Appendix J

Curriculum Mapping Grades K Through 5

Index:

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	ELA- (Reading, Spelling. Language)	**Grade Level**	Kindergarten
Curriculum/Programs/ Partners	EL Reading/ Project Based Learning/		

Units Title	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultu ral Exposure**	**End of Unit PBL Assessment**
1 Toys and Play	In this module, students build their literacy and citizenship skills as they engage in a study of toys and play. In Unit 1, students consider norms and behaviors for sharing toys and interacting with peers through structured conversations, learning experiences such as role-play and guided discovery of toys, and an analysis of the text Llama Llama Time to Share by Anna Dewdney.	RL.K.1 With prompting and support, ask and answer questions about key details in a text. RL.K.7 With prompting and support, make connections between the illustrations in the story and the text. W.K.1 Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is . . .)	Environmental Connection- Humanities/Multicultural Exposure- Students work to become ethical people by treating others well. Explain how people can work together to make decisions in the classroom.	Students use the information they gathered from interviewing a classmate to learn about his or her preferred classroom toy and how the classmate likes to play with that toy as a basis for their informational writing. Students first draw and label their classmate's preferred toy and add a sentence to accompany their drawing. Students then create a drawing with accompanying labels to show how their classmate likes to play with the preferred toy.

Curriculum Development Course at a Glance
Planning for Each Grade Level

2 Learning through Science and Story: Weather Wonders	Students build their literacy and science skills as they engage in a study of the weather. They broaden their study as they think about how weather affects people in different places around the world and characters in a variety of narrative texts.	RI.K.1 With prompting and support, ask and answer questions about key details in a text. RI.K.7 With prompting and support, make connections between the illustrations and the text. W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.	Environmental: Weather is a combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. / Explain how weather, climate, and other environmental characteristics affect people's lives in a place or region.	Students will create newscasts in which they are informing people how to protect themselves from various weather conditions.
			Humanities/Multicultural Exposure: Students work to become effective learners by learning about, practicing, and reflecting on the habits of responsibility and perseverance.	
3. Researching to Build Knowledge and Teach Others: Trees are Alive	Students build on their understanding of the needs of living things. Students deepen their knowledge about the scientific topic of living things, and trees, specifically.	RI.K.1 With prompting and support, ask and answer questions about key details in a text. RI.K.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.	Environmental: Use observations to describe patterns of what plants and animals (including humans) need to survive. Humanities/Multicultural Exposure: What does it mean to appreciate living things around us?	Students will create an informational Collage presenting information about students' researched trees.

Curriculum Development Course at a Glance
Planning for Each Grade Level

4. Contributing to Community: Enjoying and Appreciating Trees	Students explore the importance of trees to people and their communities. Students learn how different people, both real and imaginary, enjoy and appreciate trees, and they consider how real people and characters have used trees to fill a need in their community.	RL.K.2 With prompting and support, retell familiar stories including key details. RL.K.10 Actively engage in group reading activities with purpose and understanding. RI.K.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.	Environmental: Understanding why trees are important to the environment and all living things rely on their resources. Humanities/Multicultural Exposure: Students work to become ethical people by respecting others and treating them well. They also work to contribute to a better world by applying their learning to help their school and community.	Students will create a tree appreciation card/[poster.

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM 21st Century Skills

Problem Solving: *Apply understandings to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Toys and Play			**Length of Unit**	9
Focusing Lens(es)	In this module, students build their literacy and citizenship skills as they engage in a study of toys and play. In Unit 1, students consider norms and behaviors for sharing toys and interacting with peers through structured conversations, learning experiences such as role-play and guided discovery of toys, and an analysis of the text Llama Llama Time to Share by Anna Dewdney.	**Standards Addressed in this Unit**		RL.K.1 With prompting and support, ask and answer questions about key details in a text. RL.K.7 With prompting and support, make connections between the illustrations in the story and the text. W.K.1 Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is . . .)	
Inquiry Questions (Engaging- Debatable):	What can we do to make playing together fun? What makes toys fun? Which classroom toy do I prefer? Why do I prefer that classroom toy? What toys do others prefer? Why do they prefer them?				

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard:K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. Students will be given a variety of toy cars (or other small objects that roll). They will roll two	**Standard: 2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process,**	**Standard: K-2.ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem** Students will create their own toy using various items, Students will explain if their toy must be pushed and pulled to make it work	**Standards: DA:Cr1.1.K a. Respond in movement to a variety of stimuli (for example, music/sound, text, objects, images, symbols, observed dance) DA:Pr4.1.K c. Identify and apply different characteristics to movements (for example, slow, smooth, or wavy). DA:Pr5.1.K**	**Standards: K.CC.1. Count to 100 by ones and by tens. K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings[1], sounds (e.g., claps), acting out situations, verbal**

	items towards each other and record results (in pictures). They will repeat with other objects (up to 5) and record results. Teacher will focus on cause and effect with this activity but may include such vocabulary as: collision, speed, direction, left, right, slow, quick, straight, fast, back, forward, up, down, stopped. Students will contemplate other collisions and whether all collisions are "bad" but will support their idea with reasoning.	**and the final results through the use of** **informed decision-making skills.** Students will watch a video about toy making and retell the summary of the video. https://vocaroo.com/		**c. Move body parts in relation to other body parts and repeat and recall movements upon request** **DA:Pr6.1.K** **a. Dance for and with others in a designated space.** **Dance:** Students will move like several different kinds of toys (wind-up toy, pogo stick, rolling ball, etc.) and sequence movements together into a dance. Partners can teach each other their favorite toy's movements and perform both together. **Alternate Activity:** **Visual Art:** Students will create an advertisement for the toy they created. They will utilize shading and pencil colors.	**explanations, expressions, or equations.** **Money Toy Shop**: Set up a toy shop dramatic play area with toy-making materials and pretend money. Assign prices to different toy materials and encourage the children to "buy" materials to make their own toys. They can practice counting money and making purchases while engaging in imaginative play. **Standards:** **K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.G.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*** **Numbered Toy Building**: Provide wooden blocks or LEGO bricks with numbers printed on them. Encourage the children to build towers or structures using the blocks and arrange them

					in numerical order. They can practice number recognition and sequencing while building with the blocks. **Standards:** **K.G.2. Correctly name shapes regardless of their orientations or overall size.** **K.G.4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).** **K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.** **Shape Sorting Toy Bin**: Create a toy bin filled with various toys and objects in different shapes, such as balls, cubes, and cylinders. Ask the children to sort the toys into groups based on their shapes, reinforcing shape recognition and classification skills.

Curriculum Development Overview
Planning for Each Unit

Unit Title	Learning through Science and Story: Weather Wonders	**Length of Unit**	9
Focusing Lens(es)	Students build their literacy and science skills as they engage in a study of the weather. They broaden their study as they think about how weather affects people in different places around the world and characters in a variety of narrative texts.	**Standards Addressed in this Unit**	RI.K.1 With prompting and support, ask and answer questions about key details in a text. RI.K.7 With prompting and support, make connections between the illustrations and the text. W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
Inquiry Questions (Engaging-Debatable):	What is weather? How can I be prepared for any type of weather? What is weather like around the world? How does weather affect people? How can I write a story that teaches my reader about weather?		

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-ESS3-2 **Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.** After reading about types of severe weather, students will create a tornado model in a bottle using water and glitter. Then, students will use a forecast chart to predict future weather conditions and decide	**Standard: 3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Students will use an app to determine how they would prepare for the given weather. (Wizkids)	**Standard: K-2.ETS1-2:** **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem** Students will create an umbrella that will keep their toy dry when water is poured on it. Materials made available: basic school supplies, craft sticks, fabric pieces (think quilting squares), foil, paper	**Standards:** **DA:Cr1.1.K** **a. Respond in movement to a variety of stimuli (for example, music/sound, text, objects, images, symbols, observed dance).** **DA:Cr3.1.K** **a. Apply suggestions for changing movement through guided improvisational experiences.** **DA:Pr4.1.K** **b. Demonstrate tempo contrasts with**	**Standards:** **K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.** **K.CC.1. Count to 100 by ones and by tens.** **K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.6. Identify whether the number of objects in one group is greater than,**

	which day(s) would have the most severe weather.		plates, pipe cleaners, plastic cups, plastic wrap, sponges Students will design an umbrella to protect a toy from water being poured on it. Students will draw their design. Then, choose their materials to build. They will build their umbrella and then test it. Students will evaluate their umbrella based upon the following questions: Is the toy dry? Is the umbrella dry? Did the umbrella fall apart? Could you use the umbrella again? If unsuccessful, students will redesign, build and retest.	**movements that match to tempo of sound stimuli. DA:Pr5.1.K** **b. Move safely in general space and start and stop on cue during activities, group formations, and creative explorations while maintaining personal space.** **Dance:** Students will "become" and create a dance of various kinds of weather with a focus on the forcefulness of different kinds of precipitation: gentle rain, strong rain, storm with lightning, hail, and snow. Appropriate music will be played for each segment to augment performance quality and experience. **Alternate Activity: Visual Art/Music:** Students will create windchimes and determine how the wind supports the chimes in making its sound.	**less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.** **Temperature Measurement**: Introduce thermometers and demonstrate how to read temperatures. Set up a weather station where children can take turns reading and recording the temperature each day. They can practice counting, number recognition, and comparing temperatures over time. **Standards: K.G.4. K.MD.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. ESS.1**

Curriculum Development Overview
Planning for Each Unit

					Weather changes are short-term and long-term. **Weather Measurement Relay**: Set up a relay race where children use measuring cups or containers to collect water representing rain. Each child must fill their cup to a certain level before passing it to the next teammate. This activity reinforces measurement skills while simulating rainfall

Unit Title	Researching to Build Knowledge and Teach Others: Trees are Alive		**Length of Unit**	9
Focusing Lens(es)	Students deepen their understanding of the needs of living things. Students deepen their knowledge about the scientific topic of living things, and trees, specifically.	**Standards Addressed in this Unit**	RI.K.1 With prompting and support, ask and answer questions about key details in a text. RI.K.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.	
Inquiry Questions (Engaging-Debatable):	What do all living things need to live and grow? What do researchers do? How do we know that something is living? How do living things depend on trees to meet their needs? What patterns can we observe in how living things meet their needs?			

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**

Curriculum Development Overview
Planning for Each Unit

	Standard: K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive. Students will categorize pictures as either a living or nonliving thing, then they will draw pictures of living and nonliving things. Science investigation: in two glass jars, students will put a spoonful of sand in one and a spoonful of dry yeast in the other. Students will draw what they see. Then, students will add applesauce to each, wait 15 minutes and then draw what they observe. Lastly, the students will decide if sand and yeast are living or nonliving.	**Standard: 1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** Students will create an animation using Scratch to discuss what the sprites are living and nonliving.	**Science standards: ESS2.E: Biogeology, CCC: Patterns, Systems and system models Engineering standard: K-2.ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem** Students will design, build, and evaluate a home for an animal they choose.. Criteria: the home must: keep the animal safe, keep the animal dry, keep the animal warm/cool, and protect the babies. Constraint: only use natural materials. Students will learn about different animal homes and, given materials, design a home for their animal. Students will evaluate whether their home meets each criteria and, if necessary, redesign their home to meet more (or all) of the criteria.	. **Standards: DA:Cr1.1.K b. Explore different ways to do basic locomotor and nonlocomotor movements by changing at least one of the elements of dance. DA:Cr2.1.K a. Improvise dance that has a beginning, middle, and end. DA:Pr5.1.K a. Demonstrate same side and cross-body locomotor and nonlocomotor movements, body patterning movements, and body shapes. DA:Re9.1.K a. Find a movement that was noticed in a dance. Demonstrate the movement that was noticed and explain why it attracted attention.** **Dance:** Students will create and perform a dance that illustrates the seed-to-tree cycle: seed dispersal by different kinds of wind, seed settling, roots growing down to get water, seedling with leaves growing up to get sunlight, getting taller and taller until becoming a tree of a particular unique shape (palm. live oak, cypress, weeping willow),and finally each tree sending out seeds to begin the cycle again.	**Standards: K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. LS.1.a Living things include anything that is alive or has ever been alive. Living things have specific characteristics and traits. Living things grow and reproduce. Living things are found almost everywhere in the world. There are somewhat different kinds in different places. LS.2 Living things have physical traits and behaviors, which influence their survival. K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.** **Watering Plants**: Create a watering schedule for the classroom plants and involve the children in watering them. Discuss the importance of water for plant growth and survival. Use measuring cups or containers to measure and pour the water, incorporating measurement concepts. **Standards: K.CC.6. Identify whether the**

				Class will watch half while other half performs, and then switch roles. Audience will discuss favorite movements that they saw and tell why. **Alternate Activity:** **Visual Art:** Students will create a diorama that consists of living and nonliving	**number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. K.CC.7. Compare two numbers between 1 and 10 presented as written numerals. K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. K.MD.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. LS.2 Living things have physical traits and behaviors, which influence their survival. LS.1.a Living things include anything that is alive or has ever been alive. Living things have specific characteristics and traits. Living things grow and reproduce. Living things are found almost everywhere in the world. There are somewhat**

					different kinds in different places. **Comparing Plant Needs**: Set up an experiment with two plants placed in different locations—one with sunlight and water and the other without. Have the children observe and compare the growth of the two plants over time, discussing the importance of sunlight and water for plant growth. **Standards: K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. LS.2 Living things have physical traits and behaviors, which influence their survival. LS.1.a Living things include anything that is alive or has ever been alive. Living things have specific characteristics and traits. Living things grow and reproduce. Living things are found almost everywhere in the world. There are somewhat different kinds in different places.** **Sorting Living and Non-Living Things**: Provide pictures or objects representing living and non-living things, such as

					plants, animals, rocks, and toys. Have the children sort these items into groups based on whether they are living or nonliving. Discuss the basic needs of living things compared to non-living things.

Unit Title	Contributing to Community: Enjoying and Appreciating Trees		**Length of Unit**	9
Focusing Lens(es)	Students explore the importance of trees to people and their communities. Students learn how different people, both real and imaginary, enjoy and appreciate trees, and they consider how real people and characters have used trees to fill a need in their community.	**Standards Addressed in this Unit**	RL.K.2 With prompting and support, retell familiar stories including key details. RL.K.10 Actively engage in group reading activities with purpose and understanding. RI.K.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.	
Inquiry Questions (Engaging-Debatable):	How and why are trees important to us and our communities? How can we inspire others to appreciate and enjoy trees?			

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.	**Standards : 5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and**	**Science standard: K-ESS3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.** Students will develop a way to remove kudzu from an area that	**Standards:** **VA:Cr2.1.Ka** **Through experimentation, build skills in various media and approaches to artmaking** **VA:Cr2.3.Ka** **Create art that represents natural and constructed environments**	**Standards: K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1). K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.6. Identify**

	Students will watch the attached video, and, then, given a cutting from a tree, count the rings to determine the age of the tree. https://www.youtube.com/watch?v=e0DvKMegcuo	**societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** Students will discuss how various technology devices support the conservation and protection of trees. https://www.timeforkids.com/g34/tech-for-trees/?rl=en-760	would not hurt surrounding trees. They will also critique solutions by determining drawbacks and benefits. https://mysteryscience.com/plant-secrets/mystery-11/human-impacts-on-the-environment/1136	**Visual Art:** Students will create a winter tree drawing. https://www.youtube.com/watch?v=cGgd7LLfl4Q **Alternate Activity:** **Drama:** Students will create vignettes that illustrate using all the parts of a tree for different uses: building houses, paper, shade, habitat for animals, etc.	**whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. LS.2 Living things have physical traits and behaviors, which influence their survival.** **Tree Growth Timeline**: Create a timeline on a wall or bulletin board to illustrate the growth of a tree from seed to maturity. Include pictures or drawings representing each stage of the tree's life cycle. Discuss the importance of trees in providing oxygen, absorbing carbon dioxide, and preventing soil erosion. **Standards: K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. LS.2.a Living things are made up of a variety**

					of structures. Some of these structures and behaviors influence their survival. **Seed Counting and Planting**: Provide seeds from different types of trees, such as acorns or maple seeds. Have the children count the number of seeds and plant them in pots or in a designated outdoor area. They can observe the seeds sprouting and discuss the life cycle of trees. **Standards: K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. LS.1.a Living things include anything that is alive or has ever been alive. Living things have specific characteristics and traits. Living things grow and reproduce. Living things are found almost everywhere in the world. There are somewhat different kinds in different places.** **Leaf Patterns**: Collect a variety of leaves from different trees. Provide the children with sorting mats and encourage them to sort the leaves based on similarities, such as size, shape, or color. They can then create patterns using the sorted leaves, reinforcing math concepts like patterns and sequencing.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Social Studies	**Grade Level**	Kindergarten
Curriculum/ Program	Louisiana Student Standards for Social Studies		

Units Title	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**

Curriculum Development Course at a Glance
Planning for Each Grade Level

Being Part of a Community	A variety of civic duties will be explored, including voting, serving on community boards, and volunteering. Additionally, students will gain an understanding of community helpers and how laws and rules are made and enforced to ensure the safety of individuals in their communities.	K.1 Order events in a chronological sequence using schedules, calendars, and timelines. For example: a. Daily classroom activities b. Significant events in students' lives K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies K.3 Select and use appropriate evidence from primary and secondary sources to support claims. K.4 Identify symbols, customs, famous individuals, and celebrations representative of our state and nation, including: a. Symbols: United States flag, bald eagle, Louisiana State flag, brown pelican b. Customs: pledging allegiance to the United States flag, singing "The Star-Spangled Banner" c. Individuals: George Washington, Abraham Lincoln, Dr. Martin Luther King Jr. d. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day K.7 Explain the purpose of local government. K.8 Describe the importance of fairness, responsibility, respect, and hard work. For example: a. Taking care of personal belongings and respecting the property of others.	Students will study the job of an environmental scientist and how they conduct research on soil contamination. Students will connect this to the job of farmers and how they can improve soil quality through farming. Students will connect this to the rules that farmers must follow.	Students create a newcomer's guide to important places in the neighborhood around the school or in their broader community. After creating a shared class map, teams create maps documenting a specific area or community feature. With teacher support, students individually write and illustrate a description of one of the recommended places for inclusion in the guide.

		b. Following rules and recognizing consequences of breaking rules. c. Taking responsibility for assigned duties. K.9 Describe organizations and individuals within a school or parish that help solve issues, including the school principal, school custodian, volunteers, police officers, and fire and rescue workers. K.10 Describe the importance of rules and how they help protect our liberties. K.11 Explain how people can work together to make decisions. K.16 Identify jobs and industries within a school and community. K.17 Describe the concept of scarcity using examples. K.18 Use maps and models to describe relative location. For example: locating objects and places to the right or left, up or down, in or out, above or below. K.19 Identify basic landforms and bodies of water in a variety of visual representations, including mountains, hills, coasts, islands, lakes, and rivers.		
Understanding the Past	To understand culture, students will explore the culture of Louisiana and the United States by learning about holidays, celebrations, and symbols. They will know the characteristics of culture and that all cultures are unique. Students learn about how culture defines a place. They also explore the different elements of culture so that they begin to see how culture can make a place unique.	K.1 Order events in a chronological sequence using schedules, calendars, and timelines. For example: a. Daily classroom activities b. Significant events in students' lives K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies K.3 Select and use appropriate evidence from primary and secondary sources to support claims. K.4 Identify symbols, customs, famous individuals, and celebrations representative of our state and nation, including: a. Symbols: United States flag, bald eagle, Louisiana State flag, brown pelican b. Customs: pledging allegiance to the United States flag, singing "The Star-Spangled Banner" c. Individuals: George Washington, Abraham Lincoln, Dr. Martin Luther King Jr. d. State and nationally designated holidays:	Students will create a chart of a week of weather from 50 years ago and compare it to weather from today. The teacher will then direct the students to create an anchor chart that shows similarities and differences.	Student's will create a "My Culture" poster including their country of origin, holidays and traditions, clothing, food, etc.

		New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day K.6 Identify a cause and effect for a significant event in a school, neighborhood, or parish. K.18 Use maps and models to describe relative location. For example: locating objects and places to the right or left, up or down, in or out, above or below. K.19 Identify basic landforms and bodies of water in a variety of visual representations, including mountains, hills, coasts, islands, lakes, and rivers.		
Understanding Wants and Needs	To understand the difference between wants and needs, students will learn about the economic concepts of wants, needs, and scarcity within a community. Students will be able to identify examples of needs and wants. They will also be able to describe the concept of scarcity.	K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies K.3 Select and use appropriate evidence from primary and secondary sources to support claims. K.4 Identify symbols, customs, famous individuals, and celebrations representative of our state and nation, including: a. Symbols: United States flag, bald eagle, Louisiana State flag, brown pelican b. Customs: pledging allegiance to the United States flag, singing "The Star-Spangled Banner" c. Individuals: George Washington, Abraham Lincoln, Dr. Martin Luther King Jr. d. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day K.13 Identify examples of goods and services. For example: a. Goods: food, toys, clothing b. Services: medical care, fire protection, law enforcement, library resources K.14 Describe and compare reasons to save and spend money. K.15 Differentiate between wants and needs. K.16 Identify jobs and industries within a school and community. K.18 Use maps and models to describe relative location. For	Students will use their prior knowledge to explore living and nonliving things and learn about the basic needs of plants, animals, and people. They will explore the following questions: Need or Want? What is the difference between basic survival needs of human beings and things not essential for life? Needs of Plants: What do plants need to grow? Animals' Needs: What is the difference between a worm model and a live worm? Plant or Animal? What is the difference between a plant and an animal? Food for Kids: How does cooking make some foods easier to eat?	The teacher will create a "market" for students with different "wants and needs." For example, shelter, clothes, groceries, movie tickets, cars, etc. and assign a cost to each item. Each student will then receive 20 pretend dollars. They will have to shop for their needs and then their wants. At the end of the market, students will present to the class the items that they "bought."

		example: locating objects and places to the right or left, up or down, in or out, above or below. L K.19 Identify basic landforms and bodies of water in a variety of visual representations, including mountains, hills, coasts, islands, lakes, and rivers.	We Need Water: Where can we get the water we need every day? Air and Breathing: What is breathing? A Place to Be: Can animals be matched to their "places to be"?	
Exploring Our World	As part of this topic, students will explore rules and laws at home and at school. Students will learn about the importance of fairness, responsibility, respect, and hard work. By describing these important aspects of rules, students will be able to demonstrate their importance in maintaining the safety and responsibility of themselves and others.	K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies K.3 Select and use appropriate evidence from primary and secondary sources to support claims. K.4 Identify symbols, customs, famous individuals, and celebrations representative of our state and nation, including: a. Symbols: United States flag, bald eagle, Louisiana State flag, brown pelican b. Customs: pledging allegiance to the United States flag, singing "The Star-Spangled Banner" c. Individuals: George Washington, Abraham Lincoln, Dr. Martin Luther King Jr. d. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day K.5 Identify examples of different cultures and traditions in Louisiana, including: a. Music: Cajun, jazz, zydeco b. Traditions: king cake, red beans and rice on Mondays c. Cuisine: jambalaya, gumbo, etouffee,	Students will explore the role of the Environmental Protection Agency (what is the purpose and what laws they create to keep our environment protected).	The teacher will explain that there are rules for protecting our environment such as reduce the amount of stuff you through away; reuse stuff when you can; recycle cans, bottles, paper, books, and toys; and enjoy the Earth (walk in the woods, plant a tree, etc.)! Students will then design signs to post around the room as reminders of the rules for the environment.

		bread pudding, meat pies, tamales K.6 Identify a cause and effect for a significant event in a school, neighborhood, or parish. K.20 Identify ways people interact with their environment, including: a. Using natural resources b. Modifying their environment to create shelter K.21 Identify rural, suburban, and urban areas. K.22 Explain how weather impacts daily life and choices. K.23 Explain why people may move from place to place.		

STEAM 21st Century Skills

Problem Solving: *Apply understandings to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit Title	Being Part of the Community	**Length of Unit**	4.5 weeks

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	A variety of civic duties will be explored, including voting, serving on community boards, and volunteering. Additionally, students will gain an understanding of community helpers and how laws and rules are made and enforced to ensure the safety of individuals in their communities.	**Standards addressed in this unit**	K.1 Order events in a chronological sequence using schedules, calendars, and timelines. For example: a. Daily classroom activities b. Significant events in students' lives K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies K.3 Select and use appropriate evidence from primary and secondary sources to support claims. K.4 Identify symbols, customs, famous individuals, and celebrations representative of our state and nation, including: a. Symbols: United States flag, bald eagle, Louisiana State flag, brown pelican b. Customs: pledging allegiance to the United States flag, singing "The Star-Spangled Banner" c. Individuals: George Washington, Abraham Lincoln, Dr. Martin Luther King Jr. d. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day K.7 Explain the purpose of local government. K.8 Describe the importance of fairness, responsibility, respect, and hard work. For example: a. Taking care of personal belongings and respecting the property of others. b. Following rules and recognizing consequences of breaking rules. c. Taking responsibility for assigned duties. K.9 Describe organizations and individuals within a school or parish that help solve issues, including the school principal, school custodian, volunteers, police officers, and fire and rescue workers. K.10 Describe the importance of rules and how they help protect our liberties. K.11 Explain how people can work together to make decisions. K.16 Identify jobs and industries within a school and community. K.17 Describe the concept of scarcity using examples. K.18 Use maps and models to describe relative location. For example: locating objects and places to the right or left, up or down, in or out, above or below. K.19 Identify basic landforms and bodies of water in a variety of visual representations,

			including mountains, hills, coasts, islands, lakes, and rivers.
Inquiry Questions (Engaging-Debatable):	Why do we have rules and laws? How do citizens follow the rules to keep their community protected and safe? What are the symbols and traditions that represent the United States and Louisiana?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. Bubbly Fires. Students will study the job of a firefighter and how they work together to make decisions when there is a house fire. Students will learn about the rules and procedures they have to follow when a fire occurs. They will work to find out: How do fires start? Bubbly Fire	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students will explore the technology that is used on a firetruck. They will then have a in school field trip with a visit from the local fire department where the technology will be demonstrated.	**Standard: K–2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** Teacher will work with a small group of students at a time to complete this activity. The teacher will review the social studies lesson on community workers. The teacher will ask a few questions. *Why are firefighters important? What are some things that they do?* The teacher will have the students color his/her firefighter. Next, children will need to cut their straws into two pieces. They will tape the two pieces vertically parallel to each on the back of the firefighter with the help of the teacher. Students will need to create a ladder for the firefighter to pretend to climb. They will draw a rectangle on the cardboard. The teacher will cut out the sections. Finally, they will glue the	**Standards:** **VA:Cr2.1.Ka** **Through experimentation, build skills in various media and approaches to artmaking.** **VA:Cr3.1.Ka** **Explain the process of making art while creating.** **VA:Re.7.1.Ka** **Identify uses of art within one's personal environment.** **VA:Re8.1.Ka** **Interpret art by identifying subject matter and describing relevant details** **Visual Art:** Teacher will read "David Goes to School" (tie-into "No David" from regular ed. classroom). Teachers will ask questions about the book as it is read, emphasizing appropriate	**Standard: K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.** **Counting Rules**: Provide pictures or cards depicting various rules, such as cleaning up toys, raising hands to speak, or walking in line. Have the children count how many rules are depicted in each picture. **Standard: K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in**

			pieces of the ladder together. Once the ladder has been completed, the teacher will tape it to the door that the firefighter is going to climb. The teacher will place a loop at the top of the twine or ribbon on the door. The teacher will slowly alternate pulling one cord and then the other with a rocking motion to make the firefighter rise up the twine or cord. Once the teacher models, she will allow each student to make their firefighter climb the ladder.	behavior at school. Students will then create their own David to display on a collaborative bulletin board while discussing what David has learned about school rules. After they are finished, students will discuss why they made David the way they did (Is he happy, sad, etc.?). The teacher will write/print student responses based on the book's text. **Alternate Activity:** **Dance:** Students will make a dance showing several symbols of the United States. Students may, for instance, show an eagle flapping its wings, then the Statue of Liberty with torch held high, then become a flagpole with a flag, etc. This is a good way to review symbols after they have already been learned, as you can have students say what symbols they want to include in the dance and also create the movements/poses for each symbol.	**a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. K.CC.6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. K.CC.7. Compare two numbers between 1 and 10 presented as written numerals. K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.** **Graphing Classroom Rules**: Brainstorm a list of classroom rules with the students. Create a simple bar graph or pictograph to represent the number of times each rule is followed in a day or week. Discuss the results with the children, emphasizing the importance of following rules.

Unit Title	Understanding the Past	**Length of Unit**	4.5 weeks

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	To understand culture, students will explore the culture of Louisiana and the United States by learning about holidays, celebrations, and symbols. They will know the characteristics of culture and that all cultures are unique. Students learn about how culture defines a place. They also explore the different elements of culture so that they begin to see how culture can make a place unique.	**Standards addressed in this unit**	K.1 Order events in a chronological sequence using schedules, calendars, and timelines. For example: a. Daily classroom activities b. Significant events in students' lives K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies K.3 Select and use appropriate evidence from primary and secondary sources to support claims. K.4 Identify symbols, customs, famous individuals, and celebrations representative of our state and nation, including: a. Symbols: United States flag, bald eagle, Louisiana State flag, brown pelican b. Customs: pledging allegiance to the United States flag, singing "The Star-Spangled Banner" c. Individuals: George Washington, Abraham Lincoln, Dr. Martin Luther King Jr. d. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day K.6 Identify a cause and effect for a significant event in a school, neighborhood, or parish. K.18 Use maps and models to describe relative location. For example: locating objects and places to the right or left, up or down, in or out, above or below. K.19 Identify basic landforms and bodies of water in a variety of visual representations, including mountains, hills, coasts, islands, lakes, and rivers.
Inquiry Questions (Engaging-Debatable):	Why are people in the past important today? How can an event in the past influence the present? What is Culture?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**

Curriculum Development Course at a Glance
Planning for Each Grade Level

	Standards: 2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly. Students will use Google Maps to identify basic landforms in St. Martin Parish (mountains, hills, coasts, islands, lakes and rivers.) Then, using Google Earth, describe the differences noticed between each landform.	**Standards: 3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products**. Students will learn to use Google Search to find the state flag of 3 different flags. They will document their findings in their journal.	**Standard: K–2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** Students will sketch, design and create an instrument that resembles one that relates to our local heritage. (can be an accordion, drum, fiddle, guitar, scrub board, etc. but must only use materials offered and must make a sound) Students will test their instruments for sounds and record results. If redesign and test is necessary, proceed as required.	**Standards: VA:Cr2.1.Ka Through experimentation, build skills in various media and approaches to artmaking. VA:Re.7.2.Ka Describe what an image represents. VA:Cn11.1.Ka Identify a purpose of an artwork** **Visual Art:** Students will create their own state flag using elements that they identify in their culture. **Alternate Activity: Dance/Theater:** Students can work in small groups to show tableaux of certain holidays and have the other students in class guess what holiday they are showing. For instance, eating around a table for Thanksgiving, becoming fireworks for July 4th, forming a huge Christmas tree, etc.	**Standards: K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1). K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. SS.2 Personal history can be shared through stories and pictures.** **Timeline of Inventions**: Create a simple timeline on a large piece of paper or on the classroom wall. Include pictures or drawings of important inventions like the wheel, telephone, and computer. Discuss how each invention from the past has influenced the development of newer inventions in the future.

Curriculum Development Course at a Glance
Planning for Each Grade Level

					Have the children count how many years apart each invention is and compare the differences. **Standards: K.G.2. Correctly name shapes regardless of their orientations or overall size. K.G.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. K.G.6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"** **Building Bridges**: Provide building materials like blocks, popsicle sticks, or Lego bricks. Discuss how bridges have evolved over time, from simple log bridges to modern suspension bridges. Encourage the children to use the building materials to construct their own bridges, discussing how past designs have influenced modern bridge construction.

Unit Title	Understanding Wants and Needs	**Length of Unit**	9 weeks

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	To understand the difference between wants and needs, students will learn about the economic concepts of wants, needs, and scarcity within a community. Students will be able to identify examples of needs and wants. They will also be able to describe the concept of scarcity.	**Standards addressed in this unit**	K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies K.3 Select and use appropriate evidence from primary and secondary sources to support claims. K.4 Identify symbols, customs, famous individuals, and celebrations representative of our state and nation, including: a. Symbols: United States flag, bald eagle, Louisiana State flag, brown pelican b. Customs: pledging allegiance to the United States flag, singing "The Star-Spangled Banner" c. Individuals: George Washington, Abraham Lincoln, Dr. Martin Luther King Jr. d. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day K.13 Identify examples of goods and services. For example: a. Goods: food, toys, clothing b. Services: medical care, fire protection, law enforcement, library resources K.14 Describe and compare reasons to save and spend money. K.15 Differentiate between wants and needs. K.16 Identify jobs and industries within a school and community. K.18 Use maps and models to describe relative location. For example: locating objects and places to the right or left, up or down, in or out, above or below. K.19 Identify basic landforms and bodies of water in a variety of visual representations, including mountains, hills, coasts, islands, lakes, and rivers.
Inquiry Questions (Engaging-Debatable):	What's the difference between wants and needs? Why do people have different jobs? Why do people spend and save money?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Social Studies standard: K.16 Identify jobs and industries	**Standards: 6. Basic Operations and Concepts**	**Standards: K–2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an**	**Standards: MU:Cr1.1.K a With guidance, explore and experience music**	**Standards: K.MD.3. Classify objects into given categories; count the numbers of objects**

	within a school and community. In a teacher led discussion, students will discover the jobs of different scientists. They will explore their role and how they help our society. If available, guest speakers will come to class (or virtually speak) and explain his/her job and why they are important to the city of St. Martinville.	♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology. 1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** Students will research 3 technology items that they want (e.g. iPhone, iPad, gaming system, etc.) They will then use a teacher created Google slide to copy and paste the picture into the document. They will then add the cost to the column that is labeled "cost."	**object helps it function as needed to solve a given problem.** Students will sketch, design and build a personal "piggy bank" using found materials. Requirements: it must hold money and be able to open Constraints: can only use classroom materials available	**concepts (such as beat and melodic contour).** **MU:Pr4.3.K** **a With guidance, demonstrate awareness of expressive qualities (such as voice quality, dynamics, and tempo) that support the creators' expressive intent.** **MU:Pr5.1.K** **b With guidance , use suggested strategies in rehearsal to improve the expressive qualities of music** **MU:Cn11.1.K** **Demonstrate understanding of relationships between music and the other arts, other disciplines, varied contexts, and daily life.** **Music:** Students will sing and perform the Star Spangled Banner using a provided accompaniment from the music teacher. **Alternate Activity:** **Dance:** Students will make a "wants and needs" dance with a partner, showing at least one want and one need, and then explaining it to the class.	**in each category and sort the categories by count.** **K.CC.6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.** **Sorting Wants and Needs**: Provide pictures or objects representing wants (e.g., toys, candy) and needs (e.g., food, clothing). Have the children sort these items into two groups, discussing the difference between wants and needs as they do so. **Standards: K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.**

					Graphing Wants vs. Needs: Create a simple bar graph or pictograph with pictures of wants and needs along the bottom axis. Ask the children to count how many of each item they have, then help them create the graph by placing stickers or drawings representing each item. Discuss which category has more items and why. **Standards: K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. K.CC.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).** **Role-play Shopping**: Set up a pretend store with

					various items, both wants and needs, displayed on shelves. Give the children play money and shopping baskets, and let them "shop" for items they want and items they need. Encourage them to count their money and decide how to spend it wisely. **Standards: K.CC.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.** **Budgeting Game**: Provide a budget (e.g., 5 play coins) and a list of items for sale, each with a price tag. Have the children

					choose which items they want to "buy" within their budget, practicing counting and addition as they go.

Unit Title	Exploring Our World		**Length of Unit**	18 Weeks
Focus	As part of this topic, students will explore rules and laws at home and at school. Students will learn about the importance of fairness, responsibility, respect, and hard work. By describing these important aspects of rules, students will be able to demonstrate their importance in maintaining the safety and responsibility of themselves and others.	**Standards addressed in this unit**	K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies K.3 Select and use appropriate evidence from primary and secondary sources to support claims. K.4 Identify symbols, customs, famous individuals, and celebrations representative of our state and nation, including: a. Symbols: United States flag, bald eagle, Louisiana State flag, brown pelican b. Customs: pledging allegiance to the United States flag, singing "The Star-Spangled Banner" c. Individuals: George Washington, Abraham Lincoln, Dr. Martin Luther King Jr. d. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day K.5 Identify examples of different cultures and traditions in Louisiana, including: a. Music: Cajun, jazz, zydeco b. Traditions: king cake, red beans and rice on Mondays c. Cuisine: jambalaya, gumbo, etouffee, bread pudding, meat pies, tamales K.6 Identify a cause and effect for a significant event in a school, neighborhood, or parish. K.20 Identify ways people interact with their environment, including: a. Using natural resources b. Modifying their environment to create shelter K.21 Identify rural, suburban, and urban areas. K.22 Explain how weather impacts daily life and choices. K.23 Explain why people may move from place to place.
Inquiry Questions (Engaging-Debatable):	Where do people live? Why are maps helpful? What would you see on your trip across the United States?			

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM Integration	Science	Technology	Engineering	Art	Math
	Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks The teacher will create hidden treasure around the classroom. The students will be placed in groups of 3. The teacher will review cardinal directions with students. She will then give directions to the students using the cardinal directions (e.g. take 3 small steps east). The groups will work together to find the "treasure."	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students will make a list of places they have been. They will then use Google Earth to find those places.	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students learn the importance of following the laws. Students will apply what they know about Police officers enforcing the law on the highway and engineer a roadway system and traffic signs to develop a clear understanding of laws citizens must follow while driving. Roadway systems and traffic signs	**Standards:** **DA:Cr1.1.K** **a. Respond in movement to a variety of stimuli (for example, music/sound,** **b. Explore different ways to do basic locomotor and nonlocomotor movements by changing at least one of the elements of dance. text, objects, images, symbols, observed dance).** **DA:Cr3.1.K** **b. Depict a dance movement by drawing a picture or using a symbol** **DA:Pr5.1.K** **b. Move safely in general space and start and stop on cue during activities, group formations, and creative explorations while maintaining personal space.** **DA:Re8.1.K** **a. Observe movement and describe it using simple dance terminology** **Dance/Visual Art "Patterns, Pathways & Maps."** First, discuss pathways with the class. Hold up flash cards with different shaped pathways on them. Try drawing them with a finger in the air. Then, walking these	**Standards: K.G.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to K.G.2. Correctly name shapes regardless of their orientations or overall size. K.G.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). K.G.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. K.G.6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"** **Map Block Play**: Set up a block area with various building materials. Encourage the children to build their own maps using blocks, creating roads, rivers, and buildings. They can also add toy cars and figures to bring their maps to

				pathways through the room: A straight line, a circle, a spiral, and a zig-zag. Ask, "What other locomotor moves can you use while traveling on your pathway?" and challenge them to gallop, skip, march, or tip-toe on each pathway. When half watch and half move, the audience can tell which kinds of pathways they are seeing, as well as comment on speed and direction. <u>Note</u>*: With children whose spatial intelligence needs development, use a long crepe paper streamer to draw the patterns in the air. You can also lay the streamer on the floor in a pathway and walk on it. Paper tape on the floor can also help them visualize these pathways.* *Alternate Activity:* Sing the "Going on a Bunny Hunt" song (the same tune as "Going on a Bear Hunt," but less scary) as a pathway/locomotor exercise. Before class, hide the picture of the bunny in a place that will be hard for the students to find so you can reveal it at the end of the activity. Show the class where in the room all the places (the tall grass, the river, the sticky mud, the forest &	life. **Standards: K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.** **Map Relay Race**: Divide the children into teams and give each team a map with a route marked on it. Place objects or landmarks along the route. One child from each team runs to find an object and returns to tag the next team member, who then runs to find the next object. The first team to complete the route wins.

				the cave) will be and tape up the laminated picture of each environment that they will encounter on their bunny hunt. The students will follow the teacher on the pathway that they choose to each place, doing a different type of movement (march, slosh, a standing swimming move, tip-toeing, galloping) for each location, and finally, find the rabbit where it was hidden. Everyone can do their happy dance at the end. Finish by having the students create a map of their Bunny Hunt Dance by drawing a picture of the pathways they used to find the bunny.	

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Science	**Grade Level**	Kindergarten
Curriculum /Program	PhD Science		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Module 1: Weather (43 days)	Essential Question: How did the cliff dwellings at Mesa Verde protect people from the weather? **Conceptual Overview** Weather affects people and their surroundings. 1. Weather is the combination of sunlight, clouds, wind, rain and snow, and temperature in a particular place at a particular time. Different parts of weather have different effects on people and their surroundings. 2. Analyzing weather data can reveal patterns. 3. Meteorologists can predict severe weather so that communities can prepare.	**NGSS Performance Expectations** **K-ESS2 Earth's Systems** K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time. **K-ESS3 Earth and Human Activity** K-ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. **K-PS3 Energy** K-PS3-1 Make observations to determine the effect of sunlight on Earth's surface. K-PS3-2 Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. **K–2-ETS1 Engineering Design** K–2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple	Walk around school to look at the effects of weather. (i.e.. worms on the playground after a rain, leaver fallen after wind/storm, etc.)	Students observe and investigate weather, learn how weather conditions and temperatures affect people's daily lives, and draw conclusions about patterns over time to create a local weather guide. Students work together to chart daily observations, gather and analyze survey data, and discover how weather influences what people wear and the activities they do. They synthesize their findings into a guidebook of recommendations for clothing and activities suited to various types of weather.

		problem that can be solved through the development of a new or improved object or tool.		
Module 2: Pushes and Pulls (35 days)	Essential Question: How do tugboats move cargo ships through a harbor? **Conceptual Overview** Pushes and pulls can cause objects to start moving and can cause their movement to change. 1. Pushes and pulls can cause objects to start moving. The strength of the pushes and pulls can affect the speed of the objects. 2. Pushes and pulls can cause moving objects to change direction or stop.	**NGSS Performance Expectations** **K-PS2 Motion and Stability: Forces and Interactions** K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. **K–2-ETS1 Engineering Design** K–2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	What is the environmental impact of tugboats and cargo ships moving around, being pushed and pulled, around the harbor on the harbor itself.	Push Pull-Changing Direction: Students investigate the interactions between colliding objects using pushes and pulls. Students play a game of kickball and observe how the ball is pushed, pulled, started, stopped, or collides with other objects and how it changes position and speed. As a group, students will then brainstorm about other objects being pushed, pulled or colliding and then choose one of those objects to investigate.
Module 3: Life (38 days)	Essential Question: How is Mara different from the Wonderland of Rocks? **Conceptual Overview** Plants and animals, including humans, get what they need to live and grow from natural resources. 1. Plants live and grow in environments that have the water and light that the plants need. 2. Animals get what they need from natural resources in their environments.	**NGSS Performance Expectations** **K-LS1 From Molecules to Organisms: Structures and Processes** K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive. **K-ESS3 Earth and Human Activity** K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.	What is the impact of poor soil conditions on growing plants?	Students will plant seeds in different soil environments to determine which environment that plants grow the best in. 'The Life Box' (Project WET 2.0; p: 69)* - Students explore the properties of water, soil, light and air. - See detailed NGSS correlation on Project WET Portal for additional suggestions for helping students elaborate on and apply the concepts and skills in this activity.

	3. Humans use natural resources for everything they do.			
Module 4: Environments (34 days)	Essential Question: Why are gopher tortoises disappearing? **Conceptual Overview** When living things change their environment to get what they need, those changes can affect other living things. 1. Plants and animals can change their environment in many ways, and those changes can affect other plants and animals. 2. Humans can change their environment in many ways through the choices they make.	**NGSS Performance Expectations** **K-ESS2 Earth's Systems** K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. **K-ESS3 Earth and Human Activity** K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. **K–2-ETS1 Engineering Design** K–2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	Students design small boats they will use to follow water flow. - Students discuss how to reduce the amount of litter or harmful materials in water from leaving the schoolyard. Keep off the Grass | Hawaii Schools for Gather, Reason, Communicate | CC BY SA Addresses human impacts on the environment and how solutions can be engineered.	'Rainy Day Hike' (K-2 Option - Project WET Portal) - Students design small boats to follow the flow of water around the schoolyard. - See detailed NGSS correlation on Project WET Portal for additional suggestions for helping students elaborate on and apply the concepts and skills in this activity. 'There is No Away!' (Project WET 2.0; p: 453) - Students explore a collection of 'clean trash' and sort items by their properties – glass, plastic, paper or cardboard, tin or aluminum. - See detailed NGSS correlation on Project WET Portal for additional suggestions for helping students elaborate on and apply the concepts and skills in this activity.

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Unit Title	Module 1: Weather		**Length of Unit**	43 days
Focus	Weather	**Standards Addressed in this Unit**	K-ESS2-1, K-ESS3-2, K-PS3-1, K-PS3-2, and K–2-ETS1-1	
Inquiry Questions (Engaging-Debatable):	Essential Question: How did the cliff dwellings at Mesa Verde protect people from the weather?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time. Students will record weather conditions for a month onto a calendar/chart using symbols related to correct conditions and highs/lows for each day.	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.**	**Standard: K–2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** After drawing a sketch for each In the story of the "The Three Little Pigs," students will build a home out of different materials), test it against a blow dryer (or a fan) and record results. For straw, students will use plastic straws.	**Standards: DA:Cr2.1.K b. Express an idea, feeling, or image, through improvised movement moving alone or with a partner. DA:Pr4.1.K a. Make still and moving body shapes that show lines (for example, straight, bent, and curved), changes levels,**	**Standards: K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were**

	After a month, students will create a graph that displays their results, and also write a sentence about patterns noticed.	♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students will use Google Earth to find Mesa Verde.	For sticks, students will use craft sticks. For bricks, students will use legos. Students will draw their results for each.	**and vary in size (large/small)** **DA:Pr5.1.K** **c. Move body parts in relation to other body parts and repeat and recall movements upon request.** **DA:Pr6.1.K** **a. Dance for and with others in a designated space.** **Dance:** Students will create dances that show a variety of weather and how people protect themselves. For instance, building a fire to keep warm when it is very cold. Building steep roofs to shed rain and snow. Building very strong walls to keep wind away. Going swimming when it is very hot. **Alternate Activity**: **Visual Art:** Students will draw a picture of their house, apartment, or mobile home.	**counted. K.MD.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. K.G.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.** **Building a Weather Shelter**: Using building materials such as blocks, cardboard boxes, or craft sticks, encourage the children to build shelters that would protect them from different weather conditions. For example, they could build a sturdy house for protection against rain or a cozy igloo for protection against snow. Counting the number of blocks or sticks used in construction can be incorporated into this activity **Standards: K.CC.6. Identify whether the number of objects in one group is greater than, less than, or equal to the**

					number of objects in another group, e.g., by using matching and counting strategies. **ESS.2 The moon, sun, and stars can be observed at different times of the day or night.** **Measuring Sun Protection**: Provide UV-sensitive beads or paper and sunscreen. Apply sunscreen to the children's skin and give them UV-sensitive materials to wear. After spending time outdoors, observe any color changes in the beads or paper to demonstrate the effectiveness of sunscreen in protecting against sunburn. You can discuss measurement concepts such as before and after, more or less, and changes in color..

Unit Title	Module 2: Pushes and Pulls		**Length of Unit**	35 days
Focus	Pushes and Pulls	**Standards Addressed in this Unit**	K-PS2-1, K-PS2-2, and K–2-ETS1-2	
Inquiry Questions (Engaging-Debatable):	Essential Question: How do tugboats move cargo ships through a harbor?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**

	Standard: K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. Students will investigate the buoyancy of different items by placing them in a tank of water and record results. They will sort items as either float or sink. Then, given a set of other items, students will predict whether the items will sink or float with reasoning. Then, test their predictions.	**Standards: 2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** Teacher will videotape the students creating their models and discussing how they are getting the books from the first floor to the fifth floor of a building.	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Kindergarteners will take on the role as engineer to move books from the first floor to the fifth floor of a building. Students will design and model a pulley system. Students were provided a model of the school using a cardboard box. Students created pulleys using cardboard, toilet paper rolls, string, stick, and a plastic bottle. Students then tested their pulleys by transferring their marbles from the bottom of the school model to the top.	**Standards:** **VA:Cr1.1.Ka** **Engage in exploration and imaginative play with materials.** **VA:Cr2.1.Ka** **Through experimentation, build skills in various media and approaches to artmaking.** **VA:Cr2.2.Ka** **a. Identify safe and non-toxic art materials, tools, and equipment.** **Visual Art: Push & Pull Painting:** Explore the force of push and pull as you try to move paint to create a unique abstract work of art. Students will use white cardstock paper, tape, a tray, some string, small pieces of rectangular cardboard, and paint. Dip your cardboard rectangle or string into the paint. Push the cardboard and pull the string on your canvas to create a unique design. Experiment with different sizes of cardboard. **Alternate Activity:** **Dance:** Students will work with a partner to experience "force fields" where one partner "pushes" or "pulls" individual body parts on	**Standards: K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. K.MD.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.** Kindergartners can use simple nonstandard units to measure the distances that two different objects travel when pushed or pulled or the distances that an object travels when varying the strength of a push or a pull. If using two objects, students can compare them using a measurable attribute, such as weight, to see which object has "more of" or "less of" the attribute, and describe the effect that increased weight has on the distance that an object

				the other partner (without actually touching) by gesturing with hands. Partners can make each other walk or reach or look by gesturing to legs or arms or head.	travels. As students conduct multiple trials with the two objects (or with a single object, varying the strength of the push or pull), they can document the distance traveled in a simple graph. Then they can analyze the data in order to describe the cause-and-effect relationship between forces and motion of objects. As students collect and analyze data, they are learning to reason abstractly and quantitatively and use appropriate tools strategically

Unit Title	Module 3: Life		**Length of Unit**	38 days
Focus	Life	**Standards Addressed in this Unit**	K-LS1-1 and K-ESS3-1	
Inquiry Questions (Engaging-Debatable):	Essential Question: How is Mara different from the Wonderland of Rocks?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate,**	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that**	**Standards: TH:Cr1.1.K.** **b. With prompting and support, use nonrepresentational materials to create props,**	**Standards: K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. K.MD.2.**

	Students will grow plants from seeds in different types of soil (including no soil) and determine which is the best for plant growth. Students will record results and create graphs.	**evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Teachers will record students' explanations of planting boxes used to test how plants grow with or without water, soil, light, or air.	**can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students design pots or planting boxes to test how plants grow with or without water, soil, light or air. Students will record results and create a graph/chart that displays those results. Students will write a sentence that states what plants need to grow.	**puppets, and costume pieces for dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama). TH:Cr2-K.** **a. With prompting and support, interact with peers and contribute to dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama). TH:Pr5.1.K.** **a. With prompting and support, understand that voice and sound are fundamental to dramatic play and guided drama experiences (e.g., process drama, story drama, creative drama). TH:Cn11.1.K** **a. With prompting and support, identify skills and knowledge from other areas in dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama).** **Theater:** Students will create a plant puppet show to explain what plants need to grow. **Alternate Activity: Dance/Music:** Small groups of students will "be" seeds that grow into	**Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. K.CC.6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.** **Measuring Plant Growth**: As the seeds begin to sprout and grow into plants, use rulers or measuring tapes to measure the height of the

				various fruits, vegetables, or flowers while other students in the class give them the light, water and air they need to grow with gestures, props (scarves), and sounds.	plants each day or week. Discuss concepts such as comparing heights, recording measurements on a chart, and predicting future growth. **Standards: K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. K.MD.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. LS.2 Living things have physical traits and behaviors, which influence their survival.** **Estimating Plant Watering**: Discuss the importance of watering plants and how much water plants need to grow. Provide measuring cups or containers with different amounts of water and have the children estimate how much water each plant needs. They can practice measuring and comparing volumes while learning about plant care. **Standards: K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a**

					single object. K.MD.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. LS.2 Living things have physical traits and behaviors, which influence their survival. **Plant Measurement Scavenger Hunt**: Take the children on a nature walk to observe and measure different plants in their environment. Provide rulers or measuring tapes and encourage them to measure the height or length of plants they find. They can practice measuring and comparing sizes while exploring nature.

Unit Title	Module 4: Environments		**Length of Unit**	34 days
Focus	Environments	**Standards Addressed in this Unit**	K-ESS2-2, K-ESS3-3, and K–2-ETS1-3	
Inquiry Questions (Engaging-Debatable):	Essential Question: Why are gopher tortoises disappearing?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**

	Standard: 2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be solid or liquid. Students will make a cloud in a jar: the teacher pours hot water into a jar and students swirl it around to warm up the jar. Then, quickly spray hairspray into the jar. Then, place the lid, upside down, on top of the jar. Place the ice cubes on top of the lid and record what happens. Students will discuss what happened and why.	**Standards: 5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** Where Ever the Ribbon Blows | Manoa, Konawaena, and Ewa Elementary for Gather, Reason, Communicate | CC BY SA Addresses How animals change the environment. Phenomenon focus is: The Hawaiian Petrel can change the environment in which they live. This investigation engages young children in scientific discourse.	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students will design and build a wind catcher (think pinwheel). Then, test and record how many times their wind catcher spins using a fan at different speeds. As needed, students will redesign and retest.	**Standards:** **TH:Re9.1.K** **a. With prompting and support, actively engage with others in dramatic play or a guided drama experience ((e.g., process drama, story drama, creative drama).** **TH:Cn11.1.K** **a. With prompting and support, identify skills and knowledge from other areas in dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama).** **TH:Cn11.2.K** **b. With prompting and support, tell a short story in dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama).** **DA:Pr4.1.K** **a. Make still and moving body shapes that show lines (for example, straight, bent, and curved), changes levels, and vary in size (large/small).** **Dance/Theater:** Students will show the habitat of the gopher tortoise (longleaf pine forest) as a series of tableaux, with each student choosing to become a certain part of the forest that the gopher tortoise needs to survive. (a tree for shade (high level), a pond for drinking (low level), grasses for eating, air to breathe (medium level), sun to keep	**Standards: K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.** **Tortoise Race Relay**: Set up a relay race where children pretend to be tortoises racing to their shells. Place numbered shells (or pictures of shells) at the other end of the race course. Each child must run to their designated shell, count the spots on the shell, and return to their team to report the number. The team with the correct count wins the race. **Standards: K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. K.OA.5.**

				warm, etc.) Students will decide if their contribution should be at a high, medium or low level, and each tableaux will be complete when every level is represented. (between 3 and 6 students, typically) Students will continue to make tableaux until every student has had a chance to become some part of the forest that they choose. If time, you can make two larger tableaux with half of the class watching while the other half becomes the longleaf pine forest, then switch roles. **Alternate Activity:** **Visual Art:** Students will draw a model of why the tortoises are disappearing.	**Fluently add and subtract within 5.** **Tortoise Subtraction**: Use tortoise pictures or toys to demonstrate subtraction concepts. Begin with a certain number of tortoises and gradually "make them disappear" by removing them one by one. Encourage the children to count how many tortoises remain after each subtraction. **Standards: K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.1. Count to 100 by ones and by tens. K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.** **Number Line Hide-and-Seek**: Create a number line on the floor or a wall with numbered spots representing the tortoise's shell. Hide a small tortoise toy or picture behind one of the numbered spots. Call out

					a number, and have the children search for the tortoise behind the corresponding spot. This activity reinforces number recognition and counting skills.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Math	**Grade Level**	Kindergarten
Curriculum/Program	i-Ready Classroom Mathematics		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Unit 1: Numbers 0–5: Counting, Writing, and Comparing as	This unit introduces children to counting, writing, and comparing numbers 0–5. Counting is an important mathematical skill. Knowing how to count a group of objects lets you know how many are in the group. You say one number for each object in a group when you count. You can use what you know about counting to build sets from smaller sets.	**K.CC.A.3**-Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). **K.CC.B.4a**- When counting objects in standard order, say the number names as they relate to each object in the group, demonstrating one-to-one correspondence. **K.CC.B.4b**-Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. **K.CC.B.5**-Count to answer "How many?" questions. **K.CC.B.4c**-Understand that each successive number name refers to a quantity that is one larger. **K.CC.C.6**- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. **K.OA.A.3**-Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). **K.OA.A.5**-Fluently add and subtract within 5.	**Activity: Counting Nature Items** **Objective:** To practice counting, writing, and comparing numbers 0-5 using natural items. **Materials needed:** 1. Small paper or notebook for each child 2. Pencils or crayons 3. Outdoor space (such as a garden, park, or schoolyard) **Instructions:** 1. **Introduction (5 minutes):** Begin by discussing the importance of nature and the environment with the children. Talk about the different elements they might find in the outdoor space. 2. **Exploration (15 minutes):** Take the children	Students will embark on a journey to explore the world of numbers 0-5. They will engage in hands-on activities to strengthen their understanding of counting, writing, and comparing these numbers. The assessment will culminate in a showcase where students will present their discoveries and creations. Students will find and collect objects that represent numbers 0-5.They will count the objects. They will write each number as they count. Students will create a visual display using art supplies. They can draw, paint, or collage images that correspond to each other. Students will present their projects and creations to the class during a showcase event. After the showcase, each student will reflect on what they learned about counting, writing, and

			outside to explore the	comparing numbers.

			natural surroundings. Encourage them to find and collect items such as leaves, rocks, flowers, or sticks. Emphasize that they should collect items within the range of 0-5. 3. **Counting (10 minutes):** Once the children have collected their items, have them sit down with their paper or notebooks. Instruct them to count the number of items they have and write the corresponding number next to each type of item. For example, if they have three leaves, they should write the number 3 next to the word "leaves." 4. **Discussion (5 minutes):** Gather the children together and discuss what they found. Ask each child to share the number of items they collected for each type. Emphasize the importance of accurately counting and representing the numbers. 5. **Artistic Touch (optional - 10 minutes):** Allow the children to get creative by drawing a simple picture of the items they collected next to the numbers on their paper. This adds an artistic	

			element to the activity. 6. **Reflection (5 minutes):** Wrap up the activity by discussing what the children learned. Ask questions like: What was your favorite part of this activity? Why is it important to take care of the environment? How did you feel when you were counting and writing the numbers?	
Unit 2: Numbers 6–10: Counting and Writing, Comparing and Sorting	This unit introduces children to counting, writing, and comparing numbers 6–10. Knowing the counting sequence will help you know how much is one more than a given number. You can compare the number of objects in groups by counting them to see whether one number is greater than, less than, or equal to another. You can combine two numbers to make another number.	**K.CC.A.3**-Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). **K.CC.B.4a**- When counting objects in standard order, say the number names as they relate to each object in the group, demonstrating one-to-one correspondence. **K.CC.B.4b**-Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. **K.CC.B.5**-Count to answer "How many?" questions. **K.CC.B.4c**-Understand that each successive number name refers to a quantity that is one larger. **K.CC.C.6**- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. **K.CC.C.7**-Compare two numbers between 1 and 10 presented as written numerals. **K.MD.B.3**-Classify objects into given categories based on their attributes; count the numbers of objects in each category and sort the categories by count. **K.OA.A.3**-Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	Theme: "Our Unique Garden" Counting and Planting: *Introduce the concept of counting by assigning each student a specific number (6-10) and having them plant that number of seeds or plants in the class garden. *Discuss how each plant is unique, just like the students in the class. Comparing Garden Sizes: *Create different sections in the garden for each number group (6, 7, 8, 9, 10). *Ask students to compare the sizes of the sections,	Title: Exploring Numbers 6-10 Objective: ● Students will demonstrate an understanding of counting, writing, and comparing numbers 6-10. ● Students will apply their knowledge of counting sequences to identify one more than a given number. ● Students will compare the number of objects in groups to determine whether one number is greater than, less than, or equal to another.

		K.OA.A.4- For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	discussing which has more or fewer plants. *Encourage discussions about how variety is essential in a garden, just like the importance of all the different number groups in the class. Writing Numbers in Nature: *Take students on a nature walk and ask them to find natural objects like rocks, leaves, or sticks to form the numbers 6-10. *Practice writing the numbers using the found objects, reinforcing the connection between nature, numbers, and variety. Humanities and Multicultural Exposure Discussion: *Introduce stories or books that celebrate multiple different types of plants, animals, and people. *Discuss the concept of variety in the garden, emphasizing how each plant contributes to the overall beauty and health of the garden, much like each person in the class contributes to the uniqueness of the	● Students will combine two numbers to create another number. Assessment Tasks: Counting Sequence: *Provide a series of numbers (6 to 10) randomly arranged. Ask students to circle or underline the correct number in the sequence. Example: 8, 6, 9, 7, __, 10, __, 6, __, 8 One More Than: *Show a set of objects or pictures representing a number (e.g., 6 apples). Ask students to write the number that is one more than the given amount. Example: If there are 6 apples, what is one more than 6? Comparing Numbers: *Present two groups of objects and ask students to compare the numbers. Have them use the symbols (> or <) to indicate whether one group has more, fewer, or the same number of objects as the other. Example: Group A has 7 stars, and Group B has 5 stars. Write the correct

			classroom.	

				symbol (> or <) to compare the two groups. Combining Numbers: *Provide a simple addition problem using numbers 6-10 and ask students to solve it. Example: 4 + 3 = ____
Unit 3: Geometry: Naming, Comparing, and Building Shapes	This unit introduces children to naming, comparing, and building shapes. You can identify shapes as flat or solid and learn their names. Flat shapes make up the faces of solid shapes. You can use words to describe the position of a shape.	**K.G.A.2**-Correctly name shapes regardless of their orientations or overall size. **K.G.A.3**-Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). **K.G.A.1**-Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. **K.G.B.4**-Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). **K.G.B.5**-Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. **K.G.B.6**-Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?	Cultural Shape Collages: *Introduce students to shapes from different cultures (e.g., mandalas, African tribal patterns, Islamic geometric art). *Have students create collages using these shapes, emphasizing the many different types of artistic expression around the world. Cultural Shape Collages: *Introduce students to shapes from different cultures (e.g., mandalas, African tribal patterns, Islamic geometric art). *Have students create collages using these shapes, emphasizing the many different types of artistic expression around the world.	Shape Identification: Show pictures of various shapes, both flat and solid. Ask students to name each shape. Example: Circle, Square, Triangle, Cube, Sphere, Cone, etc. Comparing Shapes: Present two different shapes (flat or solid) and ask students to compare them using terms like "bigger," "smaller," "taller," or "shorter." Example: Compare a square and a circle. Which one is bigger? Building Shapes: Provide materials (e.g., cut-out shapes, building blocks) and ask students to use them to create a solid shape using flat shapes as faces. Example: Use triangles and squares to build a pyramid.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit 4: Numbers Within 10: Addition and Subtraction	This unit introduces children to adding and subtracting within 10. When you join or put together groups, you are adding. When you separate or take away groups, you are subtracting.	**K.OA.A.1**-Represent addition and subtraction with objects, fingers, mental images, drawings2 , sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. **K.OA.A.2**-Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. **K.OA.A.5**-Fluently add and subtract within 5. **K.OA.A.4**- For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. **K.OA.A.3**-Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	Subtraction Storytelling: *Read stories or create stories that involve the subtraction of elements from nature (e.g., animals migrating, leaves falling). *Discuss the impact of subtraction on the balance of ecosystems. *Discuss traditional practices of counting and calculating within different cultures. *Explore how different cultures perceive balance and harmony in their understanding of numbers and mathematics.	Title: Exploring Addition and Subtraction within 10 Objective: Students will demonstrate an understanding of adding within 10 by combining groups. Students will demonstrate an understanding of subtracting within 10 by separating or taking away groups. Assessment Tasks: Adding Within 10: Present scenarios with objects or pictures and ask students to add within 10. For example, show two groups of objects and ask how many there are when you combine them. Example: If there are 4 apples here and 3 apples there, how many apples are there in total? Subtracting Within 10: Present scenarios with objects or pictures and ask students to subtract within 10. For example, show a group of objects and ask how many are left when you take away a certain number. Example: If there are 7 stars and we take away 2 stars, how many stars are left?

				Story Problems: Provide simple addition and subtraction story problems that involve objects or situations relevant to kindergarten students. Encourage them to use drawings or manipulatives to solve the problems. Example: Mary had 5 candies. She bought 2 more. How many candies does she have now? Counting and Representing: Use visuals such as ten frames or drawings to represent addition and subtraction problems. Ask students to count and write the corresponding numbers. Example: Show a ten frame with 6 filled circles. Ask students to write the addition or subtraction sentence.
Unit 5: Numbers 11−100: Teen Numbers, and Counting by 1s and 10s	This unit introduces children to numbers 11–100 and counting by ones and tens. Teen numbers are the numbers 11–19. Teen numbers are made of ten ones and some more ones. You can use what you know about counting by tens to help you learn the counting sequence all the way to 100.	**K.NBT.A.1**-Gain understanding of place value. **K.CC.A.3**-Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). **K.CC.B.5**-Count to answer "How many?" questions. **K.CC.A.1**-Count to 100 by ones and by tens. **K.CC.A.2**-Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	Counting with Cultural Artifacts: *Introduce artifacts or objects from different cultures, allowing students to count and organize them. *Discuss how counting plays a role in cultural practices and rituals.	**Title: Exploring Numbers 11–100 and Counting Patterns** **Objective:** Students will demonstrate an understanding of numbers 11–100 and counting by ones and tens. Students will identify and represent teen numbers as a group of ten and some more ones.

				Assessment Tasks: **1. Counting by Ones:** Present a series of numbers within 11–100 randomly arranged and ask students to count by ones. Example: 14, __, 16, __, 18, __, 20, __, 22 **2. Counting by Tens:** Provide a sequence of numbers and ask students to count by tens. Example: 10, __, __, 40, __, 60, __, 80, _ 3. **Teen Numbers Understanding:** Show pictures or representations of teen numbers (11–19) and ask students to identify and explain that these numbers are made up of ten ones and some more ones. Example: Show a picture representing 15 and ask, "How many tens are there, and how many ones are there?" **4. Building Teen Numbers:** Provide materials (e.g., counters, drawings) and ask students to physically or visually represent a given

				teen number as ten ones and some more ones. Example: Represent the number 13 using counters or drawings. **5. Completing Counting Sequences:** Provide incomplete counting sequences and ask students to fill in the missing numbers within the range of 11–100. Example: 30, __, 50, __, 70, __, __, 90
Unit 6: Measurement: Comparing Length, Height, and Weight	This unit introduces children to comparing length, height, and weight. You can compare objects by telling which is longer (or taller) and which is shorter, and by telling which is heavier and which is lighter.	**K.MD.A.1**-Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. **K.MD.A.2**-Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	Environmental Stewardship *Recycle Relay: Engage in a recycling activity where children sort items by size and weight. *Planting Together: Plant small seeds and discuss how plants grow to different sizes	**Title: Exploring Length, Height, and Weight Comparisons** **Objective:** Students will demonstrate an understanding of comparing objects based on length, height, and weight. Students will use appropriate vocabulary to describe and compare objects as longer, shorter, taller, heavier, or lighter. **Assessment Tasks:** 1. **Length Comparison:** Provide pictures or real objects of various lengths and ask students to compare them. Use terms like "longer"

				and "shorter." Example: Compare two pencils and describe which one is longer and which one is shorter. 2. **Height Comparison:** Show pictures or real objects of varying heights and ask students to compare them. Use terms like "taller" and "shorter." Example: Compare two trees in a picture and describe which one is taller and which one is shorter. 3. **Weight Comparison:** Provide objects of different weights (e.g., using real objects or pictures) and ask students to compare them. Use terms like "heavier" and "lighter." Example: Compare a bag of apples and a bag of feathers, and describe which one is heavier and which one is lighter. 4. **Ordering Objects:** Give students a set of objects and ask them to arrange them in order based on length, height, or weight. Example: Arrange three objects from shortest to tallest. 5. **Explaining Comparisons:**

				Present scenarios where objects are compared, and ask students to explain their reasoning using appropriate vocabulary. Example: Why do you think the book is heavier than the pencil?

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

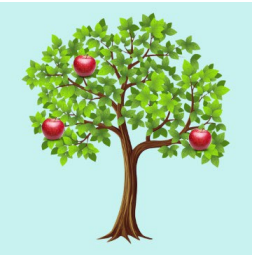
Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

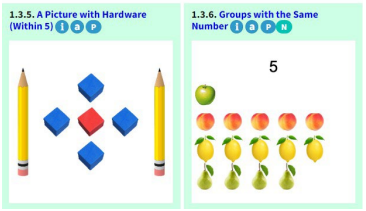
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 1: Numbers 0–5: Counting, Writing, and Comparing	**Length of Unit**	Unit 1: 35 days
Focus	Numbers 0-5	**Standards Addressed in this Unit**	**K.CC.A.3** **K.CC.B.4a** **K.CC.B.4b** **K.CC.B.5** **K.CC.B.4c** **K.CC.C.6** **K.OA.A.3** **K.OA.A.5**
Inquiry Questions (Engaging-Debatable):	How can you count, write and compare numbers 0-5?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-PS2-1 **Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.** Students will be given a variety of toy cars (or other small objects that roll). They will roll two items towards each other and record results (in pictures). They will repeat with other objects (up to 5) and record results. Teacher will focus on cause and effect with this activity but may include such	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.**	**Standard: K-2.ETS1-2:** **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem** Students will design, construct, test, (redesign if necessary) and record results of a toy wrecking ball made using string and a small round object. The students will attempt to knock down a set of 6 markers (set similarly to bowling) with their created toy wrecking ball. They will record how many markers fell in each test. They will test a minimum of twice before the	**Standards:** **DA:Cr1.1.K** **a. Respond in movement to a variety of stimuli (for example, music/sound, text, objects, images, symbols, observed dance)** **DA:Cr2.1.K** **b. Express an idea, feeling, or image, through improvised movement moving alone or with a partner.** **Dance:** Students will play a game where they need to have 0, 1, 2, 3, 4, or 5 body parts touching the floor. They will work with partners with one partner counting the other	**Standards: K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. K.G.2. Correctly name shapes regardless of their orientations or overall size. K.CC.6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.** UC Davis Chapters: 1 and 2

	vocabulary as: collision, speed, direction, left, right, slow, quick, straight, fast, back, forward, up, down, stopped. Students will contemplate other collisions and whether all collisions are "bad" but will support their idea with reasoning.	♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses**	redesign component will occur. Students will share their results with groups and/or class. Group or class will discuss reasons for results.	students' attempts to put the correct number of parts on the floor as well as naming the parts touching the floor. They will have to be very creative to figure out how to put 0 body parts on the floor! (sit in a chair and pull your feet up!) **Alternate Activity:** **Visual Art:** Numbered Mosaics: Give each child a piece of paper with a number written on it. Provide small, colored paper squares or stickers and have the children create a mosaic on their paper by placing the squares to cover the number. This helps reinforce number recognition.	 **Leaf Patterns**: Collect a variety of leaves from different trees. Provide the children with sorting mats and encourage them to sort the leaves based on similarities, such as size, shape, or color. They can then create patterns using the sorted leaves, reinforcing math concepts like patterns and sequencing.

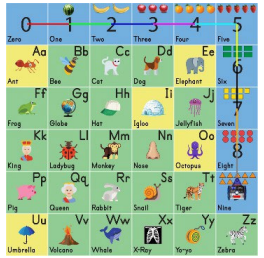
		that support lifelong learning,			

		collaboration, personal pursuits, and productivity. **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

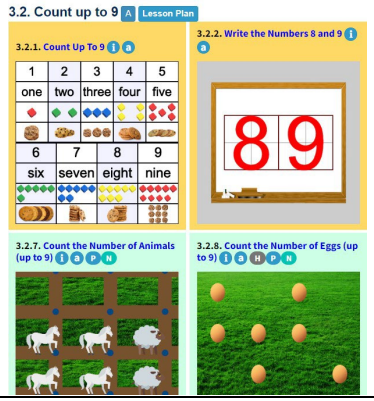
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 2: Numbers 6–10: Counting and Writing, Comparing and Sorting		**Length of Unit**	Unit 2: 35 days
Focus	Numbers 6–10	**Standards Addressed in this Unit**	**K.CC.A.3** **K.CC.B.4a** **K.CC.B.4b** **K.CC.B.5** **K.CC.B.4c** **K.CC.C.6** **K.CC.C.7** **K.MD.B.3** **K.OA.A.3** **K.OA.A.4**	
Inquiry Questions (Engaging-Debatable):	How can you count, write and compare numbers 0-5?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. Students will go on a scavenger hunt searching for objects with properties listed (for example: orange, small, bumpy, round, squishy, tall) and then, as a class, will create a graph of found objects and discuss the	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)**	**Standard: K-2.ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem** Students will design, build, measure in inches, compare and redesign the tallest tower they can using only buttons (8) and clay (or play-dough) under the constraint that their building must be taller than it is wide. Redesign will include straws along with the previous materials.	**Standards:** **VA:Cr1.1.Ka** **Engage in exploration and imaginative play with materials.** **VA:Cr2.1.Ka** **Through experimentation, build skills in various media and approaches to artmaking.** **VA:Re.7.1.Ka** **Identify uses of art within one's personal environment.** **Visual Art:** Number Sculptures: Provide playdough or	**Standard: K.CC.B.4.a Understand the relationship between numbers and quantities; connect counting to cardinality. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. CCSS Math Standards:K.CC.A.1 Count to by ones and by tens.**

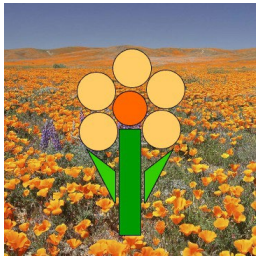
	likelihood of some objects belonging to more than one property. (for example, an orange is orange, round, and can be bumpy)	♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible**		modeling clay. Ask students to create sculptures based on a given number. For example, if the number is 4, they could make a sculpture with four distinct parts. **Alternate Activity:** **Dance:** Use student bodies standing in a row to count different numbers of body parts. Challenge students to create certain numbers with certain body parts and have the rest of class count to make sure they are correct. For instance, 3 students standing in a row have 6 knees, and students can count this. 8 students have 8 heads. A group of students can show elbows out front and show 7 elbows with some students showing 2 and some showing just 1.	UC Davis Chapters: 3 and 4.  Activity ID: 11662 Subjects: Robotics, Math Grades: Grade K Keywords: counting

		use of technology systems, information, and software.			

		♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

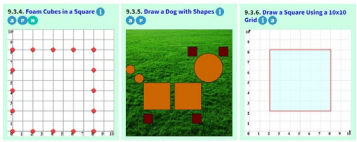
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 3: Geometry: Naming, Comparing, and Building Shapes	**Length of Unit**	Unit 3:26 days
Focus	Geometry	**Standards Addressed in this Unit**	**K.G.A.2** **K.G.A.3** **K.G.A.1** **K.G.B.4** **K.G.B.5** **K.G.B.6**
Inquiry Questions (Engaging-Debatable):	How can you name, compare and build shapes?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive. Students will be given a set of pattern blocks (flat geometric shapes) and be tasked with creating a "new" animal. Students can name their animal and decide its biome/ecosystem	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)**	**Standards: K-2.ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem** Students will design, build, and evaluate a home for their animal. Criteria: the home must: keep the animal safe, keep the animal dry, keep the animal warm/cool, protect the babies. Constraint: only use natural materials. Students will learn about different animal homes and,	**Standards:** **VA:Cr1.1.Ka** **Engage in exploration and imaginative play with materials.** **VA:Cr2.1.Ka** **Through experimentation, build skills in various media and approaches to artmaking** **VA:Cr2.3.Ka** **Create art that represents natural and constructed environments.** **Visual Art:** Collect various recycled materials such as	**CCSS Math Standards: K.G.A.2 Correctly name shapes regardless of their orientations or overall size.** UC Davis Chapters: 9 and 10 

	based upon body parts they've created.	♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible**	given materials, design a home for their animal. Students will evaluate whether their home meets each criteria and, if necessary, redesign their home to meet more (or all) of the criteria.	cardboard boxes, paper tubes, and egg cartons. *Instruct the children to use these materials to build structures incorporating different shapes. *Encourage them to discuss their creations, pointing out the shapes they used. **Alternate Activity:** **Dance:** Students can create shapes in small groups with stretchy bands or Chinese jump ropes. Groups of 3 will naturally create triangles, while groups of 4 will naturally create squares or rectangles, depending on where they stand in relationship with each other. Shapes can be horizontal, vertical, or diagonal, up high or down low, as each group decides where they want to create their shape. Shapes should be shown to class for feedback.	Activity ID: 4036 Subjects: Math Grades: Grade K Keywords: drawing, geometry, shapes Activity Statement: The flower is drawn using shapes. Identify which shapes are used to draw the flower.

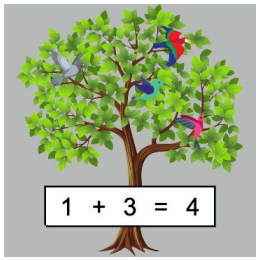
		use of technology systems, information, and software.			

		♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

Unit Title	Unit 4: Numbers Within 10: Addition and Subtraction		**Length of Unit**	Unit 4: 55 days
Focus	Numbers Within 10	**Standards Addressed in this Unit**	**K.OA.A.1** **K.OA.A.2** **K.OA.A.4** **K.OA.A.3**	

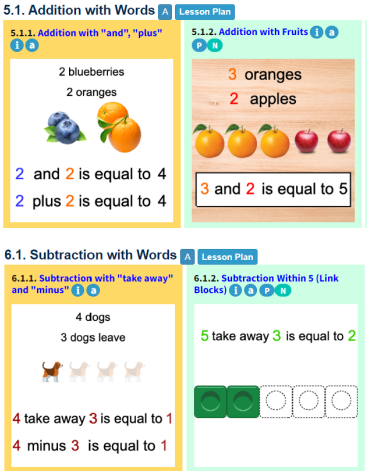
Curriculum Development Overview
Planning for Each Unit

Inquiry Questions (Engaging-Debatable):	How can you add and subtract numbers within 10?

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-ESS3-1 **Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.** Students will be given a list of fruits to choose from. Students will predict which fruit will have the most seeds (with reasoning) and then open each fruit, count the seeds and create a graph comparing the fruits' seeds. Ask and discuss the question "Why do you think the _____ had the most seeds? ____ the least seeds? "	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.**	**Standard: K-2.ETS1-2:** **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem** After viewing pictures of the Eiffel Tower and other engineering marvels, students will create shapes using round toothpicks and mini-marshmallows. Students will then be tasked to make a tower using up to 50 toothpicks and/or 100 mini marshmallows. This will be done in groups. Students will then compare the heights of their towers and discuss different teams' designs and use of different geometric shapes. (*hint--triangles are the strongest geometric shape in architecture)	**Standards:** **TH:Cr1.1.K** **a. With prompting and support, invent and inhabit an imaginary elsewhere in dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama).** **TH:Cr2-K** **a. With prompting and support, interact with peers and contribute to dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama)** **TH:Pr4.1.K** **a. With prompting and support, identify characters and setting in dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama).** **Drama:** *Create fish cutouts with numbers on them and attach paper clips. *Make a pretend pond on the floor using a blue sheet or paper.	**CCSS Math Standards:** **K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.** **K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within , e.g., by using objects or drawings to represent the problem.** **Activity Statement:** **Find the total number of birds in the tree.** UC Davis Chapters: 5 and 6  Activity ID: 4015 Subjects: Math

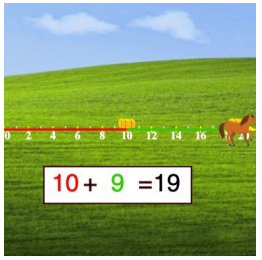
		♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with		*Use a toy fishing rod with a magnet to "catch" the fish. *Have the children catch two fish and then add or subtract the numbers they caught. **Alternate Activity** **Dance:** Students will place a certain number of parts of their bodies on the floor. Partners will add up their two sets of body parts, with a third partner "checking" their math. Each student in the trio will get a turn to be the checker and also one of the movers. Repeat for subtraction, but begin with both partners having body parts touching the floor, then one partner taking away their body parts one by one, then all partners working together to figure out the result.	Grades: Grade K Keywords: counting, addition

		the current lesson and topic being			

		covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

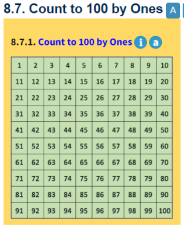
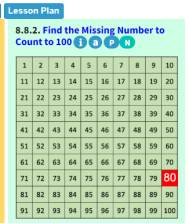
Unit Title	Unit 5: Numbers 11–100: Teen Numbers, and Counting by 1s and 10s	**Length of Unit**	Unit 5: 30 days
Focus	Numbers 11–100	**Standards Addressed in this Unit**	**K.NBT.A.1** **K.CC.A.3** **K.CC.B.5** **K.CC.A.1** **K.CC.A.2**
Inquiry Questions (Engaging-Debatable):	How can you count by 1s and 10s? How can you make teen numbers?		

Curriculum Development Overview
Planning for Each Unit

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: K-PS2-1 **Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.** Students will be given a number of raisins (between 11-100) to count, then divide into two groups. One group of raisins will be dropped into a container of water while the other group of raisins will be dropped into carbonated water. Students will observe, record and discuss results. Students will strive for an explanation for the raisins in carbonated water to rise and sink while the ones dropped in water did not have the same reaction.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.**	**Standard: K-2.ETS1-2:** **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem** Students will design, build, test (and redesign as needed) a seed-moving device. Students will be given (student choice) either a bean, pumpkin, or sunflower seed to design a device that would move said seed. Criteria: device must move a seed from one place to another. Constraint: they can only use the materials given. Students will learn about different ways seeds disperse and then create a way to get their seed to move from place to place. Students will evaluate how well/poor their seed mover worked and redesign, if necessary.	**Standards:** **VA:Cr1.2.Ka** **Engage collaboratively in creative art-making in response to an artistic problem.** **VA:Cr2.1.Ka** **Through experimentation, build skills in various media and approaches to artmaking.** **Visual Art:** Teen Number Collage: *Provide the children with magazines, colored paper, and scissors. *Assign each pair of children a teen number (11-19) and ask them to find pictures in the magazines that represent that number of objects. *After cutting out the pictures, have the children glue them onto a large sheet of paper to create a collage for their assigned teen number. *Encourage them to write the teen number on the collage and share with the class. **Alternate Activity: Dance/Drama:** Make several tableaux in which the teacher counts as a 10, and add in different numbers of	**CCSS Math Standards:** **K.CC.A.1 Count to by ones and by tens.** **K.CC.B.4.a Understand the relationship between numbers and quantities; connect counting to cardinality. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.** UC Davis Chapter: 7 and 8  Activity ID: 11154 Subjects: Math Grades: Grade K Keywords: counting Activity Statement: Change the code to move the horse to the two hay bales. Find the total distance the horse walks.

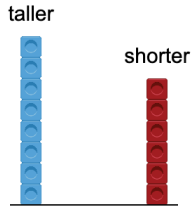
		4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill) ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky		students as 1s to represent a teen number. For instance, 7 students + 1 teacher would equal 17. Skip count by 10s when doing stretches or a sequence of movement already well known to students, for instance, touching toes, knees, waist, shoulders, and head, and then back down.	

		platform, design and engineering			

		activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 8.7. Count to 100 by Ones A Lesson Plan 8.7.1. Count to 100 by Ones I a  8.7.2. Find the Missing Number From 1 - 100 I a P N  8.8. Count to 100 by Tens A Lesson Plan 8.8.1. Count to 100 by Tens I a  8.8.2. Find the Missing Number to Count to 100 I a P N 			

Unit Title	Unit 6: Measurement: Comparing Length, Height, and Weight	**Length of Unit**	Unit 6:16 days
Focus	Measurement	**Standards Addressed in this Unit**	**K.MD.A.1** **K.MD.A.2**
Inquiry Questions (Engaging-Debatable):	How can you compare length, height and weight?		

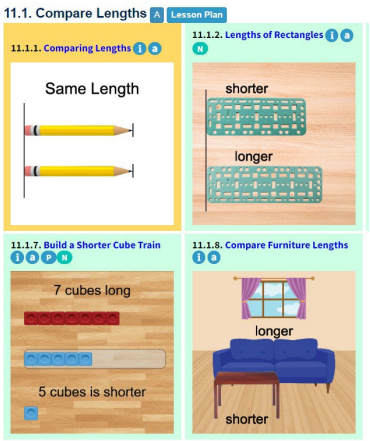
STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-PS2-1 Plan and conduct an investigation to compare the effects of	**Standards:1. Technology Communication Tools (Communication Foundation Skill)**	**Standard: K-2.ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an**	**Standards: VA:Cr2.1.Ka Through experimentation, build**	**CCSS Math Standards: K.MD.A.1 Describe measurable attributes of objects, such as length or**

	different strengths or different directions of pushes and pulls on the motion of an object. Students will recreate their investigation from the beginning of the year with rolling toy cars towards each other. This time, however, they vary the force between each trial and record the reactions by length and direction. Students will compare their records to those of others and discuss reasons for the changes.	**♦ Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** **♦ Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** **♦ Students use appropriate technology resources for solving problems and making informed decisions.** **♦ Students employ technology for real world problem solving.** **♦ Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** **♦ Students use technology tools to enhance learning, increase productivity, and promote creativity.** **♦ Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** **♦ Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.**	**object helps it function as needed to solve a given problem** Students will recreate their towers built in an earlier unit using different geometric shapes. Once built, students will measure the heights of their towers using inches and compare those to the heights of the other towers. Students will also measure the width of each tower in inches and compare those measurements. If possible, students can weigh their towers using a digital scale and compare weights to heights and widths. Students will be guided to think about how the distribution of weight is different between towers and be asked how that affects the strength of the tower.	**skills in various media and approaches to artmaking. VA:Cr2.3.Ka** **Create art that represents natural and constructed environments. VA:Re.7.1.Ka** **Identify uses of art within one's personal environment** **Visual Art:** Paper Chain Challenge: *Provide strips of colored paper to each child. *Instruct them to create paper chains of different lengths. They can use glue or tape to connect the strips. *Afterward, compare and discuss the lengths of the paper chains. Encourage them to use terms like "longer" and "shorter" to describe their creations. **Alternate Activity: Dance/Drama** Small groups of students will line themselves up by height and show their creations to the class for feedback to make sure they are indeed lined up from shortest to tallest. Students will "jump" different distances marked out on the floor with colored tape. Discussion will include who jumped the shortest distance, who jumped the longest, etc. How do we know?	**weight. Describe several measurable attributes of a single object.** **K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.** UC Davis Chapter: 11  Activity ID: 4052 Subjects: Math Grades: Grade K Keywords: measurement, height Activity Statement: Compare the heights of the two cube towers.

		♦ **Students use technology tools to process data and report results.**			

		♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below:		All jump distances are chosen by each student and each is celebrated for their uniqueness. (meaning that longer is not necessarily better - they are all interesting choices)	

Curriculum Development Overview
Planning for Each Unit

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	ELA- (Reading, Spelling. Language)	**Grade Level**	1st Grade
Curriculum/Programs/ Partners	EL Learning/ Project Based Learning/		

Units Title	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
1 Tools and Work	Students build their literacy and citizenship skills as they engage in a study of tools and work. Students first learn about how tools help to do a job.	RL.1.1 Ask and answer questions about key details in a text. RL.1.3 Describe characters, settings, and major events in a story, using key details. RL.1.4 Identify words and phrases in stories or poems that suggest feelings or appeal to the senses. RL.1.7 Use illustrations and details in a story to describe its characters, setting, or events. RI.1.1 Ask and answer questions about key details in a text. RI.1.7 Use the illustrations and details in a text to describe its key ideas. W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.	Environmental- Describe how certain tools help to maintain and upkeep different environmental structures. (Gardening tools, street cleaners, etc.) Humanities/Multicultural Exposure- Describe how communities work to accomplish common tasks, establish responsibilities, and fulfill roles of authority. Follow agreed-upon rules for discussions while responding attentively to others when addressing ideas and making decisions as a group. Explain how people can work together to make decisions in the classroom.	Students will create a magnificent tool for their classroom. (Create the tool and write a passage about how to use it.)
2 What's Up in the Sky: A Study of the Sun, Moon, and Stars	Students build their literacy and science skills as they engage in a study of the sun, moon, and stars.	RI.1.1 Ask and answer questions about key details in a text. RI.1.7 Use the illustrations and details in a text to describe its key ideas. W.1.5 With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers and add details to strengthen writing as needed.	Environmental- Use observations of the sun, moon, and stars to describe patterns that can be predicted. Humanities/Multicultural Exposure- Students will discuss how many people are taught to wish upon a star. They will discuss the myth of wishing on the star, why do people wish, and why people wish for different things. (Students work to become ethical people: habits for how we treat others.)	Students will create "What the Sun Sees" Song.

Curriculum Development Course at a Glance
Planning for Each Grade Level

3 Growing as Researchers: Birds' Amazing Bodies	Students build their literacy skills as they engage in an in-depth study of birds' bodies. Animals have physical features that help them survive; animals behave in ways that help them survive	RI.1.1 Ask and answer questions about key details in a text. RI.1.7 Use the illustrations and details in a text to describe its key ideas. W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.	Environmental- How are birds interdependent on the environment? Multicultural Exposure- Students work to become ethical people, treating others well and standing up for what is right (e.g., empathy, integrity, respect, compassion); and work to contribute to a better world, putting their learning to use to improve communities (e.g., citizenship, service).	Students will create an expert riddle podcast and information card.
4 Caring for Birds	"Why should we care about birds?"	RL.1.2b Recognize and understand the central message or lesson. RL.1.3 Describe characters, settings, and major events in a story, using key details. W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.	Environmental- Students will determine what is needed to take care of birds and how birds contribute to the environment. Multicultural Exposure- Work with the habits of character of compassion and respect. Explain how all people, not just official leaders, play important roles in a community.	Informational writing and scientific drawing

STEAM 21st Century Skills

Problem Solving: *Apply understandings to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit Title	Tools and Work		**Length of Unit**	9 weeks
Focusing Lens(es)	Students build their literacy and citizenship skills as they engage in a study of tools and work. Students first learn about how tools help to do a job	**Standards Addressed in this Unit**	RL.1.1 Ask and answer questions about key details in a text. RL.1.3 Describe characters, settings, and major events in a story, using key details. RL.1.4 Identify words and phrases in stories or poems that suggest feelings or appeal to the senses. RL.1.7 Use illustrations and details in a story to describe its characters, setting, or events. RI.1.1 Ask and answer questions about key details in a text. RI.1.7 Use the illustrations and details in a text to describe its key ideas. W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.	
Inquiry Questions (Engaging-Debatable):	Why do we need tools? How do habits of character help us do work? How do we create a magnificent thing?			

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object Students will analyze text, images, and charts to determine movement of objects. They will determine what environmental conditions caused the object to move slowly, quickly, side to side, up and down, in a circle or in a zigzag. Students will	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.**	**Standard: K–2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students will act as a city engineer and create a town road map (for an imaginary	**Standards: TH:Cr1.1.1 b. Collaborate with peers to conceptualize costumes and props in a guided drama experience (e.g., process drama, story drama, creative drama). c. Identify ways in which gestures and movement may be used to create or retell a story in guided drama experiences (e.g., process drama, story drama, creative drama).** THEATER Students will act out work related situations and the	**Standards: 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. 1.GA.1: Distinguish between defining attributes (triangles are closed and three sided versus non defining attributes (color, orientation, overall size) build and draw shapes to possess defining attributes.**

	use this information to determine whether roads in their town (viewed via Google Earth) cause cars to move differently.	Students will research tools used long ago and determine how they have advanced. They will choose one tool from the past and design a new structure for that tool based on how it can be used in the present.	town) to show ways that cars can move through a town. Criteria: cars must be able to move through the town in 3 or more ways (straight line, curved line, zigzag, in a circle, back and forth, up and down, fast or slow). The map must show at least four main places in the town. (students are encouraged to make the town a 3-D model Constraints: the town must fit on a sheet of poster board. Students may only use classroom materials made available to them. Students will use graph paper to design their town beforehand. Students will evaluate their town to ensure meeting of criteria. Students can then add or change their town map to meet the criteria better.	class must determine what tool is needed to support that work. Alternate Activity: **Standards:** **VA:Cr2.3.1a** **Identify and classify uses of everyday objects through drawings, diagrams, sculptures, or other visual means** **VA:Cr3.1.1a** **Use art vocabulary to describe choices while creating art.** VISUAL ART Students will make a simple sculpture of their favorite tool and tell a partner how they made it and why it is their favorite or write a sentence about this and share it with a partner.	**Tool Sorting:** Provide a variety of toy or real tools such as hammers, screwdrivers, wrenches, measuring tapes, and rulers. Have students work in pairs or small groups to sort the tools into different categories based on their attributes, such as size, shape, or function. Guide students through discussing the criteria they used for sorting and encourage them to explain their reasoning to their classmates.

Unit Title	What's Up in the Sky: A Study of the Sun, Moon, and Stars	**Length of Unit**	9 weeks
Focusing Lens(es)	Students build their literacy and science skills as they engage in a study of the sun, moon, and stars.	**Standards Addressed in this Unit**	RI.1.1 Ask and answer questions about key details in a text. RI.1.7 Use the illustrations and details in a text to describe its key ideas. W.1.5 With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers and add details to strengthen writing as needed.
Inquiry Questions (Engaging-Debatable):	Why do authors write about the sun, moon, and stars? What patterns can we observe in the sky? How do authors use their knowledge and observations to write a story?		

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM Connections	Science	Technology	Engineering	Art	Math
	Standard: 1-ESS1-1 **Use observations of the sun, moon, and stars to describe patterns that can be predicted.** Scientists use a process of inquiry to understand patterns and make predictions and comparisons. The sun and moon appear in different places in the sky during different times of day and of the year. Students can observe this by going, on a sunny day, to an area that can be drawn upon with chalk. Students will go in the morning and draw a partner's shadow, recording the time. In the afternoon, students will reconvene in the area where the shadows were drawn. They will redraw the shadows (now in new positions) and discuss changes.	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences**. Students will create the phases of the moon animation using scratch.	**Standard: K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Design a Rover: Using various types of pasta (lasagna, pinwheel, spaghetti, etc.) and hot glue, design a rover that will travel down a one-meter ramp and then travel an additional one meter on a smooth, flat surface.	**Standards** **DA:Cr1.1.1** **a. Explore movement inspired by a variety of stimuli (for example, music/sound, text, objects, images, symbols, observed dance, experiences) and identify the source.** **b. Explore a variety of locomotor and non-locomotor movements by experimenting with and changing the elements of dance.** **DA:Cr2.1.1** **a. Improvise a series of movements that have a beginning, middle, and end, and describe movement choices.** **DA:Pr6.1.1** **a. Dance for others in a space where audience and performers occupy different areas.** DANCE Students will create a dance where they show the different qualities of light for the sun (powerful/constant), moon (mysterious/changing), and stars (gentle/twinkly). Alternate Activity: DANCE/ VISUAL ART Students will take turns moving across the room as the sun, starting low in the East, rising high as they move westward, and then "setting"	**Standards: 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.** **Daytime and Nighttime Temperature Comparison:** Discuss with students how the sun warms the Earth during the day and how temperatures cool down at night. Provide students with thermometers or temperature strips to measure the temperature outside during the day and at night. Have students record the temperature readings and compare the daytime and nighttime temperatures. Guide students through discussing the reasons for the

				in the West. Each student will choose a different locomotor movement for their sun to travel by. Students can also create large paper "suns" to take with them on their journeys so the class can see more clearly how the sun moves. Alternate Activity: VISUAL ART Students will study constellations. They will create a 3-D constellation sculpture.	temperature differences and how the sun's heat affects the Earth's surface. **Standards: 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.** **Sun and Shadow Tracking:** On a sunny day, take the students outside and mark the position of a stationary object's shadow with chalk or tape every hour throughout the day. Have students observe how the shadow's position changes over time as the sun moves across the sky. After marking the shadows, bring students back inside and discuss the patterns they observed. Guide them to understand that the sun appears to move across the

					sky during the day and that shadows change in direction and length accordingly. Discuss how people use shadows to tell time and demonstrate how a sundial works, if possible.

Unit Title	Growing as Researchers: Birds Amazing Bodies		**Length of Unit**	9 weeks
Focusing Lens(es)	In this module, students build their literacy skills as they engage in an in-depth study of birds' bodies. The module focuses on big ideas derived from the Next Generation Science Standards: Animals have physical features that help them survive; animals behave in ways that help them survive	**Standards Addressed in this Unit**	RI.1.2 Identify the main topic and retell key details of a text. RI.1.8 Identify the reasons an author gives to support points in a text. RI.1.7 Use the illustrations and details in a text to describe its key ideas.	
Inquiry Questions (Engaging-Debatable):	What makes a bird a bird? How do birds use their body parts to survive? How do specific birds use their body parts to survive? How do we build our research skills and share our learning?			

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 1-LS1-1 **Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help**	**Standards: 2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed**	**Standard: K–2-ETS1-1** **Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-**	**Standards: VA:Cr1.2.1a** **Use observation and investigation in preparation for making a work of art. VA:Cr2.1.1a**	**Standards: 1.OA.B3: Apply properties of operations as strategies to add and subtract. 1.OA.C6: Add and subtract within 20, demonstrating fluency**

	them survive, grow, and meet their needs. Students will read and discuss different animal body parts that help them. Students will then relate those body parts to inventions created by humans. Students will then choose an animal and draw it. Students will then draw (or create then draw) an invention inspired by the animal they chose. Students will present their animals and inventions to groups or the whole class. (this is also in Science Mod 1 connection)	**decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** Bird Beak Challenge https://leftbraincraftbrain.com/bird-beak-tool-challenge-adaptation-experiment/	**2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students will create a bird beak that is able to help it survive in a specific environment. Students will compare the structure of the environments and test out each other's beak./ https://www.akteacherlife.com/how-to-build-a-bird-bird-steam-activity/	**Explore uses of materials and tools to create works of art or design.** **VA:Cr2.2.1a** **Demonstrate safe and proper procedures for using materials, tools, and equipment while making art** **VA:Re.7.2.1a** **Compare images that represent the same subject** **TH:Pr4.1.1** **a. Describe a story's character actions and dialogue in a guided drama experience (e.g., process drama, story drama, creative drama).** VISUAL ART/THEATER Students will create a paper bird beak puppet. They will use the puppet to act out a script that explains the purpose of the beak. Alternate Activity: DANCE/THEATER Students will create different birds in small groups using their bodies collaboratively. Each group will receive a different bird, and students will create one giant bird of which each student is a specific part. Parts chosen should represent specific body parts of	**for addition and subtraction within 10. Use strategies such as counting on; making ten; decomposing a number leading to a ten; using the relationship between addition and subtraction; and creating equivalent but easier or known sums.** **Food Chain Game:** Create a food chain game board with pictures or drawings of different animals and their prey. Provide students with counters or tokens to represent the animals. Have students take turns moving their animal tokens along the food chain, starting with plants (e.g., grass) as the base of the chain. Guide students through counting the number of steps in each food chain and discussing the concept of energy transfer from one organism to another. **Standards: 1.GA.1: Distinguish between defining attributes (triangles are closed and three sided versus non defining attributes**

				their specific bird that helps it to survive. For instance, an owl could be created by one student being its beak, two students being its two wings, and one student being its talons. Other birds might have students being the camouflage colorations on certain feathers or a very long beak to spear fish. Each group will show their bird, and either the class will guess which bird they are seeing or each group will tell which bird they are being and explain all the important parts they are showing.	**(color, orientation, overall size) build and draw shapes to possess defining attributes.** **Beak Adaptation Experiment:** Introduce students to different types of bird beaks and their adaptations for feeding (e.g., long, slender beaks for probing flowers, short, strong beaks for cracking seeds). Provide students with various materials representing different types of bird beaks (e.g., tweezers, straws, clothespins). Set up a simple feeding station with containers of different types of "food" (e.g., small seeds, pasta, water). Have students use the different beak models to pick up and move the food items from one container to another. Guide students through comparing the effectiveness of each type of beak adaptation for gathering food and discuss how beak shape is related to the types of food birds eat.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit Title	Caring for Birds		**Length of Unit**	9 weeks
Focusing Lens(es)	Students explore the module guiding question: "Why should we care about birds?"	**Standards Addressed in this Unit**	RI.1.7 Use the illustrations and details in a text to describe its key ideas. W.1.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.	
Inquiry Questions (Engaging-Debatable):	Why should we care about birds? How do characters in stories help care for birds? Why do people have different opinions about birds? How can people care for birds so they can live and grow?			

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. Students will design birds on tissue paper, then make them "fly" using static electricity from a balloon. Students will observe (and record) what happens when the balloon gets close to the paper birds, what happens if you point the other side of the balloon toward the paper birds. Students will then experiment using different types of paper.	**Standards: 2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** Students will watch various videos of birds in their environment and determine if those birds all need the same type of care.	**Standard: K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students will create paper airplanes to test how birds are able to fly. https://projectbeak.org/teacher/pdf/adaptations_wings_and_flight_paper_airplances.pdf	**Standards:** **TH:Cr1.1.1.** **a. Propose potential choices characters could make in a guided drama experience (e.g., process drama, story drama, creative drama).** **c. Identify ways in which gestures and movement may be used to create or retell a story in guided drama experiences (e.g., process drama, story drama, creative drama)** **TH:Cr2-1.** **a. Contribute to the development of a sequential plot in a guided drama experience (e.g., process drama, story drama, creative drama)** **b. With prompting and support, participate in group decision making in a guided drama experience (e.g., process drama, story drama, creative drama).** **TH:Pr5.1.1** **a. With prompting and support, identify and understand that physical movement is fundamental to guided drama experiences (e.g.,**	**Standards: 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.** **1.NBT.A1: Count to 120, starting at any number less than 120.** **1.NBT.C4: Add within 100, including adding a two digit number and a one digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones, and ones; and sometimes it is necessary to compose a ten.** **Bird Feeder Counting:**

				process drama, story drama, creative drama). **DA:Pr5.1.1** **c. Modify movements and spatial arrangements upon request.** DANCE/THEATER Students will create a dance where a quarter of the class are people, a quarter of the class are birds, and the other half of the class is audience. In the dance, the people will pantomime helping the birds in various ways: feeding them birdseed, giving them water in birdbaths both for drinking and bathing, making them boxes for safe nesting, etc. 'Birds' respond happily to each of these interventions and pantomime how they would use each one. Then, the students switch roles so that they all get a turn being a bird and a person. The dance can be repeated a 2nd time with the movements enlarged and abstracted to different body parts so that it becomes a dance about relationships that could apply to any two creatures . Alternate Activity: VISUAL ART Students will create a bird sculpture using paper Mache and feathers	Provide students with birdseed and bird feeders or homemade feeders (e.g., pine cones covered in peanut butter and seeds). Instruct students to fill the feeders with birdseed and hang them in designated outdoor areas. Have students count the number of birds that visit the feeders each day and record their observations. Guide students through tallying the number of different bird species they observe and discussing patterns or trends in the bird populations over time.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Math	**Grade Level**	1st
Curriculum/Program	i-Ready Classroom Mathematics		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit 1: Numbers Within 10: Addition and Subtraction	In this unit, students are introduced to addition strategies and properties of addition as they extend their knowledge of adding within 10. They develop more efficient ways to add and build fluency within 10 as they move beyond counting all to find sums. Students also build on what they know about counting and the meaning of subtraction to count on to subtract. They solve subtraction word problems involving take away, take apart, and comparison situations. within 10.	**1.OA.C.5**-Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). **1.OA.C.6**-Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). **1.0A.B.3**-Apply properties of operations to add and subtract.3 Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.) **1.0A.D.8**-Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = – 3, 6 + 6 =. **1.0A.B4**-Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. **1.0A.A.1**- Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem).	Activity: Nature Counting Adventure Materials needed: 1. Paper 2. Pencils or crayons 3. Clipboard (optional) Instructions: 1. **Outdoor Exploration:** · Take the children outdoors to a park, garden, or any natural setting or show an illustration of outdoors. · Explain that they will be going on a Nature Counting Adventure to observe	Supermarket Spree is a project based learning activity that involves using 1st grade math standards to budget, plan, and carry out a grocery shopping trip.

		1.0A.D.7-Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.	and count different elements in the environment. 2. **Counting Challenge:** · Provide a list of items for the children to find and count. For example: · Leaves · Flowers · Rocks · Birds · Trees · Clouds 3. **Count and Record:** · Instruct the children to count how many of each item they find and record the number next to the item on their paper. · For example, if they find 3 rocks, they should write the number 3 next to the "Rocks" on their paper. 4. **Drawing Challenge:** · After counting, encourage the children to draw a simple illustration of each item next to the	

			corresponding number on their paper. · This adds a creative element to the activity and helps reinforce the association between numbers and real-world objects. 5. **Group Discussion:** · Once the counting adventure is complete, gather the children and discuss their findings. · Ask questions like, "What did you enjoy counting the most?" or "Which item was the easiest or hardest to find?"	
Unit 2: Numbers Within 20: Addition and Subtraction and Representing Data	In this unit, students explore the structure of the numbers 11 to 19, refining their understanding of these numbers as “ten ones and some more ones” to begin to see them as “one ten and some number of ones.” Students develop and use the make a ten strategy and other addition strategies to add within 20.	**1.OA.C.6**-Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). **1.0A.B.3**-Apply properties of operations to add and subtract.3 Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)	*Story Problems: Introduce addition word problems related to environmental issues, encouraging students to use different strategies. *Math Games: Play interactive games that reinforce addition skills while incorporating nature-themed elements.	Dino Measurement is a project based learning unit based all around comparing, estimating, and modeling heights of different dinosaurs.

	Then they use several strategies and models to subtract within 20, relating these strategies to similar strategies used for addition. Students find the value of unknown numbers in equations and solve addition and subtraction word problems, including problems about data.	**1.0A.D.8**-Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = – 3, 6 + 6 =. **1.0A.A.1**- Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem). **1.OA.A.2**-Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. **1.NBT.B.2a**-10 can be thought of as a bundle of ten ones—called a "ten." **1.NBT.B.2b**-The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. **1.MD.C.4-**Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.		
Unit 3: Tens and Ones: Counting, Place Value, Time, and Money	In this unit, students are introduced to place value to extend their understanding of two-digit numbers to those beyond 19. They develop an understanding that 10 can be shown as one group of 10 or as 10 individual ones and that the digit in the tens place of a two-digit number denotes a number of tens. They compare two-digit numbers and look for patterns	**1.NBT.B.2a**-10 can be thought of as a bundle of ten ones—called a "ten." **1.NBT.B.2c**-The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). **1.NBT.A.1**-Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. **1.NBT.B.3**-Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. **1.MD.B.3**-Tell and write time in hours and half-hours using analog and digital clocks.	*Introduce coins from various cultures and countries. *Discuss how different societies use and value currency, connecting it to the students' understanding of numbers and counting.	Ice Cream Truck Mania is a project-based learning task that involves using 1st grade math standards to solve problems related to running an ice cream truck.

	that show relationships between numbers when counting to 120. Students are also introduced to telling time and to money. They learn to recognize minutes and hours on both analog and digital clocks and read and write time to the hour and half hour. They identify coins and find the value of sets of coins (in an optional lesson).	**Money**-Determine the value of a collection of coins up to 50 cents. (Pennies, nickels, dimes, and quarters in isolation; not to include a combination of different coins.)		
Unit 4: Operations with Tens and Ones: Addition and Subtraction	In this unit, students are introduced to operations with two-digit numbers. They build on what they know about composing and decomposing numbers 11 to 19 and strategies for adding and subtracting within 20 to add two-digit numbers. Students extend their knowledge of counting by tens to mentally find 10 more or 10 less and explore adding multiples of 10. They deepen their understanding of place-value concepts, beginning to see how adding tens and adding ones relate to each other as they regroup to add two-digit numbers.	**1.NBT.C.4**-Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10. **1.NBT.C.5**-Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. **1.NBT.C.6**-Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	*Garden Math: If applicable, create a small garden or use images of gardens to teach addition and subtraction with two-digit numbers. For example, plant seeds in rows and explore scenarios like adding or removing certain numbers of plants. *Environmental Word Problems: Develop word problems related to environmental issues, such as counting trees in a forest or animals in a habitat. These problems can then be solved using two-digit addition and subtraction. *Community Math Projects: Collaborate with the community to identify and	Supermarket Spree is a project based learning activity that involves using 1st grade math standards to budget, plan, and carry out a grocery shopping trip.

			solve real-world problems. This could involve collecting data on environmental issues and using two-digit operations to analyze and address them.	
Unit 5: Length: Comparing, Ordering, and Measuring	In this unit, students build on a basic understanding of length and direct comparison of length to make indirect comparisons and to order objects by length. Students lay nonstandard units from end to end of an object with no gaps or overlaps and understand that the number of units is a measure of length.	**1.MD.A.1**-Order three objects by length; compare the lengths of two objects indirectly by using a third object. **1.MD.A.2**-Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.	Nature's Longest and Shortest: *Explore the concept of longest and shortest in nature by comparing objects like leaves, branches, or rocks. *Discuss how different environments may have different standards for what is considered long or short. Cultural Artifacts Measurement: *Bring in artifacts from different cultures and let students measure them using nonstandard units. *Discuss how measuring objects is a universal practice but can vary in methodology across cultures.	Dino Measurement is a project based learning unit based all around comparing, estimating, and modeling heights of different dinosaurs.
Unit 6: Geometry: Analyzing, Composing, and Partitioning Shapes	In this unit, students extend their understanding of geometric shapes. They build on knowledge of names for two- and three-dimensional shapes to distinguish between defining attributes such as the number of sides or corners	**1.G.A.1**-Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes that possess defining attributes **1.G.A.2**-Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) and three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular	Outdoor Shape Scavenger Hunt: *Organize a scavenger hunt where students search for and identify shapes in the outdoor environment.	Pizza Fractions is a project based learning unit based all around preparing and serving pizzas based on appropriate situational fractions.

	and non-defining attributes such as color, orientation, and size. Students use what they know about composing and decomposing different shapes to develop a greater understanding of part-whole relationships. They also decompose two-dimensional shapes into equal shares (halves and fourths) and describe the relationship between equal shares and the whole and between halves and fourths.	cylinders) to create a composite shape, and compose new shapes from the composite shape. **1.G.A.3**-Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	*Discuss how shapes serve various functions in the natural world.	

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

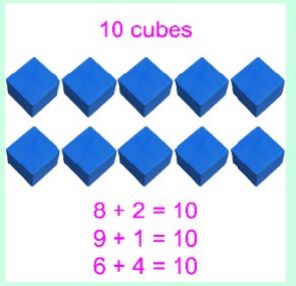
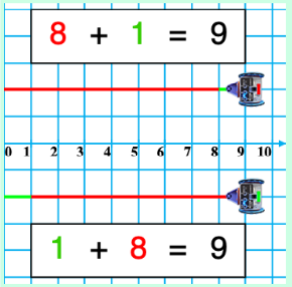
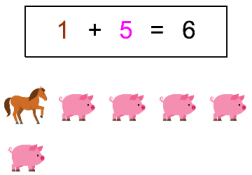
Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

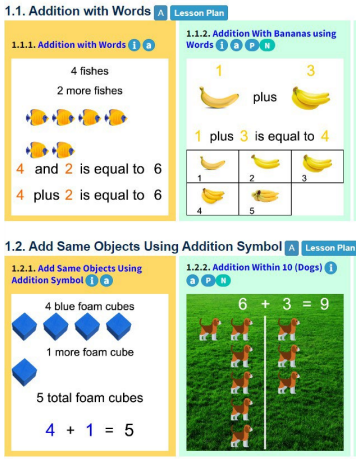
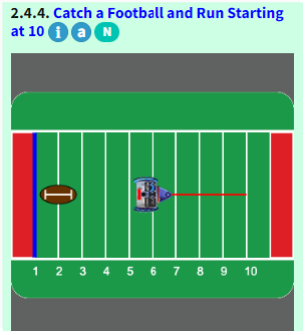
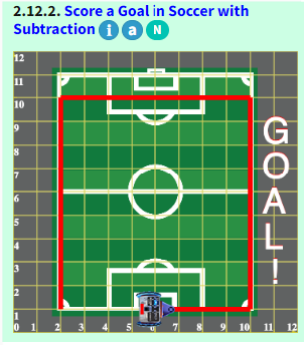
Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit Title	Unit 1: Numbers Within 10: Addition and Subtraction	**Length of Unit**	Unit 1: 55 days
Focus	Numbers Within 10	**Standards Addressed in this Unit**	**1.OA.C.5** **1.OA.C.6** **1.0A.B.3** **1.0A.D.8** **1.0A.B4** **1.0A.A.1**-
Inquiry Questions (Engaging-Debatable):	How can you add and subtract numbers within 10?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 1-PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. Students will investigate how sound travels through materials by placing materials between their ears and a ticking clock. Students will record the sound as either soft, medium or loud as heard through the material. Students will then decide which material would be best	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process,**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with math curriculum through UC-Davis and Roboblocky. Specifically, lessons 1.7, 1.12, 2.4, and 2.12. These lessons specifically have students programming the robot (whether linkbot or virtual) to model addition or subtraction. 1.7 In this lesson, students will learn to add numbers within 10. Students will represent the	**Standards: DA:Pr4.1.1** **a. Demonstrate locomotor and nonlocomotor movements that change body shapes, levels, and facings.** **b. Relate quick, moderate and slow movements to duration in time.** **Recognize steady beat and move to varying tempi of steady beat** DANCE/THEATER Students will become a "human 10-frame" (2 rows of 5 each, one row standing in front of the other), using "blue shirts", "white shirts" and "red shirts" to show number problems that the teacher	**CCSS Math Standards: 1.OA.A.1 Use addition and subtraction within to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.** UC Davis Chapters: 1 and 2

	to soundproof a room (which material allowed for the least amount of sound to travel).	**and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts**	addition problem with objects and an addition equation. 1.7.5. Different Ways to Find Total Foam Cubes  1.12 Students will review addition with numbers within 10. Students will represent the addition problem with an addition sentence to add different or same objects, add in any order, and add zero. 1.12.4. Drive Total Distance in Any Order  2.4 In this lesson, students will learn to model subtraction to solve a word problem to find the missing number in the subtraction sentence.	or other students give them to illustrate (e.g. 7 red shirts + 2 white shirts = 9 children because one square of the 10-frame is empty). Students in front row will dance or make shapes at medium level at slow tempo while students in back row will dance or make shapes at high level at faster tempo. Front and back row can also demonstrate changing speed. Alternate Activity: VISUAL ART Number Bonds Art: *Create number bonds visuals with a large piece of paper or a whiteboard. *Assign each child a number and have them draw pictures or use stickers to represent the number bonds (e.g., for 7: 3 + 4). *Discuss and share their artwork, emphasizing the relationships between numbers.	 Activity ID: 5176 Subjects: Math Grades: Grade 1 Keywords: addition Activity Statement: Find the total number of animals.

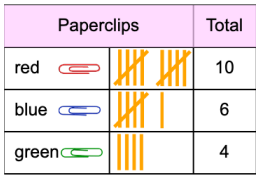
Curriculum Development Course at a Glance
Planning for Each Grade Level

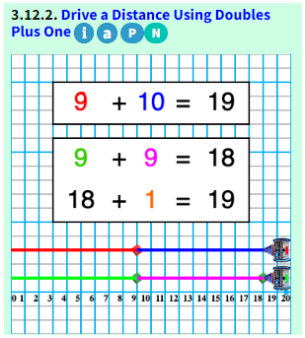
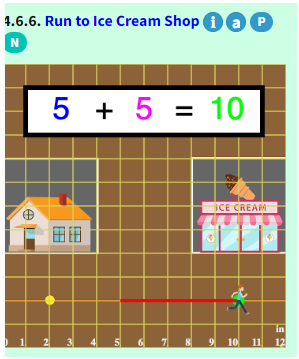
		♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky. These activities will include higher level thinking, application of math facts, completion of enhanced math, and exploration and design throughout each UNIT of learning. 	 2.12 Students will review subtraction and representing the subtraction problem with objects and an subtraction sentence. Students will also review comparing groups of objects to find how much more or fewer objects one group has over the other. 		

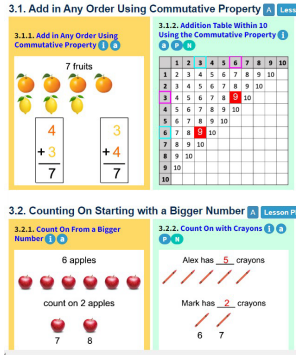
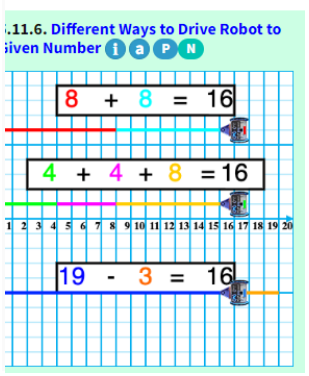
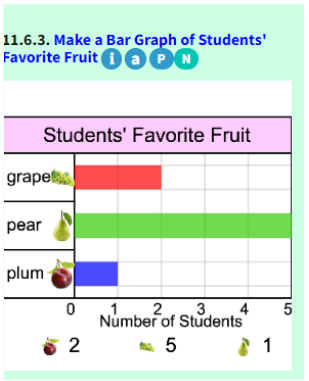
Unit Title	Unit 2: Numbers Within 20: Addition and Subtraction and Representing Data	**Length of Unit**	Unit 2: 40 days

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	Numbers Within 20	**Standards Addressed in this Unit**	**1.OA.C.6** **1.0A.B.3** **1.0A.D.8** **1.0A.A.1** **1.OA.A.2** **1.NBT.B.2a** **1.NBT.B.2b1.MD.C.4**
Inquiry Questions (Engaging-Debatable):	How can you add and subtract numbers within 20? How can you represent data?		

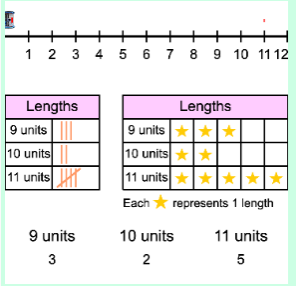
STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-PS2-2 **Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.** Students will investigate what conditions help a ball (or toy car) to roll the furthest. Students will record this data on a chart and then display it. Students will be asked comparison questions to write a sentence for. Example: How much further did the car/ball roll when on a ramp of 4 inches than it did when on a ramp of 1 inch?	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** **Students use appropriate technology resources for solving problems and making informed decisions.**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, the lessons that follow: , 3.12, 4.6, 5.11, 11.6 and 11.7. 3.12 Students will review addition strategies such as counting on, doubles, doubles plus and minus one, add 10 and more, and making a 10. Students will also review applying these	**Standards:** **DA:Pr4.1.1** **c. Demonstrate movement characteristics along with movement vocabulary (for example, use adverbs and adjectives that apply to movement such as a bouncy leap, a floppy fall, a jolly jump, and joyful spin).** **DA:Pr5.1.1** **a. Demonstrate a range of locomotor and non-locomotor movements, body patterning, body shapes, and directionality.** **b. Move safely in general space through a range of activities and group formations while maintaining personal space.** DANCE Students will create dances where 1 person will represent	**CCSS Math Standards:** **1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.** UC Davis Chapters: 3,4,5, and 11.  Activity ID: 4254 Subjects: Math Grades: Grade 1 Keywords: tally chart, data

		♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.**	strategies to add with two and with three numbers.  4.6 Students will review the subtraction strategies of counting down from the first number, thinking addition to subtract, counting up from the second number, and making a 10.  5.11 Students will review the relationship between addition and subtraction to solve equations using related facts.	the 10 and acts like a center of gravity for the other 1s. As dances are performed with different numbers of 1s related to their 10, audience members will request different kinds of movement qualities for each group. (slow and steady, quick and bouncy, etc.) Class will also say what number each group represents and also guess which student is the 10 (not moving in space but gesturing with non-locomotor movement to all the 1s to indicate movement quality). Alternate Activity: VISUAL ART Collaborative Tally Chart Mural: *Create a large tally chart on a wall or bulletin board. *Assign different items or themes to represent numbers within 20. *Have each student contribute by adding tallies to the chart using art supplies like markers or stickers.	Activity Statement: Create a tally chart of paperclips in different colors.

		♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky. These activities will include higher level thinking, application of math facts, completion of enhanced math, and exploration and design throughout each UNIT of learning. 	 11.6 In this lesson, students will learn to conduct a survey to collect data to create a bar graph.  11.7 Students will review interpreting picture graphs, tally charts, and bar graphs. **Activity Statement** 1. Measure the length the robot drives along the number line. 2. Create a tally chart and then a picture graph. 3. Get a paper with a graph from your teacher based on the instructions in **Projects** to draw graphs.		

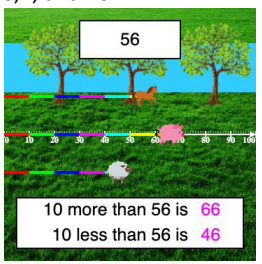
Curriculum Development Course at a Glance
Planning for Each Grade Level

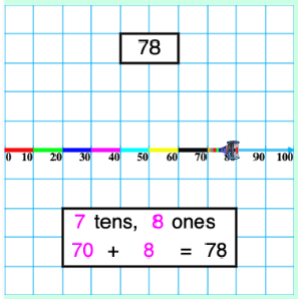
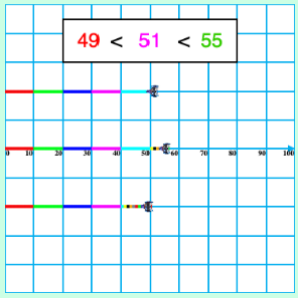
Curriculum Development Course at a Glance
Planning for Each Grade Level

			11.7.2. Make a Picture Graph of Lengths i a P N  		

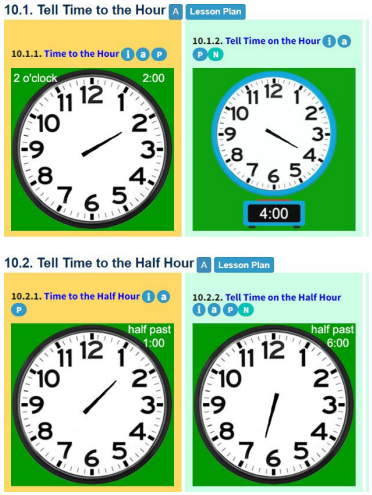
Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit Title	Unit 3: Tens and Ones: Counting, Place Value, Time, and Money	**Length of Unit**	Unit 3: 24 days
Focus	Tens and Ones	**Standards Addressed in this Unit**	**1.NBT.B.2a** **1.NBT.B.2c** **1.NBT.A.1** **1.NBT.B.3** **1.MD.B.3** **Money**
Inquiry Questions (Engaging-Debatable):	How can you count to 120? How can you identify coins and their value, and find the value of small groups of coins? How can you tell time on an analog clock?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: K-PS2-2 **Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.** Students will measure the speed of a ball and/or toy car going down ramps of different heights OR different materials down the same ramp (slide in playground?) They will use stopwatches to measure the time and meter sticks to measure distance traveled. They will display their data	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process,**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with math curriculum through UC-Davis and Roboblocky. Specifically, the lessons that follow: 6.10, 7.6, and 10.4. 6.10 Students will review count by ones and tens to 120. Students will also review expressing a number within 50 as a sum of its tens and ones.	**Standards:** **VA:Cr2.1.1a** **Explore uses of materials and tools to create works of art or design.** **VA:Cr3.1.1a** **Use art vocabulary to describe choices while creating art.** **VA:Cn11.1.1a** **Understand that people from different places and times have made art for a variety of reasons.** VISUAL ART Tens and Ones Nature Hunt: *Take students on a nature walk to collect items such as sticks and stones. *Back in the classroom, ask them to group the	**CCSS Math Standards:** **1.NBT.C.5 Given a two-digit number, mentally find more or less than the number, without having to count; explain the reasoning used.** UC Davis Chapters: 6,7, and 10  Activity ID: 5855 Subjects: Robotics, Coding, Math Grades: Grade 1

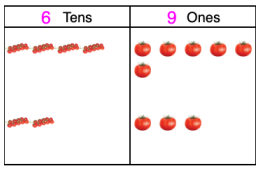
	and discuss patterns they notice.	**and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts**	6.10.3. Drive a 2-Digit Distance within 100 i a P N  7.6 Students will review comparing 2 three-digit numbers. In addition, students will review counting forward and backwards 10 from a 2-digit number. 7.6.3. Drive a Distance Between Two Numbers i a N  10.4 Students will review telling time on an analog and digital clock. **Activity Statement** Draw the hour hand on the analog clock to match the time.	items into bundles of ten (sticks) and ones (stones). *Create art representations with the collected materials. *Discuss and show how other cultures used natural objects and counting to create many different kinds of art Alternate Activities: DANCE Students will show their understandings of telling time by working in groups to show different clock times on their bodies (typically by lying on the ground in particular shapes to show both digital and analog time visually). Students can also "run the time" on a giant clock imagined around the room, running (carefully!) halfway around the circle to show :30 past and to the top of the circle again to show 30 more minutes for "o'clock". MUSIC Students will keep steady beat to seconds, minutes and hours throughout one day.	Keywords: digit, place value, tens, ones Activity Statement: 1. Change the code to move the horse a distance of the tens and ones. 2. Move the pig a distance 10 more than the horse. 3. Move the sheep a distance 10 less than the horse.

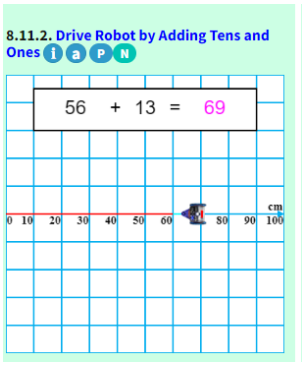
Curriculum Development Course at a Glance
Planning for Each Grade Level

		♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky. These activities will include higher level thinking, application of math facts, completion of enhanced math, and exploration and design throughout each UNIT of learning. 			

Curriculum Development Course at a Glance
Planning for Each Grade Level

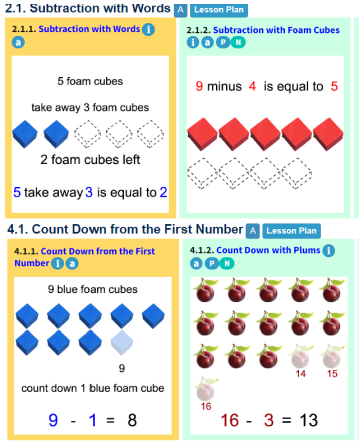
Unit Title	Unit 4: Operations with Tens and Ones: Addition and Subtraction	**Length of Unit**	Unit 4: 21 days
Focus	Adding and Subtracting with Tens and Ones	**Standards Addressed in this Unit**	**1.NBT.C.4** **1.NBT.C.5** **1.NBT.C.6**-
Inquiry Questions (Engaging-Debatable):	How can you add and subtract with tens and ones?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Students will describe objects by their texture using words such as fuzzy, hairy, rough, smooth, soft, bumpy, etc. Students will bring objects from home (or use classroom materials) and place them into a bag. Then, students will switch bags with another student. The student will then feel objects in his/her new bag and describe them using texture words. They will record their observations on a chart. Once all objects in the bag have been felt, students will guess what each object is and then check to see if their guess was correct. Students will make a class chart of right guesses versus wrong guesses and create a	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lesson 8.11. 8.11 Students will review adding and subtracting 2-digit numbers. **Activity Statement** Change the code to drive the robot in the total number of tens and ones to find the sum.	**Standards:** **VA:Cr2.3.1a** **Identify and classify uses of everyday objects through drawings, diagrams, sculptures, or other visual means.** **VA:Cr3.1.1a** **Use art vocabulary to describe choices while creating art.** VISUAL ART STEAM Math Storybook: *Have students collaborate to create a math storybook. *Assign each student a page with an addition or subtraction problem. *Ask them to illustrate the story with pictures representing tens and ones, creating a cohesive STEAM-themed math storybook. *Have students present their page and explain why they chose the materials	**CCSS Math Standards:** **1.NBT.C.4 Add within , including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of , using concrete models or drawings and strategies based on place value, properties of operations, and/or the relation-** UC Davis Chapters: 8 46 + 23 = 69  60 + 9 = 69 Activity ID: 6285 Subjects: Math Grades: Grade 1

	number sentence about those numbers (addition or subtraction)	**3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.**		and/or the subject matter they chose Alternate Activity: DANCE Students will count by 10s with any beginning number by touching head (12), shoulder (22), waist (32), knees (42), toes (52) and then toes (62), knees (72), waist (82), shoulders (92), and head (102!).	Keywords: place value, addition Activity Statement: Add the two numbers represented by the tomatoes.

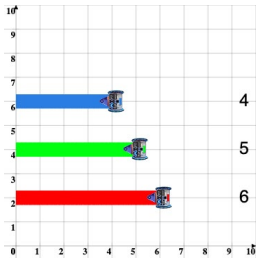
		♦ **Students are proficient in the use of technology.**			

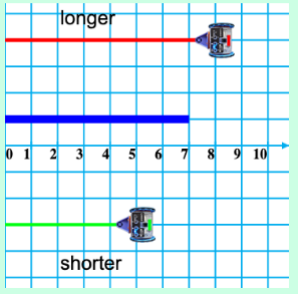
Curriculum Development Course at a Glance
Planning for Each Grade Level

		Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky. These activities will include higher level thinking, application of math facts, completion of enhanced math, and exploration and design throughout each UNIT of learning. 			

Curriculum Development Course at a Glance
Planning for Each Grade Level

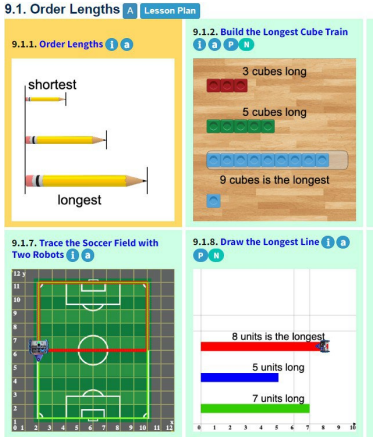
Unit Title	Unit 5: Length: Comparing, Ordering, and Measuring			**Length of Unit**	Unit 5: 15 days
Focus	Length	**Standards Addressed in this Unit**	**1.MD.A.1** **1.MD.A.2**-		
Inquiry Questions (Engaging-Debatable):	How can you compare, order, and measure lengths?				

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-PS1-1 **Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.** Students will choose to bring a toy from home. Students will measure their toy's length (using a ruler) and weight (using a digital scale or balance scale and gram weights). Students will record their toy's length and weight onto a group chart. Group members will then compare the lengths and weights of the toys and write corresponding sentences about them. For example, Tommy's car is shorter than Johnny's car because 3	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lesson 9.4 9.4 Students will review comparing lengths of three objects. **Activity Statement** Change the code to drive the robots to the foam cubes. Compare the lengths.	**Standards** **DA:Cr2.1.1** **a. Improvise a series of movements that have a beginning, middle, and end, and describe movement choices.** **DA:Pr5.1.1** **c. Modify movements and spatial arrangements upon request** DANCE Students will sit in two lines of end-to-end L-shapes ("toes to backs") and compare which line is longer and why. Each line will create a 4 - 8 count arm-and-hand dance to show the other line, based on student contributions. Teacher will view both dances and ask for changes to be made, either in tempo, level, size,	**CCSS Math Standards:** **1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.** UC Davis Chapters 9  Activity ID: 6459 Subjects: Math Grades: Grade 1 Keywords: measurement, length Activity Statement: Draw three lines using the given lengths. Compare the lengths

	inches is less than 4 inches.	**3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.**	. 9.4.4. Drive 2 Robots Compare Lengths with a Line  	or quality, and groups will revise and re-perform. Alternate Activity: VISUAL ART Paper Chain Challenge: *Provide strips of colored paper to each child. *Instruct them to create paper chains of different lengths. They can use glue or tape to connect the strips. *Afterward, compare and discuss the lengths of the paper chains. Encourage them to use terms like "longer" and "shorter" to describe their creations. Have them arrange the chains in order from longest to shortest and shortest to longest.	

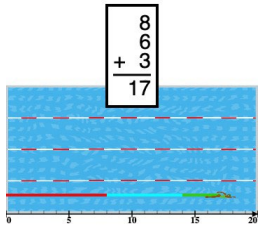
		♦ **Students are proficient in the use of technology.**			

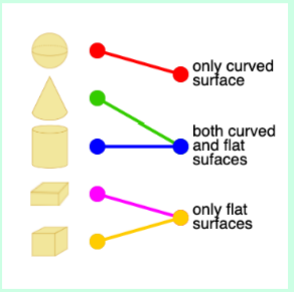
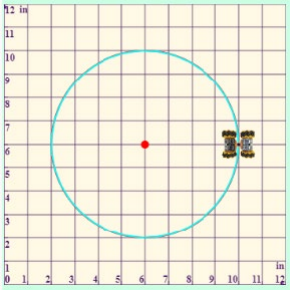
Curriculum Development Course at a Glance
Planning for Each Grade Level

		Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky. These activities will include higher level thinking, application of math facts, completion of enhanced math, and exploration and design throughout each UNIT of learning. 			

Curriculum Development Course at a Glance
Planning for Each Grade Level

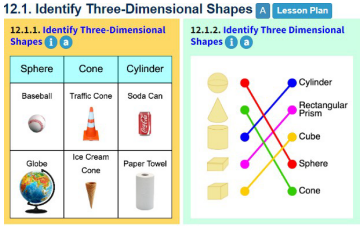
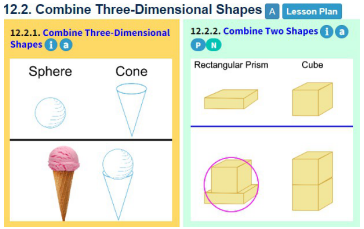
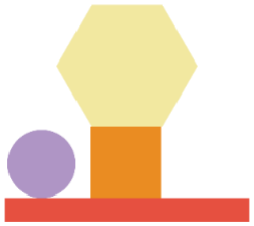
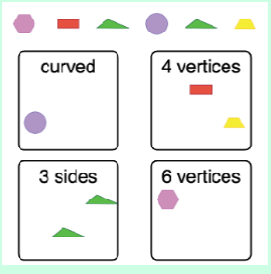
Unit Title	Unit 6: Geometry: Analyzing, Composing, and Partitioning Shapes	**Length of Unit**	Unit 6: 13 days
Focus	Geometry	**Standards Addressed in this Unit**	**1.G.A.1** **1.G.A.2** **1.G.A.3**-
Inquiry Questions (Engaging-Debatable):	How can you analyze, compose and partition shapes?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 1-LS1-1 **Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.** Students will read and discuss different animal body parts that help them. Students will then relate those body parts to inventions created by humans. Students will then choose an animal and draw it. Students will then draw (or create then draw) an invention inspired by the animal they chose. They will switch papers with a partner and then look for geometric shapes in their partner's animal drawing.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process,** and the final **results through the use of informed decision-making skills.**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lessons 12.6, 13.2, 13.7, 13.9, and 14.4. 12.6 Students will review identifying three-dimensional shapes by their defining attributes and combining the shapes into a composite shape.	**Standards** **DA:Cr1.1.1** **a. Explore movement inspired by a variety of stimuli (for example, music/sound, text, objects, images, symbols, observed dance, experiences) and identify the source.** **b. Explore a variety of locomotor and non-locomotor movements by experimenting with and changing the elements of dance.** **DA:Pr4.1.1** **a. Demonstrate locomotor and nonlocomotor movements that change body shapes, levels, and facings.** **DA:Pr6.1.1** **b. Explore the use of simple props to enhance performance.** DANCE Students create a dance	**CCSS Math Standards: 1.OA.A.1 Use addition and subtraction within to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.** UC Davis Chapters: 12,13, and 14  Activity ID: 6479 Subjects: Math Grades: Grade 1

		3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill) ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.**	12.6.2. Match Three-Dimensional Shapes to Their Surfaces  13.2 This lesson explains how to use the OmniBot with pen connectors to draw a circle, triangle, and square. 13.2.3. Draw a Circle with OmniBot  13.7 In this lesson, students will learn to find the two-dimensional shapes used to make a composite shape given its outline.	using 2D and 3D shapes with locomotor movements between. For example, one group may form a circle all together on the ground by lying in curved shapes that connect to make one circle, then locomoting (spinning?) to standing position and creating the relevant 3D sphere with their bodies and arms all connected, and then spin off away from each other to the corners of the room. Each group will be given a different 2D shape and they will need to discover the 3D shape that matches and show it in their dance. Dances may be aided by props like stretchy bands or scarves. Alternate Activity: VISUAL ART Provide paper plates and markers. *Instruct students to divide the pizzas into equal slices using different colors for each slice. *Discuss the concept of fractions as parts of a whole pizza.	Keywords: addition 1.OA.B.3 Apply properties of operations as strategies to add and subtract. Examples: If is known, then is also known. (Commutative property of addition.) To add , the second two numbers can be added to make a ten, so . (Associative property of addition.)

		♦ **Students are proficient in the use of technology.**			

Curriculum Development Course at a Glance
Planning for Each Grade Level

		Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky. These activities will include higher level thinking, application of math facts, completion of enhanced math, and exploration and design throughout each UNIT of learning. 12.1. Identify Three-Dimensional Shapes A Lesson Plan  12.2. Combine Three-Dimensional Shapes A Lesson Plan  	13.7.3. Find the Two-Dimensional Shapes i a P N  13.9 Students will review identifying two-dimensional shapes by their attributes and creating new composite shapes with two-dimensional shapes. 13.9.3. Sort Two-Dimensional Shapes i a P N  		

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Science	**Grade Level**	First Grade
Curriculum /Program	PhD Science		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Module 1: Survival (46 days)	Essential Question: How do pond plants and pond animals survive in their environment? **Conceptual Overview** Plants and animals have body parts that function in ways that help the plants and animals survive in their environment. 1. Plants and animals use their body parts in ways that help the plants and animals survive. Plant and animal body parts have properties that relate to their functions. 2. Animals have body parts that capture and convey information in the animals' environment. Plants and animals respond to their environment in ways that help the plants and animals survive. 3. Individual plants or animals of the same kind are recognizable as similar, but they can also vary in many ways. Many animal parents engage in behaviors that help their offspring survive.	**NGSS Performance Expectations** **1-LS1 From Molecules to Organisms: Structures and Processes** 1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 1-LS1-2 Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. **1-LS3 Heredity: Inheritance and Variation of Traits** 1-LS3-1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. **K–2-ETS1 Engineering Design** K–2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	How do humans depend on the environment for survival?	You will also need to talk about animals and their offspring during this unit to meet the NGSS standards laid out, so tap into what students love most of all, their families. Connecting that animals cry for their parents like humans do to communicate will be an interesting discovery for many of your "firsties". You can pull up NatGeo and play some baby animal sounds. Then discuss what the students think the animals are asking for based on the sounds! Tie this into survival, growing and meeting basic needs that you previously talked about and you have completed unit 2!

Module 2: Light (31 days)	Essential Question: How do puppeteers use light to tell stories during wayang shows? **Conceptual Overview** The way light interacts with objects affects what people see. 1. People can see objects when light illuminates the objects or when the objects give off their own light. 2. Light interacts with different objects in different ways.	**NGSS Performance Expectations** **1-PS4 Waves and Their Applications in Technologies for Information Transfer** 1-PS4-2 Make observations to construct an evidence-based account that objects can be seen only when illuminated. 1-PS4-3 Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.	What is the environmental impact of light around airports at night for planes? Why are lights around airports a different color of light and light poles are lower to the ground?	You can then use a flashlight or hand flashlights out to your students and discuss what they can see now, now that they have light to illuminate. They will be able to see the actual light waves while doing this, if the room is dark enough, so make sure you point that out to your students too! To further extend this activity and meet even more of the standards in the unit, pass out different materials to students that are transparent (plastic wrap, glass plate), translucent (wax paper, tulle fabric), opaque (construction paper, cardboard) and reflective (reflective tape, a mirror) and have them explore and discuss what happens to the light waves when they are shined through the different materials.
Module 3: Sound (38 days)	Essential Question: How does the Recycled Orchestra make music? **Conceptual Overview** Sound is caused by vibrating objects, and sound can cause objects to vibrate. 1. Sound is caused by vibrating objects. 2. Sound can cause objects to vibrate.	**NGSS Performance Expectations** **1-PS4 Waves and Their Applications in Technologies for Information Transfer** 1-PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. 1-PS4-4	What is the environmental impact of having an airport with planes landing on hearing loss for people that live and work in the area? Why do workers at the airport that work outside on the ground crew wear hearing protection?	To meet your sound wave standards, include your schools music teacher and his/her tuning fork and instruments, or work in your class with small instruments like drums or guitars (make your own out of recycled materials if you don't have access to these!) Strum them, bang on them and observe. What do you see/notice when the

		Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. **K–2-ETS1 Engineering Design** K–2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. K–2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.		instrument in making noise? Together, discuss how sound waves vibrate and the vibrations make sounds.
Module 4: Sky (31 days)	Essential Question: How did the Polynesians use observations of the Sun, stars, and the Moon to navigate from island to island? **Conceptual Overview** People can see the Sun, stars, and the Moon in the sky in predictable locations and at predictable times. 1. The Sun moves across the sky in a predictable way. 2. Most stars move across the sky in a predictable way. 3. The Moon moves across the sky in a predictable way.	**NGSS Performance Expectations** **1-ESS1 Earth's Place in the Universe** 1-ESS1-1 Use observations of the sun, moon, and stars to describe patterns that can be predicted. 1-ESS1-2 Make observations at different times of the year to relate the amount of daylight to the time of year.	Sunwise school awareness campaign Why do they advertise to wear sun protection or sunscreen when you are outside?	Sky inquiry Project Students will investigate the following: ● What color is the sky today? Why does it change? Students will research and create a plan to observe the sky and the color changes.

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit Title	Module 1: Survival	**Length of Unit**	46 days
Focus	Survival	**Standards Addressed in this Unit**	1-LS1-1, 1-LS1-2, 1-LS3-1, and K–2-ETS1-1
Inquiry Questions (Engaging-Debatable):	Essential Question: How do pond plants and pond animals survive in their environment?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 1-LS1-1 **Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.** Students will read and discuss different animal body parts that help them. Students will then relate those body parts to inventions created by humans. Students will then choose an animal and draw it. Students will then draw (or create then draw) an invention inspired by the animal they chose. Students will present their animals and inventions to groups or the whole class.	**Standards: 1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will create a video explanation of their "Pond in a Jar."	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Create a "Pond in a Jar" Design a way to help an injured animal in a Habitat using readily available materials Engineering an Animal's Survival Plant STEM Activities for Kids: Making Models of Adaptations	**Standards** **VA:Cr1.2.1a** **Use observation and investigation in preparation for making a work of art.** **VA:Cr2.1.1a** **Explore uses of materials and tools to create works of art or design.** **VA:Cr2.2.1a** **Demonstrate safe and proper procedures for using materials, tools, and equipment while making art.** VISUAL ART Students will draw a pond habitat including animals and plants that thrive in that environment. Alternate Activity: DANCE/THEATER Students will work in fours so that two are animals and two are plants. Groups will come forward and "perform" by	**Standards: 1.MD.A1: Order three objects by length; compare the lengths of two objects indirectly by using a third object. 1.MD.A2: Express the length of an object as a whole number of length units, by laying multiple copies of a short object end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.** **Plant Growth Observation:** Provide

				responding in the moment to prompts by the teacher to show how they "breathe air" or "drink water"(via roots for plants but via mouths for animals) or "eat food" (sunlight for pond plants but smaller animals for some pond animals). Class will discuss similarities and differences between plants and animals.	students with small pots, soil, and seeds for planting (e.g., beans, sunflowers). Instruct students to plant the seeds in the pots and place them in a sunny location. Have students observe and care for their plants over a period of several weeks, watering them regularly and recording their growth. Guide students through measuring the height of their plants at regular intervals using rulers or measuring tapes and recording the measurements on a growth chart. Encourage students to compare the growth rates of their plants and discuss factors that may influence plant growth, such as sunlight, water, and soil nutrients.

Unit Title	Module 2: Light		**Length of Unit**	31 days
Focus	Light	**Standards Addressed in this Unit**	1-PS4-2 and 1-PS4-3	
Inquiry Questions (Engaging-Debatable):	Essential Question: How do puppeteers use light to tell stories during wayang shows?			

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standards: 1-PS4-2 Make observations to construct an evidence-based account that objects can be seen only when illuminated. 1-PS4-3 Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. Students will read and discuss how different materials allow light to pass through (or not) and will understand the vocabulary words of opaque, translucent, and transparent. Students will investigate different materials reactions to a flashlight and record on a chart. Examples of materials that could be used: wax paper, wood, plastic wrap, tissue paper. Students may also suggest some materials to test. Encourage discovery through this process.	**Standards: 6. Basic Operations and Concepts ♦ Students demonstrate a sound understanding of the nature and operation of technology systems. ♦ Students are proficient in the use of technology. 2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** **♦ Students use appropriate technology resources for solving problems and making informed decisions.** **♦ Students employ technology for real world problem solving.** **♦ Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** Students will use the interactive applet to determine the difference between, transparent, translucent, or opaque. https://iwant2study.org/lookangejss/04waves_13light/ejss_model_blurImage/blurImage_Simulation.xhtml	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** **Transparent, Translucent, or Opaque?** In the Can You See Through Me? lesson, students experiment with materials to see how they absorb, scatter, transmit, or reflect light. As they observe how much light passes through a material, students correlate their findings with whether a material is labeled as translucent, transparent, or opaque. *Questions*: Are there any materials that allow *all* light through? Are there any materials that absorb *all* light?	**Standards** **DA:Cr1.1.1** **a. Explore movement inspired by a variety of stimuli (for example, music/sound, text, objects, images, symbols, observed dance, experiences) and identify the source.** **b. Explore a variety of locomotor and non-locomotor movements by experimenting with and changing the elements of dance.** **DA:Cr2.1.1** **a. Improvise a series of movements that have a beginning, middle, and end, and describe movement choices.** **b. Choose movements that express an idea or emotion, or follow a musical phrase.** **DA:Pr4.1.1** **c. Demonstrate movement characteristics along with movement vocabulary (for example, use adverbs and adjectives that apply to movement such as a bouncy leap, a floppy fall, a jolly jump, and joyful spin).** **DA:Pr6.1.1** **a. Dance for others in a space where audience**	**Standards: 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. 1.GA.3: Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares.** **Pour Light from a Bottle to Notice patterns** In the Serve Illuminated Water activity, students wrap a plastic bottle in aluminum foil and then shine a light through it to observe what happens when water is poured from the bottle into a sink or container. Students experiment with how altering the angle at which light hits a water-air boundary can change how the light behaves. Their observations are a

				and performers occupy different areas. DANCE/THEATER Students will work in small groups to create short dances that illustrate the four kinds of light movement with each group being given one form to show: reflecting (bouncing off a solid), scattering (being thrown in several directions when in contact with something like a prism), transmitting (going through an opening), and absorbing (being captured by a solid). Alternate activity: Students will pair up to experience shape and shadow, with one partner making an interesting body shape and the other partner showing that exact same shape (perhaps elongated) as a shadow on the floor, just as a real shadow would do. Alternate Activity: VISUAL ART Students will create Silhouette art using primary colors and side profile photos on a large sheet of construction paper and a flashlight.	real-world introduction to total internal reflection and can be used as a way to explain how fiber optic cables work. *Question*: Does light always travel in a straight line?

Unit Title	Module 3: Sound	**Length of Unit**	38 days

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	Sound	**Standards Addressed in this Unit**	1-PS4-1, 1-PS4-4, K–2-ETS1-2, and K–2-ETS1-3
Inquiry Questions (Engaging-Debatable):	Essential Question: How does the Recycled Orchestra make music?		

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 1-PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. Students will investigate how sound travels through materials by placing materials between their ears and a ticking clock. Students will record the sound as either soft, medium or loud as heard through the material. Students will then decide which material would be best to soundproof a room (which material allowed for the least amount of sound to travel).	**Standards: 6. Basic Operations and Concepts ♦ Students demonstrate a sound understanding of the nature and operation of technology systems. ♦ Students are proficient in the use of technology.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** **♦ Students use appropriate technology resources for solving problems and making informed decisions.** **♦ Students employ technology for real world problem solving.** **♦ Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** Students will use the sound applet on the doppler effect. http://galileoandeinstein.physics.virginia.edu/more_stuff/flashl	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Design your own Harmonica Make a Kazoo (Found on page 13)	**Standards** **MU:Pr4.2.1** **a With limited guidance, demonstrate knowledge of music concepts (such as beat and melodic contour) in music from a variety of cultures selected for performance** **b When analyzing selected music, read and perform rhythmic patterns using iconic or standard notation.** **MU:Cr1.1.1** **a With limited guidance, create musical ideas (such as answering a musical question) for a specific purpose .** MUSIC Palm Pipes Music Students will create a song using palm pipes to play “Farmer in the Dell” and then use palm pipes to create their own unique short melody. Alternate Activity:	**Standards: 1.NBT.A1: Count to 120, starting at any number less than 120. 1.MD.B3: Tell and write time in hours and half-hours using analog and digital clocks.** Music and Math For my first lesson, I followed the examples from *Scholastic* and began with ''Musical Matching.'' I played one key on the keyboard and explained to the class that I was playing one note or one beat. I asked them to play one beat with their instrument by hitting it once. Instead of them all playing at the same time, I called for each group to play together. Sticks went first, then triangles, and so on. Next, I played a note twice on the keyboard and asked the students to match it by playing their instrument

		ets/doppler.htm Allowing them to understand basic function of computers and technology.		DANCE/THEATER Students will take individual body shapes of their own choice and then practice vibrating them by moving body parts back and forth while the overall shape stays in one place. Students will practice vibrating slow and fast, big and small, and be asked to tell what sort of sound they would be making: big/small would show loud or soft in volume, fast/slow would show high or low in pitch. After students have practiced, teacher can "quiz" half by asking for a certain kind of sound and have the other half of the class tell if the vibrations look correct or not for that desired sound. Students can create their own dance in small groups using the idea of vibrations in their own way.	the same number of times. We matched the number of beats several times before moving on to match the pace of the beats, which is what *Scholastic* referred to as ''Making Comparisons.'' For this, I played the same note three times slowly and asked each section of instruments to match the pace. I then played a note extremely fast five times in a row and again asked students to match the number of beats and pace. After matching the pace, we matched the dynamic of sound. I played softly and they played softly. I played a soft note followed by a loud note and then they did the same.

Unit Title	Module 4: Sky		**Length of Unit**	31 days
Focus	Sky	**Standards Addressed in this Unit**	1-ESS1-1 and 1-ESS1-2	
Inquiry Questions (Engaging-Debatable):	Essential Question: How did the Polynesians use observations of the Sun, stars, and the Moon to navigate from island to island?			

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 1-ESS1-1 Use observations of the sun, moon, and stars to describe patterns that can be predicted. 1-ESS1-2 Make observations at different times of the year to relate the amount of daylight to the time of year. Students will learn about stars and constellations through a short text. Students will choose two different constellations to model using toothpicks and marshmallows. If time allows, students will create their own constellation and name it.	**Standard: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Earth Space Lab Students will study the Earth's orbit around the sun, solar time, and moon phases.	**Standard: K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students will create a 3D model of how the Earth orbits around the sun using cardboard and/or cardstock and brads. Students will be asked to explain how the Earth moves around the Sun using their model to demonstrate.	**Standards** **TH:Cr1.1.1** **c. Identify ways in which gestures and movement may be used to create or retell a story in guided drama experiences (e.g., process drama, story drama, creative drama)** **TH:Cr2-1** **b. With prompting and support, participate in group decision making in a guided drama experience (e.g., process drama, story drama, creative drama).** **DA:Pr5.1.1** **b. Move safely in general space through a range of activities and group formations while maintaining personal space.** **DA:Re.7.1.1** **a. Find a movement that repeats in a dance to make a pattern.** **DA:Cn10.1.1** **a. Find an experience expressed or portrayed in a dance that relates to a familiar experience. Identify the movements that communicate this experience.** DANCE/THEATER Groups of students take turns creating one constellation at a time after viewing each on the Promethean board and	**Standards: 1.GA.3: Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. 1.MD.B3: Tell and write time in hours and half-hours using analog and digital clocks.** Students will track the moon on a tracking chart to identify patterns in the moon over the module.

				noticing how it is formed. They create a dance "in place" where each "star" twinkles its own rhythm and moves with its own unique non-locomotor movements to celestial music, and then move ever so slightly all together ('flocking') toward the West, just as a real constellation would. Alternate Activity: VISUAL ART The Sky Project Students research and notice the color changes in the sky. Students will paint the sky using watercolors to create watercolor paintings.	

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Social Studies	**Grade Level**	1st grade
Curriculum/ Program	Louisiana Student Standards for Social Studies		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
A Place Called Louisiana 6 weeks	Students will use various types of sources to learn how to tell the difference between primary and secondary sources as well as learn how to select and use appropriate evidence to support claims. Claims are developed using a combination of evidence from sources, content knowledge, and clear reasoning.	1.2 Differentiate between primary and secondary sources. For example: 1.3 Select and use appropriate evidence from primary and secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.8 Identify examples of Louisiana's culture, 1.13 Describe examples of rules and laws in Louisiana. 1.15 Describe the importance of fairness, responsibility, respect, and hard work. 1.24 Create and use maps or models with cardinal directions, keys, and scale. 1.25 Identify where Louisiana is within the United States and on the globe. 1.26 Differentiate between the town, parish, state, and country in which the student lives on a political map.	Students can explore Louisiana's multicultural history, traditions, and celebrations, including Mardi Gras, Cajun and Creole cuisine, Zydeco music, and cultural festivals by reading various types of sources and discussing the difference of each while identifying examples of Louisiana's culture.	Students will demonstrate their ability to differentiate between primary and secondary sources and use appropriate evidence to support claims. ● Students will be provided with a set of pictures and texts. ● They will sort the materials into two categories: primary sources and secondary sources. ● Primary sources may include photographs, drawings, artifacts, or first-hand accounts. ● Secondary sources may include books, articles, or videos that discuss or analyze events or information. ● Students will read a short passage about

				a historical event or a scientific concept. ● They will identify key points or claims made in the passage. ● Using the provided primary and secondary sources, students will select evidence to support the claims made in the passage. ● Students will write a short paragraph about a topic of their choice related to the unit. ● They will make a claim or statement about the topic. ● Using evidence from both primary and secondary sources, students will support their claim with relevant information.
Louisiana History and Culture 9.5 weeks	Students will analyze primary and secondary sources to construct and express claims in which they will compare life in Louisiana in the past to life today, describe how events can affect the present, identify examples of Louisiana's culture and culture groups in Louisiana, and describe the importance of natural resources in Louisiana. Students will support these	1.1 Create a chronological sequence of events using appropriate vocabulary 1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 1.3 Select and use appropriate evidence from primary and	Students will explore how different cultural groups in Louisiana have traditionally interacted with their environment sustainably. Discuss practices such as fishing, farming, and hunting that have been important for survival and cultural identity. Teachers can take advantage of local resources by	Project Overview: Students will explore Louisiana's rich history through the lens of primary and secondary sources. They will investigate various historical events, figures, and cultural aspects of Louisiana to develop claims supported

	claims with evidence from primary and secondary sources. They will use their knowledge of maps from Unit 1 as they analyze sources and use them to support their claims.	secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.5 Compare life in Louisiana in the past to life today. 1.6 Describe how past events can affect the present. 1.8 Identify examples of Louisiana's culture, including: a. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day b. Music: Cajun, jazz, zydeco c. Languages: French, Spanish, Native languages (e.g., Atakpan, Caddo, Choctaw) d. Architecture: St. Louis Cathedral, The Cabildo, State Capitol, Louisiana Superdome, Strand Theater, Sports Hall of Fame, The National WWII Museum e. Traditions: lagniappe, second line parades, king cake, red beans and rice on Mondays f. Cuisine: jambalaya, gumbo, etouffee, bread pudding, meat pies, tamales g. Symbols: Louisiana State flag, brown pelican, magnolia tree, brown bear h. Individuals who have made significant contributions to Louisiana's artistic heritage. 1.9 Identify cultural groups that influenced Louisiana, including Acadians, Africans, Canary Islanders, French, Germans, Haitians, Native Americans, Asian Americans, French, and Spanish. 1.24 Create and use maps or models with cardinal directions, keys, and scale.	organizing field trips to nearby parks, nature reserves, museums, or cultural centers where children can experience firsthand the natural beauty and cultural heritage of Louisiana in order to previous various sources found there-such as magazines, secondary sources-interviews with staff who work there that are knowledgeable about the topics at hand.	by evidence from these sources. Project Objectives: ● Identify and differentiate between primary and secondary sources. ● Select appropriate evidence from sources to support claims. ● Develop clear and reasoned claims about Louisiana's history. ● Present findings effectively using multimedia or written formats.

		1.31 Explain how and why people and goods move from place to place. 1.32 Explain how the physical landscape of Louisiana affected the settlement of Native Americans and early settlers.		
Living and Working in Louisiana 4 weeks	In this unit, students develop a basic understanding of economic principles. They will learn to differentiate between producers and consumers. They will also identify examples of an economic cost or benefit and how that affects needs and wants. Students will be able to explain why and how goods and services are produced and traded and the role scarcity plays in making choices.	1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 1.3 Select and use appropriate evidence from primary and secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.17 Differentiate between producers and consumers. 1.18 Identify examples of an economic cost or benefit of a decision or event. 1.19 Describe how different public and private jobs help Louisianans. For example: a. Public: firefighters keeping people and their property safe b. Private: nurses caring for sick or injured people 1.20 Explain why and how goods and services are produced and traded. 1.21 Describe how scarcity requires people to make choices. 1.22 Identify and describe which goods and services are produced in different places and regions in Louisiana. 1.23 Describe the importance of natural resources in Louisiana, including timber, seafood, and oil. 1.24 Create and use maps or models with cardinal directions, keys, and scale.	Students will learn about producers (plants) and consumers (animals) in the ecosystem, drawing parallels to economic producers who create goods and services for consumers. Students will be able to understand the balance and interdependence within ecosystems that mirrors the balance between producers and consumers in the economy.	Each student will create a poster or a presentation about their economic community. Students should include the following components in their project: Identification of Producers and Consumers: Students should identify at least three producers and three consumers within their community. They can draw pictures or use symbols to represent them. Examples of Economic Costs and Benefits: Students should provide examples of economic costs and benefits within their community. For example, the cost of buying groceries versus the benefit of having food to eat. Explanation of Goods and Services: Students should describe at least three goods and three services available in their community. They should explain why these

		1.29 Describe ways people in Louisiana change their environment to meet their needs, including the construction of bridges and levees.		goods and services are important. Understanding Trade: Students should explain how goods and services are produced and traded within their community. They can include examples of local businesses and how they contribute to trade. Role of Scarcity: Students should discuss the concept of scarcity and how it influences choices in their community. They can give examples of resources that are scarce and how people make decisions based on scarcity. Students can use drawings, photos, or written descriptions to illustrate their points. Encourage creativity and originality in presenting their economic community.
Being a Citizen of Louisiana and the United States 4.5 weeks	In this topic, students will explore rules and laws in Louisiana. They will consider the importance of fairness, responsibility, respect, and hard work. Students will be able to describe how these important aspects of rules and laws relate to how they interact with other	1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 1.3 Select and use appropriate evidence from primary and secondary sources to support claims.	Students can participate in role-playing activities where students act out different aspects of citizenship, such as voting in a mock election or volunteering in their community in order to describe how rules and laws relate and the importance of	Students will create a visual presentation showcasing their understanding of rules and laws in Louisiana. They will incorporate examples and illustrations to demonstrate the concepts of fairness, responsibility, respect, and hard work in

	Louisianians as well as their environment.	1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.8 Identify examples of Louisiana's culture, including: a. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day b. Music: Cajun, jazz, zydeco c. Languages: French, Spanish, Native languages (e.g., Atakpan, Caddo, Choctaw) d. Architecture: St. Louis Cathedral, The Cabildo, State Capitol, Louisiana Superdome, Strand Theater, Sports Hall of Fame, The National WWII Museum e. Traditions: lagniappe, second line parades, king cake, red beans and rice on Mondays f. Cuisine: jambalaya, gumbo, etouffee, bread pudding, meat pies, tamales g. Symbols: Louisiana State flag, brown pelican, magnolia tree, brown bear h. Individuals who have made significant contributions to Louisiana's artistic heritage. 1.13 Describe examples of rules and laws in Louisiana. 1.15 Describe the importance of fairness, responsibility, respect, and hard work. For example: a. Taking care of personal belongings and respecting the property of others. b. Following rules and recognizing consequences of breaking rules. c. Taking responsibility for assigned duties.	responsibility, respect, and hard work.	their daily lives within the state. Students will explain what rules and laws are and why they are essential in Louisiana. ● They will provide examples of rules and laws they encounter in various settings (school, home, community). ● Students will create a poster, slideshow, or multimedia presentation to present their understanding of rules and laws in Louisiana. ● They will include text, illustrations, and examples to support their ideas.

		1.24 Create and use maps or models with cardinal directions, keys, and scale. 1.25 Identify where Louisiana is within the United States and on the globe. 1.26 Differentiate between the town, parish, state, and country in which the student lives on a political map.		
How our State Government Works 4 weeks	The purpose of this topic is to provide students with an understanding of how the Louisiana government operates. As a result, they will have a better understanding of who the leaders of Louisiana are on a national, state, and local level. In this course, students will be able to describe the important aspects of the branches of government at the state and national levels. Students will also gain an understanding of how citizens vote for their representatives at various levels of government.	1.1 Create a chronological sequence of events using appropriate vocabulary 1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 1.3 Select and use appropriate evidence from primary and secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.8 Identify examples of Louisiana's culture, including: a. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day b. Music: Cajun, jazz, zydeco c. Languages: French, Spanish, Native languages (e.g., Atakpan, Caddo, Choctaw) d. Architecture: St. Louis Cathedral, The Cabildo, State Capitol, Louisiana Superdome, Strand Theater, Sports Hall of Fame, The National WWII Museum e. Traditions: lagniappe, second line	Students can highlight the multiple different cultures that make up Louisiana's population and its representation in government leadership positions. The teacher can guide discussions on how multiple different perspectives and experiences contribute to decision- making processes and policy development.	Task Description: Students will create a multimedia presentation illustrating their comprehension of the Louisiana government. They will identify leaders, explain the branches of government, and describe the voting process for representatives at different levels of government. Teachers will assess students based on their multimedia presentations, oral explanations, and responses to questions. Rubrics aligned with the assessment criteria will be provided to guide the evaluation process.

		parades, king cake, red beans and rice on Mondays f. Cuisine: jambalaya, gumbo, etouffee, bread pudding, meat pies, tamales g. Symbols: Louisiana State flag, brown pelican, magnolia tree, brown bear h. Individuals who have made significant contributions to Louisiana's artistic heritage. 1.10 Describe the purpose of the state government of Louisiana 1.12 Identify each of the branches of the state government of Louisiana. 1.13 Describe examples of rules and laws in Louisiana. 1.14 Describe civic virtues including voting, running for office, serving on committees, and volunteering. 1.16 Identify leaders at various levels of Louisiana State government, and explain their roles and responsibilities. 1.26 Differentiate between the town, parish, state, and country in which the student lives on a political map.		

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit Title	A Place Called Louisiana		**Length of Unit**	6 weeks
Focus	The focus of the first grade is to help students acquire knowledge regarding their place in the local community and in Louisiana. First graders gain a deeper sense of the role of a citizen in a democratic society as they develop an awareness of their basic rights and responsibilities as citizens, including the laws designed to protect them. Students will continue to develop a sense of time and place as they increase their understanding of the past, present, and future through the study of Louisiana's rich history and culture, influenced by multiple ethnic and cultural groups.	**Standards Addressed in this Unit**	1.2 Differentiate between primary and secondary sources. For example: 1.3 Select and use appropriate evidence from primary and secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.8 Identify examples of Louisiana's culture, 1.13 Describe examples of rules and laws in Louisiana. 1.15 Describe the importance of fairness, responsibility, respect, and hard work. 1.24 Create and use maps or models with cardinal directions, keys, and scale. 1.25 Identify where Louisiana is within the United States and on the globe. 1.26 Differentiate between the town, parish, state, and country in which the student lives on a political map.	

Curriculum Development Course at a Glance
Planning for Each Grade Level

Inquiry Questions (Engaging-Debatable):	What does it mean to think like a historian? Why are maps helpful and important sources of knowledge? How does Louisiana's unique geography affect my life and the lives of other Louisianans?

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standards: **2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats. 2-ESS2-2** **Develop a model to represent the shapes and kinds of land and bodies of water in an area.** Students can investigate the importance of wetlands preservation, the impact of human activity on wetland ecosystems, and strategies for conservation.	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Video: How to Make a Claim Brain Pop	**Engineering standard: K–2-ETS1-1** **Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.** Objective: To introduce students to engineering concepts and STEAM integration while exploring the importance of Louisiana's wetlands. Materials Needed: Large shallow container (e.g., a plastic storage container) Soil or clay Small plants (real or fake) Small animal figurines (optional) Craft sticks or popsicle sticks Small rocks or pebbles Water Plastic toy animals (e.g., alligators, birds) Pictures or diagrams of Louisiana wetlands (optional)	**Standards** **DA:Pr4.1.1** **a. Demonstrate locomotor and nonlocomotor movements that change body shapes, levels, and facings. Move in straight, curved, and zigzagged pathways. Find and return to place in space. Move with others to form straight lines and circles.** **b. Relate quick, moderate and slow movements to duration in time. Recognize steady beat and move to varying tempi of steady beat.** **DA:Pr5.1.1** **a. Demonstrate a range of locomotor and non-locomotor movements, body patterning, body shapes, and directionality.**	**Standards: 1.MD.A1: Order three objects by length; compare the lengths of two objects indirectly by using a third object. 1.MD.A2: Express the length of an object as a whole number of length units, by laying multiple copies of a short object end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps 1.MD.B3: Tell and write time in hours and half-hours using analog and digital clocks. 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.** **Erosion Experiment**: Set up a hands-on erosion experiment to demonstrate how Louisiana's coastal geography is changing over time. Use sand, water, and small models of coastal features like barrier islands and marshes. Have students observe how erosion occurs and discuss its impact on landforms and communities. They can also measure the rate of erosion over time using markers or measuring sticks.

			Instructions: Introduction (15 minutes): Begin by discussing Louisiana's wetlands with the	DANCE Students will perform dances with the cardinal directions. First, the classroom walls will be marked with N, E, S, and W,	

			students. Show pictures or diagrams if available, and explain why wetlands are important ecosystems. Discuss the animals and plants that live in the wetlands and their significance to the environment. Building the Wetlands Model (30 minutes): In the shallow container, create the base of the wetlands using soil or clay. Mold it to resemble the landscape of Louisiana's wetlands. Add small plants and rocks to represent the vegetation and terrain of the wetlands. Place toy animals strategically around the wetlands to represent the diverse wildlife that inhabits these ecosystems. Engineering Challenge (20 minutes): Explain to the students that engineers help solve problems and build things to make life better. Divide the students into small groups and provide them with craft sticks or popsicle sticks. Challenge each group to engineer a simple structure (like a bridge or a levee) using the craft sticks to protect the wetlands from flooding. Emphasize the importance of protecting the wetlands	and students will practice facing the different directions with different body parts and different shapes (straight, curved, zigzag, or twisted). Then, students will take turns showing various locomotor movements with different qualities toward specific cardinal directions. "Can you gallop in a curvy pathway toward the East?" "Can you march in a straight line toward the South?" If time, students will work in small groups to create and perform their own cardinal directions dance, using all 4 directions with attention to locomotor movement choices, as well as pathway and speed.. Alternate Activity: VISUAL ART Mapping Art activity- students can create a map of the playground, school, their room etc..	

			from natural disasters like hurricanes. Encourage the students to work together, test their structures, and make improvements based on their observations. Reflection and Discussion (10 minutes): After the engineering challenge, gather the students together to reflect on their experience. Discuss the challenges they faced during the activity and how they worked together to overcome them. Reinforce the importance of teamwork, creativity, and problem-solving in engineering. Closure: Conclude the activity by reiterating the significance of Louisiana's wetlands and the role engineers play in protecting and preserving them. Encourage students to think about ways they can help take care of the environment in their own communities.		

Unit Title	Louisiana History and Culture	**Length of Unit**	9.5 weeks

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	The focus of the first grade is to help students acquire knowledge regarding their place in the local community and in Louisiana. First graders gain a deeper sense of the role of a citizen in a democratic society as they develop an awareness of their basic rights and responsibilities as citizens, including the laws designed to protect them. Students will continue to develop a sense of time and place as they increase their understanding of the past, present, and future through the study of Louisiana's rich history and culture, influenced by multiple ethnic and cultural groups.	**Standards Addressed in this Unit**	1.1 Create a chronological sequence of events using appropriate vocabulary 1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 1.3 Select and use appropriate evidence from primary and secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.5 Compare life in Louisiana in the past to life today. 1.6 Describe how past events can affect the present. 1.8 Identify examples of Louisiana's culture, including: a. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day b. Music: Cajun, jazz, zydeco c. Languages: French, Spanish, Native languages (e.g., Atakpan, Caddo, Choctaw) d. Architecture: St. Louis Cathedral, The Cabildo, State Capitol, Louisiana Superdome, Strand Theater, Sports Hall of Fame, The National WWII Museum e. Traditions: lagniappe, second line parades, king cake, red beans and rice on Mondays f. Cuisine: jambalaya, gumbo, etouffee, bread pudding, meat pies, tamales g. Symbols: Louisiana State flag, brown pelican, magnolia tree, brown bear h. Individuals who have made significant contributions to Louisiana's artistic heritage. 1.9 Identify cultural groups that influenced Louisiana, including Acadians, Africans, Canary Islanders, French, Germans, Haitians, Native Americans, Asian Americans, French, and Spanish. 1.24 Create and use maps or models with cardinal directions, keys, and scale. 1.31 Explain how and why people and goods move from place to place. 1.32 Explain how the physical landscape of Louisiana affected the settlement of Native Americans and early settlers.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Inquiry Questions (Engaging-Debatable):	How did Louisiana's Native Americans help make Louisiana unique? How did Louisiana grow as a colony? How did becoming part of the United States change Louisiana? How does culture define a place?

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. Students will read text about natural resources and how humans use them. Then, they will draw lines from pictures of natural resources to pictures of how humans use them. Students will also decide whether an item is something that can be recycled or if it's just trash. Students will also complete a chart about ways to reduce, things to reuse and things to recycle with their own ideas about those topics.	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** Virtual Tours: Use technology to take virtual tours of significant historical sites and cultural landmarks in Louisiana. Platforms like Google Earth or virtual reality apps can	**Science standards: 2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.** **2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area.** Engage children in hands-on activities that connect environmental science concepts with Louisiana's history and culture. For example, they could create dioramas of Louisiana habitats or plant native species in a school garden.	**Standards:** **DA:Re.7.1.1** **b. Demonstrate and describe observed or performed dance movements from a specific genre or culture** **DA:Re8.1.1** **a. Select movements from a dance that suggest ideas and explain how the movement captures the idea using simple dance terminology.** **DA:Re9.1.1** **a. Identify and demonstrate several movements in a dance that attracted attention. Describe the characteristics that make the movements interesting and talk about why they were chosen.** DANCE Students can learn a traditional Native American dance that used to be done in Louisiana and discover its purpose with research/video. Alternate Activities:	**Standards: 1.NBT.A1: Count to 120, starting at any number less than 120. 1.OA.B3: Apply properties of operations as strategies to add and subtract. 1.OA.C5: Relate counting to addition and subtraction. 1.OA.C6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten; decomposing a number leading to a ten; using the relationship between addition and subtraction; and creating equivalent but easier or known sums.** **Cultural Cooking and Measurement:** Explore Louisiana's varied cuisines and cultural heritage through cooking activities. Invite students to participate in simple cooking projects where they can measure ingredients, follow recipes, and learn about

		provide immersive experiences of			

		places like French Quarter in New Orleans, plantations along the Mississippi River, or wildlife refuges in the bayous. During these tours, incorporate simple math concepts such as counting, shapes, and directions.		VISUAL ART Students can create art inspired by the natural environment and many cultures of the state. THEATER Students will make tableaux in small groups as part of the Louisiana timeline. Each tableaux will show an important event in Louisiana history, and groups will show them in order of when they happened in history.	the cultural significance of traditional Louisiana dishes like gumbo, jambalaya, or beignets. This hands-on approach helps reinforce math concepts related to measurement, fractions, and counting.

Unit Title	Living and Working in Louisiana	**Length of Unit**	4 weeks

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	The focus of the first grade is to help students acquire knowledge regarding their place in the local community and in Louisiana. First graders gain a deeper sense of the role of a citizen in a democratic society as they develop an awareness of their basic rights and responsibilities as citizens, including the laws designed to protect them. Students will continue to develop a sense of time and place as they increase their understanding of the past, present, and future through the study of Louisiana's rich history and culture, influenced by multiple ethnic and cultural groups.	**Standards Addressed in this Unit**	1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 1.3 Select and use appropriate evidence from primary and secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.17 Differentiate between producers and consumers. 1.18 Identify examples of an economic cost or benefit of a decision or event. 1.19 Describe how different public and private jobs help Louisianans. For example: a. Public: firefighters keeping people and their property safe b. Private: nurses caring for sick or injured people 1.20 Explain why and how goods and services are produced and traded. 1.21 Describe how scarcity requires people to make choices. 1.22 Identify and describe which goods and services are produced in different places and regions in Louisiana. 1.23 Describe the importance of natural resources in Louisiana, including timber, seafood, and oil. 1.24 Create and use maps or models with cardinal directions, keys, and scale. 1.29 Describe ways people in Louisiana change their environment to meet their needs, including the construction of bridges and levees.
Inquiry Questions (Engaging-Debatable):	How do we decide between needs and wants? How does your environment influence where you work and live?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-PS1-1 **Plan and conduct an investigation to**	**Standards: 3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)**	**Standards: K–2-ETS1-1** **Ask questions, make observations, and gather**	**Standards** **VA:Cr1.2.1a** **Use observation and investigation in**	**Standards: 1.NBT.A1: Count to 120, starting at any number less than 120. 1.OA.B3: Apply properties**

	describe and classify different kinds of materials by their observable properties. Conduct simple experiments to understand concepts such as buoyancy (related to boats in Louisiana's waterways) or the water cycle (pertinent to Louisiana's frequent rains and floods).	♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** Introduce basic technological concepts related to Louisiana's industries, such as fishing, agriculture, and oil extraction. Discuss the tools and machinery used in these industries and how	**information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.** **K–2-ETS1-2** **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** Encourage students to design and build models of Louisiana landmarks such as levees, bridges, or even Cajun-style houses. Discuss the engineering principles behind these structures and their importance to the state's infrastructure.	**preparation for making a work of art.** **VA:Cr2.1.1a** **Explore uses of materials and tools to create works of art or design.** **VA:Cr2.2.1a** **Demonstrate safe and proper procedures for using materials, tools, and equipment while making art.** **VA:Re8.1.1a** **Interpret art by categorizing subject matter and identifying the characteristics of form.** VISUAL ART Explore the rich cultural heritage of Louisiana, including its music, cuisine, and traditions. After seeing paintings inspired by Louisiana's vibrant culture, students can create artwork, such as paintings of bayous or drawings of Mardi Gras celebrations. Alternate Activities: DANCE Create a class dance about natural resources, with students making movement related to lumber, rice, crawfish, oil, etc., and stringing them together with aesthetic thought as a dance sequence.	**of operations as strategies to add and subtract.** **1.OA.C5: Relate counting to addition and subtraction. 1.OA.C6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten; decomposing a number leading to a ten; using the relationship between addition and subtraction; and creating equivalent but easier or known sums. 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.** Use real-life examples from Louisiana's economy to teach mathematical concepts such as addition, subtraction, and measurement. For instance, students can calculate the total catch of a fishing boat or estimate the area of a sugarcane field. Explore patterns and shapes in Louisiana's architecture, music, and natural landscapes, providing opportunities for students to practice

		they have evolved over time.			

Curriculum Development Course at a Glance
Planning for Each Grade Level

				MUSIC/DANCE Integrate traditional music and dance into lessons about Louisiana's varied cultural influences, including French, African, and Native American traditions.	geometry and spatial reasoning skills.

Unit Title	Being a Citizen of Louisiana and the United States	**Length of Unit**	4.5 weeks

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	The focus of the first grade is to help students acquire knowledge regarding their place in the local community and in Louisiana. First graders gain a deeper sense of the role of a citizen in a democratic society as they develop an awareness of their basic rights and responsibilities as citizens, including the laws designed to protect them. Students will continue to develop a sense of time and place as they increase their understanding of the past, present, and future through the study of Louisiana's rich history and culture, influenced by multiple ethnic and cultural groups.	**Standards Addressed in this Unit**	1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 1.3 Select and use appropriate evidence from primary and secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.8 Identify examples of Louisiana's culture, including: a. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day b. Music: Cajun, jazz, zydeco c. Languages: French, Spanish, Native languages (e.g., Atakpan, Caddo, Choctaw) d. Architecture: St. Louis Cathedral, The Cabildo, State Capitol, Louisiana Superdome, Strand Theater, Sports Hall of Fame, The National WWII Museum e. Traditions: lagniappe, second line parades, king cake, red beans and rice on Mondays f. Cuisine: jambalaya, gumbo, etouffee, bread pudding, meat pies, tamales g. Symbols: Louisiana State flag, brown pelican, magnolia tree, brown bear h. Individuals who have made significant contributions to Louisiana's artistic heritage. 1.13 Describe examples of rules and laws in Louisiana. 1.15 Describe the importance of fairness, responsibility, respect, and hard work. For example: a. Taking care of personal belongings and respecting the property of others. b. Following rules and recognizing consequences of breaking rules. c. Taking responsibility for assigned duties. 1.24 Create and use maps or models with cardinal directions, keys, and scale. 1.25 Identify where Louisiana is within the United States and on the globe. 1.26 Differentiate between the town, parish, state, and country in which the student lives on a political map.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Inquiry Questions (Engaging-Debatable):	How do rules and laws impact fairness and responsibility in Louisiana? How can we make our communities and state even better?

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: K-ESS2-2 **Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.** **3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.** Students can plant native Louisiana plants in a school garden. Students will record which plants seem to grow the best.	**Standards: 3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** The teacher can introduce basic technology concepts such as using computers, tablets, or educational apps to explore topics related to Louisiana and the United States. Virtual field trips to local landmarks	**Standards: K–2-ETS1-1** **Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.** **K–2-ETS1-2** **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** Students can design and build simple structures, bridges, or models inspired by Louisiana's architecture. Students will discuss what types of bridges they've seen most often in Louisiana. Students will, in groups, sketch, and build a suspension bridge using the following materials: hole punch, empty paper towel tubes, rulers, scissors, yarn or string, masking (or painter's)	**Standards** **MU:Cr1.1.1** **a With limited guidance, create musical ideas (such as answering a musical question) for a specific purpose** **MU:Cr3.1.1** **a With limited guidance, discuss and apply personal, peer, and teacher feedback to refine personal musical ideas** **MU:Re7.2.1** **a With limited guidance, demonstrate and identify how specific music concepts (such as beat or pitch) are used in various styles of music for a purpose .** MUSIC Discuss and experience various musical styles. Then choose one and create a song in that style about how rules keep us all safe. Alternate Activities: VISUAL ART Incorporate Louisiana and U.S. cultural elements into art projects. Students can	**Standards: 1.NBT.A1: Count to 120, starting at any number less than 120. 1.OA.B3: Apply properties of operations as strategies to add and subtract. 1.OA.C5: Relate counting to addition and subtraction. 1.OA.C6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten; decomposing a number leading to a ten; using the relationship between addition and subtraction; and creating equivalent but easier or known sums. 1.MD.C4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.** **Legislative Voting:** Introduce the concept of

		or historical sites can enhance learning.	tape, cardboard and (no more than) 8 pipe cleaners.	create paintings, drawings, or crafts inspired by local festivals, musicians, or folk art traditions. THEATER Make tableaux about important laws passed in Louisiana or important rules in our classroom.	laws and how they are created by elected officials. Hold a classroom vote on a proposed "classroom law" (e.g., everyone must clean up their own messes, no running in the hallway). Provide each student with a ballot and have them vote yes or no on the proposed law. Count the votes and discuss the outcome. Use this activity to introduce basic addition and subtraction by counting the total number of votes and determining the majority.

Unit Title	How our State Government Works	**Length of Unit**	4 weeks

Curriculum Development Course at a Glance
Planning for Each Grade Level

Focus	The focus of the first grade is to help students acquire knowledge regarding their place in the local community and in Louisiana. First graders gain a deeper sense of the role of a citizen in a democratic society as they develop an awareness of their basic rights and responsibilities as citizens, including the laws designed to protect them. Students will continue to develop a sense of time and place as they increase their understanding of the past, present, and future through the study of Louisiana's rich history and culture, influenced by multiple ethnic and cultural groups..	**Standards Addressed in this Unit**	1.1 Create a chronological sequence of events using appropriate vocabulary 1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 1.3 Select and use appropriate evidence from primary and secondary sources to support claims. 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning. 1.8 Identify examples of Louisiana's culture, including: a. State and nationally designated holidays: New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day b. Music: Cajun, jazz, zydeco c. Languages: French, Spanish, Native languages (e.g., Atakpan, Caddo, Choctaw) d. Architecture: St. Louis Cathedral, The Cabildo, State Capitol, Louisiana Superdome, Strand Theater, Sports Hall of Fame, The National WWII Museum e. Traditions: lagniappe, second line parades, king cake, red beans and rice on Mondays f. Cuisine: jambalaya, gumbo, etouffee, bread pudding, meat pies, tamales g. Symbols: Louisiana State flag, brown pelican, magnolia tree, brown bear h. Individuals who have made significant contributions to Louisiana's artistic heritage. 1.10 Describe the purpose of the state government of Louisiana 1.12 Identify each of the branches of the state government of Louisiana. 1.13 Describe examples of rules and laws in Louisiana. 1.14 Describe civic virtues including voting, running for office, serving on committees, and volunteering. 1.16 Identify leaders at various levels of Louisiana State government, and explain their roles and responsibilities. 1.26 Differentiate between the town, parish, state, and country in which the student lives on a political map.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Inquiry Questions (Engaging-Debatable):	Why is the government important in Louisiana? Who leads the government in Louisiana?

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standards: SEP3. Planning and carrying out investigations. SEP4. Analyzing and interpreting data. Students can conduct simple experiments to understand concepts like voting and decision-making, emphasizing fairness and equality. This will be done using surveys, evaluating those surveys and drawing conclusions based upon the data collected.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** Students can use multimedia presentations or virtual tours to explore government buildings or historical landmarks related to Louisiana government. After the learn the content, they can apply and teach other students through use of slide shows and presentations to the students in class.	**Standards: K–2-ETS1-1** **Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.** **K–2-ETS1-2** **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** Students can engage in designing and building models of government buildings or symbols (e.g., state capitol, state flag) using simple materials like cardboard, paper, or clay.	**Standards:** **DA:Cr2.1.1** **a. Improvise a series of movements that have a beginning, middle, and end, and describe movement choices.** **b. Choose movements that express an idea or emotion, or follow a musical phrase.** **DA:Pr5.1.1** **a. Demonstrate a range of locomotor and non-locomotor movements, body patterning, body shapes, and directionality.** **TH:Cr1.1.1** **c. Identify ways in which gestures and movement may be used to create or retell a story in guided drama experiences (e.g., process drama, story drama, creative drama).** **TH:Cr2-1** **b. With prompting and support, participate in group decision making in a guided drama experience (e.g., process drama, story drama, creative drama).** THEATER/DANCE	**Standards: 1.OAA.1: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.** **1.OA.B3: Apply properties of operations as strategies to add and subtract.** **1.OA.C5: Relate counting to addition and subtraction.** **1.NBT.C4: Add within 100, including adding a two digit number and a one digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.** **Understand that in adding two-digit numbers, one adds tens and tens, ones, and ones; and sometimes it is necessary to compose a ten. 1.NBT.B.2: Understand**

				Students can create a dance of the three branches of government: executive, legislative and judicial with students wearing red shirts, white shirts and blue shirts each being members of one branch. Dance could show the responsibilities of each branch in that legislative make the laws and give them to executive.(bring a dance move over to them) Executive says yes or no to laws. (copy dance move or make an opposite one) Judicial argues whether or not law is fair and analyzes it. (add detail to dance move or change it, as in from forward to backward or slow to fast). Alternate Activity: VISUAL ART The teacher can incorporate arts activities such as drawing, painting, or sculpting to visually represent key concepts related to Louisiana government, such as voting, leadership, and democracy.	**that the two digits of a two digit number represent amounts of tens and ones. Understand the following as special cases: 1.NBT.B.2A: 10 be thought of as a bundle of ten ones—called a ten 1.NBT.B.2B: The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones 1.NBT.B.2C: The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones)** **Budgeting Exercise:** Introduce the concept of budgeting by discussing how the Louisiana government allocates funds for different services such as education, transportation, and public safety. Give students a hypothetical budget and ask them to divide it among various needs using play money or tokens. For example, they could allocate a certain amount for schools, roads, parks, and emergency services. **Standards: 1.NBT.A1: Count to 120, starting at any number less than 120. 1.OA.C5: Relate counting to addition and subtraction. 1.OA.B3: Apply properties of operations as strategies to add and subtract. 1.MD.C4: Organize, represent, and interpret**

					data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. **Counting Representatives**: Teach students about the different branches of government and the roles of elected officials. Provide pictures or figurines representing the Governor, Senators, Representatives, and other government officials from Louisiana. Have students count and sort these representatives into their respective branches. Discuss the importance of each branch and how they work together.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	ELA- (Reading, Spelling. Language)	**Grade Level**	Second
Curriculum/Programs/ Partners	EL Learning/ Project Based Learning/		

Units Title	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultu ral Exposure**	**End of Unit PBL Assessment**
1 Schools and Community	What is school and why are schools important?	RI.2.2 Identify the main topic of a multi-paragraph text as well as the focus of specific paragraphs within the text. RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.	Environmental- Explain how weather, climate, and other environmental characteristics affect people's lives in a place or region. Humanities/Multicultural Exposure- Describe how communities work to accomplish common tasks, establish responsibilities, and fulfill roles of authority.	Students will create "The Most Important Thing about Schools" Book
2 Learning through Science and Story: Fossils Tell of Earth's Changes	Students build their literacy and science skills as they engage in a study of fossils.	RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.	Environmental- Earth events can occur quickly or slowly. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. Humanities/Multicultural Exposure- How can finding evidence of the past teach us about the present.	Students will write a narrative about Discovering a Fossil.
3 Researching to Build Knowledge and Teach Others: The Secret World of Pollination	Students will study the secret world of plants and pollinators.	RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe	Environmental- Identify that plants need animals to move their seeds around. Identify a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. Humanities/Multicultural Exposure- Everyone and everything has a purpose in life, and we are interdependent on each other.	Students will create a poster and oral presentation to share information about a specific insect pollinator and plant

Curriculum Development Course at a Glance
Planning for Each Grade Level

4 Providing for Pollinators	"Why should people help pollinators to survive? How can I take action to help pollinators?		Environmental-Plants depend on animals for pollination or to move their seeds around. Humanities/Multicultural Exposure-Explain how all people, not just official leaders, play important roles in a community. Students will work to contribute to a better world by taking action to provide for pollinators in their community. They apply their learning by forming opinions about why people should protect pollinators, and then creating a wildflower seed packet that helps to protect butterflies.	Students will create a scientific illustration that conveys the message of helping pollinators to survive.

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Schools and the Community		**Length of Unit**	9
Focusing Lens(es)	What is school and why are schools important?	**Standards Addressed in this Unit**	RI.2.2 Identify the main topic of a multi-paragraph text as well as the focus of specific paragraphs within the text. RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.	
Inquiry Questions (Engaging-Debatable):	What is school, and why are schools important? Why is it hard for some children to go to school in their communities? How do communities solve these problems so their children can go to school? How are schools around the world different? How are they similar?			

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 4-ESS2-1 Plan and conduct investigations on the effects of water, ice, wind, and vegetation on the relative rate of weathering and erosion Students will read and respond to text and diagrams about the water cycle. Then, students will model how rain falls in mountains by following these directions: 1. crumple a sheet of paper. Then, open it back up but don't flatten it all the way. 2. Tell students that they just made mountains. The highest parts of the paper are mountain ridges. The low parts are	**Standards: 6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** **1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** Students will create a digital comic strip discussing how the	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** In schools and communities, we must provide each other support. Students will design a helping hand. https://www.mombrite.com/diy-model-robot-hand/	**Standard: M-AP-E3 Demonstrate awareness of where and how music is used in daily life and within the community** Writing a Song About the Importance of School The students will practice the writing skills and learn about the importance of school. They will create and perform a song that expresses why schools are important, incorporating elements of their own School experiences. Begin with a discussion about why schools are important. Write students' ideas on the whiteboard. Talk about	Students will look on Google Earth and determine how many miles the school is from their houses. They will create a map using a coordinate grid understanding that each square of the map is 10 miles. They will place the school, their house, and 2 other places that are on their way to school They will then write a math story that explains how many miles it takes they are traveling as they palace each place. (They will determine the total amount of miles traveled.)

	the valleys. They will then trace the ridges of the mountains with a marker. 3. Get a spray bottle of water and spray water over the mountains a few times. Record what happens.	environment makes it difficult for some students to go to school.		how songs can convey messages and emotions. play a few examples of songs that tell stories or convey important messages. Ask students to think about their own school experiences and why they believe school is important. Encourage them to share ideas about what they learn, their favorite activities, and the people who help them at school. Explain the basic structure of a song. Work as a class to create a simple chorus that expresses the main idea of why schools are important. Divide the class into small groups to write the verses. Each group can focus on a different aspect of school. Encourage each group to come up with rhyming lines and use descriptive language. Once the lyrics are written, decide on a simple familiar melody or create your own. Practice singing the chorus together with the melody. Have each group practice singing their verse. bring the class together to rehearse the full song. Perform the song. After the performance, discuss how it felt to write and perform a song.	

Curriculum Development Overview
Planning for Each Unit

Unit Title	Learning through Science and Story: Fossils Tell of Earth's Changes	**Length of Unit**	9
Focusing Lens(es)	Students build their literacy and science skills as they engage in a study of fossils.	**Standards Addressed in this Unit**	RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.
Inquiry Questions (Engaging-Debatable):	What do paleontologists do? How do characters respond to major events? What can we learn from studying fossils? How do readers learn more about a topic from informational texts? How do authors write compelling narratives?		

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard:3-LS1-4 Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. Students will look at fossils and gather evidence to make an inference about the past including, but not limited to, types of foods (plant or meat) certain prehistoric animals ate based upon tooth shape.	**Standards: 1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate,**	**Science standard: Standard:3-LS1-4 Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.** By studying fossils, engineers acquire new ideas for how to design ways to study global climate change and species extinction. Students will look at certain species and determine ways in which they could have survived over time. Students may also create animals' mutations that would have allowed for a longer survival time.	**Standard: VA-CA-E4 Express and explain opinions about visual works of others using basic art vocabulary** Students will create clay fossils. https://www.artwithmrsnguyen.com/2013/03/clay-fossils-k.html /Students will create 3-D fossils.	Students will be given various replications of fossils. They will practice making estimates by measuring objects by using their hands, crayons, paper clips, etc. as a nonstandard measuring unit. They will be given a description of different organism. They will determine which fossil belongs to each organism by comparing the measurements to the given description. They will then convert the nonstandard measurement to a standard measurement. (Inches)

		and collect information from a variety of sources. ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students will create an animation that explains the job of a paleontologist. (Use Wixie)			Based on the given information, they will determine the actual size of the organism. (Head is 3 times more than the hand. The tai is 4 times more than the arm.) ***2nd grade is expected to use repeated addition.***

Unit Title	Researching to Build Knowledge and Teach Others: The Secret World of Pollination	**Length of Unit**	9
Focusing Lens(es)	Students will study the secret world of plants and pollinators.	**Standards Addressed in this Unit**	RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe
Inquiry Questions (Engaging-Debatable):	How do plants grow and survive? How do pollinators help plants grow and survive? How do we get the fruits, flowers, and vegetables that we enjoy? How do we become researchers and share our learning?		

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.**	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an**	**Standard: VA-CE-E5 Draw on imagination, individual experience, and group activities to generate ideas for visual expression** Students will create a pollen painting./ http://www.nkymakers	Students will be divided into teams. Some teams will have more members than the others. (Bird, bees, wind, butterflies, flies, etc.) Use a rope or string to block off an area on the playground. (Make a

	Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem. Students will create a model of a bee and utilize it to determine how they pollinate the environment. https://www.thefirstgraderoundup.com/2018/10/stem-challenge-pollinators.html https://blog.kaplanco.com/ii/pollination-steam-craft	♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Students will explore the community of bees and how they contribute to the pollination cycle. They will then use Scratch to code an animation of a pollinator displaying how they help plants grow and survive. https://extension.entm.purdue.edu/POL_Virt_Learn/visit-to-the-royal-palace-honey-bee-hive/	**object helps its function as needed to solve a given problem.** Students will create a device that can pollinate areas of the environment that may be lacking pollinators. https://www.teachengineering.org/activities/view/uof-2627-pollinate-flower-materials-design	pace.com/2nd-grade---pollen-painting.html Standard: TH-CE-E2 Interact in group situations and show differentiation of roles through experimentation and role playing They will develop a script in which they will act out the cycle of pollination. / They can create a pollination dance.	square- Determine area of the square.) Give each team different colors of construction paper circles. Set the time for 30 seconds and students must take turns placing their color curls down in a specific area. Students on teams must go one at a time. (Like a relay). Have students use their square unit chart to color the amount of circles in that area. -On the second round, students must move a circle of a different color to a ne They will then color the new placement on the maps. In the 3rd round they will not only put colors of their own pollen, but they can move other teams' pollen. They will then color the new placement on the map. They will determine which are of the flower garden will have the most area of one type of flower. They will determine why and this may occur. They will create a pattern chart that will predict what the garden will look like after 5 more rounds. - They will determine what flower

					will most likely cover the garden.

Unit Title	Providing for Pollinators		**Length of Unit**	9
Focusing Lens(es)	Why should people help pollinators to survive? How can I take action to help pollinators?"	**Standards Addressed in this Unit**	RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.	
Inquiry Questions (Engaging-Debatable):	Why should people help pollinators to survive? How can I take action to help pollinators?			

STEAM Connections	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats. Students take action to help butterflies by creating a wildflower seed packet filled with wildflower seeds. The seeds can be planted, which will help to	**Students: 3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich,**	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.**	**Standard: TH-CE-E3 Exhibit physical and emotional dimensions of characterization through experimentation and role playing** Students will create and record a PBA about the importance of saving the pollinators. They will write the script, direct the performance, and record the project.	Students will research to determine major ways in which people can help pollinators to survive. (school yard habitat, give bees a nesting place, hummingbird garden, etc.) They will create an action plan and create a monthly budget to determine the cost of this project. They will then devise a fund raiser and predict how much they must raise in order to support their action plan. As a grade level,

	provide butterflies with nectar and a habitat. Students will observe the butterflies in the butterfly garden area and record any observations made.	**authentic, student-centered products.** **1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** Students will create an interactive presentation that explains the of taking care of the pollinators. (Students will use easel-ly)	Students will create a school habitat that will help pollinators to survive. They will work with their grade level to design a plan and then build the habitat. Certain students will be assigned different roles including, but not limited to, building, watering, monitoring, and designing. Students can rotate roles as the teachers/staff deems appropriate.		students will choose on idea and carry out the plan.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Math	**Grade Level**	2nd
Curriculum/Program	i-Ready Classroom Mathematics		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Unit 1: Numbers Within 20: Addition, Subtraction, and Data	In this unit, students extend their understanding of adding and subtracting within 20 by building on familiar strategies. Students refine their understanding of the commutative and associative properties of addition by using related addition facts to solve subtraction problems, and practice solving one-step and two-step word problems involving addition and subtraction. Students also use their knowledge of picture graphs to help with drawing and using bar graphs.	**2.OA.B.2**-Fluently add and subtract within 20 using mental strategies.2 By the end of Grade 2, know from memory all sums of two one-digit numbers. **2.OA.A.1**-. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **2.MD.D.10**-Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems4 using information presented in a bar graph.	Using data about the type of fish in a pond, students will create a bar graph.	The Camping Trip This project focuses on the addition and subtraction within 100.
Unit 2: Numbers Within 100: Addition, Subtraction, Time, and Money	In this unit, students extend their understanding of adding and subtracting within 20 by building on familiar strategies to add and subtract within 100. They interpret and solve one- and two-step word problems involving two-digit numbers. Students also learn to identify, name, and count coins and bills while solving word problems involving money,	**2.NBT.B.5**-Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **2.NBT.B.9**-Explain why addition and subtraction strategies work, using place value and the properties of operations. **2.OA.A.1**-Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **2.MD.C.8**-Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢	Cultural Currency Exploration: *Introduce currency from different countries, focusing on coins and bills. *Discuss how different cultures represent and value currency, linking it to the students' understanding of money.	Build a Zoo is a project based learning task that involves using 2nd grade math standards to solve problems related to building and maintaining a zoo.

	and apply what they know about telling time to tell time to the nearest five minutes.	symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have? **2.MD.C.7**-Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.		
Unit 3: Numbers Within 1,000: Place Value, Addition, and Subtraction	In this unit, students are introduced to three-digit numbers. They build on what they know about tens and ones in two-digit numbers to develop the understanding that one hundred can be seen as 100 ones or 10 groups of ten. Students compare three-digit numbers. They use their understanding of place value to mentally add and subtract multiples of 10 and 100 within 1,000, identifying patterns to develop mental math strategies. Students also add and subtract three-digit numbers. They build on what they know about adding and subtracting two-digit numbers to find sums and differences within 1,000, developing strategies based on their understanding of place value.	**2.NBT.A.1a**-100 can be thought of as a bundle of ten tens—called a "hundred." **2.NBT.A.1b**-The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). **2.NBT.A.3**-Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. **2.NBT.A.4**-Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons. **2.NBT.A.2**-Count within 1000; skip-count by 5s, 10s, and 100s. **2.NBT.B.8**-Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100– 900. **2.NBT.B.7**-Add and subtract within 1000 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; justify the reasoning used with a written explanation. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. **2.NBT.B.9**-Explain why addition and subtraction strategies work, using place value and the properties of operations. **2.NBT.B.6**	Cultural Math Puzzles: *Introduce math puzzles and games from various cultures that involve three-digit numbers. *Discuss how mathematical problem-solving can be entertaining and draw upon different cultural understandings .	Cupcake's Galore is a project based learning unit based all around preparing cupcakes for a bake sale to raise money for new playground equipment.
Unit 4: Length: Measurement, Addition and Subtraction, and Line Plots	In this unit, students build on what they know about measuring length to measure using standard units. They compare units of measurement such as inches, feet, yards,	**2.MD.A.1**-Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. **2.MD.A.2**-Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	Recycling Project: Integrate the concept of length measurement with a recycling project. Students can measure and compare lengths of recycled materials such as paper, cardboard,	Measure Twice, Cut Once is a project based learning task that involves using Measurement and Geometry to solve problems related to quilt making.

	centimeters, and meters to develop an understanding	**2.MD.A.3**-Estimate lengths using units of inches, feet, centimeters, and meters.	and plastic items. Discuss the	
	of the relative size of those units. Students also explore benchmark objects that can be used to estimate the lengths of objects using standard units. They extend their knowledge of measurement as iterating units as they represent whole numbers as lengths on number lines and represent addition and subtraction problems on number lines. They also measure lengths and make line plots to display measurement data.	**2.MD.A.4**-Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. **2.MD.B.5**-Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. **2.MD.B.6**-Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, …, and represent whole-number sums and differences within 100 on a number line diagram. **2.MD.D.9**-Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	environmental impact of recycling. Community Project: Involve the community by measuring and documenting lengths of different objects within the community. This could be a collaborative project that fosters a sense of unity among multiple cultural groups within the community.	

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit 5: Shapes and Arrays: Partitioning and Tiling Shapes, Arrays, Evens and Odds	In this unit, students build on a basic understanding of two-dimensional shapes. They refine their ability to distinguish between defining and non-defining attributes, using the number of sides and angles to identify, name, and classify polygons. Students explore partitioning two-dimensional shapes into halves, thirds, and fourths, using what they know about equal parts to tile a rectangle with no gaps or overlap. They build on their knowledge of rectangles to explore the concept of arrays as rectangular shapes. Students create a rectangular array using same-size	**2.G.A.1**-Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.5 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. **2.G.A.3**-Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape. **2.G.A.2**-Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. **2.OA.C.4**-Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. **2.0A.C.3**-Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	Geometry in Nature Presentation: Invite a local naturalist or environmentalist to discuss the role of geometry in nature. Explore how animals and plants exhibit specific shapes and patterns in their structures. Cultural Symbols and Shapes: Explore geometric patterns and shapes in various cultural symbols, artworks, and traditional crafts. Discuss how different cultures use shapes in their artistic expressions.	Shape Animal Craft/Owl Craft/ Shape Activities Students will create an owl using shapes they recognize and draw shapes.

	squares and connect what they know about addition to find the total number squares. Students also draw on what they know about equal groups to develop an understanding of the structure of even and odd numbers.			

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

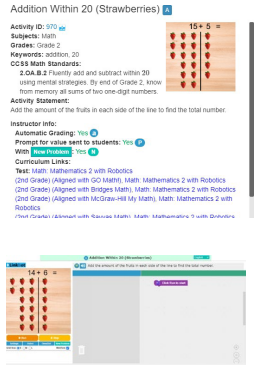
Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

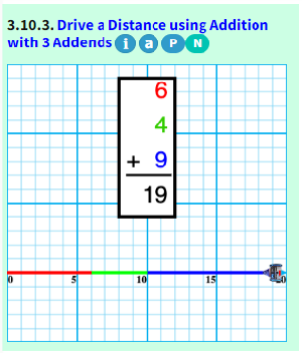
Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

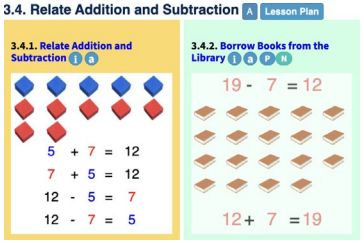
Unit Title	Unit 1: Numbers Within 20: Addition, Subtraction, and Data	**Length of Unit**	Unit 1: 34 days
Focus	Numbers Within 20	**Standards Addressed in this Unit**	**2.OA.B.2** **2.OA.A.1** **2.MD.D.10**
Inquiry Questions (Engaging-Debatable):	How can you add and subtract numbers within 20? How can you represent data with bar graph and picture graphs?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. Students will discover the greenhouse effect. Materials: 2 thermometers, glass jar with a lid, a blank table, pencil, watch, blank graph and markers. Directions: 1. find a sunny spot on a warm sunny day 2. place both thermometers and the glass jar in the sun and let them warm for 3 minutes 3. while they are waiting, label columns	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lesson 3.10. 3.10 Students will review addition and subtraction strategies and the relationship between the two operations. Students will also review adding a number multiple times.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** Classroom Snack Bar Graph: *Survey students about their favorite classroom snack (apples, grapes, crackers, etc.). *Create a bar graph with each snack represented by a colored bar. *Allow students to create a collaborative display by decorating the bars with drawings or collages of the snacks.	Activity 3 from UC Davis/Roboblocky. integrated activities: 

	on blank table Time, Control, Greenhouse. 4. Note the time and record it on the table along with the thermometers' temperatures 5. place one of the thermometers inside the jar and close the lid (this is the greenhouse thermometer). The one outside is the control. Keep both in direct sunlight. 6. record the temperature of both thermometers every minute for 10 minutes. 7. Graph results of how the temperature of both thermometers changed over time.	**3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.**			

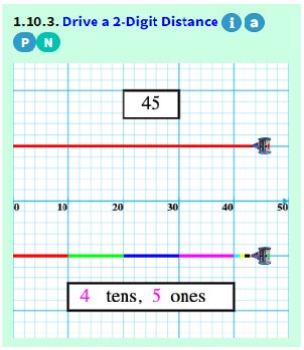
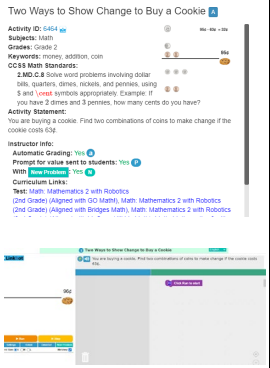
		♦ **Students are proficient in the use of technology.**			

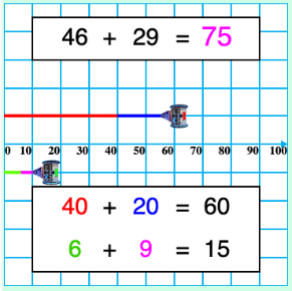
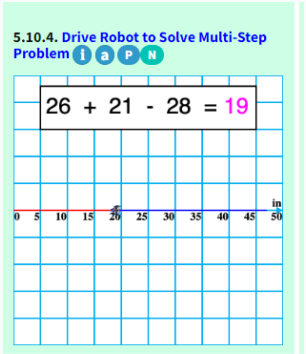
Curriculum Development Overview
Planning for Each Unit

		Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 3.4. Relate Addition and Subtraction A Lesson Plan 			

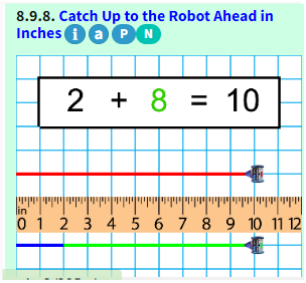
Unit Title	Unit 2: Numbers Within 100: Addition, Subtraction, Time, and Money		**Length of Unit**	Unit 2: 33 days
Focus	Numbers Within 100	**Standards Addressed in this Unit**	**2.NBT.B.5.** **2.NBT.B.9** **2.OA.A.1** **2.MD.C.8** **2.MD.C.7**	
Inquiry Questions (Engaging-Debatable):	How can you add and subtract numbers within 100? How can you tell and write time? How can you solve word problems involving money?			

Curriculum Development Overview
Planning for Each Unit

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standards: 2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot Students will predict, then determine if the weight of a bag of microwave popcorn will change after being popped. Students will measure the weight of a microwave popcorn bag using a digital scale and then measure the weight after being popped. Students will discuss if the weight changed and why they think the results were what they were.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, 1.10, 4.11, 5.10, and 8.9. 1.10 Students will review identifying even and odd numbers. Students will also review the different ways to write a 2-digit number in its expanded form with tens and ones. Students will also review counting patterns by 1, 2, 5, 10, and 100. 	**Standard: TH-CE-M4 Create improvisations and scripted scenes based on personal experience, imagination, literature, and history** Math Story Theater and Illustrations: *Provide students with math story problems involving two-digit addition and subtraction. * Have different students act out the math story using improvisation skills learned in theater class. *Use props as needed according to the story. *Have students illustrate the story problems using art supplies like markers, crayons, or colored pencils. *Encourage them to include the numbers in their illustrations and share their artwork with the class.	Activity 1,4,5,7,8 from UC Davis/Roboblocky. integrated activities:. 

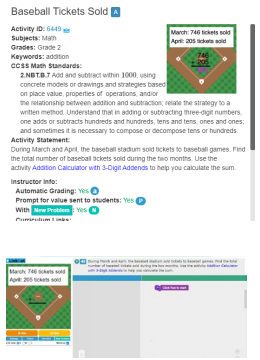
		4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill) ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky	4.11 Students will review adding 2-digit numbers. **Activity Statement** Add the tens and ones. Change the code to drive the robot in the total number of tens and ones to find the total distance driven. **4.11.3. Drive Robots to Break Addends into Tens and Ones** i a P N  5.10 Students will review subtracting 2-digit numbers. **Activity Statement** Change the code to move the robot along the green line to the foam cube. Find the total distance traveled. **5.10.4. Drive Robot to Solve Multi-Step Problem** i a P N  		

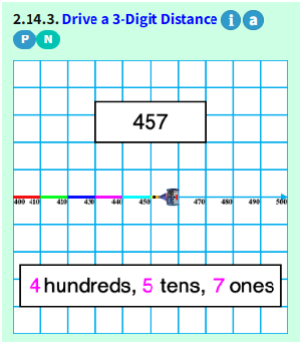
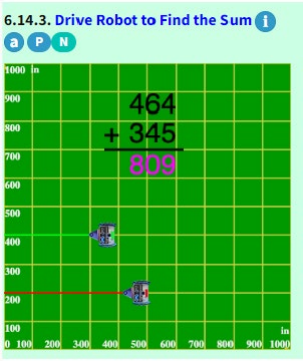
		platform, design and engineering			

		activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 	8.9 Students review measuring the length of an object in customary units and creating line plots from these measurements. **Activity Statement** Measure the length of the Linkbot wheel in inches. 		

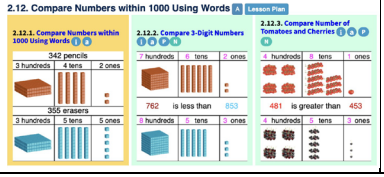
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 3: Numbers Within 1,000: Place Value, Addition, and Subtraction	**Length of Unit**	Unit 3: 41 days
Focus	Numbers Within 1,000	**Standards Addressed in this Unit**	**2.NBT.A.1a** **2.NBT.A.1b** **2.NBT.A.3** **2.NBT.A.4** **2.NBT.A.2** **2.NBT.B.7** **2.NBT.B.9** **2.NBT.B.6**
Inquiry Questions (Engaging-Debatable):	How can you add and subtract numbers within 1,000? How can you read, write, and compare three-digit numbers?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. Students will investigate how many drops of water can fit onto a penny on a flat surface. Students will predict how many drops of water can be on the flat side of a penny. Students will drop and count drops of water. Students will	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lessons 2.14 and 6.14. 2.14 Students will review expressing a 3-digit number in hundreds, tens, and ones.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** Number Art Gallery Students will practice working with numbers within 1,000. Students will integrate math skills with Visual Arts by creating artwork that represents different numbers. Begin with a review of place value and reading numbers up to 1,000. Discuss how numbers can be	Activity 2 and 6 from UC Davis/Roboblocky. integrated activities:. 

	create a line plot of students' results.	♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses**	Students will also express a 3-digit number as a sum and in words. In addition, students will review counting forward and backwards 10 and 100 from a 3-digit number. Students will review comparing 2 three-digit numbers.  6.14 Students will review adding and subtracting with 3-digit numbers. 	represented in different ways. Give each student a number card with a number between 1 and 1,000. Explain that their task is to create an artwork that represents their assigned number in different ways. Provide each student with a large sheet of construction paper or poster board. Instruct them to divide their paper into four sections using a ruler: standard form, expanded form, word form, and art representation. Have the students start with the first three sections. For the art representation section, encourage students to be creative. They could draw objects, use stickers, or stamps to represent the number. Decorate and finalize. Display the artwork. Discuss and reflect.	

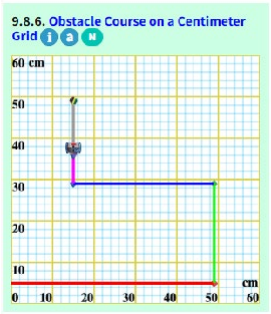
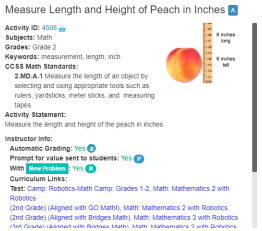
		that support lifelong learning,			

		collaboration, personal pursuits, and productivity. **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

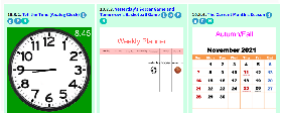
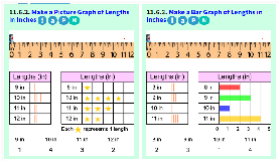
Unit Title	Unit 4: Length: Measurement, Addition and Subtraction, and Line Plots		**Length of Unit**	Unit 4: 40 days
Focus	Length	**Standards Addressed in this Unit**	**2.MD.A.1** **2.MD.A.2** **2.MD.A.3** **2.MD.A.4** **2.MD.B.5.** **2.MD.B.6** **2.MD.D.9**	

Curriculum Development Overview
Planning for Each Unit

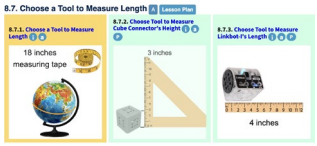
Inquiry Questions (Engaging-Debatable):	How can you measure in different units? How can you add and subtract lengths? How can you read and make line plots?

STEAM Integration	Science	Technology	Engineering	Art	Math
	Engineering standard: K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem. Students will see how long they can make a paper chain using only one sheet of paper. Students will use scissors to cut a piece of paper into strips and create a paper chain. Students will put their paper chain onto the floor. Then, measure how long the paper chains are using rulers	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lessons 9.8, 10.8 and 11.6. 9.8 Students review measuring the length of an object in customary units and creating line plots from these measurements. 	**Standard: D-CE-E1 Use kinesthetic awareness, proper use of space, and the ability to move safely** Math Dance Party Students will practice measurement, addition, and subtraction skills. Students will integrate math concepts with dance and movement. Begin with a short lesson reviewing measurement. discuss how these concepts can be applied in a fun and active way through dance. Use masking tape to create different dance stations around the room. At each station, place a number card with an addition or subtraction problem that includes measurements. Give each student a tape measure and ruler. Play some music and have students practice measuring objects around the room. Encourage students to write down their measurements on a piece of paper.	Activity 9,10, and 11 from UC Davis/Roboblocky. integrated activities:.  

		skills.			

		3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill) ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal**	10.8 Students will review telling time to the 5 minutes and telling time in different time zones. Students will also review the calendar and the seasons.  11.6 Students will review collecting data to make tally charts, picture graphs, and bar graphs. 	Divide students into small groups and assign each group to a starting station. When the music starts, students will dance their way to the first station. Once they reach the station, they must solve the addition or subtraction problem using the measurements given. One student will measure the links indicated on the card, and the group will work together to add or subtract the measurements. After solving the problem, students should record their answer on a sheet of paper. Repeat the process until all groups have visited each station and solved all the problems. Review and discuss the answers.	

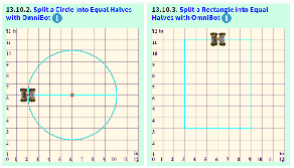
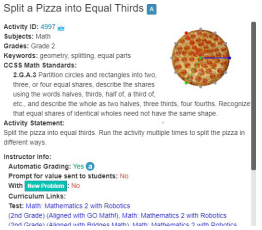
		pursuits, and productivity.			

		6. Basic Operations and Concepts ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

Unit Title	Unit 5: Shapes and Arrays: Partitioning and Tiling Shapes, Arrays, Evens and Odds		**Length of Unit**	Unit 5: 23 days
Focus	Shapes and Arrays	**Standards Addressed in this Unit**	**2.G.A.1** **2.G.A.3** **2.G.A.2** **2.OA.C.4** **2.0A.C.3**	

Curriculum Development Overview
Planning for Each Unit

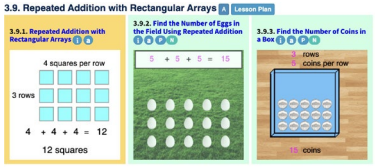
Inquiry Questions (Engaging-Debatable):	How can you partition shapes? How can you add using arrays? What are even and odd numbers?

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. Students will test the durability of paper in different shapes by creating shapes using folding techniques and testing how many books the paper can hold before tearing.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote**	**Computer science standard: 1A-AP-08 Model daily processes by creating and following algorithms to complete tasks. 1A-AP-10 Develop programs with sequences and simple loops to express ideas or address a problem.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lesson 13.10. 13.10 This lesson explains how to use the OmniBot with pen connectors to split shapes into equal halves. 	**Standard: VA-AP-M6 Describe the use and value of the visual arts in daily life, the workplace, and the community** Introduce the concept of arrays by showing students how arrays are used to organize objects in rows and columns. Then, have students create array artwork using small objects like buttons, beads, or stickers arranged in rows and columns on a grid. Reflect and discuss how an array can be used in different ways such as in the workplace, or community.	Activity 13 from UC Davis/Roboblocky. integrated activities:.  

		creativity.			

		♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with			

		the current lesson and topic being			

		covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Science	**Grade Level**	Second Grade
Curriculum /Program	PhD Science		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Module 1: Matter (42 days)	Essential Question: Why do different kinds of birds use certain materials to build their nests? **Conceptual Overview** The properties of matter and the ways matter can change make materials suited to specific purposes. 1. Matter can be described and classified by its properties. 2. Matter can change in different ways. 3. The properties of matter make materials suited to different purposes.	**NGSS Performance Expectations** **2-PS1 Matter and Its Interactions** 2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. 2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. 2-PS1-3 Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. 2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. **K–2-ETS1 Engineering Design** K–2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	Students will create a bird nest using a variety of recycled material.	States of Matter PBL Students will investigate the properties of matter and changes that occur in objects. They will identify the three common states of matter as solid, liquid, or gas. through an investigation of changes in objects by tearing, dissolving, melting, squeezing, etc.

Module 2: Earth Changes (37 days)	Essential Question: How can the island of Surtsey change shape over time? **Conceptual Overview** Natural events transform Earth's land as time passes. 1. Land has many shapes and is made up of rocks, soil, and sand. 2. Wind and water can shape land by moving materials from one place to another. 3. Earth events change land over short and long time spans.	**NGSS Performance Expectations** **2-ESS1 Earth's Place in the Universe** 2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly. **2-ESS2 Earth's Systems** 2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. **K–2-ETS1 Engineering Design** K–2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	What is the impact of touring the National Parks land over time?	Website: pg. 6 https://www.uvu.edu/education/docs/seed/seedpod-2ndgrade.pdf Students will complete an investigation to learn how different landforms are created with the use of water a. Get the sand damp so that it can be packed together and place it into the bins. It needs to be moldable. b. Forming a canyon: watch this video for instructions i. https://www.youtube.com/watch?v=cgJHT_RTcdA&feature=youtu.be c. Forming an arch: i. pack down sand very well, shape into a circle more than 1" tall. ii. Slightly dig out two sides, the ones across from each other. iii. Poke a small hole in the bottom of the dug out part on each side. iv. Slowly pour water in until the arch is formed. d. Forming Sea Stacks and other formations (like horseshoe bend): i. Pack down sand very well in a large pile that's at least 5" tall ii. Create a small indented circle around a part of the sand (So that the water will stay in the same place). iii. As the water is poured in a circle in the same place, it should eventually become like a river with a sand formation

				standing in the center (much like the horseshoe bend) 3. Have a gallery walk so everybody gets a chance to see the different creations their classmates have made. 4. After the gallery walk, have each group take turns to explain how water formed the landform they created. 5. Hold a class discussion so students can discuss their findings (see "Reason" section above for discussion questions).
Module 3: Plants (34 days)	Essential Question: How did local plants recover after the eruption of Mount St. Helens? **Conceptual Overview** Different kinds of plants have different needs for growth and depend on certain interactions for pollination and seed travel. 1. Different kinds of plants need different amounts of water and light to grow. 2. Some plants depend on animals for pollination. 3. Seeds can travel in many ways, some of which involve animals.	**NGSS Performance Expectations** **2-LS2 Ecosystems: Interactions, Energy, and Dynamics** 2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow. 2-LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. **K–2-ETS1 Engineering Design** K–2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	How do plants prevent landslides?	Planting Seeds in a Ziploc Bag Students will use popcorn kernels to grow in a ziploc bag that is placed in the window where sunlight is present for bag #3. Students will have 3 different bags: water and no light, no water and light, and water and light. Students will make daily observations of each bag and record their data in a notebook to make inferences.
Module 4: Biomes (34 days)	Essential Question: Why do so many kinds of plants and animals live below Mount Everest but so few live on it?	**NGSS Performance Expectations** **2-LS4 Biological Evolution: Unity and Variety**	What is the impact of a biome when you have an invasive species enter the area?	Students will research different biomes and create a Biome Box to represent their research.

	Conceptual Overview Earth's land and water environments support many different species. 1. An environment can be described by its living and nonliving components. 2. A biome supports many kinds of plants and animals. These species generally differ from the species of other biomes. 3. Earth's environments support different species. Some environments support more species than others.	2-LS4-1 Make observations of plants and animals to compare the variety of life in different habitats. **2-ESS2 Earth's Systems** 2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area. 2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be solid or liquid.		

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 1: Matter		**Length of Unit**	42 days
Focus	Matter	**Standards Addressed in this Unit**	2-PS1-1, 2-PS1-2, 2-PS1-3, 2-PS1-4, and K–2-ETS1-1	
Inquiry Questions (Engaging-Debatable):	Essential Question: Why do different kinds of birds use certain materials to build their nests?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Science standard: 2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. Kitchen Chemists Students embark on a culinary adventure where they learn about the properties of different kitchen materials and baking ingredients, investigate physical and chemical changes caused by heating and cooling, and demonstrate how these concepts relate to cooking and baking delicious, kid-friendly recipes. They use what they learn to create a scientific cookbook that teaches others about	**Standards:6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Camera built into the birdhouse so the students can observe how the bird builds their nest. Video of baya Weaver building a nest; Students will view video and add to their Notice and Wonder chart	**Science standard: 2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.** Melting and Freezing Place chocolate covered pretzels and chips on a hot plate. Students will observe notice changes. Students will make ice cream in a bag and notice any changes. Based on their observation, students will come up with other snacks they want to test for melting and freezing that the teacher will demonstrate.	**Standard: D-CE-E5 Execute improvised and set movement patterns with concentration and focus individually and in groups** Dancing Through the States of Matter Discuss the properties of each state of matter. Show posters or images representing each state of matter. Discuss examples of each state in everyday life. Explain that students will use their bodies to represent the particles in solids liquids and gasses. Use music to help set the tempo for each state of matter. Demonstrate different movements for each state of matter. First work as a class then allow students to improvise and come up	Given various materials, students will brainstorm to determine items that have the best properties to create a birdhouse. Students will weigh each chosen item They will provide the total weight of the birdhouse. Students construct the bird house and test it on a replicated tree limb. The teacher will place rocks to represent birds and consider which nest can withstand the most birds living it. The class will graph each group's nest data. Students will use the data to construct a claim about how certain materials are better suited for bird's nest.

	the art and science of their favorite foods.			with their own body movements for each state of matter.	

Unit Title	Module 2: Earth Changes		**Length of Unit**	37 days
Focus	Earth Changes	**Standards Addressed in this Unit**	2-ESS1-1, 2-ESS2-1, and K–2-ETS1-3	
Inquiry Questions (Engaging-Debatable):	Essential Question: How can the island of Surtsey change shape over time?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Science standard: 2-ESS1-1 **Use information from several sources to provide evidence that Earth events can occur quickly or slowly.** **5-PS1-4 Conduct an investigation to determine whether mixing two or more substances results in new substances.** Students will construct a volcano using common classroom materials (ensuring space available for a plastic bottle in the center). In the bottle, the teacher will put baking	**Standards: 6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** **1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences. 2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.**	**Science standard: 2-ESS1-1** **Use information from several sources to provide evidence that Earth events can occur quickly or slowly.** Slow and Fast Changes to the Earth Website: pg. 11 https://www.uvu.edu/education/docs/seed/seedpod-2ndgrade.pdf Ask the question and discuss what caused changes to the earth? Students can be split into groups and complete stations to learn about slow and fast changes to the earth. This is recommended to be done over 2 days, completing 2 stations per day: a. Earthquake station: i. Shake Table, fact and fault model,	**Standard: VA-AP-E3** **Explore the beauty in nature and discern images and sensory qualities found in nature and art** Earth Changes Diorama Start with a brief lesson on how natural processes like erosion, volcanic eruptions, earthquakes, and weathering change the Earth's surface. Give each student a small shoe box or small cardboard box as a base for their diorama. Explain that they will create a scene inside of the box that shows one or more ways the Earth can change. Have the students write labels or short descriptions of the	**Counting Erosion Rocks** Provide students with a set of small objects (e.g., beans) and ask them to count out a certain number (e.g., 20). Explain that each bean represents a rock affected by erosion. Then, have them imagine erosion taking place and remove some beans from the set. Ask them to count how many beans (rocks) are left. Discuss the concept of subtraction as they see how erosion changes the landscape. Weathering Word Problems **:** Present students with simple word problems related to weathering. For example:

	soda, food coloring and vinegar to create a chemical reaction (teacher will specifically say that baking soda and acids create a chemical reaction but that is not what causes real volcanoes to erupt). Students will observe the reacting liquid as it flows down the sides of the created volcano and connect that to the creation of islands from volcanic eruptions.	♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** Look at Google Earth at different landforms and have students explain how each landform was formed (e.g. Grand Canyon, the Arches, Other national parks, etc.). Using google slides.	K'Nex, Keva planks. ii. Students build a structure using the keva planks or K'nex iii. Place the structure on the shake table iv. Shake table and observe what happens v. Make changes to your structure and try again vi. Use the fact and fault model to see how the tectonic plates shift b. Hurricane/Tsunami (wind station): i. Hair dryers, K'nex, Keva planks. ii. Students build a structure using the keva planks or K'nex iii. Use the hair dryer on the structure to see if their structure withstands the wind. iv. Make changes to your structure and try again c. Volcano stations: Volcano kit i. Use ¼ cup of vinegar and pour into the volcano. ii. Pour 1 spoonful of baking soda into the volcano. iii. Observe the reactions. iv. This can be done as a demonstration for the students, or they can complete this in small groups with explicit instructions on what to do. d. Erosion stations: i. Erosion Kit, outside materials, dirt, rocks, sticks. ii. Students place trees, and plants in dirt iii. See procedures card for erosion kit instruction iv. Poor water down the erosion kit and observe what happens v. Make changes and try again 4. Conduct class discussion (See above for questions) 5. Formative assessment: Show students a series of pictures that represent different fast and slow changes. Have	natural processes depicted in their diorama. Glue these labels Inside the Box near relevant features. Let the students present their dioramas to the class and explain the natural processes they chose to represent. Discuss and reflect.	"If there were 25 rocks on a mountain and 19 of them broke into smaller pieces due to weathering, how many whole rocks are left?" Encourage them to draw pictures to represent the problem and use counting or subtraction to find the solution.

			students move their arms and legs fast or slow to demonstrate the specific type of change.		

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 3: Plants		**Length of Unit**	34 days
Focus	Plants	**Standards Addressed in this Unit**	2-LS2-1, 2-LS2-2, and K–2-ETS1-2	
Inquiry Questions (Engaging-Debatable):	Essential Question: How did local plants recover after the eruption of Mount St. Helens?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**

Curriculum Development Overview
Planning for Each Unit

	Standard: 2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow. Students will create mazes using post office mailing boxes. They will then place the created mazes over a seedling and observe over 2-3 weeks the seedling's growth. Students should come to the conclusion that plants grow towards sunlight thereby proving plants need sunlight to grow.	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Students will work with the interactive applet on Evolution of Plant adaptations.	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Engineer a solution to prevent landslides We used crumpled newspaper covered in potting soil to create a slope. We simulated a landslide of the slope with no vegetation by pouring water on the hill to represent a heavy rain storm. Next, students did the simulation again with vegetation (aquarium plants) strategically placed to help hold the soil in place. Students observe and record the amount of water they use before their slope begins to slide each time. They also measured and compared the distance their houses slid down the slope with and without surrounding vegetation.	**Standard: TH-CA-E4 Use basic theater arts vocabulary to express and explain opinions about scripts and performances** The Eruption of Mount St. Helens: A Theatrical Performance Begin a short lesson about Mount Saint Helens, including its location and significance. Show pictures or videos of the eruption and the changes it caused to the environment. Create a script that depicts the eruption. Assign each student a role. Roles can include the volcano, scientist, animals, trees, and residents. Explain each role and its significance in the story of the eruption. Rehearse the script. Have the students create simple props to represent the volcano, ash cloud, trees, and other elements. perform the play allowing each student to showcase their understanding of the eruption. Discuss and reflect.	**Measurement with Water Lily Pads** Show students a picture or illustration of a water lily pad and discuss its large size. Explain that water lily pads are adapted to float on water and provide shade for aquatic animals. Then, have students measure the length and width of a water lily pad using paper strips or rulers. Ask them to record their measurements and compare the size of the water lily pad to other objects in the classroom. Students will then determine how many lily pads can fit in various size ponds. They will then use a graph paper to model the number of lily pads given a certain area.

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 4: Biomes		**Length of Unit**	34 days
Focus	Biomes	**Standards Addressed in this Unit**	2-LS4-1, 2-ESS2-2, and 2-ESS2-3	
Inquiry Questions (Engaging-Debatable):	Essential Question: Why do so many kinds of plants and animals live below Mount Everest but so few live on it?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats. Students will decide if given animals can or can not survive in certain habitats with justification for their decisions. Students will be given pictures of different animals and pictures of different biomes. In groups, students will discuss whether certain animals will survive in each habitat and give reasons why or why not.	**Standards: 3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill) ♦ Students use technology tools to enhance learning, increase productivity, and promote creativity. ♦ Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Students will use Google to research a biome to create a biome box.	**Engineering standards: K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Biome Engineering Design Project to create a biome in a 2 liter water bottle. Alternate Website: https://www.howtosmile.org/resource/biodomes-engineering-design-project	**Standard: M-CE-E3 Improvise or compose and perform simple musical ideas, such as echoing melody or short rhythmic patterns** Musical Biomes of Mount Everest Students will learn about the different biomes found on Mount Everest and the plants and animals that inhibit these biomes. Students will create and perform in a musical piece that represents the various biomes and their unique characteristics. Begin with a short lesson on Mount Everest and its surrounding biomes. Explain that biomes are large areas of specific climates, plants, and	Students will create a chosen biome using non-standard units such as counting objects (e.g., seeds, rocks). Show them pictures or illustrations of biomes and ask them to estimate how many counting objects it would take to cover the area of each biome. Then, provide them materials and or objects to create a 3 -D model of a biome in which they will measure the length and width to identify the area. Students will determine the area of living and nonliving components within the biome. Students will write a description to explain their biomes. They must discuss what is in the

			In this design-based activity, learners explore environments, ecosystems, energy flow and organism interactions by creating a model biodome. Learners become engineers who create model ecosystems. Learners design and create their own biodomes and watch what happens to the living and nonliving things they place in them.	animals. show pictures or posters of each biome. Highlight some of the key plants and animals found in each biome. Divide the class into small groups and assign each group a biome. Each group will create a musical piece representing their assigned biome, including sounds and movements of the plants and animals found there. Provide each group with instruments and audio recordings of natural sounds. Encourage students to experiment with creating sounds that mimic the environment and the animals in their biome. Have the students create simple props or masks representing plants and animals in their biome. Have each group practice their musical piece incorporating natural sounds, instruments and movements. Encourage creativity and expression and how they represent their biome through music and performance.	biomes and the area those items cover .

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Social Studies	**Grade Level**	2nd grade
Curriculum/ Program	Louisiana Student Standards for Social Studies		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
North America: Geography and the Environment 9 Weeks	**Topic 1:** Students will use various types of sources to learn how to use and create maps, and identify and locate the four hemispheres, equator, prime meridian, and the United States. **Topic 2**: Students will describe the geographic and physical characteristics of North America, compare and contrast urban, suburban, and rural environments, and identify natural disasters and their effects on people and the environment.	2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 2.3 Select and use appropriate evidence from primary and secondary sources to support claims. 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning. 2.20 Create and use maps and models with a key, scale, and compass with intermediate directions. 2.21 Describe geographic features and physical characteristics of places in the United States and the world, including mountains, hills, plains, deserts, coasts, islands, peninsulas, lakes, oceans, and rivers. 2.22 Identify and locate the four hemispheres, equator, and prime meridian. 2.23 Describe the relative location of the United States.	Humanities/Multicultural Exposure Connection: Explore multiple different communities around the world through maps and images. Discuss how different communities adapt to their environments. Activities: Create simple maps of the classroom or schoolyard. Introduce basic geographical features like the equator, prime meridian, and hemispheres through interactive activities and games. Show pictures and videos of multiple different communities worldwide and discuss their unique features.	Students will work in small groups to create a presentation or poster that showcases their understanding of mapping skills, geographical features, and different types of environments. They will incorporate information learned about maps, hemispheres, the equator, the prime meridian, the United States, and North America. Additionally, they will compare and contrast urban, suburban, and rural environments and explore the impact of natural disasters.

The Earliest Americans 7 Weeks	**Topic 1:** Students will learn about the first peoples of North America and how they lived and the legends, stories, and songs that contributed to the mk of the United States. Additionally, students will learn about the movement of people and goods throughout and into the United States. . **Topic 2:** Students will learn about colonial North America. Additionally, students will learn about the national holidays, monuments, and symbols and their importance in the United States.	2.1 Create and use a chronological sequence of events using appropriate vocabulary. 2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews of b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 2.3 Select and use appropriate evidence from primary and secondary sources to support claims. 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning. 2.5 Compare life in the United States in the past to life today. 2.6 Describe the significance of the American Revolution and the founding of the United States. 2.7 Identify and describe national historical figures, celebrations, symbols, and places. a. Identify and describe the Founding Fathers, including George Washington, Thomas Jefferson, Benjamin Franklin, Patrick Henry, John Adams, John Hancock, and James Madison. b. Identify and describe historical female figures, including Abigail Adams, Anne Hutchinson, Dolley Madison, Betsy Ross, and Phillis Wheatley. c. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day. d. Describe the history of American	Delve into the many cultures, traditions, and languages of the first peoples of North America. Examine the oral traditions, legends, and stories of indigenous communities, highlighting their connection to the natural world. Foster an understanding of multiple different cultures by exploring the varied traditions and practices of colonial settlers and indigenous peoples. Discuss the significance of national holidays, monuments, and symbols in representing the history and values of the many cultures within the United States.	Topic 1-Write a short paragraph describing the lifestyle of one of the first peoples of North America. Include details about their housing, food, clothing, and any tools or inventions they used. Topic 2-Write about one colonial settlement in North America. Include details about why people settled there, what life was like in the settlement, and any important events that happened there. Prepare a short presentation to share one aspect of your learning with the class. This could be a summary of your research, a retelling of your creative project, or a reflection on your experience studying these topics.

		symbols, including the Liberty Bell, United States flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto “In God We Trust.” e. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of Liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. 2.8 Interpret legends, stories, and songs that contributed to the development of the cultural history of the United States, including Native American legends, African American history, tall tales, and stories of folk heroes. 2.10 Identify and describe principles of American democracy and relate them to the founding of the nation. a. Identify reasons for the settlement of the thirteen colonies and the founding of the United States, including the search for freedom and a new life. 2.12 Define governmental systems, including democracy and monarchy. 2.20 Create and use maps and models with a key, scale, and compass with intermediate directions. 2.21 Describe geographic features and physical characteristics of places in the United States and the world, including mountains, hills, plains, deserts, coasts, islands, peninsulas, lakes, oceans, and rivers. 2.26 Explain how and why people, goods, and ideas move from place to place.		

		2.27 Describe how and why people from various cultures immigrate to the United States.		
Making the United States of America 6 Weeks	**Topic 1:** Students will learn why the United States needed a constitution and how the founding fathers created the new government that we use today. **Topic 2:** Students will learn about the structure and functions of the United States government.	2.1 Create and use a chronological sequence of events using appropriate vocabulary. 2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 2.3 Select and use appropriate evidence from primary and secondary sources to support claims. 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning. 2.5 Compare life in the United States in the past to life today. 2.6 Describe the significance of the American Revolution and the founding of the United States. 2.7 Identify and describe national historical figures, celebrations, symbols, and places. a. Identify and describe the Founding Fathers, including George Washington, Thomas Jefferson, Benjamin Franklin, Patrick Henry, John Adams, John Hancock, and James Madison. b. Identify and describe historical female figures, including Abigail Adams, Anne Hutchinson, Dolley Madison, Betsy Ross, and Phillis Wheatley. c. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day,	Students will explore the ideals of equality and justice enshrined in the Constitution, discussing how these values apply to people of different backgrounds, including different races, ethnicities, genders, and abilities. The teacher can introduce historical figures of different cultural backgrounds who contributed to the development of the Constitution, such as Alexander Hamilton, James Madison, and Benjamin Banneker, an African American who corresponded with Thomas Jefferson on matters of racial equality.	Project Tasks: Research Phase (In-Class Activity): Students will be provided with age-appropriate resources including books, videos, and simplified texts to understand the historical context of the United States Constitution and the role of the founding fathers. Students will explore the structure and functions of the United States government, focusing on branches (Legislative, Executive, Judicial) and their respective roles. Group Work (In-Class Activity): Students will be divided into small groups. Each group will discuss and plan their visual representation of the United States Constitution and Government. They may choose to create posters, dioramas, or other creative visual aids.

		Thanksgiving Day, and Christmas Day. d. Describe the history of American symbols, including the Liberty Bell, United States flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." 2.9 Describe the structure and responsibilities of each of the three branches of the U.S. government (legislative, executive, judicial). 2.10 Identify and describe principles of American democracy and relate them to the founding of the nation. b. Identify and describe basic principles of the Declaration of Independence and the Constitution of the United States, including equality under the law and fair treatment for all. 2.11 Explain the purpose of rules and laws in the United States. 2.12 Define governmental systems, including democracy and monarchy. 2.13 Describe civic virtues including voting, running for office, serving on committees, and volunteering. 2.15 Compare local, state, and national elected officials and explain their roles and responsibilities, including the president, governor, mayor, and representatives.		Creation Phase (In-Class Activity): Groups will work together to create their visual representation using art supplies provided by the teacher. Students should ensure that their representation includes key elements such as the preamble, branches of government, and basic functions of each branch. Presentation Phase (Classroom Presentation): Each group will present their visual representation to the class. Students will explain why the United States needed a constitution, how the founding fathers created the new government, and the structure and functions of the United States government as depicted in their project.
Choices and Costs 5 Weeks	**Topic 1:** Students will learn about the economic concepts of wants, needs, producers, consumers, and scarcity within the United States.	2.1 Create and use a chronological sequence of events using appropriate vocabulary. 2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews	The teacher can use stories and examples from multiple different cultures to illustrate the importance of respecting differences and welcoming people of all backgrounds. Highlight how	Task 1: Different Perspectives Collage Objective: Students will create a collage highlighting different aspects of appreciating different

			different perspectives	cultures

	Topic 2: Students will learn to value differences among people and exemplify a respect for the rights and opinions of others. Students will also develop an appreciation of shared values, principles, and beliefs that promote stability for our country's government and its citizens.	b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 2.3 Select and use appropriate evidence from primary and secondary sources to support claims. 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning. 2.5 Compare life in the United States in the past to life today. 2.14 Describe how hard work, good habits, consistent attendance in school, and planning for the future can help you achieve your goals, including attending college, learning a trade, and having a successful career. 2.16 Describe the United States in economic terms, including free enterprise, private property, producers and consumers, profit and loss, costs and benefits, and imports and exports. a. Describe how people are both producers and consumers. b. Explain why free enterprise and private property are important concepts and how they are beneficial to individuals and to the United States. c. Identify examples of an economic cost or benefit of a decision or event. 2.17 Explain why and how people specialize in the production of goods and services. 2.18 Explain how scarcity of resources and opportunity costs require people to make choices to satisfy wants and needs. 2.19 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services. 2.26 Explain how and why people, goods, and ideas move from place to place. 2.27 Describe how and why people from various cultures	contribute to a rich tapestry of ideas and solutions in our society. Encourage empathy and understanding towards people from different backgrounds.	and shared values in our community. Materials: ● Magazines, newspapers, and art supplies (markers, glue, scissors) ● Large poster boards or construction paper Instructions: Introduce the concept of the societal impact of different cultures and the importance of respecting differences among people. Divide students into small groups and provide them with materials. Instruct students to find images or words in the magazines and newspapers that represent different perspectives and/or cultural backgrounds, shared values, and respect. Guide students to create collages on their poster boards

				or construction paper, incorporating the found materials. Encourage students to explain their

		immigrate to the United States.		collages and discuss why nondiscrimination and respect are essential in our community and country.

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Unit Title	North America: Geography and the Environment		Length of Unit	9 Weeks
Focus	The goal of the second grade is to introduce students to major historical events, figures, and symbols related to the principles and founding of American democracy. Young students learn to value differences among people and exemplify a respect for the rights and opinions of others. They develop an appreciation for our country's government and its citizens while building knowledge about our founding documents, system of government, and individuals who exemplify American values and principles.	**Standards Addressed in this Unit**	2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 2.3 Select and use appropriate evidence from primary and secondary sources to support claims. 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning. 2.20 Create and use maps and models with a key, scale, and compass with intermediate directions. 2.21 Describe geographic features and physical characteristics of places in the United States and the world, including mountains, hills, plains, deserts, coasts, islands, peninsulas, lakes, oceans, and rivers. 2.22 Identify and locate the four hemispheres, equator, and prime meridian. 2.23 Describe the relative location of the United States.	
Inquiry Questions (Engaging-Debatable):	How can we use maps and globes to better understand our world? How has geography affected people in North America?			

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 3-PS2-3 Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in	**Standard:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill) ♦ Students use technology tools to enhance learning, increase productivity, and promote creativity. ♦ Students use productivity tools to work**	**Standard: K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.**	Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations North American Landscape Collages	Map Making (20 minute: Divide students into small groups and provide each group with a large piece of paper or poster board. Ask them to create their own map of a fictional island or town.

	contact with each other. Students can explore the concept of cardinal directions by conducting simple experiments with magnets or compasses to understand how they align with the Earth's magnetic field. Students will differentiate maps from their uses and types after reading a text. Students will be tasked to create models of common landforms using modeling clay and/or play-doh and create a map key symbol for each landform type.	**collaboratively in developing technology-rich, authentic, student-centered products.** The teacher can introduce digital mapping tools such as Google Maps or online map-making software for children. Let them explore and create their own maps digitally.	Students can sketch, design and create a puzzle of a map to teach about maps and landforms. (can be a fictional place) Criteria: 1. map puzzle must have pieces that fit together to make a puzzle 2. have three or more landforms 3. be neat and colorful Constraints: 1. may only use the materials provided 2. teacher will give a specific amount of time for all to complete	Objectives: Students will learn about different geographical features and environments of North America. Students will use various art materials to create collage that represents a specific landscape. Activity: Ask each student to choose a specific type of North American landscape they would like to create. Provide magazines or printed images for students to find pictures that match their chosen landscape. Have students cut out these images along with any additional shapes or elements they want to include. Students will arrange and glue their images onto a piece of construction paper to create their landscapes collage. They can add details using crayons, markers or colored pencils. Once the collage is complete, have students write a few labels or a short description of their landscape on small pieces of paper. Encourage them to include specific geographical features and environmental details. Have the students present their collages to the class.	Encourage them to include landmarks such as mountains, rivers, and buildings, and to label them with names and symbols. They should also draw a compass rose to indicate directions. Scale and Measurement): Once the maps are complete, have students use rulers to measure distances between different landmarks on their maps. Discuss the concept of scale and explain how it allows us to understand the relative sizes of objects on a map. For example, if 1 inch on the map represents 1 mile in real life, students can use this scale to calculate how far apart two landmarks are.

Unit Title	The Earliest Americans	**Length of Unit**	7 Weeks

Focus	The goal of the second grade is to introduce students to major historical events, figures, and symbols related to the principles and founding of American democracy. Young students learn to value differences among people and exemplify a respect for the rights and opinions of others. They develop an appreciation for our country's government and its citizens while building knowledge about our founding documents, system of government, and individuals who exemplify American values and principles.	**Standards Addressed in this Unit**	2.1 Create and use a chronological sequence of events using appropriate vocabulary. 2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 2.3 Select and use appropriate evidence from primary and secondary sources to support claims. 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning. 2.5 Compare life in the United States in the past to life today. 2.6 Describe the significance of the American Revolution and the founding of the United States. 2.7 Identify and describe national historical figures, celebrations, symbols, and places. a. Identify and describe the Founding Fathers, including George Washington, Thomas Jefferson, Benjamin Franklin, Patrick Henry, John Adams, John Hancock, and James Madison. b. Identify and describe historical female figures, including Abigail Adams, Anne Hutchinson, Dolley Madison, Betsy Ross, and Phillis Wheatley. c. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day. d. Describe the history of American symbols, including the Liberty Bell, United States flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." e. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of Liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. 2.8 Interpret legends, stories, and songs that contributed to the development of the cultural history of the United States, including Native American legends, African American history, tall tales, and stories of folk heroes. 2.10 Identify and describe principles of American democracy and relate them to the founding of the nation. a. Identify reasons for the settlement of the thirteen colonies and the founding of the United States, including the search for freedom and a new life.

			2.12 Define governmental systems, including democracy and monarchy. 2.20 Create and use maps and models with a key, scale, and compass with intermediate directions. 2.21 Describe geographic features and physical characteristics of places in the United States and the world, including mountains, hills, plains, deserts, coasts, islands, peninsulas, lakes, oceans, and rivers. 2.26 Explain how and why people, goods, and ideas move from place to place. 2.27 Describe how and why people from various cultures immigrate to the United States.
Inquiry Questions (Engaging-Debatable):	How have different peoples shaped the culture and history of the United States? Why did colonists want Independence from Great Britain?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. **Tea Bag Hot Air Balloon** Students will discuss the following questions pre-investigation: how does a hot air balloon work? How does it fly in the air? Students will be given tea bags with string attached. Students will cut the tea bag open on the side attached to the string. Then, they will dump the contents into a mug to use later (or throw away if not using later). Students will shape the bag into a	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.**	**Standard: K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** **Paddleboat:** Students will discuss the following questions before construction: can you make a paddle boat that moves through the water using its own power? Will it stay floating? Materials: shallow plastic storage container or disposable plastic water bottle laid on its side 2 pencils duct tape rubber band plastic milk jug scissors kiddie pool (in which to test)	**Standard: M-HP-E2 Recognize and discuss the function of music within historical and cultural contexts, including celebrations, ceremonies, and special occasions** Early American Songs and Rhythms Objectives: Students will learn about the culture and daily life of early Americans through music. Students will explore and perform traditional songs and rhythms from Colonial American cultures. Activity: Begin with a short lesson on the role of music in the lives of early colonial settlers. Explain how music was used in various aspects of life, such as ceremonies,	**Introduction:** Begin by discussing with students what taxes are and why they are collected. Explain that taxation without representation means being taxed by a government without having a say in the decisions made by that government. Introduce the Boston Tea Party as an example of how colonists protested against unfair taxation. **Tea Party Simulation):** Set up a simple tea party simulation in the classroom. Provide each student with a cup or mug, a tea bag, and hot water. Explain that they will be participating in a tea party, but before they can enjoy their tea, they must pay a tax. Collect a pretend tax (play money or coins) from each

	cylinder and stand it up on a glass (or porcelain) plate. Teacher will use a match to light the top of the tea bag on fire. Students will record their observations using pictures and/or words. Students will discuss what happened and why. Students may extend the lesson by using other paper materials (example, printer paper, cardstock, tissue paper, cardboard) to recreate the investigation. Students should record observations of these investigations.	**6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Use digital resources and virtual tours to explore colonial settlements and historic landmarks. Students can engage with interactive maps and historical simulations.	Procedure: 1. attach each pencil to opposite sides of the plastic container with duct tape. Attach them about ¾ of the way down the container, leaving about 4 inches of each pencil free in the back 2. wrap a rubber band around the fee ends of the pencils 3. construct the paddle: use scissors to cut out 4 equal rectangles from a plastic milk jug, then fold each rectangle in half and arrange them in a cross shape with all the folds touching in the middle 4. use duct tape to attach one end of each rectangle to one end of another rectangle so that the cross holds its shape 5. slide one blade of the paddle through the rubber band on the boat 6. wind up the paddle. set the boat in the pool and let the paddle go Observe: what direction does your boat travel? Does it move in a straight line or does its path curve? How can you improve the boat's	storytelling, work, and celebrations. Play recordings of traditional colonial American folk songs. discuss the themes, instruments, and rhythms used in each type of music. Ask the students to share their observations and thoughts on the differences and similarities between the music then and the music now. Teach the students a simple song from Colonial American culture such as Yankee Doodle or Simple Gifts. Have the students create simple percussion instruments using craft materials. Instruments such as shakers or drums. Once the instruments are ready, practice playing rhythms along with the song. Discuss how music and instruments can tell us about the culture and daily life of early Americans.	student before giving them their tea. Have them calculate how much it would cost if they had to do this everyday for a week, month, year. . Discuss how it feels to have to pay a tax without having a say in how it is used. **Reflection and Discussion:** After the tea party simulation, gather students together to reflect on their experience. Ask them how they felt about having to pay a tax without representation. Encourage them to discuss why they think the colonists were upset about taxes imposed by the British government. Use this discussion to introduce the concept of representation in government and the importance of having a voice in decision-making.

			performance? (redesign/rebuild as time allows)		

Unit Title	Making the United States of America	**Length of Unit**	6 Weeks

Focus	The goal of the second grade is to introduce students to major historical events, figures, and symbols related to the principles and founding of American democracy. Young students learn to value differences among people and exemplify a respect for the rights and opinions of others. They develop an appreciation for our country's government and its citizens while building knowledge about our founding documents, system of government, and individuals who exemplify American values and principles.	**Standards Addressed in this Unit**	2.1 Create and use a chronological sequence of events using appropriate vocabulary. 2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 2.3 Select and use appropriate evidence from primary and secondary sources to support claims. 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning. 2.5 Compare life in the United States in the past to life today. 2.6 Describe the significance of the American Revolution and the founding of the United States. 2.7 Identify and describe national historical figures, celebrations, symbols, and places. a. Identify and describe the Founding Fathers, including George Washington, Thomas Jefferson, Benjamin Franklin, Patrick Henry, John Adams, John Hancock, and James Madison. b. Identify and describe historical female figures, including Abigail Adams, Anne Hutchinson, Dolley Madison, Betsy Ross, and Phillis Wheatley. c. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day. d. Describe the history of American symbols, including the Liberty Bell, United States flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." 2.9 Describe the structure and responsibilities of each of the three branches of the U.S. government (legislative, executive, judicial). 2.10 Identify and describe principles of American democracy and relate them to the founding of the nation. b. Identify and describe basic principles of the Declaration of

			Independence and the Constitution of the United States, including equality under the law and fair treatment for all. 2.11 Explain the purpose of rules and laws in the United States. 2.12 Define governmental systems, including democracy and monarchy. 2.13 Describe civic virtues including voting, running for office, serving on committees, and volunteering. 2.15 Compare local, state, and national elected officials and explain their roles and responsibilities, including the president, governor, mayor, and representatives.
Inquiry Questions (Engaging-Debatable):	Why did the Founding Fathers create the United States Constitution? How does the United States' government work, and how do citizens participate in our government?		

.STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats. Students will read and discuss short texts about biodiversity, especially that of a wetland (where we live in LA). They will complete a chart comparing/contrasting different places, such as their neighborhood and a garden. (if not available for observation, teachers can find live webcams of different biomes using "critter cam" as a search topic).	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks. 5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that**	**Standard: K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students will sketch, design and build a bird feeder. (for a more advanced task, students can attempt to make the bird feeder strong enough to hold a small camera) Criteria: must hold 1 cup of birdseed and must have a place for the bird to perch Constraints: must only use materials provided by the teacher and must follow the time allotted.	**Standard: D-HP-E1 Recognize and discuss the role of dance in cultural/historical contexts, including celebrations, ceremonies, and special occasions** Colonial Dance Party Objectives: Students will learn about the social customs and entertainment of Colonial America. Students will experience and perform traditional colonial dances. Activity: Begin with a brief lesson about life in colonial America, focusing on social gatherings and	Integrate math by analyzing timelines of events leading to the creation of the Constitution. Students can create timelines, calculate elapsed time, and understand the sequence of historical events.

		support lifelong learning, collaboration, personal pursuits, and productivity. 6. Basic Operations and Concepts ♦ Students demonstrate a sound understanding of the nature and operation of technology systems. ♦ Students are proficient in the use of technology. Students use digital resources and interactive websites to explore virtual tours of historical landmarks related to the founding of the United States, such as Independence Hall.		entertainment. Explain that dancing was a popular form of entertainment and socializing. Show a short video clip or play a recording of colonial dance music. Introduce a few simple Colonial dances such as the Virginia Real and the Minuet. Provide a brief background on each dance. Demonstrate the basic steps for each dance to the students. have the students form pairs or small groups and practice the steps together. Play the colonial dance music while they practice. Organize a colonial dance party where students can perform the dances they've learned.	

Unit Title	Choices and Costs	**Length of Unit**	5 Weeks

Focus	The goal of the second grade is to introduce students to major historical events, figures, and symbols related to the principles and founding of American democracy. Young students learn to value differences among people and exemplify a respect for the rights and opinions of others. They develop an appreciation for our country's government and its citizens while building knowledge about our founding documents, system of government, and individuals who exemplify American values and principles.	**Standards Addressed in this Unit**	2.1 Create and use a chronological sequence of events using appropriate vocabulary. 2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies 2.3 Select and use appropriate evidence from primary and secondary sources to support claims. 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning. 2.5 Compare life in the United States in the past to life today. 2.14 Describe how hard work, good habits, consistent attendance in school, and planning for the future can help you achieve your goals, including attending college, learning a trade, and having a successful career. 2.16 Describe the United States in economic terms, including free enterprise, private property, producers and consumers, profit and loss, costs and benefits, and imports and exports. a. Describe how people are both producers and consumers. b. Explain why free enterprise and private property are important concepts and how they are beneficial to individuals and to the United States. c. Identify examples of an economic cost or benefit of a decision or event. 2.17 Explain why and how people specialize in the production of goods and services. 2.18 Explain how scarcity of resources and opportunity costs require people to make choices to satisfy wants and needs. 2.19 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services. 2.26 Explain how and why people, goods, and ideas move from place to place. 2.27 Describe how and why people from various cultures immigrate to the United States.
Inquiry Questions (Engaging-Debatable):	What factors influence where Americans work and live? How can good habits, hard work, and planning for the future help you achieve your goals?		

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. Students will read and discuss text about properties of materials, then they will rate a list of materials by their properties. Students will use tag symbols commonly found on clothing to determine which tags should a consumer look for in given scenarios.	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks. 5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity. 6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** The teacher can utilize digital resources such as educational videos and interactive games to introduce economic concepts like producers, consumers, and supply and demand.	**Standard: K-2-ETS1-2 Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps its function as needed to solve a given problem.** Students will research shoe designs, then sketch, design and build a shoe using the following: criteria: shoe must fit the foot of a person in grade 2, be comfortable to wear, protect a person's feet when they wear them and stay on while walking constraints: only use materials provided and within a given time.	Theater Standard: TH-HP-E4 Recognize universal characters and situations in stories and dramas of various cultures and how theater reflects life The History of Early American Currency: A Theatrical Performance Objective: Students will learn about the history of early American currency. Students will engage in a theatrical performance to illustrate the use and importance of early American currency. Activity: Begin with a short lesson on the types of currency used in early America including bartering wampum, Spanish dollars, and early colonial currency. Discuss the importance of currency in daily life and trading during colonial times. Use the provided script or adapt it to fit the needs of your class. Assign each student a role to play. Roles include Native Americans trader, a colonial farmer, a merchant, a blacksmith, and a child learning about	**Introduction):** Begin by discussing with students what immigration means and why people move to different countries. Introduce the concept of multiculturalism and explain that people from all over the world come to the United States for various reasons. **Multicultural Exploration:** Show pictures or illustrations representing different cultures and countries to the students. Discuss the reasons why people from each culture might choose to immigrate to the United States. For example, economic opportunities, political stability, religious freedom, or escaping conflict. **Mathematical Representation:** Provide each student with a piece of paper and markers. Ask them to choose one culture or country from the images shown and draw a picture representing why someone from that culture might want to immigrate to the United States. Encourage them to include symbols or images related to their

				currency from their parents. Practice the script with students helping them learn their lines and understand their roles. Have students create simple props to represent early currency. You can also use costumes if available. Perform the play allowing each student to Showcase their understanding of early American currency through their role.	chosen reason (e.g., dollar signs for economic opportunities, a peace symbol for escaping conflict). **Data Gathering:** Create a graph or chart on graph paper or a large poster board to represent the different reasons why people immigrate to the United States. Label the axes with the reasons (e.g., economic opportunities, political stability, religious freedom) and provide students with counting objects (e.g., buttons, beans) to represent each reason. Have students place the counting objects on the graph to show their estimation of the frequency of each reason. **Data Analysis:** Once the graph is complete, guide the students in analyzing the data. Discuss which reasons appear most frequently and which appear least frequently. Encourage them to make observations and draw conclusions based on the data. **Reflection and Discussion:** Gather the students together to reflect on what they learned about immigration and the reasons why people from various cultures choose to immigrate to the

					United States. Encourage them to share their drawings and thoughts, and reinforce key concepts related to exploration of multiple cultures and empathy.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	ELA- (Reading, Spelling. Language)	**Grade Level**	3rd
Curriculum/Programs/ Partners	Louisiana Guidebooks/ Project Based Learning/		

Units Title	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultu ral Exposure**	**End of Unit PBL Assessment**
1 Cajun Folktales	What can folktales teach us about how we should treat others?	RL.3.2 Recount stories, including fables, folktales, and myths from multiple different cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text. RL.3.3 Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events. RL.3.7 Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).	Environmental- Students will determine the various species of the swamp and how they are interdependent. Students will also determine causes and solutions for the loss of Louisiana swamp lands. Humanities/Multicultural Exposure- The Cajun culture is built on the deep-rooted traditions of a unique, hard-working people. What influences and impacts does Cajun culture have on our current traditions?	Students will utilize the characteristics of a chosen animal to create their own Cajun Folktale. Students must choose an animal, insect, etc. related to Louisiana, and determine how their characteristics can be utilized to create a tale. Students will work in groups to write the play and perform it for the class.
2 Treasure Island	What is considered treasure and why?	RL.3.3 Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events. RI.3.6 Distinguish the student's point of view from that of the author of a text. RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.	Humanities/ Environmental-Students will discuss overfishing and its effects. They will also determine the effects of oceanic pollution. Different perspectives:- Students determine their personal treasure and what others may consider their treasure. (Does treasure have to be something seen or tangible?)/ -Consider various cultures and what they consider personal treasures.	Students will create/design their own geocache. Students will create a 3-D replica of what they consider their treasure. (They must also answer the question-Why is geocaching considered modern-day treasure hunting?) They will also use Google earth to determine a place to hide their treasure. Students will take turns giving coordinates to their classmates to find the hidden treasure.

3 Voices of America	Why is it important to speak up for what you believe in?	RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea. RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. RI.3.6 Distinguish the student's point of view from that of the author of a text. RI.3.9 Compare and contrast the most important points and key details presented in two texts on the same topic	Humanities/Multicultural Exposure-The purpose of protesting and how standing up for a cause leads to change. Determine how an individual point of view and life experiences determine their belief systems.	Students will choose a real-world problem. They will determine their belief system on this issue. They will create a peaceful protest mural that conveys their point of view. They will also create a speech that gives the audience their perspectives of why they are passionate about the issue of choice.

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Cajun Folktales		**Length of Unit**	12 Weeks
Focusing Lens(es)	What can folktales teach us about how we should treat others?	**Standards Addressed in this Unit**	RL.3.2 Recount stories, including fables, folktales, and myths from multiple different cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text. RL.3.3 Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events. RL.3.7 Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).		
Inquiry Questions (Engaging-Debatable):	What are the characteristics of a folktale? What life lessons can we learn from folktales? How are certain characteristics of animals utilized to support the folktale? How does the setting of the folktale support the development of the theme?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-LS3-2 Use evidence to support the explanation that traits can be influenced by the environment. Students will study wetland ecosystems life and then create a model of a wetland. https://www.youtube.com/watch?v=jrGuUFZwSkE	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate,**	**Engineering standard: 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** The wetlands help to slowly filter the water that moves through them. In fact—wetlands work so well to purify water—that communities have built artificial wetlands (called constructed wetlands) to filter wastewater. Constructed wetlands	**Standard: M-HP-E1 Recognize musical styles representative of various cultures .** Exploring Cajun Folk Tales Through Storytelling and Music Students will learn about Cajun culture through folktales and music, developing their reading, comprehension, and musical skills. Choose a Cajun folktale to read aloud to class. Discuss the main	**Wetland Area Estimation**: Show students aerial images or satellite photos of wetland areas and ask them to estimate the total area covered by water, vegetation, and other features. They can use grids or other measuring tools to make their estimations more accurate, helping them develop spatial awareness and estimation skills

		and collect information from a variety of sources. ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Using the U.S. Fish & Wildlife Service's Wetlands Mapper, identify a wetland in your community. Design an interactive brochure that provides information on the wetland using Canva.	represent an engineered ecosystem that can be built anywhere. Students will investigate the design of the three primary structures. (Free Water Surface Flow, Horizontal Subsurface Flow, Vertical Subsurface Flow) Students will identify the strengths and weaknesses of each and design/create one that will best support their community.	characters, setting, and plot, emphasizing the cultural aspects present in the story. Have the students take turns reading parts of the story aloud to practice their reading fluency. Play a piece of Cajun music and discuss characteristics . Relate the music to the mood or events in the story. Divide students into groups and assign each group a scene or character from the folktale. Have each group create a musical piece that represents their assigned scene or character using instruments or singing.	

Unit Title	Treasure Island		**Length of Unit**	12 Weeks
Focusing Lens(es)	What is considered treasure and why?	**Standards Addressed in this Unit**	RL.3.3 Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events. RI.3.6 Distinguish the student's point of view from that of the author of a text. RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.	
Inquiry Questions (Engaging-Debatable):	What do people consider treasure? Why do people search for treasure? How does searching for treasure impact a person's life? How do people's point of view determine their search for treasure?			

Curriculum Development Overview
Planning for Each Unit

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. Students will investigate spatial reasoning by the teacher having a large clear cup and large jeweled rocks (think large aquarium stones). Students will predict how many jewels will fill the cup and then "fill" the cup with the large stones. Teacher will ask, "Is it full?" and discuss. Then, the teacher will display smaller jeweled/sparkly rocks and pour in until the class agrees the cup is full. Discuss why the smaller rocks filled the spaces between the larger ones. The teacher will then take out a container of water and ask, "Will this fit into the cup, too?" The teacher will pour water into the cup until full and the class will again discuss how the water fills the "empty spaces" between all of the stones.	**Standard:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students will use Canva to create a missing treasure poster. This poster will identify why the treasure is important to them and what might occur if it is never found.	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will design/create a way to get drinkable water from a fresh water spring found on the island. Students will create a pulley system that can lift a small bucket of water. Materials can include (but are not limited to): 2 chairs of equal size (to mimic sides of a well), long wooden dowel, cardboard tube, and rope. Students will test their pulley system for strength and efficiency. If necessary, they will redesign and retest.	**Standard: TH-CE-E6 Develop awareness of technical dimensions of the dramatic form, such as theatrical space, scenery, costuming, and make-up** Designing a Set for "Treasure Island' Students will create and present a set design for a scene from Treasure Island. **B**egin with a brief explanation of what set design is and why it's important in theater. Discuss how sets help tell the story and create the atmosphere of the play. show examples of set designs from various plays or movies. Discuss the different locations and environments in the story Treasure Island. Divide the class into small groups and assign each group a specific scene. have students draw detailed sketches of their set designs, labeling key features and props. Use construction paper craft materials and drawing supplies to create a more detailed and colorful version of their set design.	**Treasure Hunt Measurement Experience.** Hide clues that involve measurement tasks. For instance, "Find the tree with the longest branch. Measure the length of the branch in inches to reveal your next clue." This encourages students to practice measuring length using rulers centimeters and meters)

				They can create a 2d poster or 3D model depending on the materials available. Encourage creativity. Once the sets are complete, have each group present their design to the class.	

Unit Title	Voices of America		**Length of Unit**	12 Weeks
Focusing Lens(es)	Why is it important to speak up for what you believe in?	**Standards Addressed in this Unit**	RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea. RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. RI.3.6 Distinguish the student's point of view from that of the author of a text. RI.3.9 Compare and contrast the most important points and key details presented in two texts on the same topic	
Inquiry Questions (Engaging-Debatable):	What does it mean to speak up? How does speaking up reflect a person's beliefs and values? What characteristics does a person who speaks up for their beliefs have? How does speaking up impact certain situations?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 1-PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. Students will conduct an experiment on sound and how it travels.	**Standard:** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill) ♦ Students use technology tools to enhance learning, increase productivity, and promote creativity. ♦ Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products. 4. Technology Research Tools (Linking and Generating Knowledge Foundation**	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.**	**Standard: VA-HP-E1 Identify the subject, basic style, and culture represented by various works of art** Learn about the adinkra, which is a printed or stamped traditional cloth that is made by the Ashanti people of Ghana, a country in West Africa. These symbols are used to	**Geometry in American Landmarks**: Study famous American landmarks such as the Statue of Liberty, the Golden Gate Bridge, or Mount Rushmore. Discuss how certain landmarks convey messages and meaning of American Culture. Students can explore geometric shapes and

	Materials: metal spoon, 4 feet of string or yarn, and a ruler Procedure: 1. Tie the handle of the spoon to the middle of the string. 2. Each student in a pair will wrap each end of the string a few times around the index fingers. 3. Hold fingers close to their ears and let the spoon hang free. 4. Have another group member hit the spoon with the ruler. Discussion questions: What can you hear when your friend hits the spoon with the ruler? Does is sound different when the string is held close versus holding the string far away? How long does the sound echo? Extension: try different sizes of spoons or forks to test different sounds.	**Skill) ♦ Students use appropriate technology to locate, evaluate, and collect information from a variety of sources. ♦ Students use technology tools to process data and report results. ♦ Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students will take a virtual tour of the Civil Rights Movement. Determine how the voices of those individuals made significant changes in the word.	Students will sketch, design and build a voice amplifier using materials given. Criteria: a student's voice must be increased by 3 or more decibels using said device (will be measured using a decibel meter) Constraints: can only use the materials offered and must complete within the time allotted	tell a story, They will create a cloth using symbols to tell a story from one of the events of the civil rights era. Historical Events and Scientific Ideas n Song Standard: M-HP-E2 Recognize and discuss the function of music within historical and cultural contexts, including celebrations, ceremonies, and special occasions Play different examples of songs that had a significant impact during a particular historical event. Discuss scientific inventions that were also developed during that particular historical event. Explain that historical events and scientific discoveries often happen together and influence each other. Choose a current event that the students are familiar with. Discuss what may have led to this event. As a class, write a song that talks about different current events, why they're happening and how they feel about them.	concepts present in these landmarks, such as symmetry, angles, and measurements. They can practice geometry skills by creating scale models, drawing blueprints, or calculating dimensions. Students can also create a landmark that displays their meaning of America.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Math	**Grade Level**	3rd
Curriculum/Program	i-Ready Classroom Mathematics		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Unit 1: Three-Digit Numbers: Place Value, Addition, and Subtraction	In this unit, students extend and then use their understanding of place value as they learn to round whole numbers to the nearest ten and hundred, and add and subtract three-digit numbers.	**3.NBT.A.1**-Use place value understanding to round whole numbers to the nearest 10 or 100. **3.NBT.A.2**-Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	Students can explore how different cultures around the world interact with and value their natural surroundings. Discuss traditional practices, beliefs, and rituals related to the environment in various cultures. Encourage students to appreciate multiple different perspectives on nature and learn from them.	Problem-Solving and Critical Thinking: Pose open-ended questions that encourage students to explain their reasoning and demonstrate a deeper understanding of place value and arithmetic operations. For example, "Explain why it's important to round numbers when estimating quantities or solving problems involving large numbers." Reflection and Self-Assessment: Include a component where students reflect on their learning throughout the unit. They can assess their strengths, areas for improvement, and set goals for future math learning.
Unit 2: Multiplication and Division: Concepts,	In this unit, students build on their understanding of	**3.OA.A.1-**Interpret products of whole numbers, e.g., interpret 5 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a	Students can explore the impact of human activities on wildlife habitats. Students	Project Components:

Relationships, and Patterns	arrays,	total number of objects can be expressed as 5 X 7.	can use multiplication to calculate the area of habitats	
	skip-counting, and repeated addition as they begin to explore the concept of multiplication. They learn strategies for multiplication such as breaking apart a number and using the commutative and distributive properties of multiplication to find products of two one-digit numbers. Students build on place-value understanding and the associative property to multiply by tens. Students learn that division is the inverse of multiplication and make connections to addition and subtraction fact families to help them solve for unknowns in all positions in multiplication and division equations.	**3.OA.A.3**-Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.B.5**-Apply properties of operations as strategies to multiply and divide.2 Examples: If 6 4 = 24 is known, then 4 6 = 24 is also known. (Commutative property of multiplication.) 3 5 2 can be found by 3 5 = 15, then 15 2 = 30, or by 5 2 = 10, then 3 10 = 30. (Associative property of multiplication.) Knowing that 8 5 = 40 and 8 2 = 16, one can find 8 7 as 8 (5 + 2) = (8 5) + (8 2) = 40 + 16 = 56. (Distributive property.) **3.OA.C.7**-Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 5 = 40, one knows 40 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.A.2**-Interpret whole-number quotients of whole numbers, e.g., interpret 56 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 8. **3.OA.B.6**-. Understand division as an unknown-factor problem. For example, find 32 8 by finding the number that makes 32 when multiplied by 8.	needed for different animal species. They can also explore population growth and decline of animal species using multiplication and division.	Game Board Design: Students will design a game board with spaces representing multiplication problems, challenges, and rewards. They can incorporate themes related to multiplication concepts or create a unique storyline for the game. Player Pieces and Tokens: Students will design player pieces and tokens that represent characters or objects related to the game theme. Tokens can be used to track player progress or earn rewards. Game Testing and Feedback: After completing the game components, students will playtest their games with classmates and gather feedback on gameplay, clarity of instructions, and overall enjoyment. Reflection and Presentation:

				Students will reflect on their design process, challenges
				encountered, and lessons learned throughout the project. They will present their Multiplication Marvels game to the class, explaining the rules, strategies, and learning objectives behind the game.
Unit 3: Multiplication: Finding Area, Solving Word Problems, and Using Scaled Graphs	In this unit, students build on their prior knowledge of linear measurement and tiling rectangles as they learn that area measures the space inside a shape. They use multiplication to compute area and also recognize that area is additive. Students use their understanding of the relationship between multiplication and division to solve one-step word problems and use all four operations to solve two-step word problems. They also reexamine bar and picture graphs, understanding that the scale on a graph can represent	**3.MD.C.5a**-A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. **3.MD.C.5b**-A plane figure that can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. **3.MD.C.6**-Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). **3.MD.C.7a**-Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. **3.MD.C.7b**-Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. **3.MD.C.7c**-Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a b and a c. Use area models to represent the distributive property in mathematical reasoning. **3.OA.A.3**-Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	Students can explore how environmental factors can vary across different regions and communities. Discuss how cultural practices and geographical factors influence people's interactions with the environment. Encourage students to think critically about how environmental data can inform decision-making and promote environmental justice.	Project Overview: Students will work collaboratively to design their dream classroom layout while applying their understanding of area measurement, multiplication, division, and graph interpretation. They will create a scaled floor plan of their ideal classroom, solve mathematical problems related to area and operations, and present their designs to the class.

	intervals other than one.	**3.OA.D.8**-Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess		
		the reasonableness of answers using mental computation and estimation strategies including rounding. **3.MD.B.3**-Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.		

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit 4: Fractions: Equivalence and Comparison, Measurement, and Data	In this unit, students use their prior understanding that shapes can be broken into halves, thirds, and fourths to recognize that a fraction is a whole divided into some number of equal parts. They develop an understanding of fractions as numbers which can be represented on a number line and begin to explore fraction equivalency using various models. Students learn to compare fractions using the size of the fractions as shown by the denominators and the number of parts as shown by the numerators. They use symbols to compare fractions and read comparison statements	**3.NF.A.1**-Understand a fraction 1/b, with denominators 2, 3, 4, 6, and 8, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. **3.NF.A.2a**-Represent a fraction 1/ b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. **3.NF.A.2b**-Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line. **3.NF.A.3a**-Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line **3.NF.A.3b**-Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model. **3.NF.a.3c**-Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram. **3.NF.A.3d**-Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	Using data about the type of fish in a pond, students will create a line plot.	Project Tasks: Fraction Representation: Draw shapes and divide them into halves, thirds, and fourths. Label the parts to represent fractions. Identify the numerator and denominator for each fraction. Number Line Exploration: Represent fractions on a number line. Place fractions in the correct order on the number line. Demonstrate an understanding of fractions as parts of a whole. Fraction Equivalency:

	accurately. Students also measure objects to the nearest quarter of an inch and display and answer questions about measurement data in line plots.	**3.MD.B.4**-Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.		Use different models (e.g., pictures, fraction strips) to explore equivalent fractions. Identify equivalent fractions and explain how they represent the same portion of a whole. Comparing Fractions: Compare fractions using symbols (<, >, =). Use the size of denominators and the number of parts (numerators) to determine the relative size of fractions. Write accurate comparison statements for fractions. Measurement: Measure objects to the nearest quarter of an inch using rulers or other measurement tools. Record measurement data accurately. Create a line plot to display the measurement data. Analyze the data and answer questions related to the measurements.

				Project Presentation: You will present your findings and demonstrate your understanding of fractions and measurement to the class. Your presentation should include: • Examples of fraction representations and explanations. • Demonstrations of fraction equivalency using models. • Comparisons of fractions with explanations. • A discussion of measurement techniques and data analysis using line plots.
Unit 5: Measurement: Time, Liquid Volume, and Mass	In this unit, students build on prior measurement skills. Previously they learned to tell time to the nearest five minutes, and in this unit, they will tell time to the nearest minute and explore the idea of elapsed time. Students will expand their knowledge of	**3.MD.A.1**-Understand time to the nearest minute. **3.MD.A.2**-Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).5 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	Discuss the importance of conservation efforts in preserving natural resources and protecting the environment. Explore concepts like reducing waste, recycling, and conserving water.	Project Tasks: Time Exploration: Practice telling time to the nearest minute on analog and digital clocks. Solve problems involving elapsed time, including finding the start time, end

	measurement as they solve one- and two-step problems about liquid volume and mass.			time, or duration of an activity. Use different strategies to calculate elapsed time, such as counting forward or backward on the clock. Liquid Volume Problems: Solve one-step and two-step problems involving liquid volume. Use appropriate units of measurement (e.g., cups, pints, quarts, gallons) to solve problems. Understand the relationship between different units of liquid volume. Mass Measurement: Solve one-step and two-step problems involving mass. Use appropriate units of measurement (e.g., grams, kilograms) to solve problems. Understand the concept of heavier and lighter objects and compare their masses. Problem-Solving Scenarios:

				Create and solve real-life scenarios that involve time, liquid volume, and mass. Apply problem-solving strategies to find solutions to various situations.
Unit 6: Shapes: Attributes and Categories, Perimeter and Area, and Partitioning	In this unit, students build on their knowledge of drawing, naming, and classifying two-dimensional shapes as they learn about new shape attributes and how they contribute to classification. They learn how to determine the perimeter of a shape and consider how area and perimeter can be used to reason about a shape's form. They also look at equal parts in a shape as fractions.	**3.G.A.1**-Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. **3.MD.D.8**-Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **3.G.A.2**-Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.	Activity: Explore different forms of cultural art from around the world, such as Native American quilting, Islamic geometric patterns, or African tribal designs. Connection: Discuss how various cultures incorporate geometric shapes and patterns into their art and architecture. Students can analyze the symmetry, repetition, and symbolism behind these geometric designs and create their own artwork inspired by multiple different cultural traditions.	Project Overview: For this project, you will deepen your understanding of two-dimensional shapes, their attributes, and how they contribute to classification. You will also explore the concepts of perimeter, area, and fractions as they relate to shapes. Project Tasks: Shape Attributes and Classification: Identify and name two-dimensional shapes based on their attributes. Classify shapes according to their properties (e.g., number of sides, angles). Explore new shape attributes and discuss how they contribute to classification.

				Perimeter Exploration: Learn how to determine the perimeter of a shape by adding the lengths of its sides. Practice calculating the perimeter of various shapes, including rectangles, squares, triangles, and irregular shapes. Understand how perimeter can be used to reason about a shape's form and size. Area Consideration: Introduce the concept of area as the measure of the space inside a shape. Discuss how area differs from perimeter and explore ways to calculate area for simple shapes. Compare and contrast area and perimeter, discussing their different uses in geometry. Fractions and Equal Parts: Explore equal parts within shapes and represent them as fractions.

				Identify and shade fractions of shapes to represent different fractional amounts. Understand the relationship between equal parts, fractions, and the whole shape.

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

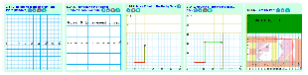
Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 1: Three-Digit Numbers: Place Value, Addition, and Subtraction	**Length of Unit**	Unit 1: 21 days
Focus	Three-Digit Numbers	**Standards Addressed in this Unit**	**3.NBT.A.1** **3.NBT.A.2**
Inquiry Questions (Engaging-Debatable):	How can you add and subtract three-digit numbers? How can you round three-digit numbers?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-PS2-2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. Students will test the probability of throwing certain 3 digit numbers with 3 dice. For example, what are the chances of throwing a 4, 5, and 3 with 3 dice? Students will conduct 3 tests each and record numbers created. Then, the class will create a tally chart for the numbers created. Based upon the tally chart evidence, students will decide which 3 digit number is most likely to be thrown using 3 dice.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. For the engineering component, they will complete lesson 1.14. 1.14 Students will review strategies to solve addition and subtraction problems within 1,000. 	**Standard: D-CE-E1 Use kinesthetic awareness, proper use of space, and the ability to move safely** Dance and Math: Adding and Subtracting Three-Digit Numbers Play some music and have the students do a short dance warm-up to get them moving and ready for the activity. Prepare number cards with three digit numbers written on them. Each card should have one three digit number. Divide the students into pairs or small groups and give each group a set of number cards. Explain that when the music starts, Students will dance	Chapter 1- Roboblocky  Grade 3 Overview In this lesson, students will learn how to recognize and apply the commutative property of addition. Learning Objectives Identify arithmetic patterns and explain them using properties of addition.

		3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill) ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.**		around the room with their number cards. When the music stops, they must pair up with another student or group and combine their number cards to create an addition or subtraction problem. Give the students a moment to solve the problem together. Repeat the process into starting the music again and having students dance with their number cards stopping to create new problems with different partners.	

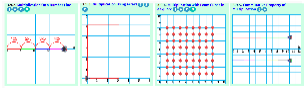
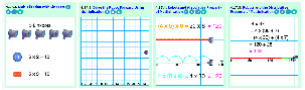
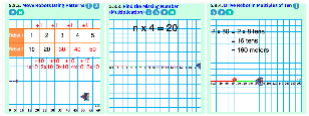
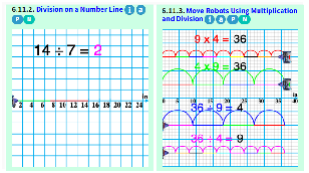
		♦ **Students are proficient in the use of technology.**			

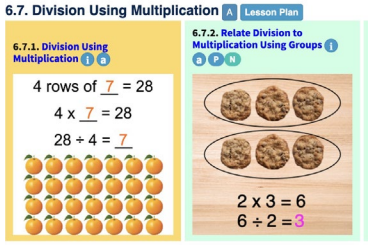
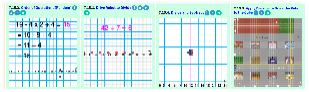
		Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: **1.7. Addition Using Break Apart Strategy** A Lesson Plan **1.7.1. Addition Using Break Apart Strategy** i a Add 120 + 234 + 95 = 449 Original Numbers / Break apart the addends 1 120 → 100 + 20 + 0 234 → 200 + 30 + 4 + 95 → 0 + 90 + 5 449 → 300 +140+ 9 **1.7.2. Delivery Truck Miles** i a P N 318 + 198 = 516 300 + 10 + 8 100 + 90 + 8 400 +100+16			

Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 2: Multiplication and Division: Concepts, Relationships, and Patterns	**Length of Unit**	Unit 2: 42 days
Focus	Multiplication and Division	**Standards Addressed in this Unit**	**3.OA.A.1** **3.OA.A.3.** **3.OA.B.5** **3.OA.C.7** **3.OA.A.2** **3.OA.B.6**
Inquiry Questions (Engaging-Debatable):	How can you multiply through 10? How can you use place value to multiply? How are multiplication and division connected?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-PS2-2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. Students will read and respond to text and pictures about patterns in motion. Then, students will create a pendulum attached to a cup of paint. Students will put white paper under the pendulum and test different movements of the paint cup. They will record observations about different movements	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. The following lessons are specifically engineering: 3.9, 4.17, 5.8, 6.11, and 7.15. 3.9 Students will review multiplication using repeated addition, a number line, and arrays. Students will also review the commutative,	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** "Division Art Garden" Materials: Large poster paper or chart paper, Markers, colored pencils, or crayons Flower cut-outs or stickers, Rulers or straight edges, Glue Steps: Introduction: *Begin by discussing the concept of division and	**CCSS Math Standards: 3.NBT.A.2 Fluently add and subtract within using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. 3.OA.A.1 Interpret products of whole numbers, e.g., interpret as the total number of objects in groups of objects each. For example, describe a context in which a total number of objects can be expressed as .** **CCSS SMP Standards:**

	and resulting pictures created by the paint.	♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits,**	identity, and zero properties of multiplication.  4.17 Students will review strategies to multiply 1-digit factors. These strategies include using the distributive and the associative properties.  5.8 Students will review using multiplication facts to solve problems.  6.11 Students will review division as a means of splitting a total number of objects into equal groups. Students will also review the relation between division and subtraction, and the relation between division and multiplication.  7.15 In this lesson, students will practice strategies to divide by 4.	how it relates to sharing or grouping items equally. *Introduce the idea of creating an art garden where flowers will be distributed into rows using division. Setting the Scene: *On the large poster paper, draw a garden landscape with rows and spaces for flowers. *Explain that the garden needs to be divided into several rows, and each row will have a certain number of flowers. Student-led Division: *Let each student decide on the total number of flowers they want in the garden. *Have them determine how many rows they want in the garden and how many flowers will be in each row. *This involves the students using division to figure out the distribution of flowers. Creating Rows: *Instruct students to use rulers to draw straight lines, creating the determined number of rows in the garden. *Each row represents the	**SMP.3 Construct viable arguments and critique the reasoning of others** **SMP.6 Attend to precision** **SMP.8 Look for and express regularity in repeated reasoning** **Keywords** **equal groups, counting** **Vocabulary** **Equal groups: groups that have an equal number of objects in them.** Roboblocky Chapters 3,4,5,6,and 7  Overview In this lesson, students will learn how to find the total number of objects by adding equal groups of these objects. Learning Objectives Count the total number of objects by adding together the number of objects in multiple equal groups Standards Examples Example 1: Count Equal Groups of Cubes In the picture in the grid we see 4 equal groups of 3 cubes each. How many cubes are there in total? To find this number,

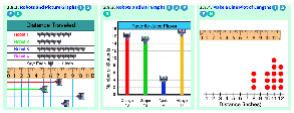
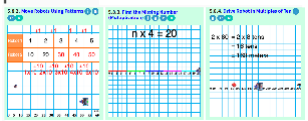
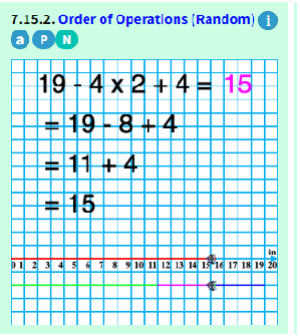
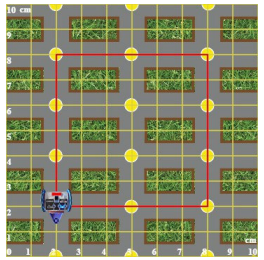
		and productivity. **6. Basic Operations and Concepts**			
		♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 		number they decided upon through division. Decorating Flowers: *Provide students with flower cut-outs or stickers. *Instruct them to decorate the flowers using colors or patterns. Distributing Flowers: *Following the division plan, students should place the decorated flowers in the rows they created. *This step visually represents the distribution of flowers based on the division they performed. Labeling Rows: *Encourage students to label each row with the number of flowers it contains. *This step reinforces the connection between division and the representation of equal groupings.	count by 3 four times. We then have 3 + 3 + 3 + 3 = 12 So, we know that there are 12 total cubes. Example 2: Count Number of Claws There are 5 crabs on a beach, each with 2 claws. How many claws are there in total? To find this number, count by 2 five times. We then have 2 + 2 + 2 + 2 + 2 = 10 So, we know that there are 10 claws in total. Example 3: Count Number of Legs A farmer has 6 sheep, each sheep has 4 legs. How many legs are there in total? To find this number, count by 4 six times. We then have 4 + 4 + 4 + 4 + 4 + 4 = 24

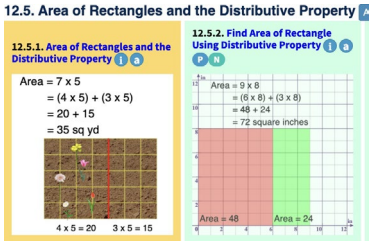
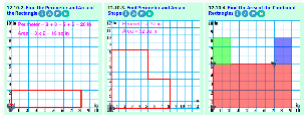
				Reflection: *Conclude the activity with a reflection session where students discuss how they used division and subtraction to create their art garden. *Ask questions about the relationship between the total number of flowers, the number of rows, and	So, we know that there are 24 legs in total. Example 4: Count Equal Groups of Distance Watch as the robot moves in the grid. We see that it drives 5 inches and then waits 3 times. How far does the robot drive in total? To find this
				the number of flowers in each row.	number, count by 5 three times. We then have 5 + 5 + 5 = 15 So, we know that the robot drives 15 total inches.

Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 3: Multiplication: Finding Area, Solving Word Problems, and Using Scaled Graphs	**Length of Unit**	Unit 3: 30 days
Focus	Multiplication	**Standards Addressed in this Unit**	**3.MD.C.5a** **3.MD.C.5b** **3.MD.C.6** **3.MD.C.7a** **3.MD.C.7b** **3.MD.C.7c** **3.OA.A.3** **3.OA.D.8** **3.MD.B.3**
Inquiry Questions (Engaging-Debatable):	How can you multiply to find area? How can you solve one and two-step word problems using the four operations? How can you use scaled graphs?		

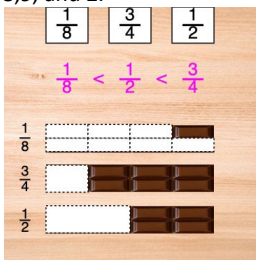
STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow and meet their needs. Students will be given a fruit (groups will have either an orange, an apple, or a pear) and open to count the number of seeds. They will record the number of seeds in a chart, then multiply each number by given numbers to determine how many	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. The following lessons are robot engineering: 2.8, 5.8, 7.15 and 12.10. 2.8 Students will review collecting data in a frequency table and making picture and bar graphs.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** **"Artistic Area Mosaics"** **Steps:** 1. **Introduction to Area:** * Begin by explaining the concept of area as the measure of the space inside a shape. *Discuss that in this activity, students will be creating mosaics and	**CCSS Math Standards: 3.MD.C.7.a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.** **3.MD.C.7.b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.**

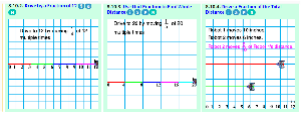
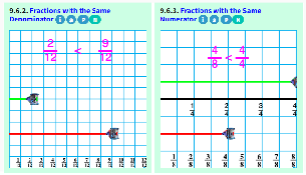
	seeds would be in 3 apples or 7 pears.	♦ **Students employ technology for real world problem solving.** ♦ Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills. 3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill) ♦ Students use technology tools to enhance learning, increase productivity, and promote creativity. ♦ Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products. 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill) ♦ Students use appropriate technology to locate, evaluate, and collect information from a variety of sources. ♦ Students use technology tools to process data and report results. ♦ Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks. 5. Social, Ethical, and Human Issues (Citizenship Foundation Skill) ♦ Students understand the ethical, cultural, and societal issues related to technology. ♦ Students practice responsible use of technology systems, information, and software. ♦ Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity. 6. Basic Operations and Concepts	 5.8 Students will review using multiplication facts to solve problems.  7.15 In this lesson, students will practice strategies to divide by 4. **Activity Statement** Modify the program to move the first robot directly to the solution. Move the second robot forward, backwards, and then forwards using the order of operations. Find the robots' final position.  7.15.2. Order of Operations (Random) 19 - 4 x 2 + 4 = 15 = 19 - 8 + 4 = 11 + 4 = 15 12.10 Students will review finding the perimeter and area of shapes. **Activity Statement** Edit the code in the workspace to have the robot trace the rectangle that is outlined in	finding the area of their designs using square units. 2. **Selecting Shapes:** *Let each student choose a basic shape (square, rectangle, triangle, etc.) as the base for their mosaic. * Explain that they will create their mosaic within this shape. 3. **Drawing the Base Shape:** *Students draw the selected shape on their paper. The size of the shape will be the canvas for their mosaic. 4. **Dividing into Squares:** *Instruct students to use rulers to divide the inside of their base shape into a grid of squares. * The squares will serve as the unit for measuring the area. 5. **Designing the Mosaic:** * Allow students to be creative and design their mosaic using colored pencils, markers, or crayons.	**3.NBT.A.3 Multiply one-digit whole numbers by multiples of in the range (e.g.) using strategies based on place value and properties of operations.** UC Davis Chapter: 5,7,12, and 2.  Activity ID: 3907 Subjects: Robotics, Coding, Math Grades: Grade 3 Keywords: multiplication Activity Statement: A rectangular street block is outlined in cyan. Add movement blocks to the workspace to trace the outline. Find the area and perimeter of the street block enclosed in the rectangle. Each square is equal to one square yard.

		♦ Students demonstrate a sound understanding of the nature and operation of technology systems. ♦ Students are proficient in the use of technology. Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 	the grid. Find the perimeter and area of the drawn rectangle. 	* Each square within the grid represents one unit of area. 6. **Counting Square Units:** *After completing their mosaic, students count the number of square units within the grid. * Emphasize that this count represents the area of their design. 7. **Adding Square Stickers:** *Provide small square stickers or cut-outs. *Students glue these stickers onto the squares of their grid, reinforcing the concept of area. 8. **Discussion and Sharing:** *Conclude the activity with a class discussion where each student shares the total area of their mosaic. * Encourage students to compare and contrast the areas of their mosaics. 9. **Extension (Optional):** * Challenge students to find the area of a composite shape by	

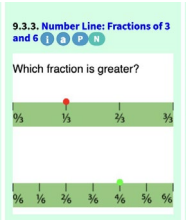
				combining two or more basic shapes for their mosaic. *This extension activity promotes critical thinking and understanding of how to find the area of irregular shapes.	

Unit Title	Unit 4: Fractions: Equivalence and Comparison, Measurement, and Data	**Length of Unit**	Unit 4: 28 days
Focus	Fractions	**Standards Addressed in this Unit**	**3.NF.A.1** **3.NF.A.2a** **3.NF.A.2b** **3.NF.A.3a** **3.NF.A.3b** **3.NF.a.3c** **3.NF.A.3d** **3.MD.B.4**
Inquiry Questions (Engaging-Debatable):	How can you find equivalent fractions? How can you compare fractions? How can you measure length and plot data on line plots?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. Students will use a recipe with fractional amounts of ingredients	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the	**Standard: M-CE-E2 Recognize basic notational symbols and express vocabulary that conveys precise musical meanings** "Rhythm Fractions and Creating Rhythmic Patterns"	UC Davis Chapters; 8,9, and 2. 

	(to make trail mix). Some students will be given ½ cups, others will be given ¼ cups and others will be given ⅛ cups (or two tablespoons) to create the same recipe. When every group has created a trail mix correctly, students may enjoy it.	**effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues**	math curriculum through UC-Davis and Roboblocky. The following lessons are direct robot engineering for the assigned chapters: 8.10 and 9.6. 8.10 In this lesson, students will learn about equal parts of a whole and how to identify when a whole is divided into halves, thirds, fourths, and sixths.  9.6 Students will review comparing fractions. **Activity Statement** Modify the program to move each robot to a foam cube. Compare the distances the robots move. 	Students will integrate their understanding of math and music by exploring the relationship between fractions and rhythmic note values. This activity helps students reinforce their knowledge of fractions while developing their rhythmic skills.	Activity ID: 6885 Subjects: Math Grades: Grade 3 Keywords: fraction, comparison CCSS Math Standards: 3.NF.A.1 Understand a fraction as the quantity formed by part when a whole is partitioned into equal parts; understand a fraction as the quantity formed by parts of size . 3.NF.A.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram. 3.NF.A.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. 3.NF.A.2.a Represent a fraction on a number line diagram by defining the interval from to as the whole and partitioning it into equal parts. Recognize that each part has size

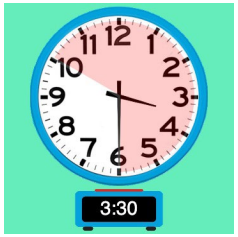
		(Citizenship Foundation Skill)			

		♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			and that the endpoint of the part based at locates the number on the number line. 3.NF.A.2.b Represent a fraction on a number line diagram by marking off lengths from . Recognize that the resulting interval has size and that its endpoint locates the number on the number line. 3.NF.A.3.a Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. 3.NF.A.3.d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols or, and justify the conclusions, e.g., by using a visual fraction model. 3.NF.A.3.b Recognize and generate simple equivalent fractions, e.g., Explain why the fractions are equivalent, e.g., by using a visual fraction model. 3.NF.A.3.c Express whole numbers as fractions, and

Curriculum Development Overview
Planning for Each Unit

					recognize fractions that are equivalent to whole numbers. Examples: Express in the form ; recognize that ; locate and 1 at the same point of a number line diagram. Activity Statement: Three partially eaten chocolate bars are shown. Order the fractional amount of each chocolate bar left from least to greatest

Unit Title	Unit 5: Measurement: Time, Liquid Volume, and Mass		**Length of Unit**	Unit 5: 16 days
Focus	Measurement	**Standards Addressed in this Unit**	**3.MD.A.1** **3.MD.A.2**	
Inquiry Questions (Engaging-Debatable):	How can you tell time to the nearest minute? How can you solve problems involving elapsed time? How can you measure liquid volume? How can you measure mass?			

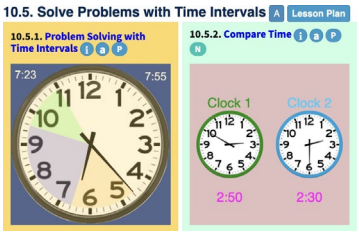
STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. Students will use graduated cylinders to	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math	**Standard: VA-CE-E2 Explore and discuss techniques and technologies for visual expression and communication** **Picture Book Weights:**	UC Davis Chapters: 10 and 11 

	measure different given liquids to the mL. Students will then mix said liquids together and record observations of the mixtures. For example, water and oil, water and rubbing alcohol (the green kind), oil and rubbing alcohol can each be mixed without a safety concern.	♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and**	curriculum through UC-Davis and Roboblocky. The following lessons have direct robot engineering connected to the assigned chapters: 10.6 and 11.5. 10.6 Students will review telling time. **Activity Statement** A dog in the park will walk on the grass for a certain number of minutes. Once you know the final time, use the number of minutes passed to find out the time when the dog started walking.  11.5 Students will review measuring the length, volume, and mass of objects. **Activity Statement** Measure the length of the three rectangle connectors to the nearest fourth inch and compare their lengths. 	*Have students create a picture book with illustrations of objects and their corresponding weights in kilograms and grams. *This activity combines literacy with math and art, reinforcing the understanding of weights through visual representation.	Activity ID: 8218 Subjects: Math Grades: Grade 3 Keywords: time CCSS Math Standards: 3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. Activity Statement: School lets out at 3:30 pm. A clock on the board will display the current time. Find out the number of 5 minute intervals needed to reach 3:30 pm

		technological innovations based on			

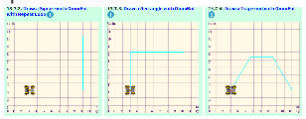
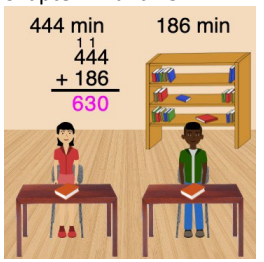
		the appropriateness to specific tasks. **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below:			

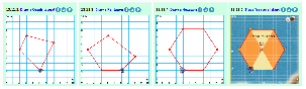
Curriculum Development Overview
Planning for Each Unit

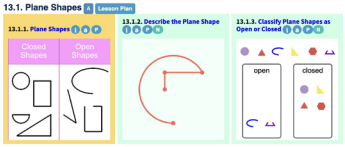
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 6: Shapes: Attributes and Categories, Perimeter and Area, and Partitioning		**Length of Unit**	Unit 6: 18 days
Focus	Shapes	**Standards Addressed in this Unit**	**3.G.A.1** **3.MD.D.8** **3.G.A.2**	
Inquiry Questions (Engaging-Debatable):	How can you classify shapes? How can you find the area and perimeter of shapes? How can you partition shapes into equal areas?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. Students will test the durability of paper in different shapes by creating shapes using folding techniques and testing how many books the paper can hold before tearing. Students can also add another variable to their investigation such as paper material type, such as construction paper or card stock. Teachers may use the following link as an aide in planning and	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky; specifically, lessons 13.7 and 13.11. 13.7 This lesson explains how to use the OmniBot with pen connectors to draw quadrilaterals.  13.11 Students will review describing the sides and	**Standard: VA-CE-E3 Use art vocabulary and the elements and principles of design to convey the language of art (create and discuss own artwork)** Students choose a quadrilateral (rectangle, parallelogram, rhombus.) They draw different sizes of the quadrilateral they selected on paper using different color crayons. The shapes can overlap. They paint the white space with watercolors. Have students write what makes their shape a quadrilateral and why it is not one of the other quadrilaterals they didn't select.	**CCSS Math Standards: 3.NBT.A.2 Fluently add and subtract within using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. Activity Statement: Chloe and Brandon spend time reading each week. Add the number of minutes each student spent reading.** UC Davis Chapters: Chapter 12 and 13 

	conducting this investigation: https://www.youtube.com/watch?v=v0tck3aGX8s	**informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and**	angles of two-dimensional shapes. 		Activity ID: 7043 Subjects: Math Grades: Grade 3 Keywords: addition

		operation of technology systems.			

		♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Science	**Grade Level**	Third Grade
Curriculum /Program	PhD Science		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Module 1: Weather and Climate (39 days)	Essential Question: How can we prevent a storm from becoming a disaster? **Conceptual Overview** People analyze weather and climate data to anticipate future weather conditions and develop solutions to reduce the impact of weather hazards. 1. People collect and analyze weather data over time to reveal stable and changing conditions. 2. Climate describes a location's typical weather conditions over time. 3. The ability to predict severe weather can help people reduce the impact of weather hazards.	**NGSS Performance Expectations** **3-ESS2 Earth's Systems** 3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. 3-ESS2-2 Obtain and combine information to describe climates in different regions of the world. **3-ESS3 Earth and Human Activity** 3-ESS3-1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. **3-5-ETS1 Engineering Design** 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	How does weather impact your school or home?	Compare Weather Data Students will be challenged to make tools and to measure the rainfall in a way that can be compared. Students will understand the following: rainfall must be measured the same way to compare data, data cannot be compared if data is measured in two different ways, and data is observations or measurements that are recorded in an investigation. Students work in groups and can use very simple objects like a popsicle stick, connecting cubes, or a pencil, to measure and compare the amount of rain that falls in two different places. Next, students use their materials to devise a way to measure the rainfall in both cups and record their observations. Since they will not have a ruler, their

				measurements will be untraditional.
Module 2: Survival (35 days)	Essential Question: How do butterflies survive over time in a changing environment? **Conceptual Overview** Organisms have characteristics that help them survive over time in changing environments. 1. Fossils provide evidence of the kinds of organisms that lived long ago and the nature of their environments. 2. For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. Some animals form groups that help members survive. 3. When an environment changes, the kinds of organisms that live there may change. Some organisms may stay and survive, some may move in or out, and some may die.	**3-LS2-1 Ecosystems: Interactions, Energy, and Dynamics** 3-LS2-1 Construct an argument that some animals form groups that help members survive. **3-LS4-1 Biological Evolution: Unity and Diversity** 3-LS4-1 Analyze and interpret data from fossils to provide evidence of the organisms and environments in which they lived long ago. 3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. 3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. **3–5-ETS1 Engineering Design** 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	What are harmful environmental factors that affect the butterflies' survival?	Butterfly Lab Students will learn and identify the stages of a butterfly. Students will observe the stages of the butterfly lab with actual butterflies. Students will observe the caterpillar, chrysalis, or butterfly. They will mark over a 14 day period what stage the butterfly is in on a bar graph. Students will make predictions on how long the butterfly will be in each stage and compare answers to the actual data they collected.
Module 3: Traits (38 days)	Essential Question: What makes an individual humpback whale unique? **Conceptual Overview** Individuals have a variety of traits that are inherited from	**NGSS Performance Expectations** **3-LS1 From Molecules to Organisms: Structures and Processes** 3-LS1-1	Students will learn about the domestication and life cycle of the turkey, recognize how turkeys are raised on farms, and identify turkey products.	Comparing Apples and Onions Students explore heredity concepts by comparing observable traits of apples and onions, collecting data

	their parents, some of which can be influenced by interactions between individuals and their environments. 1. Individuals of the same species have the same characteristics but can have different traits. 2. Traits can be influenced by growth and development and interactions between an individual and its environment. 3. Individuals inherit traits from both parents. Different individuals inherit different combinations of traits. 4. Some traits provide individuals with advantages in surviving and reproducing. These advantageous traits help a species' life cycle continue.	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. **3-LS3 Heredity: Inheritance and Variation of Traits** 3-LS3-1 Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. 3-LS3-2 Use evidence to support the explanation that traits can be influenced by the environment. **3-LS4 Biological Evolution: Unity and Diversity** 3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.		on the traits of different apple varieties, and investigating apple production.
Module 4: Forces and Motion (37 days)	Essential Question: Why do objects move differently in space than they do on Earth? **Conceptual Overview** The forces acting on an object may affect its motion (speed and direction). Forces that are balanced do not change an object's motion, but forces that are unbalanced change an object's motion. 1. Patterns of an object's motion can be observed and described in order to make predictions. 2. Multiple forces can act on an object. If the forces are balanced,	**NGSS Performance Expectations** **3-PS2 Motion and Stability: Forces and Interactions** 3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. 3-PS2-2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. 3-PS2-3	How does the force of impact of Sugar Cane trucks carrying sugar cane loads impact our local roads?	Force and Motion on a Playground Students will learn about force and motion using hands-on activities on the playground and in the classroom. Students will start off the unit in Arc 1 by beginning to think about the playground as a place to learn about science. Force and motion concepts will be introduced using the book Newton and Me by Lynne Mayer. The playground will then be used to make

	the object's motion does not change. If the forces are unbalanced, the object's motion changes. 3. Magnetic and electric forces can be exerted between objects with certain properties even when the objects are not in contact.	Ask questions to determine cause and effect relationships of electrical or magnetic interactions between two objects not in contact with each other. 3-PS2-4 Define a simple design problem that can be solved by applying scientific ideas about magnets. **3–5 ETS1 Engineering Design** 3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		observations about force and motion and about how fun a playground is intertwined with force and motion. Students will perform experiments using ramps to further their explorations of how force and motion impacts speed and direction. Using the knowledge they have gained, in Arc 2, students will collaborate to create experiments on the playground. Designing and creating a Rube Goldberg machine in the classroom will continue this application of how force changes the position and motion of an object. In Arc 3, a field trip to a nearby playground is used to create an additional experiment to deepen their knowledge of force and motion. To think about force and motion from another perspective, groups will design and build a playground for a millipede. The culminating activity will be to use all they have learned to research and choose what additional type of playground equipment could be added to the school's playground to have the playground more fully encompass the aspects of force and motion as well as to make the playground more fun.

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 1: Weather and Climate		**Length of Unit**	39 days
Focus	Weather and Climate	**Standards Addressed in this Unit**	3-ESS2-1, 3-ESS2-2, 3-ESS3-1, and 3-5-ETS1-1	
Inquiry Questions (Engaging-Debatable):	Essential Question: How can we prevent a storm from becoming a disaster?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: MS-ESS2-4 Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. **ZIP BAG WATER CYCLE** With just a few household ingredients you can help to quickly explain the water cycle to your students. Here's what you'll need: A plastic zippered bag Food coloring	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Use a digital thermometer to record the daily weather inside and outside the classroom. Once the students collect the data, they will input this into a google sheet and create graphs of their data.	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will build an anemometer. Students will be offered the following materials and , in groups, design and build a working anemometer: clay, gravel, wooden dowels, wooden skewers, plastic straws, paper cups, tape, string and hole puncher. Students will engage in the engineering design process to design and build a working	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** Shaving Cream Rain Clouds Students will work in groups with a glass jar, shaving cream and food coloring. Fill the glass jar with water and put shaving cream on the top. The shaving cream represents the cloud. Then start dripping food coloring on top of the shaving cream. Explain to your students that when the cloud is heavy enough, it will start to rain. Sure enough, when you have put enough food coloring	**Data Analysis of Weather Patterns**: Provide students with weather data (e.g., temperature, rainfall, wind speed) from different regions affected by weather disasters. Ask them to analyze the data, create graphs (bar graphs, line graphs), and identify patterns or trends. For example, they can compare the frequency and intensity of hurricanes or tornadoes over time. Using the data, students will create a news broadcast warning a city about hurricane status.

	Tape First, pour some water into the bag. It should be enough to cover the bottom of the bag by ½ inch to an inch. Add a few drops of food coloring so students can see the water better. Blue is preferable to best represent water, but any color works! Close the bag and tape it to a window or a wall facing a window. As the water warms, it will start to evaporate. But the water vapor won't be able to escape the bag because the bag is sealed. The water vapor gets trapped at the top of the back and eventually starts to cool. As it cools, it condenses like a cloud. When it condenses enough, it falls down like rain. While this isn't a perfect illustration, it gives the students a great sense of the water cycle and how clouds and rain form.		anemometer using materials they select from a set of possible choices. Students will test their anemometer using a small fan and/or a hair dryer.	drops on the cloud, it will start to rain. *Pro Tip: Dilute the food coloring with water, otherwise you'll go through a lot of food coloring drops.*	

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 2: Survival	**Length of Unit**	35 days
Focus	Survival	**Standards Addressed in this Unit**	3-LS2-1, 3-LS4-1, 3-LS4-3, 3-LS4-4, and 3–5-ETS1-2
Inquiry Questions (Engaging-Debatable):	Essential Question: How do butterflies survive over time in a changing environment?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. Students will decide if given animals can or can not survive in certain habitats with justification for their decisions. Students will be given pictures of different animals and pictures of different biomes. In groups, students will discuss whether certain animals will survive in each habitat and give reasons why or why not.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** Students will produce a video report of their argument that some animals form groups that help members survive.	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will build a model of the habitat that would protect the life cycle of a butterfly.	**Standard: D-CE-E2 Explore and demonstrate basic movements and the elements of dance (space, time, and energy)** Butterfly Life Cycle Dance **Introduction to the Butterfly Life Cycle:** Begin with a short lesson on the four stages of the butterfly life cycle: egg, caterpillar, chrysalis, and butterfly. Show pictures or diagrams to illustrate each stage and discuss the characteristics and changes that occur in each stage. **Movement Warm-Up:** Play some music and lead the students in a short	**Life Cycle Math**: Integrate math into the study of the butterfly life cycle. Provide students with data on the number of eggs laid by a butterfly, the percentage that hatch into caterpillars, and the percentage that survive to become butterflies. Students can practice multiplication, division, and percentages by calculating these figures and discussing factors that impact survival rates.. Students will use the data and math to support a developed claim about ways to support butterfly survival.

				warm-up to get them ready for movement. Include stretching and basic movements to prepare them for dancing. **Stage 1: Egg** Explain that butterflies start as tiny eggs. Have the students curl up into a small ball on the floor, representing an egg. Play slow, gentle music and encourage them to imagine they are safely inside an egg. **Stage 2: Caterpillar** Discuss how the egg hatches into a caterpillar (larva) that crawls and eats leaves. Have the students slowly uncurl and begin to crawl on the floor, moving their bodies like caterpillars. Play slightly faster music with a steady beat to mimic the caterpillar's movements as it eats and grows. **Stage 3: Chrysalis** Explain that the caterpillar forms a chrysalis (pupa)	

				where it undergoes transformation. Have the students stand still and wrap their arms around themselves, mimicking the chrysalis. Play slow, soothing music as they imagine the changes happening inside the chrysalis. **Stage 4: Butterfly** Discuss how the butterfly emerges from the chrysalis with beautiful wings. Have the students slowly open up their arms and begin to flutter around the space, representing the butterfly. Play lively, light music and encourage graceful, flowing movements to mimic the butterfly's flight. Provide scarves or ribbons for students to use as wings if available. **Sequence Dance:** Lead the students in a dance sequence that goes through all four stages of the butterfly life cycle:	

				Start curled up as eggs. Transition to crawling as caterpillars. Stand still and wrap arms as chrysalises. Flutter around as butterflies. Repeat the sequence several times, encouraging students to fully embody each stage. **Creative Dance:** Allow students to create their own short dance sequences that represent the butterfly life cycle. Let them choose their own movements and music (if available) to express the stages creatively. **Performance and Reflection:** Have the students perform their butterfly life cycle dances for the class. Discuss how they felt during each stage and how dance helped them understand the life cycle of a butterfly. Reflect on the importance of each stage in the butterfly's life.	

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 3: Traits	**Length of Unit**	38 days
Focus	Traits	**Standards Addressed in this Unit**	3-LS1-1, 3-LS3-1, 3-LS3-2, 3-LS4-2
Inquiry Questions (Engaging-Debatable):	Essential Question: What makes an individual humpback whale unique?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-LS4-2 **Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.** Students will read and respond to text and graphics about animal adaptations. Then, the teacher will pose the question: have you ever wondered how Arctic animals stay warm in the most frigid, freezing conditions on Earth? Teacher will have a bowl of ice water provided for each group of students. Procedure: 1. Students will each place a bare finger in the bowl of ice water and count how many seconds they could stand to	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.**	**Science standard: 3-LS3-1** **Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.** Build-a-Calf Workshop Students will Flip the coin to determine what genes your offspring will carry. Match the genetic traits each parent will pass on to his/her offspring by recording the uppercase or lowercase letter from the coin in the chart provided for you.	**Standard: VA-CE-E2** **Explore and discuss techniques and technologies for visual expression and communication** **Protecting Ugly Animals** Students will select an animal they consider ugly and look at traits of that animal. They will create a poster to persuade other 3rd graders to protect their animal because they are important to the ecosystem.	**Animal Footprint Measurements**: Introduce students to the concept of animal tracks and how they can reveal information about an animal's size and movement. Provide students with pictures of animal tracks or make impressions of animal tracks using clay or plaster. Have students measure the length and width of the tracks using rulers or measuring tape. They can then calculate the area of each track by multiplying the length by the width, helping them understand how animals' footprints vary in size.

	leave before it was too cold 2. Students take out finger and warm it back up 3. With help from a partner, students will coat one finger with a layer of shortening (ex Crisco) making sure that no skin is visible 4. Students will put the shortening-covered finger in the ice water and measure how long they can leave it 5. Discuss how and why there is a difference	Students pick a winter animal and will research how it survives in the winter (hibernate, migrate, or adapt). Students will create a visual model of how their animal survives, digitally publish their writing, and devise a way to explain to a baby animal how and why it has to find a way to survive in the winter.			

Unit Title	Module 4: Forces and Motion		**Length of Unit**	37 days
Focus	Forces and Motion	**Standards Addressed in this Unit**	3-PS2-1, 3-PS2-2, 3-PS2-3, 3-PS2-4, and 3–5-ETS1-3	
Inquiry Questions (Engaging-Debatable):	Essential Question: Why do objects move differently in space than they do on Earth?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)**	**Standards: 3.P.1 Understand motion and factors that affect motion. 3.P.1.1 Infer changes in speed or direction resulting from forces acting on an object.**	**Standard: VA-CE-E2 Explore and discuss techniques and technologies for visual**	**Balloon Rocket Races**: Explore the concept of thrust and gravity by conducting balloon rocket races. Have

	unbalanced forces on the motion of an object. Students will investigate Newton's first Law of Motion. Materials: plastic container ½ filled with water, postcard or cardstock, cardboard tube and an orange. Procedure: 1. Place the postcard over the container of water 2. Stand the cardboard tube on top of the postcard 3. Balance the orange on top of the cardboard tube so that it is right over the mouth of the container 4. Quickly pull the postcard away and observe what happens 5. Recreate the experiment, this time without the cardboard tube. Observe and discuss what happens	♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Forces and Motion Applet Students will study using the interactive applet how motion is affected by force.	**3.P.1.2 Compare the relative speeds (faster or slower) of objects that travel the same distance in different amounts of time. 3.P.1.3 Explain the effect of earth's gravity on the motion of any object on or near the earth.** Force and Motion on a Playground pg. 11 Dream Playground Design Challenge: Part 1 Explain that students will use their Fun Factor Survey results for the Dream Playground Design Challenge at the end of the unit.	**expression and communication** Force and Motion on a Playground pg. 20 Ramp Investigation Art Students will dip the tires in paint and let the vehicle go down the ramp to create a piece of artwork.	students attach a string to a straw and thread the string through the straw. Then, inflate a balloon and tape it to the straw. When the balloon is released, it will propel the straw forward like a rocket. Students can experiment with different balloon sizes or amounts of air to see how they affect the distance the rocket travels. They can measure and compare the distances traveled to understand the relationship between thrust, gravity, and motion.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Social Studies	**Grade Level**	3rd grade
Curriculum/ Program	Louisiana Student Standards for Social Studies		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Founding the United States of America (5 weeks)	**Topic 1**: Students will understand how in time disagreements about principles of government led the colonists to establish their own identity separate from Great Britain, write the Declaration of Independence, and fight for their independence in the American Revolution. **Topic 2**: Students will learn about the origins of the U.S. Constitution and the Bill of Rights, as well as America's struggles following the Revolutionary War and how this led to the Constitutional Convention. They will read about the debates that took place and addition of the Bill of Rights. Finally, they will look at the role George Washington played as the nation's first president.	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. b. Describe the significance of state and nationally	Students can discuss the environmental impact of the American Revolution and the subsequent nation-building processes. How did the war affect landscapes, ecosystems, and natural resources? Encourage students to think about the environmental consequences of conflict and colonization. Students can also explore the concept of liberty and equality as articulated in the Declaration of Independence and the U.S. Constitution. Discuss how these ideals were interpreted and applied differently by various groups throughout American history.	Write a Declaration of Independence: After studying the Declaration of Independence, have students write their own declarations outlining grievances and reasons for independence. Encourage them to express their thoughts in simple language and relate them to their own lives. Presidential Timeline: Have students create a timeline of George Washington's life, highlighting his role as the nation's first president. They can include significant events from his presidency and illustrate how his leadership shaped the early United States.

		designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. c. Describe the history of American symbols, including the Liberty Bell, U.S. flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. e. Identify and describe natural American landmarks, including the Grand Canyon, Mississippi River, Monument Valley, Niagara Falls, Rocky Mountains, Smoky Mountains, and Yellowstone National Park. 3.7 Describe the significance of major events in the history of the United States, including the American Revolution, Louisiana Purchase, Lewis and Clark Expedition, the abolition of slavery following the Civil War, women's suffrage movement, civil rights movement, and the Space Race. 3.10 Recognize functions of the Declaration of Independence and the Constitution of the United States. d. Compare and contrast representative democracy (republic) and monarchy. e. Explain how our founding documents protect individuals' rights to life, liberty, and the pursuit of happiness. 3.11 Identify and describe basic principles of the		

		Declaration of Independence and the Constitution of the United States. 3.13 Describe civic virtues: voting, running for office, serving on committees, and volunteering. 3.19 Create and use maps and models with a key, scale, and compass with intermediate directions. 3.20 Describe the geographic features of places in the United States.		
Papers and Places (4 weeks)	**Topic 1**: Students will learn about the structure and workings of the U.S. Constitution including how a bill becomes a law, the branches of government, and checks and balances. They will compare and contrast federal and state governments, and explore how citizens participate in our democracy. **Topic 2**: Students will review their knowledge of U.S. geography and deepen their understanding of specific geographic features of the United States, along with some of our nation's most cherished symbols.	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. c. Describe the history of American symbols, including the Liberty Bell, U.S. flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust."	Understanding the Impact of Legislation on the Environment: Students can explore how laws, such as environmental protection acts, are created and enforced to safeguard natural resources and ecosystems. Students can discuss how the branches of government work together to address environmental issues, such as pollution control or wildlife preservation. The teacher can encourage discussions on citizen involvement in advocating for environmental policies and participating in initiatives like community clean-ups or tree planting.	The teacher can engage students in interdisciplinary projects that examine environmental issues through the lens of civic engagement and respect for all cultures. The teacher can encourage students to research and present case studies on environmental policies or initiatives that have addressed socio-economic disparities and promoted environmental justice. The teacher can facilitate discussions on how different communities collaborate to address shared environmental concerns and advocate for sustainable practices.

		d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. e. Identify and describe natural American landmarks, including the Grand Canyon, Mississippi River, Monument Valley, Niagara Falls, Rocky Mountains, Smoky Mountains, and Yellowstone National Park. 3.10 Recognize functions of the Declaration of Independence and the Constitution of the United States. a. Describe the process by which a bill becomes law. b. Describe the responsibilities of the three branches of government. c. Explain the relationship between the federal government and state government. 3.11 Identify and describe basic principles of the Declaration of Independence and the Constitution of the United States. 3.13 Describe civic virtues: voting, running for office, serving on committees, and volunteering. 3.14 Describe how and why people become citizens of the United States. 3.16 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services. 3.19 Create and use maps and models with a key, scale, and compass with intermediate directions. 3.20 Describe the geographic features of places in the United States. 3.21 Interpret geographic features of the United States using a variety of tools such as different types of maps and photos.		

		3.22 Identify and locate the four hemispheres, equator, and prime meridian. 3.23 Locate and describe the seven continents and five oceans. 3.24 Describe the relative location of the United States. 3.25 Describe why and how people in the United States have modified their environment. 3.26 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments.		
A Growing Nation (4.5 weeks)	**Topic 1**: In this topic students will learn about the major achievements of Thomas Jefferson's presidency, with a particular focus on the Louisiana Purchase and the Corps of Discovery. Students will explore Jefferson's motivations for purchasing the Port of New Orleans and the unlikely circumstances that led to the United States effectively doubling in size without a shot being fired. The students will learn about the goals of the Corps of Discovery and will recount the expedition's incredible journey to the Pacific Ocean and back again. **Topic 2**: In this topic, students will learn how the United States expanded westward following the Louisiana Purchase, and how the ever-growing tide of settlers affected American Indians. Students will examine the various motivations for settlers and how they affected and modified the environment	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison.	Topic 1: Environmental Science Connection: While exploring Thomas Jefferson's presidency and the Louisiana Purchase, students can learn about the geographical expansion and its impact on the environment. They can delve into how the acquisition of new territories influenced biodiversity, land use, and natural resources. Topic 2: Humanities/Multicultural Exposure: Studying the impact of westward expansion on American Indian communities offers insights into multiple different cultural perspectives, experiences of displacement, and resistance to colonization. Understanding how different	Creative Task: Imagine you are a member of the Corps of Discovery. Write a journal entry detailing one of your experiences during the expedition, describing the challenges you faced and the discoveries you made. OR Creative Task: Create a storyboard illustrating the journey of a settler family moving westward after the Louisiana Purchase. Include key milestones, challenges faced, and interactions with American Indian communities along the way.

			groups of American Indians	

	with new technologies. Finally, students will look at how different groups of American Indians responded to encroachments on their land, and threats to their way of life.	b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. c. Describe the history of American symbols, including the Liberty Bell, U.S. flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. 3.7 Describe the significance of major events in the history of the United States, including the American Revolution, Louisiana Purchase, Lewis and Clark Expedition, the abolition of slavery following the Civil War, women's suffrage movement, civil rights movement, and the Space Race. 3.8 Describe how voluntary and involuntary migration have affected the United States. 3.9 Describe how technological advancements such as the steam engine, railroad, airplane, automobile, electricity, telephone, radio, television, microwave, and digital technologies have affected the lives of people in the United States. 3.19 Create and use maps and models with a key, scale, and compass with intermediate directions.	responded to encroachments on their land provides valuable lessons in empathy, cultural sensitivity, and the complexities of historical narratives.	

		3.20 Describe the geographic features of places in the United States. 3.21 Interpret geographic features of the United States using a variety of tools such as different types of maps and photos. 3.24 Describe the relative location of the United States. 3.25 Describe why and how people in the United States have modified their environment. 3.26 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments. 3.28 Describe how the regions of the United States vary culturally and economically.		
A Changing Nation (4.5 weeks)	**Topic 1**: In the early 1800s, people settled in many different regions of the United States. Starting in the Northeast, people eventually migrated to other areas due to numerous factors, such as overpopulation, fertile farmland, economy, and technological advancements. Inventions like the steamboat and locomotive allowed people to easily and quickly settle in various regions. **Topic 2**: In the early years of the United States, slavery was often a common topic for debate. While the North was typically against slavery, the South believed it was not a problem and felt it was even needed in order to maintain and grow the agricultural economy. However, abolitionists and others began to speak out against slavery, including President Abraham Lincoln, but not everyone	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander	The debate over slavery intersected with environmental justice issues as enslaved people were often forced to work in harsh agricultural environments, contributing to soil depletion and environmental degradation. ● Understanding the environmental impact of slavery expands students' awareness of the broader social, economic, and environmental implications of historical events. ● Exploring the perspectives of abolitionists, enslaved individuals, and others involved in the anti-slavery movement deepens	**Topic 1: Westward Expansion** Role-Play: Divide students into groups, assigning each group a different perspective (e.g., pioneer, Native American, inventor). Have them create short skits or role-plays depicting interactions between these groups during westward expansion. **Topic 2: Slavery and the Civil War** Letter Writing: Have students imagine they are living during the Civil War era and write letters from the perspective of different individuals (e.g., soldiers, enslaved individuals, family members). Encourage them to express their

	agreed and this soon led to the Civil War.	Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. c. Describe the history of American symbols, including the Liberty Bell, U.S. flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. 3.7 Describe the significance of major events in the history of the United States, including the American Revolution, Louisiana Purchase, Lewis and Clark Expedition, the abolition of slavery following the Civil War, women's suffrage movement, civil rights movement, and the Space Race. 3.8 Describe how voluntary and involuntary migration have affected the United States. 3.9 Describe how technological advancements such as the steam engine, railroad, airplane, automobile, electricity, telephone, radio, television, microwave, and digital	students' understanding of the struggle for human rights and social justice.	thoughts, emotions, and experiences related to the war and its impact on their lives.

		technologies have affected the lives of people in the United States. 3.10 Recognize functions of the Declaration of Independence and the Constitution of the United States. e. Explain how our founding documents protect individuals' rights to life, liberty, and the pursuit of happiness. 3.12 Explain the significance of the Emancipation Proclamation and the Thirteenth Amendment. 3.15 Describe the United States in economic terms: free enterprise, private property, producers and consumers, profit and loss, supply and demand, and imports and exports. a. Explain why free enterprise and private property are important concepts and how they are beneficial to individuals and to the United States. b. Explain how the interaction between producers and consumers in a free market satisfies economic wants and needs. c. Explain how supply and demand can affect the prices of goods and services. d. Differentiate between imports and exports. e. Explain why and how people specialize in the production of goods and services. 3.16 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services. 3.17 Describe the relationship between scarcity and opportunity cost in economic decision-making. 3.25 Describe why and how people in the United States have modified their environment. 3.26 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments. 3.28 Describe how the regions of the United States vary culturally and economically.		

Curriculum Development Course at a Glance
Planning for Each Grade Level

A Nation of Industry and Innovation (4 weeks)	**Topic 1**: The Industrial Revolution was a time of sweeping transformation in how people worked and lived, bringing innovations and fueling debates about how we interact with our environment. For further reading, please review these resources: Sound Smart: Child Labor in the Industrial Revolution | History **Topic 2**: As the 26th president of the United States, Theodore Roosevelt played a major role in the Conservation Movement by creating many laws and programs to help protect the nation's lands and animals.	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington	By exploring Roosevelt's legacy in the Conservation Movement, students can gain insights into the interconnectedness of environmental science and humanities, recognizing the ethical, social, and cultural dimensions of conservation efforts. They can learn about the multiple different perspectives and values that shape environmental policies and practices, fostering empathy, critical thinking, and a sense of responsibility towards the planet and its inhabitants across different communities and generations.	Task Description: As a culminating project for our unit on the Industrial Revolution and its impact on the environment, students will create a presentation or poster that compares and contrasts the environmental changes during the Industrial Revolution with the environmental issues we face today. Your project should highlight innovations from the Industrial Revolution and their effects on the environment, as well as propose solutions for addressing current environmental challenges.

		D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. e. Identify and describe natural American landmarks, including the Grand Canyon, Mississippi River, Monument Valley, Niagara Falls, Rocky Mountains, Smoky Mountains, and Yellowstone National Park. 3.8 Describe how voluntary and involuntary migration have affected the United States. 3.9 Describe how technological advancements such as the steam engine, railroad, airplane, automobile, electricity, telephone, radio, television, microwave, and digital technologies have affected the lives of people in the United States. 3.15 Describe the United States in economic terms: free enterprise, private property, producers and consumers, profit and loss, supply and demand, and imports and exports. a. Explain why free enterprise and private property are important concepts and how they are beneficial to individuals and to the United States. b. Explain how the interaction between producers and consumers in a free market satisfies economic wants and needs. c. Explain how supply and demand can affect the prices of goods and services. d. Differentiate between imports and exports. e. Explain why and how people specialize in the production of goods and services.		

		3.16 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services. 3.17 Describe the relationship between scarcity and opportunity cost in economic decision-making. 3.25 Describe why and how people in the United States have modified their environment. 3.26 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments. 3.27 Describe the importance of conservation and preservation. 3.28 Describe how the regions of the United States vary culturally and economically.		
Towards a More Perfect Union (5 weeks)	**Topic 1**: The women's suffrage movement fought for women's right to vote in the late 19th and early 20th centuries. They wanted voting rights for women and equality in politics. They faced challenges, like the belief that women should focus on their homes and opposition from some men. Important suffragists, such as Susan B. Anthony, led the movement. Despite obstacles, the movement succeeded. In 1920, the 19th Amendment was ratified, giving women the right to vote. This was a major step toward equality and encouraged women's participation in society and politics. For further reading, please review these resources: Women's Suffrage - The U.S. Movement, Leaders & 19th Amendment	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel	One potential connection between the women's suffrage movement and environmental science can be drawn through the concept of advocacy for change and the interconnectedness of social and environmental issues. Furthermore, the principles of equality and justice that underpinned the women's suffrage movement can also be applied to environmental science. Environmental degradation often disproportionately affects marginalized communities, highlighting the importance of addressing social inequalities alongside environmental issues.	Group Discussion ● Lead a reflective discussion where students can share their thoughts on the challenges of upholding democratic ideals. ● Encourage students to consider the role of ordinary citizens in creating positive change and promoting equality. Personal Reflections ● Provide students with writing prompts or drawing activities to reflect on what they've learned about

	Topic 2: The United States has struggled since its beginning—and continues to struggle today—to put into practice the noble ideas embodied in the Declaration of Independence and the U.S. Constitution. Throughout the history of the United States, members of one group have often excluded members of other groups. Behaving in accord with our ideals has not always been easy; but when faced with injustice, ordinary people can make extraordinary changes for good.	Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. 3.7 Describe the significance of major events in the history of the United States, including the American Revolution, Louisiana Purchase, Lewis and Clark Expedition, the abolition of slavery following the Civil War, women's suffrage movement, civil rights movement, and the Space Race. 3.8 Describe how voluntary and involuntary migration have affected the United States. 3.10 Recognize functions of the Declaration of Independence and the Constitution of the United States. e. Explain how our founding documents protect individuals' rights to life, liberty, and the pursuit of happiness. 3.11 Identify and describe basic principles of the Declaration of Independence and the Constitution of the United States. 3.12 Explain the significance of the Emancipation Proclamation and the Thirteenth Amendment. 3.13 Describe civic virtues: voting, running for office, serving on committees, and volunteering.	By recognizing the parallels between these movements, students can develop a deeper understanding of the interconnectedness of social and environmental issues and the importance of advocacy and collective action in creating positive change for both people and the planet.	justice, equality, and citizenship. ● Encourage students to express their own ideas and feelings about making the world a better place.
An Ever Advancing Nation (1.5 weeks)	Modern-Era Advancements: The Space Race and the Digital Age	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to:	Explore the many different backgrounds of scientists, engineers, and innovators involved in the Space Race and the Digital Age. Highlight the contributions of	Research and Presentation (Space Race): Students research key events, missions, and figures of the Space Race era.

		a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. 3.7 Describe the significance of major events in the history of the United States, including the American Revolution, Louisiana Purchase, Lewis and Clark Expedition, the abolition of slavery following the Civil War, women's suffrage movement, civil rights movement, and the Space Race. 3.9 Describe how technological advancements such as the steam engine, railroad, airplane, automobile, electricity, telephone, radio, television, microwave, and digital technologies have affected the lives of people in the United States. 3.18 Describe the importance of personal financial decision-making such as budgeting and saving.	individuals from different cultures and backgrounds. Discuss how literature, art, and culture have been influenced by advancements in space exploration and digital technology. For example, how science fiction novels and films have imagined space travel and future technological developments, showcasing multiple different perspectives and ideas.	They create a presentation or poster highlighting the following: Important dates and events (e.g., launch of Sputnik, Apollo 11 Moon landing) Notable astronauts and scientists (e.g., Yuri Gagarin, Neil Armstrong) Significance of the Space Race in history and its impact on technology and society

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Foundation the United States of America	**Length of Unit**	5 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	Building on what students learned about our founding documents and system of government in grade 2, this course continues to introduce students to major historical events, figures, symbols, and places related to the development and history of the United States of America. In grade 3 students examine the people, places, and papers in U.S. history that exemplify American ideals and democratic values like equality, liberty, justice, and responsibility for the common good. In this course, students will also focus on building their geographic knowledge of North America and the wider world, while further developing an understanding of how the environment affects its inhabitants and how people, in turn, affect their environment.	**Standards Addressed in this Unit**	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. c. Describe the history of American symbols, including the Liberty Bell, U.S. flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial,

			Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. e. Identify and describe natural American landmarks, including the Grand Canyon, Mississippi River, Monument Valley, Niagara Falls, Rocky Mountains, Smoky Mountains, and Yellowstone National Park. 3.7 Describe the significance of major events in the history of the United States, including the American Revolution, Louisiana Purchase, Lewis and Clark Expedition, the abolition of slavery following the Civil War, women's suffrage movement, civil rights movement, and the Space Race. 3.10 Recognize functions of the Declaration of Independence and the Constitution of the United States. d. Compare and contrast representative democracy (republic) and monarchy. e. Explain how our founding documents protect individuals' rights to life, liberty, and the pursuit of happiness. 3.11 Identify and describe basic principles of the Declaration of Independence and the Constitution of the United States. 3.13 Describe civic virtues: voting, running for office, serving on committees, and volunteering. 3.19 Create and use maps and models with a key, scale, and compass with intermediate directions. 3.20 Describe the geographic features of places in the United States.
Inquiry Questions (Engaging-Debatable):	How did the American Revolution create the United States of America? How did the U.S Constitution get written?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-LS4-3 Construct an argument with evidence that in a	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)**	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or**	**Standard: TH-HP-E4 Recognize universal characters and situations**	**Revolutionary War Battles**: Explore the geography of

	particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. Explore the science behind colonial farming techniques and agriculture. Students can create small-scale gardens or planting experiments to learn about colonial crops, soil types, and agricultural practices, observing plant growth and experimenting with variables like sunlight and water.	♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Introduce students to basic coding concepts using simple platforms like Scratch. Students can create interactive stories or games that simulate key events of the American Revolution, such as Paul Revere's ride or the signing of the Declaration of Independence.	**want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Introduce students to architectural principles by studying the design of the U.S. Capitol building. Students can research the architecture of the Capitol and then design and build their own models using materials like LEGO bricks or cardboard.	**in stories and dramas of various cultures and how theater reflects life** Explore the art of propaganda posters used during the Revolutionary War. Students can design their own posters using art supplies or digital tools, incorporating key slogans, symbols, and imagery that reflect the spirit of the revolution. Then reenact a scene based on that time period.	Revolutionary War battles and the distances between key locations. Provide students with maps of battlefields and ask them to calculate the distances between various points, such as the distance traveled by troops from one location to another. Students can use rulers or measuring tape to measure distances on the maps and then convert the measurements to miles or kilometers. This activity reinforces math skills related to measurement, scale, and unit conversion. **Colonial Currency Conversion**: Introduce students to the currency used during the American Revolution, such as colonial pounds, shillings, and pence. Provide students with conversion charts or examples of colonial currency, and ask them to convert amounts between different units. For example, they can convert pounds to shillings or pence to pounds. This activity helps reinforce math skills related to addition, subtraction, and basic unit conversion.

Curriculum Development Overview
Planning for Each Unit

Unit Title	Papers and Places	**Length of Unit**	4 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	Building on what students learned about our founding documents and system of government in grade 2, this course continues to introduce students to major historical events, figures, symbols, and places related to the development and history of the United States of America. In grade 3 students examine the people, places, and papers in U.S. history that exemplify American ideals and democratic values like equality, liberty, justice, and responsibility for the common good. In this course, students will also focus on building their geographic knowledge of North America and the wider world, while further developing an understanding of how the environment affects its inhabitants and how people, in turn, affect their environment.	**Standards Addressed in this Unit**	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. c. Describe the history of American symbols, including the Liberty Bell, U.S. flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. e. Identify and describe natural American landmarks, including the Grand Canyon, Mississippi River, Monument Valley, Niagara Falls, Rocky Mountains, Smoky Mountains, and Yellowstone National Park.

			3.10 Recognize functions of the Declaration of Independence and the Constitution of the United States. a. Describe the process by which a bill becomes law. b. Describe the responsibilities of the three branches of the government. c. Explain the relationship between the federal government and state government. 3.11 Identify and describe basic principles of the Declaration of Independence and the Constitution of the United States. 3.13 Describe civic virtues: voting, running for office, serving on committees, and volunteering. 3.14 Describe how and why people become citizens of the United States. 3.16 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services. 3.19 Create and use maps and models with a key, scale, and compass with intermediate directions. 3.20 Describe the geographic features of places in the United States. 3.21 Interpret geographic features of the United States using a variety of tools such as different types of maps and photos. 3.22 Identify and locate the four hemispheres, equator, and prime meridian. 3.23 Locate and describe the seven continents and five oceans. 3.24 Describe the relative location of the United States. 3.25 Describe why and how people in the United States have modified their environment. 3.26 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments.
Inquiry Questions (Engaging-Debatable):	How does our system of government work? What are the major geographic features and national symbols associated with the United States?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**

	Standard: 3-PS2-2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. Students will make paper birds fly using static electricity. Materials: tissue paper, markers, scissors, balloon and wool cloth Directions: 1. using markers, students will draw a few birds on tissue paper and cut them out with scissors 2. lay the birds on a flat surface 3. inflate the balloon and tie it off 4. rub the balloon on wool cloth (or hair) for 10-20 seconds 5. hold the balloon a few inches above the paper birds 6. record what happens	**Standards:6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Introduce students to age-appropriate online databases or digital archives where they can explore primary sources related to historical events and figures. Students will keep a digital journal entry of summarizing facts from their research.	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will design and create a model of the Washington Monument using cardboard, toothpicks, glue and other common school supplies. If so desired, the teacher can give specific height requirements for each piece (the rectangular prism and the pyramid).	**Standard: M-HP-E2 Recognize and discuss the function of music within historical and cultural contexts, including celebrations, ceremonies, and special occasions** Exploring Patriotic Music and its Text 1. Introduction to Patriotic Music: Begin with a discussion about patriotic music and its significance in American culture. Explain how these songs are often used to express love for the country, commemorate important events, and bring people together. 2. Listening to Patriotic Songs Play audio recordings of several patriotic songs. Provide students with printed lyrics to follow along as they listen. Discuss the themes and emotions conveyed in each song. 3. Analyzing Lyrics: Divide students into small groups and assign each group a different patriotic song. Have each group analyze the lyrics of their assigned song, looking for key themes, important words, and the overall message.	**Statue of Liberty Measurements**: Discuss the Statue of Liberty as a national symbol and its physical characteristics, such as height and dimensions. Provide students with measurements of the statue's height, arm length, and other dimensions. Then, ask students to use rulers or measuring tape to recreate the statue's proportions on a smaller scale. They can measure and cut out pieces of paper or cardboard to represent different parts of the statue and assemble them to create a model. This activity reinforces math skills related to measurement, scale, and proportion. **Bald Eagle Graphing**: Introduce students to the bald eagle as a national symbol and discuss its characteristics, such as wingspan and weight. Provide students with data on the wingspans and weights of different bald eagles and ask them to create scatter plots or bar graphs to visualize the data. Students can then analyze the graphs to identify trends and patterns in the bald eagle population. This activity reinforces math skills related to graphing, data

	Retry investigation with cardstock and observe the differences.			Encourage students to discuss what they think the song is about and how it makes them feel. 4. Creating Visual Aids: Provide construction paper, markers, and crayons for each group to create visual aids that represent the themes and messages of their song. Have students draw pictures or create posters that illustrate the meaning of the lyrics. Encourage creativity and use of symbols that relate to the song's content (e.g., flags, landscapes, historical events). 5. Learning and Singing the Songs: Teach students to sing their assigned patriotic song. Practice singing together, focusing on clear pronunciation and expression of the lyrics' meaning. Use simple musical instruments to accompany the singing. Assign different instruments to students and practice playing them in rhythm with the song. 6. Performing the Songs: Organize a mini-concert where each group and convey the emotions of	analysis, and interpretation. .

				the performs their song for the class. Have students use their visual aids to enhance their performance, showing the posters or drawings as they sing. Encourage students to sing with enthusiasm song. 7.Discussion and Reflection: - After the performances, discuss the different patriotic songs and their meanings..	

Unit Title	A Growing Nation	**Length of Unit**	4.5 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	Building on what students learned about our founding documents and system of government in grade 2, this course continues to introduce students to major historical events, figures, symbols, and places related to the development and history of the United States of America. In grade 3 students examine the people, places, and papers in U.S. history that exemplify American ideals and democratic values like equality, liberty, justice, and responsibility for the common good. In this course, students will also focus on building their geographic knowledge of North America and the wider world, while further developing an understanding of how the environment affects its inhabitants and how people, in turn, affect their environment.	**Standards Addressed in this Unit**	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. c. Describe the history of American symbols, including the Liberty Bell, U.S. flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial,

			Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. 3.7 Describe the significance of major events in the history of the United States, including the American Revolution, Louisiana Purchase, Lewis and Clark Expedition, the abolition of slavery following the Civil War, women's suffrage movement, civil rights movement, and the Space Race. 3.8 Describe how voluntary and involuntary migration have affected the United States. 3.9 Describe how technological advancements such as the steam engine, railroad, airplane, automobile, electricity, telephone, radio, television, microwave, and digital technologies have affected the lives of people in the United States. 3.19 Create and use maps and models with a key, scale, and compass with intermediate directions. 3.20 Describe the geographic features of places in the United States. 3.21 Interpret geographic features of the United States using a variety of tools such as different types of maps and photos. 3.24 Describe the relative location of the United States. 3.25 Describe why and how people in the United States have modified their environment. 3.26 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments. 3.28 Describe how the regions of the United States vary culturally and economically.
Inquiry Questions (Engaging-Debatable):	Why was the Louisiana Purchase and the Corps of Discovery important to the United States? How did the western Expansion affect the Nation?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**

Curriculum Development Overview
Planning for Each Unit

	Standard: 3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. Students will learn that Lewis and Clark's expedition cataloged 122 different species of animals all of which had a backbone. Students will watch the video about animal classification https://www.youtube.com/watch?v=mRidGna-V4E , and, then, given a set of animal cards, students will classify these animals based upon traits they observe.	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill) ♦ Students use technology tools to enhance learning, increase productivity, and promote creativity. ♦ Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Students can engage in urban planning activities where they design and build models of urban, suburban, and rural environments, considering land use and economic factors. Use Tinkercad to design their models.	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will design and build a raft using drinking straws to model rafts used to cross smaller bodies of water by the Lewis and Clark expedition. Materials: pencil, paper, drinking straws, hot glue gun and sticks, scissors, pennies (to represent people and supplies) Criteria: raft must float on water and hold at least 10 pennies Constraints: only use the materials provided	**Standard: D-HP-E1 Recognize and discuss the role of dance in cultural/historical contexts, including celebrations, ceremonies, and special occasions** National Celebrations Through Dance Divide the class into small groups and assign each group National celebration. Ask each group to brainstorm and create dance movements that represent their assigned celebration. Play music that corresponds with each celebration while students practice their dance routines. Encourage creativity and expression in their movements. organize your performance where each group presents their dance routine to the class. discuss and reflect.	**Land Surveying Simulation**: Introduce students to the concept of land surveying and its importance during westward expansion. Provide students with a mock "parcel of land" and ask them to survey and divide it into smaller plots using surveying tools such as stakes and measuring tape. They can calculate the area and dimensions of each plot, practice dividing land into equal sections, and discuss the significance of property boundaries in settlement patterns.

Curriculum Development Overview
Planning for Each Unit

Unit Title	A Changing Nation	**Length of Unit**	4.5 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	Building on what students learned about our founding documents and system of government in grade 2, this course continues to introduce students to major historical events, figures, symbols, and places related to the development and history of the United States of America. In grade 3 students examine the people, places, and papers in U.S. history that exemplify American ideals and democratic values like equality, liberty, justice, and responsibility for the common good. In this course, students will also focus on building their geographic knowledge of North America and the wider world, while further developing an understanding of how the environment affects its inhabitants and how people, in turn, affect their environment.	**Standards Addressed in this Unit**	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. c. Describe the history of American symbols, including the Liberty Bell, U.S. flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto "In God We Trust." d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial,

			Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House. 3.7 Describe the significance of major events in the history of the United States, including the American Revolution, Louisiana Purchase, Lewis and Clark Expedition, the abolition of slavery following the Civil War, women's suffrage movement, civil rights movement, and the Space Race. 3.8 Describe how voluntary and involuntary migration have affected the United States. 3.9 Describe how technological advancements such as the steam engine, railroad, airplane, automobile, electricity, telephone, radio, television, microwave, and digital technologies have affected the lives of people in the United States. 3.10 Recognize functions of the Declaration of Independence and the Constitution of the United States. e. Explain how our founding documents protect individuals' rights to life, liberty, and the pursuit of happiness. 3.12 Explain the significance of the Emancipation Proclamation and the Thirteenth Amendment. 3.15 Describe the United States in economic terms: free enterprise, private property, producers and consumers, profit and loss, supply and demand, and imports and exports. a. Explain why free enterprise and private property are important concepts and how they are beneficial to individuals and to the United States. b. Explain how the interaction between producers and consumers in a free market satisfies economic wants and needs. c. Explain how supply and demand can affect the prices of goods and services. d. Differentiate between imports and exports. e. Explain why and how people specialize in the production of goods and services.

			3.16 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services. 3.17 Describe the relationship between scarcity and opportunity cost in economic decision-making. 3.25 Describe why and how people in the United States have modified their environment. 3.26 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments. 3.28 Describe how the regions of the United States vary culturally and economically.
Inquiry Questions (Engaging-Debatable):	How did the different regions of the United States develop? How did the movement to end slavery affect the United States?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. Students can explore the geographical features of different regions and how they influenced settlement patterns and economic activities. Discuss how climate, landforms, and natural resources impacted agriculture, industry, and transportation.	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.**	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students can discuss the engineering challenges involved in building infrastructure like canals, roads, bridges, and railways across diverse terrains.	**Standard: VA-HP-E3 Identify art images and themes from the past and present and discuss historical differences.** Students can explore how art reflects the culture, history, and landscape of different regions. Analyze paintings, photographs, and folk art from various time periods and regions to understand how artists depicted the American landscape and way of life.	**Regional Population Graphing**: Provide students with population data for different American regions, such as the Northeast, Midwest, South, and West. They can research and gather population numbers for each region over time, such as during different decades or historical periods. Then, students can create line graphs to visualize the population trends in each region over time. This activity reinforces math skills related to graphing, data analysis, and interpretation. Students

		♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** The teacher can introduce students to technological advancements that facilitated westward expansion and economic development, such as the steam engine, the telegraph, and the railroad. Encourage students to think about how these technologies transformed communication, transportation, and daily life. Students can summarize their learning using google docs.	Students will sketch, design and build a truss bridge using craft sticks. Materials: craft sticks, hot glue gun, glue gun sticks and scissors. *safety--Teacher should do the hot gluing due to temperature-related injuries Procedure: 1. arrange 3 craft sticks into a triangle and glue together 2. create more triangles as fits your design 3. lay craft sticks flat and glue them together 4. continue until the bridge matches your design 5. to test the strength of the bridge, place between two desks or chairs and tie a bucket to hang from the middle of the bridge 6. add weights or rocks to test the strength 7. record how much weight the bridge held		will use the data to determine why the populations vary from region to region.

Curriculum Development Overview
Planning for Each Unit

Unit Title	A Nation of Industry and Innovation	**Length of Unit**	4 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	Building on what students learned about our founding documents and system of government in grade 2, this course continues to introduce students to major historical events, figures, symbols, and places related to the development and history of the United States of America. In grade 3 students examine the people, places, and papers in U.S. history that exemplify American ideals and democratic values like equality, liberty, justice, and responsibility for the common good. In this course, students will also focus on building their geographic knowledge of North America and the wider world, while further developing an understanding of how the environment affects its inhabitants and how people, in turn, affect their environment.	**Standards Addressed in this Unit**	3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 3.2 Explain connections between ideas, events, and developments in U.S. history. 3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. 3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 3.5 Compare life in the United States in the past and present. 3.6 Identify and describe national historical figures, celebrations, and symbols. a. Describe the achievements of George Washington, Thomas Jefferson, Lewis and Clark, Sacagawea, Abraham Lincoln, Frederick Douglass, Harriet Tubman, Sojourner Truth, Sitting Bull, George Washington Carver, Susan B. Anthony, Mabel Ping-Hua Lee, Theodore Roosevelt, the Wright Brothers, Thomas Edison, Henry Ford, Alexander Graham Bell, Dr. Martin Luther King Jr., Jackie Robinson, Sally Ride, Katherine Johnson, and Mae Jemison. b. Describe the significance of state and nationally designated holidays, including New Year's Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington's Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. d. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House.

			e. Identify and describe natural American landmarks, including the Grand Canyon, Mississippi River, Monument Valley, Niagara Falls, Rocky Mountains, Smoky Mountains, and Yellowstone National Park. 3.8 Describe how voluntary and involuntary migration have affected the United States. 3.9 Describe how technological advancements such as the steam engine, railroad, airplane, automobile, electricity, telephone, radio, television, microwave, and digital technologies have affected the lives of people in the United States. 3.15 Describe the United States in economic terms: free enterprise, private property, producers and consumers, profit and loss, supply and demand, and imports and exports. a. Explain why free enterprise and private property are important concepts and how they are beneficial to individuals and to the United States. b. Explain how the interaction between producers and consumers in a free market satisfies economic wants and needs. c. Explain how supply and demand can affect the prices of goods and services. d. Differentiate between imports and exports. e. Explain why and how people specialize in the production of goods and services. 3.16 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services. 3.17 Describe the relationship between scarcity and opportunity cost in economic decision-making. 3.25 Describe why and how people in the United States have modified their environment. 3.26 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments. 3.27 Describe the importance of conservation and preservation. 3.28 Describe how the regions of the United States vary culturally and economically.

Curriculum Development Overview
Planning for Each Unit

Inquiry Questions (Engaging-Debatable):	What were the causes and effects (both positive and negative) of the Second Industrial Revolution in the United States? How did the Conservation Movement change how Americans think about the environment?

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. Students will read and respond to text, images and graphs about how animal habitats change. They will then create a sign that encourages people to be careful and responsible so habitats stay safe. (for example, an animal crossing sign)	**Standards:6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Students can explore how technology evolved during the Industrial Revolution, from simple machines to complex factory systems. After this they can create a single sheet describing the machines they researched using Canva.	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will build a model of an animal rope bridge. Students are given the scenario that many trees are cut down to make space for new roads, and small animals no longer have safe ways to cross the area. They are tasked to create a rope bridge to help these animals. Criteria: must create a crossing between two things such as chairs which will represent trees, must support a large apple without falling (apple represents small animal) and must be at least 18 inches in length Constraints: only use materials provided and the bridge can	**Standard: TH-CA-E1 Describe in simple terms how voice, language, and technical elements are used in works of theatre and other dramatic media** American Industry and Innovation Through History 1. Introduction to American Industry and Innovation: Begin with a brief lesson on the history of American industry and key innovations that have shaped the country. Discuss the impact of these inventions on daily life, the economy, and society as a whole. 2. Reading and Discussion: Provide students with summaries or timelines of major inventions and industrial developments. Discuss each innovation briefly, highlighting the inventor, the invention, and its significance.	**Steam Engine Power**: Explore the impact of steam engines on transportation and industry during the Industrial Revolution. Provide students with information about the power output of steam engines and how it was measured in units such as horsepower. Then, ask students to calculate the total horsepower of a steam engine based on its size and capacity. They can use multiplication and unit conversion to convert between different units of power measurement. This activity reinforces math skills related to multiplication, unit conversion, and measurement. **Textile Factory Math**: Discuss the role of textile factories in the Industrial Revolution and how they transformed the production of clothing and fabrics. Provide students with fabric samples and ask them to

			not have any support in the middle, just the ends Material suggestions: cardboard tubes, clothespins, q-tips, pipe cleaners, ruler, straws, string, craft sticks, dowels, yarn	3. Assign Roles: - Assign each student a role as a historical figure or an inventor who contributed to American industry and innovation. Roles can include: - Eli Whitney (cotton gin) - James Watt (steam engine) - Henry Ford (assembly line) - Thomas Edison (light bulb) - The Wright Brothers (airplane) - Tim Berners-Lee (World Wide Web) 4. Create the Script: - Use the provided script or have the students help create a script that covers the main events and developments in American industry and innovation. Ensure the script includes key moments and dialogues between inventors and historical figures. Sample Script: American Industry and Innovation Through History Narrator: Welcome to our play about American industry and innovation. Throughout history, many great minds have contributed to the progress of our nation. Let's meet some of these remarkable inventors and	measure and cut pieces of fabric to specific dimensions using rulers or measuring tape. They can then calculate the area of each fabric piece and use multiplication to determine the total amount of fabric needed for a given project. This activity reinforces math skills related to measurement, area calculation, and multiplication. **Assembly Line Simulation**: Introduce students to the concept of assembly lines and how they revolutionized manufacturing during the Industrial Revolution. Set up a mock assembly line activity where students work in teams to assemble simple products using a series of steps. Each student can be responsible for one step in the process, such as adding a part or attaching a component. Students can measure the time it takes to complete each step and calculate the total production time for the assembly line. This activity reinforces math skills related to time, measurement, and efficiency.

				learn about their amazing creations. Scene 1: The Cotton Gin Eli Whitney: (holding a model of the cotton gin) In 1793, I invented the cotton gin. This machine helps separate cotton fibers from seeds quickly, revolutionizing the cotton industry. Farmer: (excited) With your cotton gin, we can produce cotton faster and more efficiently. This will change agriculture forever! Narrator: Eli Whitney's cotton gin greatly increased cotton production and transformed the American South. Scene 2: The Steam Engine** James Watt: (showing a model of the steam engine) I improved the steam engine in the late 18th century. My design makes it more powerful and efficient. Factory Worker:(impressed) Your steam engine powers our factories and trains, leading to the Industrial Revolution.	

				Narrator: James Watt's steam engine played a crucial role in industrializing America and the world. Scene 3: The Assembly Line Henry Ford: (standing next to a model of a car) In 1913, I introduced the assembly line to car manufacturing. This method speeds up production and makes cars more affordable. Worker: (happy) With the assembly line, we can build cars faster and cheaper. More people will be able to own cars! Narrator: Henry Ford's assembly line revolutionized manufacturing and transportation. Scene 4: The Light Bulb Thomas Edison: (holding a light bulb) In 1879, I invented the practical incandescent light bulb. It provides reliable and long-lasting light. Homeowner: (grateful) Your light bulb illuminates our homes and streets, making life easier and safer.	

				Narrator: Thomas Edison's light bulb brought light to the world and changed how we live. Scene 5: The Airplane Orville Wright: (showing a model of an airplane) In 1903, my brother Wilbur and I made the first powered flight in our airplane, the Wright Flyer. Pilot: (amazed) Your invention opens the skies to travel and exploration. The future of aviation is bright! Narrator: The Wright Brothers' airplane paved the way for modern air travel and transportation. Scene 6: The Internet Tim Berners-Lee:(holding a model of a computer) In 1989, I invented the World Wide Web, connecting people and information around the globe. Student: (excited) With the internet, we can learn, communicate, and access information like never before! Narrator: Tim Berners-Lee's World Wide Web transformed how we connect and interact with the world.	

				Narrator: Thank you for watching our play about American industry and innovation. These inventors and their creations have shaped our nation and the world. 5. Rehearsal: - Practice the script with the students, helping them learn their lines and understand their roles. - Encourage expressive acting and the use of props to enhance the performance. 6. Create Props and Costumes: OPTIONAL - Have students create simple props to represent the inventions and tools used by the historical figures. - Provide simple costume pieces to help students get into character (e.g., hats, shawls, tools). 7. Performance: - Set up a performance area and arrange the audience (other students, teachers, or parents). - Perform the play, allowing each student to showcase their understanding of American industry and innovation through their role. 8. Discussion and Reflection:	

Curriculum Development Overview
Planning for Each Unit

Curriculum Development Overview
Planning for Each Unit

Unit Title	Towards a More Perfect Union	**Length of Unit**	5 Weeks

Curriculum Development Overview
Planning for Each Unit

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			e. Explain how our founding documents protect individuals' rights to life, liberty, and the pursuit of happiness. 3.11 Identify and describe basic principles of the Declaration of Independence and the Constitution of the United States. 3.12 Explain the significance of the Emancipation Proclamation and the Thirteenth Amendment. 3.13 Describe civic virtues: voting, running for office, serving on committees, and volunteering.
Inquiry Questions (Engaging-Debatable):	What did suffragists fight for and what did they accomplish? What was the civil rights movement of the 1950s–1960s and what did it accomplish?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: SEP3. Planning and carrying out investigations. SEP4. Analyzing and interpreting data. Students will create a survey question that addresses a problem they feel needs to be resolved at school (for example, more recess time or uniforms). They will predict the outcome of the survey by polling in their own classroom. Then, they will survey the rest of the grade level. Students will create a graph to represent the results of their survey and whether or not	**Standards:5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** Digital Citizenship: Teach students about responsible technology use and its role in building a better society.	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will sketch, design and build a civil rights monument that honors contributions of a male or female civil rights leader of their choosing. Criteria: must include a picture of person and why chosen	**Standard: M-CA-E3 Recognize characteristics of music that make a musical selection appropriate for a particular purpose** American Music: Past and Present Play different styles of music from early American culture to the present. During each song point out different musical elements found in the song. Talk about what time year or decade the song was composed and what significant historical events were happening around that time. Allow the students to share their	**Graphing Suffrage:** Provide data on historical voting trends, such as the percentage of eligible voters who participated in elections over time. Help students create bar graphs or line graphs to represent this data visually. Then, guide them in interpreting the graphs and drawing conclusions about changes in voting behavior. **Timeline Math:** Create a timeline of key events in the civil rights movement, such as the Montgomery Bus Boycott, the March on Washington, and the

	their hypotheses were correct.		Constraints: can only use materials provided and must be completed within time frame given Suggested materials: cardboard tubes, card stock, construction paper, glue, markers	feelings and emotions about the song.	passing of the Civil Rights Act. Use this timeline to introduce concepts of chronological order and elapsed time. Have students calculate the number of years or months between events using subtraction or count forward to predict future events. **Protest Sign Math:** Provide students with examples of protest signs used during the civil rights movement, featuring slogans like "Equal Rights" or "End Segregation." Have students create their own protest signs with mathematical messages, such as "Math for All" or "Count on Equality." This activity encourages creative expression while reinforcing arithmetic skills. **Freedom Songs Math:** Explore the role of music in the civil rights movement by listening to and analyzing freedom songs like "We Shall Overcome" or "This Little Light of Mine." Have students count the beats in each measure or create rhythmic patterns using simple fractions. They can also write their own lyrics with mathematical themes,

					such as counting or patterns.

Unit Title	An Ever Advancing Nation	**Length of Unit**	1.5 Weeks

Curriculum Development Overview
Planning for Each Unit

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Inquiry Questions (Engaging-Debatable):	How did the Space Race impact the United States? How have digital technologies affected Americans?		

Curriculum Development Overview
Planning for Each Unit

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standards: 3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. **3-ESS2-2 Obtain and combine information to describe climates in different regions of the world.** Students can explore weather patterns, climate zones, and how they impact life on Earth. Students will read and respond to text and images about weather forecasting. They will then draw a nature scene that depicts each season complete with a character that displays what that character would wear within that season.	**Standards: 5. Social, Ethical, and Human Issues (Citizenship Foundation Skill) ♦ Students understand the ethical, cultural, and societal issues related to technology. ♦ Students practice responsible use of technology systems, information, and software. ♦ Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** The teacher can teach students about responsible technology use, including online safety, digital etiquette, and the importance of protecting personal information online.	**Engineering standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time and cost. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will create and build a weather vane. Materials: paper, cup, pencil, straw, pushpin, sturdy paper plate Criteria: weather vane must turn to point in the direction the wind is blowing Constraints: only use the materials provided and must be completed within the time frame given	**Standard:VA-CE-E2 Explore and discuss techniques and technologies for visual expression and communication** The teacher can incorporate art into STEAM projects by having students create artwork inspired by science and technology themes. For example, students can create space-themed paintings or sculptures of inventions.	**Coding Challenges:** Introduce students to the basics of coding through fun and interactive activities. Use block-based coding platforms like Scratch or Code.org to teach concepts such as sequencing, loops, and conditional statements. Have students create their own simple programs or games, incorporating mathematical concepts like counting, patterns, or logical reasoning. **Rocket Launch Math:** Create a simulation of a rocket launch using simple materials like paper cups, balloons, and straws. Have students build their own "rockets" and experiment with launching them at different angles and distances. Use measuring tools like rulers or measuring tapes to track the height and distance traveled by each rocket. Then, guide students in analyzing the data and comparing their results, reinforcing concepts of measurement and data analysis.

					Countdown to Liftoff: Introduce students to the concept of countdown sequences used in space missions. Use a stopwatch or digital timer to conduct countdowns, starting from different numbers and counting down by ones, fives, or tens. Challenge students to perform mental math calculations to determine the elapsed time at each stage of the countdown. You can also incorporate skip counting activities to reinforce multiplication skills. **Rocket Fuel Pattern Table:** Discuss the importance of fuel efficiency in rocket design and space exploration. Provide students with different types of "rocket fuel" substances, such as baking soda and vinegar or Mentos and soda. Have students conduct experiments to determine which combination produces the highest and longest-lasting reaction. Guide them in measuring and comparing the amounts of each substance used, reinforcing concepts of measurement and pattern table.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	ELA- (Reading, Spelling. Language)	**Grade Level**	4th
Curriculum/Programs/ Partners	Louisiana Guidebooks/ Project Based Learning/ LA A+ Schools		

Units Title	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultu ral Exposure**	**PBL Assessment**
1 Hurricanes	How do natural disasters affect communities both negatively and positively?	RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text. RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. RI.4.6 Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.	Environmental: Students will investigate the impacts of hurricanes on the environment, people, and industries. They will also investigate how hurricanes may be the effect of climate change. Humanities/Multicultural Exposure: Students will determine how the impact of hurricanes cause people to relocate. They will discuss how this may change the culture, population, and economics of the area.	Students will work in pairs to create a newscast report on a hurricane that affected the Louisiana coast. Students will use research evidence to develop their interview for the newscast/podcast. Students will record their actual performance.
2 The Lighting Thief	How do myths and other stories help us make sense of the world?	RL.4.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions). RL.4.9 Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.	Environmental: Students will develop an understanding of lighting, lighting storms, and how it affects the environment. Humanities/Multicultural Exposure: Students will develop an understanding of how the strengths and weaknesses of individuals create an environment that is supportive for a greater good.	Students will create a 3-d model of a mythological character and explain how the character may represent the person they are. Students will use evidence from mythological research to explain their character as it relates to their own personal traits.

Curriculum Development Course at a Glance
Planning for Each Grade Level

3 Olympics	How has ancient culture impacted athletic competition?	RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.	Environmental: Students will determine how different environments impact the	Students will research various countries. They will create an Olympic game based on

		RI.4.5 Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.	athletic world of sports. (winter and summer) Humanities/Multicultural Exposure: Students will investigate how the goal of sportsmanship builds character, respect, and equality for the common man.	evidence from the research. Students will create an instructional video that explains the game. The class will watch the video prior to the class Olympic competition.

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Hurricanes		**Length of Unit**	12 Weeks
Focusing Lens(es)	How do natural disasters affect communities both negatively and positively	**Standards Addressed in this Unit**	RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text. RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. RI.4.6 Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.	
Inquiry Questions (Engaging-Debatable):	What emotions do people experience during hurricanes? How do these hurricanes affect the environment? How can one recover after hurricanes? What supports might help people make through hurricane devastating?			

STEAM Integration Concepts	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 4-ESS2-1 Plan and conduct investigations on the effects of water, ice, wind, and vegetation on the relative rate of weathering and erosion. LC-4-ESS2-1a Use data to compare differences in the shape of the land due to the effects of weathering or erosion. Students will read and respond to text and graphics about severe weather. Then, they will investigate what happens during a landslide by completing	**Standards:2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.**	**Science Standards: 3-ESS3-1 Make a claim about the merit of a design solution that reduces the impact of a weather-related hazard. LC-3-ESS3-1a Identify the positive impact of a solution humans can take to reduce the impact of weather-related hazards (e.g., barriers to prevent flooding).** **Engineering standards: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the**	**Standard: VA-CA-E4 Express and explain opinions about visual works of others using basic art vocabulary** Students will analyze before and after hurricane pictures. They will determine the mood and theme of the photo. Students will then use after picture to create an image that reflects a rebuilding stage of the area.	**Calculating Rainfall:** Discuss with students how hurricanes can bring heavy rainfall and cause flooding. Provide students with data on rainfall amounts during past hurricanes, either in inches or millimeters. Challenge students to convert the rainfall measurements between inches and millimeters using conversion factors. Have students calculate the total amount of rainfall over a specific area affected by a hurricane, such as a city or region.

	the following investigation: Materials: sand, soil, tray, water, small chute (sloping surface with sides), small objects to represent houses Procedure: 1. Place the "houses" at one end of the tray. Place the chute on the other side. Tape the chute in place if needed. 2. Put a small mound of soil halfway up the chute. 3. Fill a paper cup halfway with water. Slowly pour water down the chute, starting at the top. 4. Record observations 5. Repeat the process with a small mound of sand. 6. Record observations Make sure to discuss these questions: What happened to the soil? What happened to the	♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will utilize Scratch to code the effects of a hurricane. Students will choose the correct sprite. They will also input chosen pictures for the background.	**criteria and constraints of the problem. 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** Students will design and build a flood barrier to protect a paper house. Criterion: the flood barrier must prevent water from reaching a paper house Constraints: They may only use the materials provided and the barrier can not touch the paper house.		**Tracking Hurricane Paths:** Provide students with maps showing the paths of past hurricanes. Have students plot the coordinates of each hurricane's location at specific time intervals (e.g., every 6 hours) on a grid or map. Encourage students to use rulers or string to connect the plotted points and trace the paths of the hurricanes. Guide students through calculating the distances traveled by the hurricanes over time, as well as their average speeds.

	sand? What happened to the houses?				

Unit Title	The Lighting Thief		**Length of Unit**	12 Weeks
Focusing Lens(es)	How do myths and other stories help us make sense of the world?	**Standards Addressed in this Unit**	RL.4.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions). RL.4.9 Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.	
Inquiry Questions (Engaging-Debatable):	What lasting impact has Greek Mythology had on our society today? What constitutes a hero? What is a myth?			

STEAM Integration Concepts	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. LC-2-PS1-1a Use data to describe different kinds of materials by their observable properties Complete science experiment where students can understand the formation of lighting. https://www.sciencebuddies.org/stem-activities/candy-lightning	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)**	**Engineering standards: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.**	**Standard: M-CA-E3 Recognize characteristics of music that make a musical selection appropriate for a particular purpose** **TH-CA-E3 Identify and discuss the theme, message, or story idea conveyed in a dramatic work**	**Mythical Creature Geometry:** Introduce students to mythical creatures from Greek mythology featured in the book, such as the Minotaur or Medusa. Have students research the characteristics and attributes of these creatures.

		♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students will use the book creator website to create their own mythological story. Students must utilize the source of nature to build the persona of their creature. (Must remember that the creature must be on a quest.) https://bookcreator.com/	Students discuss the characteristics of storms, including the relationship between weather fronts and storms. Using everyday materials, they develop models of basic lightning detection systems (similar to a Benjamin Franklin design) and analyze their models to determine their effectiveness as community storm warning systems. https://www.teachengineering.org/activities/view/cub_weather_lesson03_activity1	Compare and Contrast The Lighting Thief Musical and Book Rehearse a scene and song from The Lightning Thief Musical. Compare and contrast the content of the text and song to the book.	Challenge students to use geometric shapes (e.g., triangles, circles, rectangles) to create drawings or models of the mythical creatures. Encourage students to calculate the perimeter, area, or other geometric properties of their creations and compare them with those of real-world objects.

Unit Title	Olympics		**Length of Unit**	12 Weeks
Focusing Lens(es)	How has ancient culture impacted athletic competition?	**Standards Addressed in this Unit**	RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text. RI.4.5 Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.	
Inquiry Questions (Engaging-Debatable):	How has athletic competition changed since Ancient Greece? How have the changes affected the way we view athletics today? What are some ways the ancient Greek games are different from the current Olympic games?			

	Science	**Technology**	**Engineering**	**Art**	**Math**

Curriculum Development Overview
Planning for Each Unit

STEAM Integration Concepts	**Standards: 4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. LC-4-LS1-1b Identify internal structures (e.g., heart, muscles, bones) that support growth, survival, behavior, and reproduction of organisms.** Students will discuss the muscular systems and determine how different athletes must have various muscles working together to be effective at their sport. Students will investigate the function of the heart, how exercise affects heart rate and the rate of recovery after exercise.	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** Students will complete research about athletes and the type of gear needed for them to be effective. They will create an anchor chart that shows the components of the suit and how it supports the athlete with carrying out their task. https://simplifaster.com/articles/the-power-of-apparel-in-sport/ https://www.spookynooksports.com/blog/manheim/clothing-and-workout-performance (StoryBoard/Anchor Chart Creator) https://www.storyboardthat.com/create/anchor-charts	**Engineering standards: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students will create an original Olympic game. They must consider what is required of the athlete to perform their task successfully. They will sketch and design an apparatus or suit to support the athlete. If time allows, students can build a prototype of said apparatus or suit.	**Standard: VA-AP-E4 Recognize that there are many possibilities and choices in the processes for designing and producing visual arts** Symbols of the Olympic Games Students will study the various symbols of the Olympics and discuss their representation. They will then create a 3 D model of an Olympic symbol and determine how their symbol represents the concept of the Olympics.	**Olympic Stadium Capacity:** Introduce students to famous Olympic stadiums and their seating capacities. Provide students with blueprints or diagrams of Olympic stadiums and challenge them to calculate the total number of seats available. Guide students through using multiplication and addition to determine the seating capacity for different sections or levels of the stadium. Encourage students to compare the capacities of different stadiums and discuss factors that may influence their sizes.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Math	**Grade Level**	4th
Curriculum/Program	i-Ready Classroom Mathematics		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Unit 1: Whole Numbers: Place Value, Comparison, Addition, and Subtraction	In this unit, students build on their understanding of place value, rounding, and addition and subtraction of three-digit numbers. They explore place value to the hundred-thousands place, rounding, comparing, adding, and subtracting multi-digit numbers.	**4.NBT.A.1**-Recognize that in a multi-digit whole number less than or equal to 1,000,000, a digit in one place represents ten times what it represents in the place to its right. For example, (1) recognize that 700 ÷ 70 = 10; (2) in the number 7,246, the 2 represents 200, but in the number 7,426 the 2 represents 20, recognizing that 200 is ten times as large as 20, by applying concepts of place value and division. **4.NBT.A.2**-Read and write multi-digit whole numbers less than or equal to 1,000,000 using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons **4.NBT.A.3**-Use place value understanding to round multi-digit whole numbers, less than or equal to 1,000,000, to any place. **4.NBT.B.4**-Fluently add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000, using the standard algorithm.	Humanities offer rich insights into how different cultures perceive and interact with nature. Environmental science can benefit from understanding these multiple different perspectives to develop more effective environmental policies and practices that reflect the perspectives and contributions of different communities. For instance, indigenous knowledge systems often hold valuable insights into sustainable resource management and biodiversity conservation, which can complement scientific approaches.	Performance Tasks: Provide hands-on tasks where students manipulate physical objects or use visual aids to demonstrate their understanding of place value, rounding, and arithmetic operations. Reflection and Self-Assessment: Include a component where students reflect on their learning throughout the unit. They can assess their understanding of key concepts, identify areas of strength, and set goals for improvement.
Unit 2: Operations: Multiplication, Division, and Algebraic Thinking	In this unit, students build on their basic understanding of multiplication and division as they learn about multiplicative comparison and solve problems using multiplication and	**4.OA.A.1**-Interpret a multiplication equation as a comparison and represent verbal statements of multiplicative comparisons as multiplication equations, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7, and 7 times as many as 5.	Environmental Science and Diversity: Throughout the unit, students will explore the diversity of life forms and ecosystems on Earth. They will examine how factors like habitat destruction, climate	Problem-Solving with Multiplication and Division: Present real-life scenarios or story problems where students need to apply multiplication or division to find solutions. For example:

	division. They also use multiplication and division facts to find factors and multiples for whole numbers within 100 and to generate, extend, and analyze patterns.	**4.OA.A.2**-Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and/or equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison (Example: 6 times as many vs. 6 more than). **4.OA.B.4**-Using whole numbers in the range 1–100 **4.OA.C.5**-Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way. **4.OA.A.3**-Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. Example: Twenty-five people are going to the movies. Four people fit in each car. How many cars are needed to get all 25 people to the theater at the same time?	change, and human activity impact biodiversity and the delicate balance of ecosystems. By understanding these connections, students will develop a deeper appreciation for the importance of conservation and environmental stewardship.	"If each book costs $5 and Sarah wants to buy 8 books, how much money does she need?" "There are 24 students in a class. If they need to be divided into 4 equal groups, how many students will be in each group?" Open-Ended Questions: Include questions that require students to explain their reasoning or demonstrate their understanding in their own words. For instance: "How are multiplication and division related?" "Explain how you know if a number is a multiple of another number."
Unit 3: Multi-Digit Operations and Measurement: Multiplication, Division, Perimeter and Area	In this unit, students build on their understanding of multiplying a whole number by ten as they learn to multiply multi-digit numbers. They will also learn relative sizes of measurement units and to convert a larger unit to a smaller unit by multiplication. Then students use what they know about place value, multiplication, and division to divide	**4.NBT.B.5**-Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **4.MD.A.1**-Recognize that in a multi-digit whole number less than or equal to 1,000,000, a digit in one place represents ten times what it represents in the place to its right. For example, (1) recognize that 700 ÷ 70 = 10; (2) in the number 7,246, the 2 represents 200, but in the number 7,426 the 2 represents 20,	Humanities/Multicultural Exposure Connection: ● Integrate multiple different perspectives and cultural contexts into math problems and scenarios. Incorporate stories or examples from various cultures that involve measurements,	Real-world Application of Area and Perimeter: You have a rectangular garden with a length of 15 meters and a total area of 120 square meters. Determine the width of the garden using the area

	three- and four-digit numbers by one-digit divisors. They will also build on their prior knowledge of area and perimeter by using models to develop an understanding of the area and perimeter formulas and to apply them in problem-solving.	recognizing that 200 is ten times as large as 20, by applying concepts of place value and division. **4.NBT.B.6**-Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. **4.MD.A.3**-Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor	multiplication, and division. ● Explore historical contexts where measurement and geometry played significant roles in various civilizations. For example, students can learn about ancient civilizations' methods of measuring land for agriculture or construction. ● Discuss how different cultures and communities utilize mathematical concepts in their daily lives, such as traditional crafts, architecture, or agricultural practices.	formula. Explain how you arrived at your answer. Word Problems Involving Multiplication and Division: John wants to buy 5 packs of pencils. Each pack contains 24 pencils. How many pencils does John need in total? If he decides to share these pencils equally among 6 friends, how many pencils will each friend get? Show your calculations and explain your reasoning.
Unit 4: Fractions, Decimals, and Measurement: Addition, Subtraction, and Multiplication	In this unit, students expand on prior work with fractions to write equivalent fractions, compare fractions, add and subtract fractions with like denominators, and multiply fractions by whole numbers. They represent fractions with denominators of 10 and 100 with visual models and read, write, and compare	**4.NF.A.1**-Explain why a fraction a/b is equivalent to a fraction (n a)/(n b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.) **4.NF.A.2**-Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the	Compare fractions representing different cultural groups and their contributions to society Explore fractions as a tool for understanding and acceptance of different cultures. Encourage discussions about the importance of respecting	Real-Life Application Problems: Students will solve word problems involving time, money, and measurement, applying their understanding of fractions and decimals in practical contexts. Example: A recipe calls for 3/4 cups of flour. If you need to make the recipe 1.5 times

	decimals to hundredths. Students also solve time, money, and measurement problems.	results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.) **4.NF.B.3**-Understand a fraction a/b with a > 1 as a sum of fractions 1/b. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.) **4.NF.B.3a**-Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. Example: 3/4 = 1/4 + 1/4 + 1/4. **4.NF.B.3b**-Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8. **4.NF.B.3d**-. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. **4.NF.B.3c**-Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction **4.MD.B.4**-Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection. **4.NF.B.4a**-. Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 (1/4), recording the conclusion by the equation 5/4 = 5 (1/4). **4.NF.B.4b**-Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a	and celebrating cultural differences in society.	larger, how much flour will you need in total? Visual Model Interpretation: Students will interpret visual models representing fractions with denominators of 10 and 100. Example: Analyze the visual model below and write the fraction it represents: [Provide a visual model representing a fraction, such as a shaded portion of a rectangle divided into tenths or hundredths.]

		visual fraction model to express 3 (2/5) as 6 (1/5), recognizing this product as 6/5. (In general, n (a/b) = (n a)/b.) **4.NF.B.4c**-Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?		
Unit 5: Geometry and Measurement: Figures, Classification, and Symmetry	In this unit, students build on their understanding of geometric shapes, their attributes, and shape classification as they learn about points, lines, rays, and angles. They learn to measure angles and recognize that angles can be combined or decomposed as they solve real-world problems involving angle measure. Finally, they learn about line symmetry as they identify symmetric figures and draw lines of symmetry.	**4.G.A.1**-Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. **4.MD.C.5**-Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: **4.MD.C.5a**-An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where two rays intersect the circle. **4.MD.C.5b**-An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. **4.MD.C.6**-Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. **4.MD.C.7**-Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a letter for the unknown angle measure. **4.G.A.2**-Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a	Cultural perspectives on geometry: Explore how different cultures and civilizations have used geometric shapes and patterns in art, architecture, and design. Discuss the significance of geometric motifs in various cultural traditions. Different Perspectives on symmetry: Explore how different cultures perceive and represent symmetry differently. Show examples of symmetry in multiple different cultural artifacts, such as Islamic tile patterns, African textiles, or indigenous art from various regions. Collaborative art projects: Engage students in collaborative art projects where they create symmetrical designs inspired by multiple different cultural traditions. Encourage them to incorporate elements of symmetry they've learned	Performance Task: ● Provide students with a set of geometric shapes and ask them to classify each shape based on its attributes. For example, they could classify shapes by the number of sides, angles, or lines of symmetry. ● Have students measure angles using protractors and compare their measurements with provided angle measures. ● Present students with symmetric and non-symmetric figures and ask them to identify the lines of symmetry. ● Create real-world scenarios where students must apply

			into their artwork while	

		specified size. Recognize right triangles as a category, and identify right triangles. **4.G.A.3**-Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	respecting and celebrating different cultures.	their understanding of angles and geometric shapes to solve problems.

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

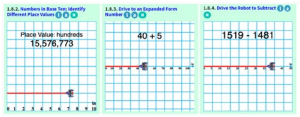
Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

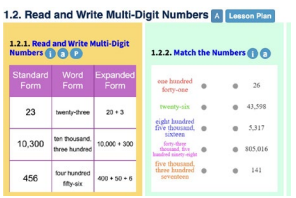
Unit Title	Unit 1: Whole Numbers: Place Value, Comparison, Addition, and Subtraction	**Length of Unit**	Unit 1:25 days
Focus	Whole Numbers	**Standards Addressed in this Unit**	**4.NBT.A.1** **4.NBT.A.2** **4.NBT.A.3** **4.NBT.B.4**
Inquiry Questions (Engaging-Debatable):	How can you use place value? How can you compare whole numbers? How can you add and subtract whole numbers?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. **Ice Cream in a Bag** Students will investigate the temperature differences between ice water and ice water with salt added. Materials: 1. 2 large mixing bowls 2. Measuring cups and spoons 3. 20 cups of ice (divided in ½) 4. 6 tablespoons salt 5. Thermometer 6. Small plastic zip-top bag 7. ½ cup milk 8. 1 tablespoon sugar 9. ¼ teaspoon of vanilla	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. The lesson most directly involved in engineering with this math topic is 1.8. 1.8 Students will review place values up to 1 million. Students will also review the rounding numbers to any given place value. In addition, students will review addition up to 1 million and subtraction within 1 million.	**Standard: M-CE-E5 Participate in organized musical activities including singing, playing, and movement** Rhythm and Place Value Divide the class into small groups. Each group receives a set of flash cards with different numbers. Groups will use the numbers to create a rhythm. For example, the number 1 2 3 4 can be broken down into 1 - thousands, 2 - hundreds, , 3 - tens, and four one's. Assign each place value a specific percussion instrument. Groups practice playing their numbers as rhythms using the assigned instruments.	**CCSS Math Standards: 4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.** **Activity Statement:** **The two numbers in the grid represent how far each horse will run. Edit the variables in the Workspace by entering the two distances and finding the total distance they travel together.** UC Davis Chapter 1 

	10. Gallon-size plastic zip-top bag 11. Spoon Procedure: 1. In one mixing bowl, mix 10 cups of ice and 1 cup of water. 2. In another mixing bowl, mix 10 cups of ice, 1 cup of water and the salt. 3. Wait for 4 minutes, then use a thermometer to measure the temperature of each bowl and record. 4. Add the milk, sugar and vanilla to the small bag. Squeeze the air out and seal tightly. 5. Dump the salty ice mixture from the bowl into the large bag. 6. Place the small bag inside the large bag with the ice mixture and seal it. 7. Shake the bags for 5-10 minutes or until the milk mixture turns into a soft solid. 8. Open the large bag and remove the small bag. Rinse the small bag under cool water. 9. Open the bag and enjoy the treat with the spoon!	**Students employ technology for real world problem solving.** **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** **Students use technology tools to enhance learning, increase productivity, and promote creativity.** **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** **Students use technology tools to process data and report results.** **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** **Students understand the ethical, cultural, and societal issues related to technology.**		Each group performs their rhythmic pattern for the class. After each performance, the group explains how they converted their number into the rhythm and which place values correspond to which instrument. .	Activity ID: 5772 Subjects: Math Grades: Grade 4 Keywords: add, addition, multi-digit

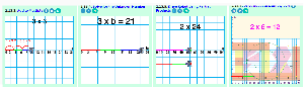
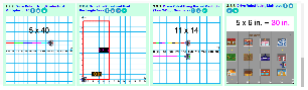
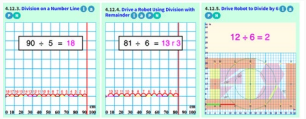
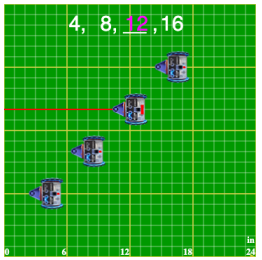
		♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below:			

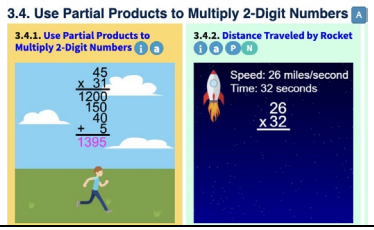
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 2: Operations: Multiplication, Division, and Algebraic Thinking		**Length of Unit**	Unit 2: 24 days
Focus	Operations: Multiplication, Division, and Algebraic Thinking	**Standards Addressed in this Unit**	**4.OA.A.1** **4.OA.A.2** **4.OA.B.4** **4.OA.C.5** **4.OA.A.3**	
Inquiry Questions (Engaging-Debatable):	How can you understand multiplication as a comparison? How can you multiply and divide in word problems, including multi-step? How can you determine factors and multiples, prime and composite, and shape patterns?			

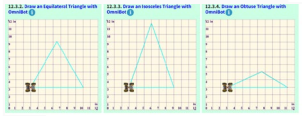
STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 3-LS4-3 Construct and support an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. LC-3-LS4-3a Identify changes in a habitat that would cause some organisms to move to new locations. LC-3-LS4-3b Identify changes in a habitat that would	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. The lessons that directly relate to engineering in these math	**Standard: D-CA-E3 Recognize and discuss the sequencing of movements in dance** Dancing with Multiplication and Division Assign different dance moves to represent numbers. Practice the dance moves with the students. Use multiplication flashcards to call out problems. Students perform the	**CCSS Math Standards: 4.OA.C.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add " and the starting number , generate terms in the resulting sequence and observe that the terms appear to alternate**

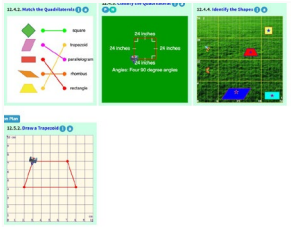
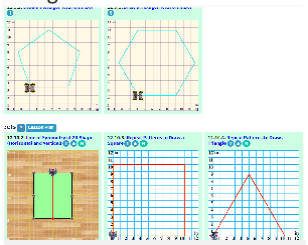
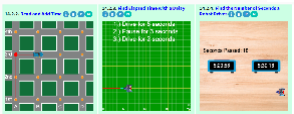
	cause some organisms to die **Bacteria Farming** **Step 1:** To do this experiment, you will need a petri dish that contains agar, a number of Q-tipped cotton swabs, and some pieces of newspaper. **Step 2:** What you will do is use the swabs to collect samples of dust or germs from around the school, and you will apply that sample to the petri dish. Make sure to put the lids back on tight, as that ensures that no oxygen gets in - oxygen can kill bacteria. **Step 3:** Place the dishes that you are using in a warmer area of the classroom, as the warm temperature will promote the growth of the bacteria. **Step 4:** Check the dishes daily to see how your bacteria are growing, and you will be surprised by how fast they multiply in such a pleasant condition. You can get bacteria from just about any place, and you will find that it will grow	**Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.**	topics are as follows: 2.13, 3.8, 4.12, and 5.7. 2.13 In this lesson, students will review multiplication with 1-digit using a variety of methods.  3.8 In this lesson, students will review multiplication with 2-digit using a variety of methods.  Students will review dividing multi-digit dividends by 1-digit divisors by finding whole-number quotients of whole numbers with up to two-digit dividends, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.  5.7 In this lesson, students will review how to find common factors and multiples of two or more numbers. They will also review prime and composite numbers as well as number patterns.	dance move for the first number and the number of times of the second number. Similarly, assign dance moves for division. Practice the dance moves with the students. use division flashcards to call out problems. Students perform the dance move for the first number and divide it into the number of times of the second	**between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.** **Activity Statement:** **The top and bottom two robots are located at the first and second numbers of the sequence shown in the grid. The top robot is located at the last number of the sequence. Determine the missing number then drive the remaining robot to the missing term.** UC Davis Chapters: 2,3,4, and 5.  Activity ID: 9056 Subjects: Robotics, Coding, Math Grades: Grade 4 Keywords: addition, robotics, factors, sequence, pattern

	easily in these favorable conditions. Just make sure to wrap the bacteria-filled dishes in newspaper when throwing them out, as you don't want to allow the bacteria to run loose in your garbage can and cause all your food to rot quickly!	♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

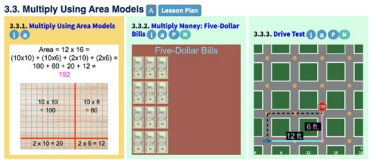
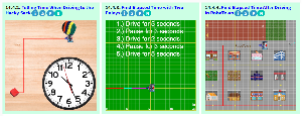
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 3: Multi-Digit Operations and Measurement: Multiplication, Division, Perimeter and Area	**Length of Unit**	Unit 3: 26 days
Focus	Multi-Digit Operations and Measurement	**Standards Addressed in this Unit**	**4.NBT.B.5** **4.MD.A.1** **4.NBT.B.6** **4.MD.A.3**
Inquiry Questions (Engaging-Debatable):	How can you solve multi-digit multiplication and division problems? How can you find the perimeter and area?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. LC-5-PS1-4a Identify that when two or more different substances are mixed, a new substance with different properties may be formed. LC-5-PS1-4b Identify the changes that occur when two or more substances are mixed using evidence provided from data. **Soda Geyser Eruption** Students will investigate the volume of soda remaining after	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. The lessons most directly related to engineering with these math topics are as follows: 12.3, 12.5, 12.6, 12.9, 14.2, and 14.4. 12.3 This lesson explains how to use the OmniBot with pen connectors to draw triangles.  12.5	**Standard: D-CE-E5 Execute improvised and set movement patterns with concentration and focus individually and in groups** Dancing with Perimeter and Area Use masking tape or chalk to mark different shapes on the floor. Divide the class into small groups and assign each group a shape. Have students walk along the edges of their assigned shape, counting the steps as they go. Use measuring tapes or rulers to measure the sides of the shapes and calculate the perimeter. Discuss how they can use their dance movements to represent the perimeter.	**CCSS Math Standards: 4.MD.A.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor. Activity Statement: Change the code for the length and width to find the area.** UC Davis Chapters: 12 and 14

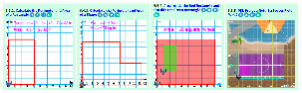
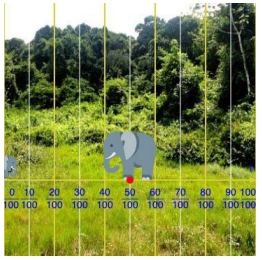
	a reaction to Mentos candy. Materials: 1. 3 2-liter bottles of diet soda 2. Mentos candy 3. Measuring cups Procedure: 1. Outside, place the bottle of soda on a flat surface. 2. Open up the soda, quickly drop in 2 Mentos and back up 3. Once done reacting, use measuring cups to see how much soda remains in the bottle. 4. Record the data 5. Repeat with either different kinds of soda or different amounts of Mentos. 6. Record all results and discuss the differences noticed	**3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.**	In this lesson, students will learn how to classify quadrilaterals based on their sides and angles.  12.9 This lesson explains how to use the OmniBot with pen connectors to draw shapes with repeated patterns. Students will classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.  14.2 In this lesson, students will learn to program the robot to drive or pause for a certain number of seconds.  14.4 Students will Tell and write time from analog and digital clocks to the nearest	For example, taking big steps around the shape to show the perimeter distance. Each group creates a dance routine that follows the perimeter of their shape. Encourage students to use different movements. groups perform their perimeter dances for the class.	 Activity ID: 11536 Subjects: Math Grades: Grade 4 Keywords: Area, RoboTown

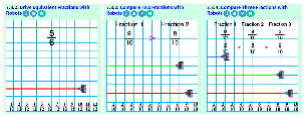
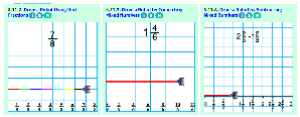
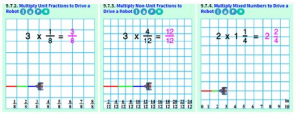
		♦ **Students are proficient in the use of technology.**			

		Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 	minute using am and pm and measure intervals of time in minutes. 		

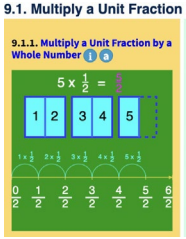
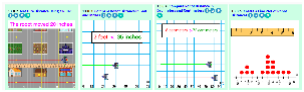
Unit Title	Unit 4: Fractions, Decimals, and Measurement: Addition, Subtraction, and Multiplication		**Length of Unit**	Unit 4: 55 days
Focus	Fractions, Decimals, and Measurement:	**Standards Addressed in this Unit**	**4.NF.A.1** **4.NF.A.2** **4.NF.B.3** **4.NF.B.3b** **4.NF.B.3d** **4.NF.B.3c** **4.MD.B.4** **4.NF.B.4a** **4.NF.B.4b** **4.NF.B.4c**		
Inquiry Questions (Engaging-Debatable):	How can you compare fractions? How can you add and subtract fractions? How can you multiply fractions? How can you compare decimals? How can you solve problems with length, volume, mass, and weight?				

Curriculum Development Overview
Planning for Each Unit

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standards: 4-PS4-1 Develop a model of waves to describe patterns in terms of amplitude and wavelength and to show that waves can cause objects to move. LC-4-PS4-1a Describe the properties of waves using a model (e.g., drawings, diagrams) to show amplitude (height) and wavelength. LC-4-PS4-1b Identify relationships involving wave amplitude, wavelength, and the motion of an object (e.g., when the amplitude increases, the object moves more). Students will read and respond to text and diagrams of waves. Then, students will create waves in a bottle. Directions: 1. Fill a bottle ½ full of water. 2. Fill rest of bottle with vegetable oil (use a funnel to prevent spillage)	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. The lessons that directly relate to engineering within these math topics are as follows: 6.6, 7.8, 8.11, 9.7 and 13.8. 6.6 In this lesson, students will review calculating the perimeter, area, and missing side lengths of squares and rectangles.  7.8 In this lesson, students will review how to recognize and generate pairs of equivalent fractions. They will also continue to practice writing fractions in their simplest forms and finding the common denominator of a pair of fractions. Additionally, students will review, compare and order various fractions.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** Fraction Flip Book: *Provide each student with a stack of index cards or small pieces of paper. *Instruct them to draw a shape on the first card and shade a fraction of it. *On subsequent cards, have students draw shapes that are visually equivalent to the previous fraction by changing the number of parts or shading.	**CCSS Math Standards: 4.NF.C.6 Use decimal notation for fractions with denominators or . For example, rewrite as; describe a length as meters; locate on a number line diagram.** Activity Statement: Input decimal values into the variables "distance" to help the baby elephant move to meet with its mother. UC Davis Chapters: 6,7,8,9, and 13  Activity ID: 6818 Subjects: Robotics, Coding, Math Grades: Grade 4 Keywords: Fraction, Decimals, Equivalence

	3. Add 3-4 drops of food coloring. 4. Add a marble to the bottle, and screw the lid on tight. 5. Turn the bottle on its side, tilting it back and forth to make waves. 6. Record observations with pictures and words.	**4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky	 8.11 Students will add and subtract unit fractions, represent fractions as the sum or difference of unit fractions, understand a fraction 1/2 as the quantity formed by 1 part when a whole is partitioned into 2 equal parts, understand a fraction 1/4 as the quantity formed by 1 part when a whole is partitioned into 4 equal parts, fluently add fractions with common denominators and simplify these sums using equivalent fractions or whole numbers.  9.7 In this lesson, students will review multiplying unit fractions by a whole number, multiplying non-unit fractions by a whole number, and multiplying mixed numbers by a whole number.  13.8 In this lesson, students will review how to compare units of length, weight, and volume in customary and metric units.		

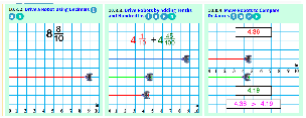
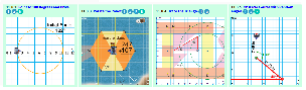
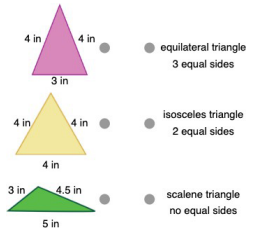
		platform, design and engineering			

		activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 9.1. Multiply a Unit Fraction by a Whole Number A Lesson 9.1.1. Multiply a Unit Fraction by a Whole Number  9.1.2. The Fish And Turtle Go Swimming 			

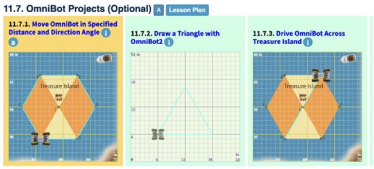
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 5: Geometry and Measurement: Figures, Classification, and Symmetry		**Length of Unit**	Unit 5: 24 days
Focus	Geometry and Measurement:	**Standards Addressed in this Unit**	**4.G.A.1** **4.MD.C.5a** **4.MD.C.5b** **4.MD.C.6** **4.MD.C.7** **4.G.A.2** **4.G.A.3**	
Inquiry Questions (Engaging-Debatable):	How can you identify figures such as points, lines, rays, and angles? How can you classify two-dimensional figures? How can you find symmetry in an object?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. **Tinfoil Barge** Students will investigate different sizes and shapes of aluminum foil boats and their effect upon how many pennies each boat can hold. Materials needed:	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.**	**Computer science standard: 1B-AP-10 Create programs that include sequences, events, loops and conditionals. 1B-AP-15 Test and debug a program or algorithm to ensure it runs as intended.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. The lessons that directly involve engineering that relate to these math topics are as follows: 10.8, 11.7 and 11.8. 10.8 In this lesson, students will review converting tenths and hundredths to decimals,	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** **Materials**: 9×12 black (or white) construction paper 3×3 colored construction paper – 6 each, assorted colors Scissors Glue stick	**CCSS Math Standards: 4.G.A.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. (Two-dimensional shapes should include special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals, e.g., rhombus, square, rectangle, parallelogram, trapezoid.) CA.**

	1. large container of water 2. ruler 3. aluminum foil 4. pennies Procedure: 1. Measure a 6-inch square of foil and fold the edges up on all four sides 2. Pinch the corners together to make a good seal to prevent water from leaking into the boat 3. Place the boat in water to ensure it stays floating 4. Carefully place pennies, one by one, onto the boat. 5. Count how many pennies the boat holds until it sinks 6. Repeat the procedure with different sizes and/or different shapes for the boats and record all results	♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses**	calculating equivalent fractions and decimals, adding fractions and decimals, and comparing decimals.  11.7 This lesson shows how to move an OmniBot at any angle. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.  11.8 In this lesson, students will review adding angles and finding unknown angle measures. 	**Directions**: 1. Fold each of your 3×3 squares in half. 2. Cut a different shape from each of your folded squares, ***beginning and ending on the fold.*** (You'll want to emphasize cutting on the fold, and have some extra 3×3's on hand for those inevitable mis-cuts!) 2.Lay out all your shapes on the black paper, before you do any gluing. Follow the diagram below, placing all your open square shapes first, lining up corners and straight edges. Then place their matching cut-out shapes in the spaces next to them. 4.On each shape draw at least one line of symmetry. 	UC Davis Chapters: 10 and 11  Activity ID: 6881 Subjects: Math Grades: Grade 4 Keywords: lines of symmetry Activity Statement: There are two columns in the grid. The left column has various triangles and the right column has the names of these triangles. Run the program and match the shapes in the left column with their names in the right column.

		that support lifelong learning,			

		collaboration, personal pursuits, and productivity. **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 			

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Science	**Grade Level**	Fourth Grade
Curriculum /Program	PhD Science		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Module 1: Earth Features (39 days)	Essential Questions: How did the Grand Canyon's features form? **Conceptual Overview** Earth's surface features change continually as a result of natural processes. Some changes occur rapidly and others occur over long periods of time. 1. Layers of rock and the fossils in those layers provide evidence of changes to Earth's surface over time. 2. The processes of breaking down rock (weathering) and moving sediment (erosion) play a role in shaping the features of Earth's surface. 3. Natural processes (e.g., earthquakes, volcanic activity) and features of Earth's surface (e.g., mountains) occur in global patterns. 4. Humans harness energy from Earth's features and processes, and the methods used to harness	**NGSS Performance Expectations** **4-ESS1 Earth's Place in the Universe** 4-ESS1-1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. **4-ESS2 Earth's Systems** 4-ESS2-1 Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. 4-ESS2-2 Analyze and interpret data from maps to describe patterns of Earth's features. **4-ESS3 Earth and Human Activity** 4-ESS3-1 Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment. 4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.	What is the environmental impact of the tourist population on the Grand Canyon?	Students will track the weather and look for erosion opportunities around the school. Students will determine how the soil eroded aways and develop a method to stop the erosion of the soil on their campus.

		3–5 ETS1 Engineering Design		
	that energy can change Earth's features and processes.	3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.		
Module 2: Energy (32 days)	Essential Question: How do windmills change wind to light? **Conceptual Overview** Energy can be neither created nor destroyed, but people harness energy by transferring it to the desired place or transforming it into a form people can use. 1. Energy is why things happen. 2. People can observe phenomena that indicate the presence of energy. It can be useful to classify those indicators into categories such as sound, light, heat, electricity, and the motion of objects. 3. Energy can transfer between objects through collisions and from place to place through electric currents, sound, heat, and light. 4. Energy transformation occurs when one phenomenon indicating the presence of energy changes into any other energy phenomenon.	**NGSS Performance Expectations** **4-PS3 Energy** 4-PS3-1 Use evidence to construct an explanation relating the speed of an object to the energy of that object. 4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. 4-PS3-3 Ask questions and predict outcomes about the changes in energy that occur when objects collide. 4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	What is the impact of windmills on the bird population?	<u>Collision with Sports Balls</u> pg. 12 - 15 Students Investigate how the speed of an object affects the size of a collision. Students will Construct an explanation for how the speed of a moving object affects the amount of energy transferred to another object in a collision.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Module 3: Sense and Response (37 days)	Essential Question: How do elephants sense rainstorms from more than 100 miles away? **Conceptual Overview**	**NGSS Performance Expectations** **4-LS1 From Molecules to Organisms: Structures and Processes** 4-LS1-1	What impact does it have on elephants in a zoo and detecting the rainstorm, but cannot leave the area?	<u>Animal Response to Information</u> How do animals receive and respond to different types of information? How do animals
	Animals have sensory structures with receptors specialized to receive information, process the information in their brain, and respond to the information in different ways. 1. Sensory structures in animals have receptors specialized to receive particular types of information about their environments. 2. Waves are regular patterns of motion that transfer energy across a distance without the net transfer of matter. Animals' touch and sound receptors detect vibrations from waves. 3. Animals' brains receive and process information that can guide their actions.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. 4-LS1-2 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. **4-PS4 Waves and Their Applications in Technologies for Information Transfer** 4-PS4-1 Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.		use the information to guide their actions and behaviors within their environments? In this unit students explore these questions by learning about animal senses and then engaging in several activities and a simulation where they experience first-hand how to perceive their surroundings and use the information to make decisions and guide their own behaviors. The unit culminates in a design challenge where students develop an animal model with input sensors and then create a decision tree that demonstrates how the animal processes and responds to information.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Module 4: Light (37 days)	Essential Question: Why didn't Amelia Earhart complete her journey? **Conceptual Overview** The interactions between light and objects and the physical properties of those objects affect what we see and how we communicate. 1. Light must reflect off the surface of an object and enter	**NGSS Performance Expectations** **4-PS4 Waves and Their Applications in Technologies for Information Transfer** 4-PS4-2 Develop a model to describe that light reflecting from objects and entering the eyes allows objects to be seen. 4-PS4-3 Generate and compare multiple solutions that use patterns to transfer information. **3–5-ETS1 Engineering Design**	What is the impact of light around a telescope?	**Reflections in a Mirror** In the Mirror, Mirror on the Wall... lesson, students experiment to see how reflective surfaces like mirrors change the *direction* of light. Using what they learn, students experiment with bouncing light from a flashlight off of reflective surfaces and then see if they can redirect light in a series of mirror bounces to reach

	the eyes for the object to be seen. 2. The physical properties of an object (texture, color, material) and the color of the light shining on an object affect how we see it. 3. Information can be digitized to allow for more effective communication across a distance.	3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. 3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		from a starting point to a target location in the room.

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 1: Earth Features		**Length of Unit**	39 days
Focus	Earth Features	**Standards Addressed in this Unit**	4-ESS1-1, 4-ESS2-1, 4-ESS2-2, 4-ESS3-1, 4-ESS3-2, and 3–5-ETS1-2	
Inquiry Questions (Engaging-Debatable):	Essential Questions: How did the Grand Canyon's features form?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 4-ESS2-1 Plan and conduct investigations on the effects of water, ice, wind and vegetation on the relative rate of weathering and erosion. LC-4-ESS2-1a Use data to compare differences in the shape of the land due to the effects of weathering or erosion. Students will create models of wind and water erosion. Materials needed: 2 large containers, sand, cup of water, fan or a straw, and soil Procedure: 1. Form a mountain of soil in one container making it about 3 inches across and 5 inches tall.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will Google Images of the modern day Grand Canyon. They will use the images to create a Notice and Wonder class chart using Google Jamboard.	**Standards: 4-ESS1-1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in landforms over time. LC-4-ESS1-1b Identify older fossils as being found in deeper, older rock layers.** Make Layers of the Earth using Pudding in a Cup (Students will use a timer to show how long it took to spread each layer and relate to the age of the layers of the Grand Canyon.)	**Standard: VA-CE-E5 Draw on imagination, individual experience, and group activities to generate ideas for visual expression** Students can create a travel book or type of passport and draw the objects in the book. Then as they learn more information they can add it to their books. They can write a short paragraph or create a graphic organizer in the books about the different objects. Painting a rock after an investigation into the Native American Grand Canyon Art	**River Flow Rates**: Discuss the role of the Colorado River in carving the Grand Canyon. Provide students with data on the average flow rate of the Colorado River at different points along its course. Have students calculate the volume of water flowing through the river per second, per minute, or per hour at various locations. Discuss how the river's flow rate influences erosion and canyon formation over time. **Topographic Maps:** Introduce students to topographic maps of the Grand Canyon region. Provide them with contour lines representing elevation and have them interpret

	2. Slowly pour a cup of water onto the mountain to simulate rain. Record what happens. 3. Form a pile of sand in the center of the other container making it about 3 inches across and 5 inches tall. 4. Blow air lightly over the sand with a fan or by blowing through a straw. Record what happens. Discuss how these models can represent real world occurrences and how they can be prevented.				the map to identify the canyon's features, such as cliffs, plateaus, and river channels. Challenge students to calculate the difference in elevation between various points on the map using contour lines.

Unit Title	Module 2: Energy		**Length of Unit**	32 days
Focus	Energy	**Standards Addressed in this Unit**	4-PS3-1,4-PS3-2,4-PS3-3,4-PS3-4, and 3-5-ETS1-1	
Inquiry Questions (Engaging-Debatable):	Essential Question: How do windmills change wind to light?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**

	Standard: LC-4-PS3-4a Relate an example that demonstrates that energy can be converted from one form to another form (for example, electric circuits that convert electrical energy into light, motion, sound or heat). Students will investigate energy flow within a circuit to create a card with a LED light. Students will decorate card stock for a celebration (thank you card, happy birthday, etc.) to include a place for a small LED light. Students will create a circuit within the card that connects the diode to a watch battery using copper tape. They will have to use trial and error to make a complete circuit that turns the light on. Students will discuss their process once successful. In their discussion, reasoning must be included.	**Standards:2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Solar Powered Cars pg. 8 - 11 Students will develop a model to show the transfer and transformation of energy in the solar car system. Students can construct an explanation for how energy is transferred and transformed into the system of the solar car. They will also print and design a 3D model using Tinkercad and or Blender.	**Standards: 4-PS3-1 Use evidence to construct an explanation relating the speed of an object to the energy of that object. LC-4-PS3-1a Identify that moving objects contain energy. LC-4-PS3-1b Demonstrate that objects moving faster possess more energy than objects moving slower.** Sail Cars pg. 4-7 Students design and build a sail car to gather data on how changing the energy affects the car's motion. Students construct an explanation to describe why changing the energy put into the sail cars affects the speed and the energy of that object.	**Standard: VA-CE-E5 Draw on imagination, individual experience, and group activities to generate ideas for visual expression** Solar Oven pg. 20 - 25 Students will develop a model to show the transfer and transformation of energy in the system of the solar oven. (From light energy to heat energy) , construct an explanation for how energy is transferred into the system of the solar oven, and engineer and build a device to change (convert) solar energy into heat energy.	**Model Wind Turbines**: Provide students with materials such as cardboard, straws, paper cups, and pinwheels. Instruct them to design and build a model wind turbine. Encourage students to experiment with different blade shapes, sizes, and angles to optimize their turbine's performance. Once the turbines are built, have students test them using a fan or by blowing air with their mouths. Measure and record the rotational speed of each turbine using a stopwatch or timer. Then, have students calculate the speed in rotations per minute (RPM). **Wind Energy Output:** Discuss with students how wind energy is converted into electricity by the turbines' blades spinning a generator. Provide students with small generators or motors, such as hobby motors or hand-crank generators. Connect the generators to the model wind turbines built in the previous activity. Measure and record the voltage or current produced by each turbine as the blades spin.

					Guide students through calculating the electrical power output (voltage × current) of each turbine.

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 3: Sense and Response		**Length of Unit**	37 days
Focus	Sense and Response	**Standards Addressed in this Unit**	4-LS1-1, 4-LS1-2, and 4-PS4-1	
Inquiry Questions (Engaging-Debatable):	Essential Question: How do elephants sense rainstorms from more than 100 miles away?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 4-LS1-2 Construct an explanation to describe how animals receive different types of information through their senses, process the information in their brains, and respond to the information in different ways. LC-4-LS1-2a Identify that sense receptors provide different kinds of information, which is processed by the brain. LC-4-LS1-2b Identify how animals use their sense receptors to respond to different types of information (e.g., sound, light, odor, temperature) in their surroundings with behaviors that help them survive.	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.**	**Standards: 4-LS1-2 Construct an explanation to describe how animals receive different types of information through their senses, process the information in their brains, and respond to the information in different ways. LC-4-LS1-2b Identify how animals use their sense receptors to respond to different types of information (e.g., sound, light, odor, temperature) in their surroundings with behaviors that help them survive.** **Engineering standards: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.** **3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to**	**Standard: D-CE-E1 Use kinesthetic awareness, proper use of space, and the ability to move safely** They engage in kinesthetic simulations (performing arts) to model the experience of being non-sighted while identifying objects and distances with their remaining senses.	**Mapping Rainfall Patterns:** Provide students with a map of an area where elephants live, along with data on historical rainfall patterns in that region. Guide students through plotting the locations of rainstorms on the map over a period of time, using different symbols or colors to represent intensity. Have students calculate the distances between the elephants' habitat and the locations of the rainstorms using a scale on the map. Encourage students to analyze the data to identify any correlations or trends in the elephants' ability to detect rainstorms from afar.

	Students will read and respond to text and graphics about animals' senses. Then, students will go outside to explore using their senses. They will record, on a graphic organizer, what they see, what they feel (tree bark, grass), what they hear, and what they smell. Students will answer the following questions after their sensory exploration: If you lived in the wild, how do you think your senses would help you to survive? What are some ways you respond when you are scared by something or detect a threat?	Students watch videos to learn how animals perceive the world around them and discuss how animals use this information for survival, providing practice and experience with using digital information to investigate phenomena. Once they have conducted the research, they can create a single-page example of an animal's perception using Canva.	**meet the criteria and constraints of the problem.** Students will be given a scenario that states they have found a small injured animal that needs to be protected from predators. Students are tasked to design and create a device that uses sound to help the animal protect itself and scare off predators. Criteria: The device must create a sound that would scare off predators and be able to attach to the injured animal in some way. Constraints: They may only use materials provided and must complete it within the time frame given by the teacher.		

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 4: Light		**Length of Unit**	37 days
Focus	Light	**Standards Addressed in this Unit**	4-PS4-2, 4-PS4-3, 3–5-ETS1-2, and 3–5-ETS1-3	
Inquiry Questions (Engaging-Debatable):	Essential Question: Why didn't Amelia Earhart complete her journey?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 4-PS4-2 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. LC-4-PS4-2a Arrange a model to show that light can be seen when light reflected from its surface enters the eye. Students will investigate how light moves. Materials: Clear cup of water, pencil, index card, and two mirrors Procedure: 1. Have students look into one mirror. Then, hold the second mirror up facing the first mirror. Students will record their observations in	**Standards: 6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Interactive Applet on Light Students will use the interactive applet to investigate how the angle of light refracts or reflects off of surfaces.	**Engineering standards: 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.** **Mixing Red, Green, and Blue Light** What happens when you mix red and green *light*? If *yellow* wasn't your first guess, this activity will help! In the Colored Shadows activity, students use flashlights and colored cellophane to create shadows and explore the science of additive and subtractive colors of light. It is important to note (and sometimes confusing) that mixing colors of light doesn't behave the same as mixing paint. When talking about colors of light, the primary colors are red, green, and blue, and these colors can be combined to make a spectrum of other colors. Computer displays, for example,	**Standard: VA-AP-E3 Explore the beauty in nature and discern images and sensory qualities found in nature and art** **What Color is the Sky?** Depending on the time of day and the weather, you might describe the sky as blue, or pink, or purple, or grey, or a combination of colors! What color is the sky really and what causes the colors we see? Light from the sun is *white* light. It contains all the colors, which we can see in rainbow form when light is refracted by a prism, for example. If the light in our sky is all white light from the sun, why does it appear different colors at different times of day? In the Sky Science lesson, students explore how the	**Mirror Maze:** Create a simple maze using cardboard or poster board, with mirrors strategically placed to reflect light. Provide students with flashlights or laser pointers. Challenge students to navigate the maze by directing the light beam to reflect off the mirrors and illuminate the path to the exit. Have students measure and record the angles at which the light beam reflects off the mirrors using protractors. Guide students through calculating the angles of reflection and discussing how the angle of incidence relates to the angle of reflection. **Sunlight and Shadows:**

	pictures and words. 2. Students will draw a large arrow on an index card. Then, they will place the card behind the cup of water focusing on the arrow drawn. Students will move the card closer and farther from the cup. Students will record their observations with pictures and words. 3. Students will put a pencil in the cup of water. Then, they will look at the pencil from the side. They will records their observations in pictures and words.		use the RGB color model, a system that uses red, green, and blue to create the colors we see on the screen. *Questions*: Why are the primary colors for mixing paint different from the RGB system for mixing light? If you mix all colors of light together, what color will you get? If you mix all colors of paint together, what color will you get? (*Note*: Students interested in further exploring the mixing of light can experiment with the Mixing Light to Make Colors project.)	colors we see in the sky are related to how light from the sun passes through our atmosphere. *Questions*: Why is the sky viewed from the Moon always dark, but the sky viewed from Earth seems to have many colors at different times of the day? How does milk act like the Earth's atmosphere in this experiment? (*Note*: For an informal exploration of sky colors, see the Sunset Colors in a Glass activity. In this activity, students use white light to create a simulated sunset in a jar!)	Take students outside on a sunny day and have them observe how sunlight creates shadows when it interacts with objects. Provide students with various objects of different shapes and sizes. Challenge students to experiment with positioning the objects in relation to the sunlight to create interesting shadow patterns. Have students measure and record the lengths and angles of the shadows cast by different objects using rulers and protractors. Guide students through analyzing the data to identify patterns and relationships between the angles of incidence and the angles of shadow formation.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Social Studies	**Grade Level**	4th grade
Curriculum/ Program	Louisiana Student Standards for Social Studies		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Prehistory and the Agricultural Revolution (4.5 weeks)	**Topic 1:** Students explore how early humans developed stone and bone tools to help them hunt, master fire, and developed language to pass down their knowledge to their descendants. **Topic 2**: Students will build knowledge of the agricultural revolution and its effects on the development of civilization. **Topic 3:** Students explain how the agricultural revolution was among the biggest changes human societies have gone through and led to the development of civilizations.	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.9 Describe the characteristics of nomadic hunter-gatherer societies, including their use of hunting weapons, fire, shelter and tools. 4.10 Describe early human migration out of Africa, first to Asia and Europe, then to Australia and the Americas. 4.11 Explain the effects of the Agricultural Revolution,	Understanding the development of civilizations post-agricultural revolution involves examining multiple different cultural practices, belief systems, and social structures. Students can explore how environmental factors influenced the rise and fall of civilizations, fostering discussions on resilience, adaptation, and understanding of multiple different cultures.	Task 3: Understanding the Significance of the Agricultural Revolution Objective: Students will explain the significance of the agricultural revolution as one of the biggest changes in human societies. Activity: Students write a short essay or create a multimedia presentation explaining the significance of the agricultural revolution in the development of civilizations. Students engage in a class discussion or debate on the pros and cons of the agricultural revolution. Assessment Criteria:

		including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure.		Depth of understanding demonstrated in the essay or presentation. Ability to articulate arguments and participate constructively in the discussion or debate.
Ancient Near East (6 weeks)	**Topic 1:** Students will deepen their understanding of how the earliest known civilizations developed by looking at specific characteristics of Mesopotamian civilizations. **Topic 2:** Students will study the geography of Egypt, specifically the Nile River, as well as the culture and beliefs associated with the ancient Egyptians. Students will examine how Egypt interacted with ancient Nubian Kingdoms**.**	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements.	Human Impact on the Environment: Students can explore how these civilizations altered their landscapes through agricultural practices, irrigation systems, and construction projects such as canals and dams. They can learn about the environmental consequences of such actions and how they contributed to the rise and fall of these civilizations. Natural Resources and Sustainability: Discussions can focus on how these ancient societies managed their natural resources, the sustainability of their practices, and the consequences of resource depletion on their societies.	**Performance Tasks:** Role-Play Scenarios: Create role-play scenarios where students act out scenes from daily life in Mesopotamian and Egyptian civilizations. This could include trading in a marketplace, participating in religious ceremonies, or working on farms. Assess their understanding of social roles, customs, and cultural practices. Problem-Solving Activities: Present students with hypothetical problems or challenges faced by ancient Mesopotamian or Egyptian societies, such as managing irrigation systems, dealing with natural disasters, or resolving conflicts between city-states. Evaluate their ability to apply knowledge of

		4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.13 Describe the geographic, political, economic, and cultural structures of the ancient Near East. a. Identify and locate geographic features of the ancient Near East, including the Black Sea, Persian Gulf, Euphrates River, Tigris River, Mediterranean Sea, and Zagros Mountains. b. Explain how geographic and climatic features led to the region being known as the Fertile Crescent. c. Explain how irrigation, silt, metallurgy, production of tools, use of animals and inventions, such as the wheel and plow, led to advancements in agriculture. d. Describe how changes in agriculture in Sumer led to economic growth, expansion of trade and transportation, and the growth of independent city-states. e. Identify important achievements of the Mesopotamian civilization, including cuneiform, clay tablets, ziggurats, and the Epic of Gilgamesh as the oldest written epic. f. Describe the significance of the written law in the Code of Hammurabi, and explain the meaning of the phrase "an eye for an eye and a tooth for a tooth." g. Describe the achievements of the ancient Israelites. 4.14 Describe the geographic, political, economic, and cultural structures of ancient Egypt. a. Identify and locate geographic features of ancient Egypt, including the Mediterranean Sea, Red Sea, Nile River and Delta, and the Sahara Desert. b. Explain the structure of ancient Egyptian		historical context to propose solutions.

		society, including the relationships between groups of people and the role played by the pharaoh and enslaved people. c. Explain Egyptian beliefs about the afterlife, the reasons for mummification, and the use of pyramids. d. Describe the significance of key figures from ancient Egypt, including Queen Hatshepsut, Ramses the Great, and the significance of the discovery of Tutankhamun's tomb on the modern understanding of ancient Egypt. e. Describe the achievements of ancient Egyptian civilization, including hieroglyphics, papyrus, and the pyramids and Sphinx at Giza. f. Describe the cultural diffusion of ancient Egypt with surrounding civilizations through trade and conflict.		
Early Civilizations: India, Greece, China (8.5 weeks)	**Topic 1:** Students examine the beliefs and practices of people who lived in ancient India and during Ashoka's reign. **Topic 2:** Students will examine the influence of geography on the development of civilization in China and the ideas and beliefs that came out of the Shang and Zhou dynasties. **Topic 3:** Students examine the origins and character of democracy and oligarchy in Athens and Sparta and the ideas and beliefs associated with ancient Greece.	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment.	Environmental Science: Encourage students to explore how environmental factors such as geography, climate, and natural resources influenced the development and sustainability of ancient societies. Discuss the impact of human activities on the environment during ancient times, such as agriculture, deforestation, and water management practices. Highlight connections between ancient	Debate: Organize a classroom debate where students take on the roles of Athenians and Spartans discussing the merits of democracy and oligarchy. Comparative Venn Diagram: Have students create a Venn diagram comparing and contrasting the political systems, daily life, education, and values of Athens and Sparta. Creative Writing: Ask students to write journal entries or letters from the perspective of a child living in either Athens or Sparta,

		4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires.4.8; 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.15 Describe the geographic, political, economic, and cultural structures of ancient India. a. Identify and locate geographic features of ancient India, including the Ganges River, Indus River, Himalayan Mountains, Indian Ocean, and the subcontinent of India. b. Explain the emergence of civilization in the Indus River Valley as an early agricultural civilization and describe its achievements, including architecture built with bricks, roads arranged into a series of grid systems, and sewer systems. c. Identify the long-lasting intellectual traditions that emerged during the late empire of ancient India, including advances in medicine and Hindu-Arabic numerals. 4.16 Describe the geographic, political, economic, and cultural structures of ancient Greece. a. Identify and locate geographic features of ancient Greece, including the Mediterranean Sea, Athens, the Peloponnesian peninsula, and Sparta. b. Describe how the geographic features of ancient Greece, including its mountainous terrain and access to the Mediterranean Sea contributed to its organization into city-states	environmental practices and their relevance to modern-day environmental challenges and sustainability efforts.	describing their daily life, activities, and beliefs.

		and the development of maritime trade. c. Describe the concept of the polis in Greek city-states, including the ideas of citizenship, civic participation, and the rule of law. d. Explain the basic concepts of direct democracy and oligarchy. e. Explain the characteristics of the major Greek city-states of Athens and Sparta, including status of women, approaches to education, type of government, and the practice of slavery. f. Describe the causes and consequences of the Persian Wars, including the role of Athens and its cooperation with Sparta. g. Describe the polytheistic religion of ancient Greece. h. Identify Socrates, Plato, and Aristotle as great philosophers of ancient Greece and explain how ideas can spread through writing and teaching. i. Identify examples of ancient Greek architecture, including the Parthenon and the Acropolis. j. Identify Alexander the Great and explain how his conquests spread Hellenistic (Greek) culture. 4.18 Describe the geographic, political, economic, and cultural structures of ancient China. a. Identify and locate geographic features of ancient China, including the Gobi Desert, Plateau of Tibet, Himalayan Mountains, Yangtze River, Pacific Ocean, and the Yellow River. b. Describe the influence of geographic features on the origins of ancient Chinese civilization in the Yellow River Valley, and explain how China's geography helped create a unique cultural identity. c. Describe problems prevalent in the time of		

		Confucius and explain the concepts of filial piety (dutiful respect) and the Mandate of Heaven. e. Describe how the size of ancient China made governing difficult and how early dynasties attempted to solve this problem, including the construction of the Grand Canal and the Great Wall.		
The Growth of Empires (4.5 weeks)	**Topic 1:** Students examine how representative democracy developed in Rome, and how and why it eventually collapsed into empire and dictatorship. **Topic 2:** Students will examine the influence of geography on the development of civilization in China and the ideas and beliefs associated with the Zhou, Qin, and Han dynasties.	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements.	Humanities/Multicultural Exposure in Rome and China: ● Students can delve into the many different cultures and societal structures of both ancient Rome and China. They can explore the roles of different social classes, cultural practices, religious beliefs, and systems of governance. ● Through examining the transition from republic to empire in Rome and the dynamics of power within Chinese dynasties, students can gain insights into the complexities of governance and multiple different perspectives. ● Teachers can introduce stories and primary sources	Project Idea: Design a Roman Republic Board Game Objective: Students will demonstrate their understanding of the development and collapse of the Roman Republic through a creative board game. Tasks: Research: Students research the key events, figures, and concepts related to the Roman Republic. Game Design: In groups or individually, students design a board game that represents the rise and fall of the Roman Republic. The game could include elements such as Senate decisions, conquests, and the emergence of dictatorship. Gameplay: Students playtest each other's games and provide feedback based on

		4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.16 Describe the geographic, political, economic, and cultural structures of ancient Greece. a. Identify and locate geographic features of ancient Greece, including the Mediterranean Sea, Athens, the Peloponnesian peninsula, and Sparta. b. Describe how the geographic features of ancient Greece, including its mountainous terrain and access to the Mediterranean Sea contributed to its organization into city-states and the development of maritime trade. c. Describe the concept of the polis in Greek city-states, including the ideas of citizenship, civic participation, and the rule of law. d. Explain the basic concepts of direct democracy and oligarchy. e. Explain the characteristics of the major Greek city-states of Athens and Sparta, including status of women, approaches to education, type of government, and the practice of slavery. f. Describe the causes and consequences of the Persian Wars, including the role of Athens and its cooperation with Sparta. g. Describe the polytheistic religion of ancient Greece. h. Identify Socrates, Plato, and Aristotle as great philosophers of ancient Greece and explain how ideas can spread through writing and teaching. 4.18 Describe the geographic, political, economic, and cultural structures of ancient China. a. Identify and locate geographic features of ancient China, including the Gobi Desert,	that highlight the contributions of multiple different groups within these civilizations, including women, slaves, artisans, merchants, and scholars. ● Additionally, discussions on the interactions between different cultures, such as the Silk Road trade network, can help students appreciate the interconnectedness and the variety of cultures within ancient societies.	historical accuracy and fun factor.

		Plateau of Tibet, Himalayan Mountains, Yangtze River, Pacific Ocean, and the Yellow River. b. Describe the influence of geographic features on the origins of ancient Chinese civilization in the Yellow River Valley, and explain how China's geography helped create a unique cultural identity. c. Describe problems prevalent in the time of Confucius and explain the concepts of filial piety (dutiful respect) and the Mandate of Heaven. e. Describe how the size of ancient China made governing difficult and how early dynasties attempted to solve this problem, including the construction of the Grand Canal and the Great Wall. f. Explain the major accomplishments of the Han Dynasty, including the magnetic compass, paper making, porcelain, silk, and woodblock printing. g. Describe how the desire for Chinese goods influenced the creation of The Silk Road and began a process of cultural diffusion throughout Eurasia.		
Early Civilizations in North America (4.5 weeks)	**Topic 1:** Students will learn that the understanding of our history is ever changing, as archaeologists are discovering new clues to our past. They will discover various theories regarding how the first people crossed into the Americas, which leads to questions about the timeline of our ancient ancestors. Students will discover the ways Paleoindians interacted with their environment and each other to create various, unique cultures	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints.	Environmental Science: Both topics involve understanding how ancient peoples interacted with their environment. Students will learn about the ways Paleoindians and the people of the Poverty Point Culture adapted to and modified their surroundings for survival. They will explore the ecosystems they inhabited, the resources they utilized, and the impact they had on their environment. This	Project Idea : Documentary Film on Poverty Point Culture Task: Students work in teams to create a documentary film exploring the daily life, cultural practices, and trade networks of the Poverty Point culture. Criteria: Research depth and accuracy, storytelling and

	that advanced over time. **Topic 2:** Students will investigate these mounds and the various theories as to their purpose. Students will explore how the people of the Poverty Point Culture lived and interacted with the environment daily and how they interacted with various groups through a vast trade network.	c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.9 Describe the characteristics of nomadic hunter-gatherer societies, including their use of hunting weapons, fire, shelter and tools. 4.10 Describe early human migration out of Africa, first to Asia and Europe, then to Australia and the Americas. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.19 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate geographic features in the Americas, including Mississippi River and Delta, Amazon River, the Pacific Ocean, Appalachian Mountains, Gulf of Mexico, Atlantic Ocean, South America, and the Yucatan Peninsula. b. Describe the cultural elements among Indigenous communities in the Americas, including housing, clothing, games/entertainment, dance, and how food was gathered/caught and cooked. c. Explain how nomadic groups of people first	includes discussions on sustainable practices, resource management, and the consequences of environmental changes.	visual appeal, clarity of narration and presentation. These project-based assessment ideas provide opportunities for students to engage deeply with the content, demonstrate their understanding, and showcase their creativity and critical thinking skills.

		hunted and traveled throughout what would become Louisiana. d. Explain how people living in what would become Louisiana gradually moved towards seasonal hunting and gathering, using new tools and practices for hunting, and building large mounds for ceremonial and practical purposes. e. Describe key characteristics of Poverty Point culture, including art, hunting methods, dress, food, use of mounds, and resources traded there.		
Early Civilizations: The Maya (3 weeks)	**Topic 1:** Students will examine how the Maya thrived in the rainforests of South America and will investigate questions surrounding the collapse of their civilization and abandonment of their cities.	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.8 Describe the origin and spread of major world religions as they developed throughout history.	Environmental Science: Explore the rainforest ecosystem: Understanding the rainforest environment where the Maya civilization thrived involves delving into environmental science concepts. Students can learn about the biodiversity of the rainforest, the importance of its flora and fauna, and the interdependence of species within this ecosystem. Impact of human activity: Through studying the Maya civilization, students can investigate how human activities, such as deforestation, agriculture, and resource extraction, can impact the environment. This exploration can help students understand the delicate balance between human societies and their surrounding ecosystems.	Creative Project: Encourage students to express their understanding of the Maya civilization through a creative project such as a short skit, a clay model of a Maya city, or a story about a fictional Maya character. Provide guidelines and criteria for the creative project to ensure that it reflects accurate information about the Maya civilization. Reflection and Discussion: Facilitate a reflection session where students can share what they have learned about the Maya civilization and discuss any questions or insights they have gained.

		4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.19 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate geographic features in the Americas, including Mississippi River and Delta, Amazon River, the Pacific Ocean, Appalachian Mountains, Gulf of Mexico, Atlantic Ocean, South America, and the Yucatan Peninsula. b. Describe the cultural elements among Indigenous communities in the Americas, including housing, clothing, games/entertainment, dance, and how food was gathered/caught and cooked. f. Explain the major accomplishments of the Mayans, including advancements in astronomy, mathematics and the calendar, construction of pyramids, temples, and hieroglyphic writing. g. Describe the influence of geographic features on the origins of the Mayan civilization and explain theories related to the abandonment of their cities.		Encourage students to think about how the lessons from the Maya civilization can be applied to their own lives and communities.

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

<table>
<tr><td>Unit Title</td><td colspan="2">Prehistory and the Agricultural Revolution</td><td>Length of Unit</td><td>4.5 Weeks</td></tr>
<tr><td>Focus</td><td>After building knowledge about their community, parish, state and nation in grades K-3, students are ready to expand their historical horizons and begin an exploration of the ancient and classical world. In grade 4 students are introduced to the story of human civilization and will examine key characteristics of society, government and culture in ancient Mesopotamia, Northern Africa, India, Greece, Rome, China, and the Americas.</td><td>Standards Addressed in this Unit</td><td colspan="2">4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity.
4.2 Use a variety of primary and secondary sources to:
a. Analyze social studies content.
4.3 Explain connections between ideas, events, and developments in world history.
4.4 Compare and contrast events and developments in world history.
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a. Demonstrate an understanding of social studies content.
b. Compare and contrast content and viewpoints.
c. Explain causes and effects.
d. Describe counterclaims.
4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment.
4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires.
4.9 Describe the characteristics of nomadic hunter-gatherer societies, including their use of hunting weapons, fire, shelter and tools.
4.10 Describe early human migration out of Africa, first to Asia and Europe, then to Australia and the Americas.
4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements.
4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure.</td></tr>
<tr><td>Inquiry Questions (Engaging-Debatable):</td><td colspan="4">What was life like for the earliest people and how did they come to populate the earth?
How did farming change the world?
What are the different characteristics of a civilization and how are they related to the Agricultural Revolution?</td></tr>
</table>

Curriculum Development Overview
Planning for Each Unit

STEAM Integration	Science	Technology	Engineering	Art	Math
	Standard: 3-LS4-3 Construct and support an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. Students will conduct an investigation using multiple types of seeds with local soil to determine which plants grow best.	**Standards:** **1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students can compare and contrast ancient technologies with modern agricultural technologies, such as tractors, irrigation pumps, and GPS-guided equipment. Create an anchor chart to demonstrate this knowledge using Canva.	**Engineering standard: 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students can explore the engineering principles behind ancient monuments and structures, such as Stonehenge or the Pyramids by recreating them using Lego or other types of building blocks and standard classroom materials.	**Standard: M-HP-E3 Recognize families of musical instruments and instruments of various cultures** Exploring Ancient Cultures Through Music Divide the students into small groups, assigning each group in ancient culture. Provide resources for students to research the types of instruments and music used in their assigned culture. Each group fills out a worksheet with their findings, focusing on the instruments, purpose of the music, and any interesting facts. Using the craft materials provided, each group creates a simple version of an ancient instrument they researched.	**Crop Yield Analysis**: Discuss how the Agricultural Revolution led to innovations in farming techniques and increased crop yields. Provide data or pictures of different crops and their yields per acre. Have students calculate the total yield of each crop and compare them to determine which crops were most beneficial for early civilizations. **Geometry in City Planning**: Discuss how ancient civilizations used geometry in city planning, e.g., building straight roads, designing irrigation systems. Provide grid paper and markers for students to design their own city layout. Incorporate math by having them calculate the areas of different parts of their city (parks, streets, residential areas).

Curriculum Development Overview
Planning for Each Unit

Unit Title	Ancient Near East	**Length of Unit**	6 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	After building knowledge about their community, parish, state and nation in grades K-3, students are ready to expand their historical horizons and begin an exploration of the ancient and classical world. In grade 4 students are introduced to the story of human civilization and will examine key characteristics of society, government and culture in ancient Mesopotamia, Northern Africa, India, Greece, Rome, China, and the Americas.	**Standards Addressed in this Unit**	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.13 Describe the geographic, political, economic, and cultural structures of the ancient Near East. a. Identify and locate geographic features of the ancient Near East, including the Black Sea, Persian Gulf, Euphrates River, Tigris River, Mediterranean Sea, and Zagros Mountains. b. Explain how geographic and climatic features led to the region being known as the Fertile Crescent. c. Explain how irrigation, silt, metallurgy,

			production of tools, use of animals and inventions, such as the wheel and plow, led to advancements in agriculture. d. Describe how changes in agriculture in Sumer led to economic growth, expansion of trade and transportation, and the growth of independent city-states. e. Identify important achievements of the Mesopotamian civilization, including cuneiform, clay tablets, ziggurats, and the Epic of Gilgamesh as the oldest written epic. f. Describe the significance of the written law in the Code of Hammurabi, and explain the meaning of the phrase "an eye for an eye and a tooth for a tooth." g. Describe the achievements of the ancient Israelites. 4.14 Describe the geographic, political, economic, and cultural structures of ancient Egypt. a. Identify and locate geographic features of ancient Egypt, including the Mediterranean Sea, Red Sea, Nile River and Delta, and the Sahara Desert. b. Explain the structure of ancient Egyptian society, including the relationships between groups of people and the role played by the pharaoh and enslaved people. c. Explain Egyptian beliefs about the afterlife, the reasons for mummification, and the use of pyramids. d. Describe the significance of key figures from ancient Egypt, including Queen Hatshepsut, Ramses the Great, and the significance of the discovery of Tutankhamun's tomb on the modern understanding of ancient Egypt. e. Describe the achievements of ancient Egyptian civilization, including hieroglyphics, papyrus, and the pyramids and Sphinx at Giza.

Curriculum Development Overview
Planning for Each Unit

			f. Describe the cultural diffusion of ancient Egypt with surrounding civilizations through trade and conflict.
Inquiry Questions (Engaging-Debatable):	Why is Mesopotamia often called the "Cradle of Civilization?" What were the contributions of Egypt to the Ancient World?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. Students can conduct hands-on experiments to demonstrate the principles of irrigation, creating and using models to simulate water flow and distribution.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students can explore the inventions and innovations of Ancient Near Eastern civilizations, such as the	**Engineering standard: 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students will sketch, design and build their own ziggurat models using materials like clay, cardboard, or LEGO bricks. Emphasize principles of stability and proportion.	**Standard: TH-HP-E5 Recognize careers in theater arts and identify roles of theater artists in various cultures and time periods** Journey Through Ancient Theater Students will learn about the origins of theater in ancient Greece and Rome, exploring the cultural and historical significance of early theatrical performances. Provide an overview of the origins of theater in Greece and Rome. Discuss the significance of theater in ancient societies. Introduce key elements of ancient theater. Read a short passage or watch a video about a famous ancient Greek play. Discuss the themes , characters, and structure of the play. Use art supplies to design and	**Hieroglyphic Math**: Introduce students to hieroglyphs, the ancient Egyptian writing system. Teach them basic hieroglyphic symbols representing numbers. Create math problems using these hieroglyphic numbers and have students solve them by translating the symbols into regular Arabic numerals. For example, students could decode hieroglyphic addition or subtraction problems. **Building Pyramids**: Explain to students how Ancient Egyptians built pyramids using mathematical principles such as geometry and engineering. Provide materials like sugar cubes or building blocks. Challenge students to build their

		wheel, writing systems, and irrigation techniques.-Videos After they complete the videos, they can split into groups and choose one activity to report to students using Google Slides.		decorate masks. Divide students into small groups and assign each group a part of the script to rehearse. Organize a performance where each group presents their scene in sequence, creating an adaption of the play.	own pyramids using these materials while following specific mathematical constraints, such as the number of layers or the slope of the sides.

Unit Title	Early Civilizations: India, Greece, China	**Length of Unit**	8.5 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	After building knowledge about their community, parish, state and nation in grades K-3, students are ready to expand their historical horizons and begin an exploration of the ancient and classical world. In grade 4 students are introduced to the story of human civilization and will examine key characteristics of society, government and culture in ancient Mesopotamia, Northern Africa, India, Greece, Rome, China, and the Americas.	**Standards Addressed in this Unit**	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires.4.8; 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.15 Describe the geographic, political, economic, and cultural structures of ancient India. a. Identify and locate geographic features of ancient India, including the Ganges River, Indus River, Himalayan Mountains, Indian Ocean, and the subcontinent of India. b. Explain the emergence of civilization in the Indus River Valley as an early agricultural civilization and describe its achievements, including architecture built with bricks, roads arranged into a series of grid systems, and

			sewer systems. c. Identify the long-lasting intellectual traditions that emerged during the late empire of ancient India, including advances in medicine and Hindu-Arabic numerals. 4.16 Describe the geographic, political, economic, and cultural structures of ancient Greece. a. Identify and locate geographic features of ancient Greece, including the Mediterranean Sea, Athens, the Peloponnesian peninsula, and Sparta. b. Describe how the geographic features of ancient Greece, including its mountainous terrain and access to the Mediterranean Sea contributed to its organization into city-states and the development of maritime trade. c. Describe the concept of the polis in Greek city-states, including the ideas of citizenship, civic participation, and the rule of law. d. Explain the basic concepts of direct democracy and oligarchy. e. Explain the characteristics of the major Greek city-states of Athens and Sparta, including status of women, approaches to education, type of government, and the practice of slavery. f. Describe the causes and consequences of the Persian Wars, including the role of Athens and its cooperation with Sparta. g. Describe the polytheistic religion of ancient Greece. h. Identify Socrates, Plato, and Aristotle as great philosophers of ancient Greece and explain how ideas can spread through writing and teaching. i. Identify examples of ancient Greek architecture, including the Parthenon and the Acropolis.

			j. Identify Alexander the Great and explain how his conquests spread Hellenistic (Greek) culture. 4.18 Describe the geographic, political, economic, and cultural structures of ancient China. a. Identify and locate geographic features of ancient China, including the Gobi Desert, Plateau of Tibet, Himalayan Mountains, Yangtze River, Pacific Ocean, and the Yellow River. b. Describe the influence of geographic features on the origins of ancient Chinese civilization in the Yellow River Valley, and explain how China's geography helped create a unique cultural identity. c. Describe problems prevalent in the time of Confucius and explain the concepts of filial piety (dutiful respect) and the Mandate of Heaven. e. Describe how the size of ancient China made governing difficult and how early dynasties attempted to solve this problem, including the construction of the Grand Canal and the Great Wall.
Inquiry Questions (Engaging-Debatable):	What ideas, practices, and events united groups across the vast Indian subcontinent? What were the political and cultural characteristics of early China? Why were the ancient Greeks so influential?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 4-PS4-2 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.**	**Engineering standard: 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.**	**Standard: D-HP-E2 Recognize basic differences between dance styles and identify styles of dance in various cultures**	**Terracotta Army Population**: Introduce students to the Terracotta Army, a vast collection of clay sculptures buried with the first Emperor of

	In 300 BC, the mathematician Euclid studied light and wrote a book about what he found out. In this book, he suggested that light always travels in straight lines. Questions for discussion are as follows: Can we draw some pictures to show how we see an object? What would the picture look like if light doesn't travel in straight lines? What difference do you think it would make? Can we draw some pictures to explain why shadows have the same shape as the objects causing them?	♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students can create simple models or replicas of technological artifacts from each civilization using materials like clay, paper, or recycled materials using research to find the pictures and information about them.	Students can design and build miniature models of famous structures using building blocks, clay, or other craft materials, encouraging students to think about the engineering challenges involved.	Dancing Through Ancient Civilizations Divide the students into three groups, assigning each group one of the ancient civilizations (China, India, Greece). Provide resources (books, websites, videos) for students to research traditional dances from their assigned culture. Have each group fill out a worksheet with their findings, focusing on the types of dances, their purposes (rituals, celebrations, storytelling), and any interesting facts. Dance Demonstration: Show videos of traditional dances from China, India, and Greece. Discuss the key movements and styles observed in each dance form. Highlight the cultural and historical context of each dance style. Learning the Moves: Teach basic dance movements from each culture to the entire class. China: Movements from traditional Chinese ribbon dance.	China. Show images of the Terracotta Army and discuss its significance in early Chinese culture. Provide information about the estimated population of the Terracotta Army. Have students calculate the total number of sculptures based on the number of soldiers, horses, chariots, etc. Discuss how the creation of the Terracotta Army reflects the power and cultural values of early Chinese rulers. **Chinese Numeral Systems**: Explain to students that early Chinese civilizations developed their own numeral system. Provide examples of Chinese numerals and their corresponding symbols. Have students practice writing and calculating with Chinese numerals, incorporating addition, subtraction, and multiplication problems. Discuss how understanding different numeral systems was crucial for record-keeping and administrative tasks in early China.

				India: Steps from classical Indian dance forms like Bharatanatyam or Kathak. Greece: Steps from Greek folk dances like the Sirtaki. Practice the movements together as a class, encouraging students to embody the style and spirit of each culture. Creating a Dance Routine Have each group create a short dance routine inspired by the ancient culture they researched. Allow time for groups to practice and refine their routines. Encourage creativity in combining movements and incorporating storytelling elements. Performance: Each group performs their dance routine for the class. Encourage the students to explain the significance of their dance before performing.	

Curriculum Development Overview
Planning for Each Unit

Unit Title	The Growth of Empires	**Length of Unit**	4.5 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	After building knowledge about their community, parish, state and nation in grades K-3, students are ready to expand their historical horizons and begin an exploration of the ancient and classical world. In grade 4 students are introduced to the story of human civilization and will examine key characteristics of society, government and culture in ancient Mesopotamia, Northern Africa, India, Greece, Rome, China, and the Americas.	**Standards Addressed in this Unit**	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.16 Describe the geographic, political, economic, and cultural structures of ancient Greece. a. Identify and locate geographic features of ancient Greece, including the Mediterranean Sea, Athens, the Peloponnesian peninsula, and Sparta. b. Describe how the geographic features of ancient Greece, including its mountainous terrain and access to the Mediterranean Sea contributed to its organization into city-states

			and the development of maritime trade. c. Describe the concept of the polis in Greek city-states, including the ideas of citizenship, civic participation, and the rule of law. d. Explain the basic concepts of direct democracy and oligarchy. e. Explain the characteristics of the major Greek city-states of Athens and Sparta, including status of women, approaches to education, type of government, and the practice of slavery. f. Describe the causes and consequences of the Persian Wars, including the role of Athens and its cooperation with Sparta. g. Describe the polytheistic religion of ancient Greece. h. Identify Socrates, Plato, and Aristotle as great philosophers of ancient Greece and explain how ideas can spread through writing and teaching. 4.18 Describe the geographic, political, economic, and cultural structures of ancient China. a. Identify and locate geographic features of ancient China, including the Gobi Desert, Plateau of Tibet, Himalayan Mountains, Yangtze River, Pacific Ocean, and the Yellow River. b. Describe the influence of geographic features on the origins of ancient Chinese civilization in the Yellow River Valley, and explain how China's geography helped create a unique cultural identity. c. Describe problems prevalent in the time of Confucius and explain the concepts of filial piety (dutiful respect) and the Mandate of Heaven. e. Describe how the size of ancient China made governing difficult and how early dynasties

			attempted to solve this problem, including the construction of the Grand Canal and the Great Wall. f. Explain the major accomplishments of the Han Dynasty, including the magnetic compass, paper making, porcelain, silk, and woodblock printing. g. Describe how the desire for Chinese goods influenced the creation of The Silk Road and began a process of cultural diffusion throughout Eurasia.
Inquiry Questions (Engaging-Debatable):	How did The Roman Republic Become an Empire? In what ways did life in China change during the Qin and Han Dynasties?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. LC-4-PS3-2a Identify examples of how energy can be moved from place to place (i.e., through sound or light traveling; by electrical currents; heat passing from one object to another). Students will use the instruments they create in engineering to discover differences in pitch by changing the	**Standards: 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill) ♦ Students use appropriate technology to locate, evaluate, and collect information from a variety of sources. ♦ Students use technology tools to process data and report results. ♦ Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Divide students into small groups and assign each group an ancient empire to research. Provide access to computers/tablets and books for students to gather	**Engineering standard: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.** Students will design and build a working model of ancient Chinese instruments (either the erhu or ruan) after studying about them and listening to music made from said instruments. Criteria: Instrument must make sound that can be differentiated by strumming on different parts of the strings.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations.** Give each group a large world map and art supplies. Instruct students to locate and mark the geographical boundaries of their assigned empire on the map. Encourage students to use different colors and symbols to represent important cities, trade routes, and landmarks	**Roman Numeral Math**: Introduce students to the Roman numeral system and its use in ancient Rome. Provide examples of Roman numerals and their corresponding values. Create math problems that require students to perform addition, subtraction, and multiplication using Roman numerals. Challenge students to solve puzzles or riddles involving Roman numerals, reinforcing their understanding of this numerical system.

	pressure in different places on strings of instruments.	information about their assigned empire. Encourage students to explore the technological advancements and mathematical achievements of their assigned empire	Constraints: Students can only use materials made available.	associated with their empire.	

Unit Title	Early Civilizations in North America	**Length of Unit**	4.5 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	After building knowledge about their community, parish, state and nation in grades K-3, students are ready to expand their historical horizons and begin an exploration of the ancient and classical world. In grade 4 students are introduced to the story of human civilization and will examine key characteristics of society, government and culture in ancient Mesopotamia, Northern Africa, India, Greece, Rome, China, and the Americas.	**Standards Addressed in this Unit**	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.9 Describe the characteristics of nomadic hunter-gatherer societies, including their use of hunting weapons, fire, shelter and tools. 4.10 Describe early human migration out of Africa, first to Asia and Europe, then to Australia and the Americas. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.19 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate geographic features in the Americas, including Mississippi River and Delta, Amazon River, the Pacific Ocean, Appalachian Mountains, Gulf of Mexico,

			Atlantic Ocean, South America, and the Yucatan Peninsula. b. Describe the cultural elements among Indigenous communities in the Americas, including housing, clothing, games/entertainment, dance, and how food was gathered/caught and cooked. c. Explain how nomadic groups of people first hunted and traveled throughout what would become Louisiana. d. Explain how people living in what would become Louisiana gradually moved towards seasonal hunting and gathering, using new tools and practices for hunting, and building large mounds for ceremonial and practical purposes. e. Describe key characteristics of Poverty Point culture, including art, hunting methods, dress, food, use of mounds, and resources traded there.
Inquiry Questions (Engaging-Debatable):	How did different groups living in prehistoric North America interact with their environment? How did different groups living in prehistoric North America and Louisiana interact with their environment and each other?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 4-ESS1-1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in landforms over time.	**Standards:6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)**	**Engineering standard: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.** Building Structures: Investigate the engineering	**Standard: M-HP-E2 Recognize and discuss the function of music within historical and cultural contexts, including celebrations, ceremonies, and special occasions** Performing Arts: Introduce students to traditional	**Environmental Mapping**: Provide students with a large map or grid representing prehistoric North America. Assign each student or group a specific indigenous group (e.g., Plains Indians, Pacific Northwest tribes).

	Students will investigate what types of materials preserve well in ice and what happens to those materials once they become defrosted. Students will choose items they believe that would preserve well in ice, with reasoning, and place into an ice tray. Teacher will pour water into the ice tray and freeze it. Students will observe the materials once frozen and record observations. As the materials defrost, students will continue to observe and record.	♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** Inventions and Tools: Discuss the technological innovations developed by early civilizations, such as tools, pottery, irrigation systems, and construction techniques. Students can create models or drawings of these inventions, or even try their hand at making simple replicas using clay or other materials. Using 3D modeling software to design a real tool.	behind ancient structures like the cliff dwellings of the Ancestral Puebloans or the earthen mounds built by Mississippian cultures. Encourage students to design and build their own miniature versions of these structures using materials like clay, popsicle sticks, or cardboard. Different groups of students will be assigned different civilizations to represent, and, therefore, will be given different supplies with which to create their structures.	music, dance, and storytelling practices of indigenous peoples. They can learn traditional songs or dances and even create their own performances based on stories from different Native American cultures.	Have students research and identify the geographical features of the region where their assigned group lived, such as rivers, forests, mountains, and plains. Using math skills, such as scale and measurement, guide students in marking significant environmental features on their maps. Encourage students to discuss how the environment influenced the lifestyles and activities of each indigenous group. **Seasonal Harvest Calendar**: Discuss with students how indigenous groups in prehistoric North America relied on seasonal cycles for hunting, gathering, and agriculture. Provide a blank calendar template representing a year. Guide students in researching and identifying the seasons and corresponding activities for their assigned indigenous group (e.g., planting, harvesting, migration). Have students fill in the calendar with symbols or pictures representing each activity for each season. Incorporate math

					skills by calculating the duration of each season and determining the timing of specific activities.

Unit Title	Early Civilizations: The Maya	**Length of Unit**	3 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	After building knowledge about their community, parish, state and nation in grades K-3, students are ready to expand their historical horizons and begin an exploration of the ancient and classical world. In grade 4 students are introduced to the story of human civilization and will examine key characteristics of society, government and culture in ancient Mesopotamia, Northern Africa, India, Greece, Rome, China, and the Americas.	**Standards Addressed in this Unit**	4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. 4.3 Explain connections between ideas, events, and developments in world history. 4.4 Compare and contrast events and developments in world history. 4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment. 4.7 Use geographic representations and historical information to explain how physical geography influenced the development of ancient civilizations and empires. 4.8 Describe the origin and spread of major world religions as they developed throughout history. 4.11 Explain the effects of the Agricultural Revolution, including the barter economy, food surpluses, domestication of plants and animals, specialization, and the growth of permanent settlements. 4.12 Identify and explain the importance of the following key characteristics of civilizations: culture, specialization, infrastructure, stable food supply, government, technology, belief systems, writing, and social structure. 4.19 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate geographic features in the Americas, including Mississippi River and Delta, Amazon River, the Pacific Ocean, Appalachian Mountains, Gulf of Mexico, Atlantic Ocean, South America, and the Yucatan Peninsula. b. Describe the cultural elements among Indigenous communities in the Americas,

			including housing, clothing, games/entertainment, dance, and how food was gathered/caught and cooked. f. Explain the major accomplishments of the Mayans, including advancements in astronomy, mathematics and the calendar, construction of pyramids, temples, and hieroglyphic writing. g. Describe the influence of geographic features on the origins of the Mayan civilization and explain theories related to the abandonment of their cities.
Inquiry Questions (Engaging-Debatable):	What do the ruins of the Maya tell us about their civilization?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-PS1-3 Make observations and measurements to identify materials based on their properties. Students will create dyes from local plants after researching and learning about Maya techniques in dyeing. Questions that will guide discussion are as follows: Can we find out how to make a dye from plants? Which parts of plants make the best dyes? Can we create an instruction	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.**	**Engineering standards: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.**	**Standard: VA-HP-E4 Identify media used in works of art throughout history and recognize the importance of available resources** Students can explore Maya art and culture through various mediums, including pottery, sculpture, and mural painting. Encourage students to create their own Maya-inspired artwork using traditional Maya motifs and symbols. You can also introduce them to Maya music and	**Mathematical Patterns in Maya Art**: Maya art often incorporated mathematical patterns such as symmetry and repetition. Show students examples of Maya art and have them identify and describe the mathematical patterns they observe. Then, they can create their own artwork inspired by Maya patterns using geometric shapes. **Number Systems**: The Maya used a base-20 number system with a combination of dots and

	leaflet for making plant dyes?	♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Students can investigate the technological advancements of the Maya, such as their architecture, writing system, and calendar. Encourage students to explore how the Maya used mathematics and astronomy to develop their calendar system. Students can use the app Stellarium to view the constellations that were used.	Students will sketch, design and create a means of brushing teeth similar to the way the Mayas did. Questions that will guide discussion and design are as follows: Why do you think a toothbrush is better than twigs and leaves for cleaning teeth? What do you think we could do to clean our teeth if we didn't have toothbrushes and toothpaste? Criteria: The toothbrush creation must remove debris from a model of teeth. Constraints: Students will be given materials and a specific amount of time to complete.	dance as forms of artistic expression.	bars. Have students practice converting between Maya numbers and our modern base-10 system. You can provide them with Maya numbers and ask them to represent those numbers in our decimal system, or vice versa. **Measurement and Architecture**: Maya architecture was quite advanced, with precise measurements used in building structures like temples and pyramids. Provide students with diagrams or pictures of Maya ruins and have them measure various dimensions using rulers or measuring tapes. Then, they can calculate the area and perimeter of different structures.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	ELA- (Reading, Spelling. Language)	**Grade Level**	5th
Curriculum/Programs/ Partners	Louisiana Guidebooks/ Project Based Learning/ LA A+ Schools		

Units Title	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultu ral Exposure**	**PBL Assessment**
1 Making of a Scientist	How does the process of scientific inquiry lead to the development of advanced technology?	RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text. RI.5.5 Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two texts.	Environmental: Students will investigate the technological advancements that have affected our environment. (Renewable energy, electric vehicles,) Humanities/Multicultural Exposure: Students will investigate the different advancements that have contributed to the longevity of society. (Medical breakthroughs/ renewable energy, poverty, increase in information)	Students will choose one major technological advancement that happened in the last 10-15 years and create a video presentation that explains how it has impacted science and society. https://www.canva.com/ Animoto
2 Wonderstruck	How does effective communication develop strong relationships?	RL.5.2 Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text. RL.5.5 Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem. RL.5.6 Describe how a narrator's or speaker's point of view influences how events are described.	Environmental: Students will research how animals communicate to sustain life. They will determine how humans have utilized these communication systems to advance out technological structures. Humanities/Multicultural Exposure: Students discover how effective communication clarifies information, helps build relationships, teamwork, and trust. Helps to develop your knowledge base, which helps you make better life choices. (Students will discuss the impact of social media and how this has impacted communication among society.)	Students will create PSA video that supports how the right communication can impact relationships and the future of our society.

Curriculum Development Course at a Glance
Planning for Each Grade Level

3 Renaissance Art	How has culture influenced art?	RL.5.2 Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the	Humanities/Multicultural Exposure Students will discover how one's culture impact our roles in society.	Students will use software to create an animated Renaissance art part explaining the theme of the

		speaker in a poem reflects upon a topic; summarize the text. RL.5.6 Describe how a narrator's or speaker's point of view influences how events are described.		art piece. They will also discuss their views of it may have impacted past and present culture.

STEAM 21st Century Skills

Problem Solving: *Apply understandings to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Making of a Scientist		**Length of Unit**	12 Weeks
Focusing Lens(es)	How does the process of scientific inquiry lead to the development of advanced technology?	**Standards Addressed in this Unit**	RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text. RI.5.5 Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two texts.	
Inquiry Questions (Engaging-Debatable):	What are the qualities that go into the making of a scientist? What processes must a scientist have to develop new ideas? How might these ideas impact society?			

STEAM Integration Concepts	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total amount of matter is conserved. Students will measure and record the mass of glow sticks before and after breaking to create a chemical reaction. Compare mass before and after. Students will also measure and record the mass of a small cup of water and a small cup of calcium chloride (found in dehumidifier tools such	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the**	**Standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time or cost.** Students will design a cooler that can insulate a bowl of ice and keep it from melting that is easily portable. Criteria: Cooler design must insulate a bowl of ice and keep it from melting. Cooler design must be easily portable. Constraint: Students can only use the materials provided to them and the time frame allotted by the teacher.	**Standard: TH-CA-M2 Analyze descriptions, dialogues, and actions to explain character traits, personality, motivations, emotional perceptions, and ethical choices** Exploring Scientific Inquiry Through Storytelling and Art Divide students into small groups. Provide each group with a worksheet to brainstorm their story. They should decide on: The main character and setting. The scientific question the character wants to answer. How the character will conduct background	**Data Analysis with Experiments**: Engage students in conducting simple experiments and collecting data. For instance, they could investigate the effect of different amounts of sunlight on plant growth by planting seeds in containers placed in varying levels of sunlight. Students can measure and record plant growth over time, and then analyze the data using charts and graphs. This activity integrates math skills such as measurement, data collection, and graphing, while promoting scientific inquiry.

		technology selected, the process,			

	as Damp Rid). Students will mix the substances within a small, sealed bag and record all observations including mass. Students will compare the mass before and after.	**and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Students will create a resume for an aspiring scientist who is out searching for a job. They must use evidence from the text to support the information in the resume.		research and form a hypothesis. The experiment the character will design and conduct. How the character will analyze the results and draw conclusions. Story Writing Have each group write their story, making sure to incorporate all the steps of scientific inquiry. Encourage creativity and detail in their narratives. Provide time for groups to draft, revise, and edit their stories. VA-CE-E6 Identify relationships among visual arts, other arts, and disciplines outside the arts Art Integration (30 minutes) Each group creates illustrations for their story. These can include: A cover page with the title and an illustration of the main character. Scenes depicting key moments in the story, especially those involving the steps of scientific inquiry. Use various art supplies to make the illustrations colorful and engaging. Presentation Each group presents their story to the class, showing their illustrations and explaining how their	

				character went through the steps of scientific inquiry. Encourage students to be expressive and enthusiastic in their presentations.	

Unit Title	Wonderstruck		**Length of Unit**	12 Weeks
Focusing Lens(es)	How does effective communication develop strong relationships?	**Standards Addressed in this Unit**	RL.5.2 Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text. RL.5.5 Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem. RL.5.6 Describe how a narrator's or speaker's point of view influences how events are described.		
	In what ways do we communicate with each other? How can different forms of communication impact relationships? What can occur if communication is unclear?				

STEAM Integration Concepts	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. Students will investigate how animals communicate with humans. They will also explore how we utilize some of the animal communication structures to develop technology features.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.4. Technology**	**Standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time or cost.** Students will create a communication device utilizing a set of materials. They must explain how this device supports communication and how it might be effective or ineffective. https://www.teachengineering.org/activities/view/uof-2625-designing-communication-device-sound-activity	**Standard: VA-CE-E6 Identify relationships among visual arts, other arts, and disciplines outside the arts** Character and Theme Analysis in Wonderstruck Divide the students into small groups. Each group selects a character or theme from the book to	**Graphing Communication Preferences**: Begin by discussing various forms of communication such as face-to-face conversations, phone calls, text messaging, and email. Have students brainstorm the advantages and disadvantages of each form. Then,

	Students may extend the investigation by trying different communication techniques with pets at home. Those who do this extension will be expected to explain their results to the class.	**Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** Students will read from Smoke to Signals. They will determine how communication technology has developed over time. They will identify why these adjustments transpired. Students will create an Instagram page choosing a communication device that has changed how we communicate.		explore (e.g. , Ben, Rose, the theme of loss, the theme of discovery). Provide worksheets for students to jot down their observations and insights about their chosen character or theme. Each group creates an artistic piece that represents their character or a theme. For Characters: Draw a portrait, create a character collage, or design a comic strip depicting key moments. For themes: Create a thematic collage, paint a scene that captures the essence of the theme, or design a symbolic piece of art.	conduct a survey among classmates or family members to determine their preferred methods of communication. After collecting data, help students create a bar graph or pie chart to display the results. They can analyze the data to identify trends and patterns in communication preferences. **Measurement in Communication:** Explore measurement concepts in communication by examining units of time and distance. Have students measure the time it takes to convey messages through different modes of communication. For example, they can time how long it takes to deliver a message verbally versus sending the same message via email or text. They can also calculate the distance between two points and compare it to the time it takes to travel between them

					using different modes of transportation. This activity reinforces math skills in measurement and conversion.

Unit Title	Renaissance Art		**Length of Unit**	12 Weeks
Focusing Lens(es)	How has culture influenced art?	**Standards Addressed in this Unit**	RL.5.2 Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text. RL.5.6 Describe how a narrator's or speaker's point of view influences how events are described.	
Inquiry Questions (Engaging-Debatable):	In what ways does art reflect various cultures? How do artists impact the views of society? How can artists influence people's perspectives?			

STEAM Related Concepts	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-ESS1-2 **Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.** Students use their bodies as a kinesthetic model of the Earth to understand how the speed of the Earth's spin affects the length of a day.	**Standards: 6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will watch a video about the inventions of that era. They will create a diagram in which they explain how each system is connected to ensure the invention works.	**Standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time or cost.** Students will design, create and build a working model of a printing press. Criteria: It must contain a lever or a screw, and it must effectively press down when operated manually.	**Standard: VA-HP-E5 Recognize professions in the visual arts and the role and status of the artist in various cultures and time periods (2, 4)** **VA-HP-E6 Recognize great artists and works of art that have shaped the history of art** Create Your Own Renaissance Portrait	**Proportions in Human Figure Drawing:** Explore the mathematical principles of proportion in human figure drawing, a hallmark of Renaissance art. Introduce students to the concept of the "golden ratio" and its use in determining ideal proportions in art and architecture. Guide students to draw their

	https://mysteryscience.com/astronomy/mystery-1/day-night-earth-s-rotation/378		Constraint: Students are limited to the supplies provided by the teacher and the time limit set by the teacher.	Introduction to Renaissance Art Show examples of famous Renaissance portraits (e.g., Mona Lisa by Leonardo da Vinci, Portrait of a Young Man by Raphael). Discuss key characteristics of Renaissance portraits, such as realistic depiction of faces, use of light and shadow (chiaroscuro), attention to detail, and the portrayal of the individual. Observation and Discussion Ask students to observe the examples and identify common features. Write down their observations on chart paper or a whiteboard. Highlight the importance of realistic details, facial expressions, and backgrounds in Renaissance portraits. Planning the Portrait Have each student decide whether to create a self-portrait or a portrait of a classmate. If doing self-portraits, provide	own human figures using proportional guidelines based on the golden ratio. They can measure and compare the lengths of different body parts to ensure accurate proportions. This activity integrates math skills in measurement, ratio, and proportion. **Geometric Shapes in Renaissance** Architecture: Explore the geometric shapes and patterns found in Renaissance architecture. Provide students with images of famous Renaissance buildings, such as the Florence Cathedral or the Palazzo Vecchio. Have students identify geometric shapes such as squares, rectangles, circles, and triangles within the architectural details. They can use rulers and protractors to measure angles and dimensions, and then recreate the geometric patterns using paper or cardboard. This activity reinforces math skills related to geometry and spatial reasoning .Students will determine what tessellations are. They will also discuss how

				mirrors for them to observe their own faces. Ask students to sketch a basic outline of their portrait on paper, focusing on the head and shoulders. Drawing the Portrait Guide students through the process of drawing their portraits, starting with the basic shape of the head and then adding details like eyes, nose, mouth, and hair. Encourage them to use shading to create a three-dimensional effect, similar to the chiaroscuro technique. Remind them to pay attention to details that make their portrait unique and realistic. Adding Color and Background Once the pencil drawing is complete, have students add color using colored pencils, crayons, or markers. Encourage them to think about the background of their portrait. They can include simple elements that reflect their interests or aspects of their personality, similar to	many of Da Vinci paintings use symmetry and tessellation patterns. Students will use tessellations/symmetry to sketch the other part of a given image.

				how Renaissance artists included details that told a story about the subject. Reflection: Discuss what they learned about Renaissance art and the process of creating a portrait.	

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Math	**Grade Level**	5th
Curriculum/Program	i-Ready Classroom Mathematics		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Unit 1: Whole Number Operations and Applications: Volume, Multiplication, and Division	In this unit, students build on their understanding of area as they learn about volume and how to measure the space inside of a rectangular prism. They learn to multiply multi-digit numbers using the standard algorithm and use various strategies to divide numbers with up to four digits by divisors with up to two digits.	**5.MD.C.3a**-A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. **5.MD.C.3b**-A solid figure that can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. **5.MD.C.4**-Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. **5.MD.C.5a**-Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. **5.MD.C.5b**-Apply the formulas V = l w h and V = B h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems. **5.MD.C.5c**-Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems. **5.NBT.B.5**-Fluently multiply multi-digit whole numbers using the standard algorithm. **5.NBT.B.6**-Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, subtracting multiples of the divisor, and/or the relationship between multiplication and division. Illustrate and/or explain the calculation by	Explore the concept of multiculturalism and respect for all cultures within different cultural contexts. Discuss how people from multiple different backgrounds contribute unique perspectives and knowledge to society. Introduce the idea of different perspectives in mathematics by discussing different strategies and approaches to solving multiplication and division problems. Emphasize that there are multiple ways to solve math problems, and each method has its strengths and advantages. Encourage students to share their cultural perspectives on mathematics and problem-solving strategies. Discuss how mathematical concepts are applied and understood differently in various cultures around the world.	Performance Tasks: ● Design hands-on tasks where students can demonstrate their understanding of volume by constructing rectangular prisms using given dimensions or by measuring the volume of objects using appropriate tools. ● Allow students to work collaboratively or individually, depending on the nature of the task.

		using equations, rectangular arrays, area models, or other strategies based on place value.		
Unit 2: Decimals and Fractions: Place Value, Addition, and Subtraction	In this unit, students build on their prior understanding of decimals (tenths and hundredths) as they read, write, compare, and round decimals through thousandths. They will extend their knowledge of the relation between place values as they think about multiplying and dividing by powers of ten. Then students build on their prior understanding of fractions and decimals. They use what they know about fraction equivalency to add and subtract fractions with unlike denominators. Finally, they solve word problems requiring addition and subtraction of decimals and fractions.	**5.NBT.A.1**-Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. **5.NBT.A.2**-Explain and apply patterns in the number of zeros of the product when multiplying a number by powers of 10. Explain and apply patterns in the values of the digits in the product or the quotient, when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. For example, 100 = 1, 101 = 10 ... and 2.1 x 102 = 210. **5.NBT.A.3a**-Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 100 + 4 10 + 7 1 + 3 (1/10) + 9 (1/100) + 2 (1/1000). **5.NBT.A.3b**-Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. **5.NBT.A.4**-Use place value understanding to round decimals to any place.	Cultural Perspectives on Environmental Conservation (Humanities/Multicultural Exposure & Environmental Science): ● Students explore multiple different cultural perspectives on environmental conservation and sustainability. ● They study how different communities around the world interact with their natural environments and the measures they take to protect them. ● Students analyze data related to environmental conservation efforts in different regions, such as renewable energy usage, recycling rates, and conservation policies. ● They compare and contrast decimal and fraction representations of these data sets to identify patterns	Reading and Writing Decimals (Tenths and Hundredths): Provide a set of decimal numbers and ask students to write them in words. Give them written decimals and have them convert them into standard decimal notation. Comparing and Rounding Decimals: Present pairs of decimals and ask students to compare them using comparison symbols (<, >, =). Provide decimals and ask students to round them to the nearest tenth or hundredth. Multiplying and Dividing by Powers of Ten: Offer multiplication and division problems involving powers of ten for students to solve.

			and trends in environmental	

			practices across cultures. ● Students create presentations or posters highlighting how different cultures have approached environmental conservation and advocating for cross-cultural understanding and collaboration.	Include problems where students need to move the decimal point when multiplying/dividing by powers of ten

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit 3: More Decimals and Fractions: Multiplication and Division	In this unit, students use what they know about multiplying and dividing whole numbers to multiply and divide decimals to hundredths. They extend their understanding of multiplying a fraction by a whole number to multiplying fractions and whole numbers by fractions and they solve word problems using multiplication of fractions. Finally, students build on their understanding of the relationship between multiplication and division as they learn to divide with unit fractions.	**5.NBT.B.7**-Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; justify the reasoning used with a written explanation. **5.NF.B.3**-Interpret a fraction as division of the numerator by the denominator (a/b = a b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie? **5.NF.B.4a**-Interpret the product (m/n) x q as m parts of a partition of q into n equal parts; equivalently, as the result of a sequence of operations, m x q ÷ n. For example, use a visual fraction model to show understanding, and create a story context for (m/n) x q.	Environmental Science: Students learn about environmental issues such as resource management, conservation, and sustainability. They explore diverse ecosystems, understand the impact of human activities on the environment, and investigate solutions to environmental challenges. Through hands-on activities, discussions, and research, students develop a sense of stewardship towards the planet and its resources. Humanities/Multicultural Exposure: Through the lens of humanities and an appreciation of multiple different cultures, students examine the interconnectedness of cultures, traditions, and perspectives around the	Multiplying and Dividing Decimals: Students will demonstrate their ability to apply their knowledge of multiplying and dividing whole numbers to decimals, specifically decimals to the hundredths place. Multiplying Fractions and Whole Numbers by Fractions: Building on their understanding of multiplying a fraction by a whole number, students will extend this concept to multiplying fractions and whole numbers by fractions. Word Problems Involving Multiplication of Fractions: Students will solve word problems that require the

			world. They explore the rich tapestry of human experience, learning about different societies, languages, belief systems, and historical events. By embracing the value of all cultures, students cultivate empathy, tolerance, and respect for people from varied backgrounds, fostering a sense of global citizenship and a welcoming of different cultures.	application of multiplication of fractions. Dividing with Unit Fractions: Students will deepen their understanding of the relationship between multiplication and division as they learn to divide with unit fractions.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Unit 4: Measurement, Data, and Geometry: Converting Units, Using Data, and Classifying Figures	In this unit, students use their familiarity with measurement units and their ability to multiply and divide with fractions and decimals to convert measurement units and solve problems involving conversions. They also create line plots that show measurements involving fractions with different denominators and solve problems by interpreting the data. Students use what they know about the attributes of shapes and classifying quadrilaterals and triangles to show hierarchical relationships between categories. They also use	**5.MD.A.1**-Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step, real-world problems (e.g., convert 5 cm to 0.05 m; 9 ft to 108 in). **5.MD.B.2**-Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally **5.G.B.3**-Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. **5.G.B.4**-Classify quadrilaterals in a hierarchy based on properties. (Students will define a trapezoid as a quadrilateral with at least one pair of parallel sides.)	Environmental science often involves collecting and interpreting data related to ecosystems, weather patterns, and pollution levels. Line plots provide a visual representation of data, allowing students to analyze trends and make informed decisions about environmental issues. For example, they might create line plots to track changes in temperature, rainfall, or air quality over time.	For the assessment, the teacher might consider including a mix of question types such as multiple choice, short answer, and problem-solving questions. Here are some sample questions: Measurement Conversions: Convert 3 feet to inches. If there are 1000 millimeters in a meter, how many millimeters are in 2.5 meters? Sarah's recipe calls for 2 cups of flour. If she wants to make half the recipe, how many ounces of flour does she need? (Assume 1 cup = 8 ounces)

	visual organizational models such as Venn diagrams to classify geometric shapes.			Line Plots and Data Interpretation: Create a line plot showing the heights of students in the class in inches. What is the most common height? If the line plot shows the number of books read by students in a week, how many students read 3 or more books? Interpret the line plot showing the number of hours spent studying for a test. How many students studied for more than 8 hours? Attributes of Shapes: Identify the quadrilateral that has four right angles and opposite sides that are congruent. Classify the triangle based on its angles as acute, obtuse, or right. Describe the attributes of a rectangle and explain how it is different from a square.

Unit 5: Algebraic Thinking and the Coordinate Plane: Expressions, Graphing Points, Patterns and Relationships	In this unit, students will build on their previous skills writing equations for a given mathematical situation as they learn to use grouping symbols to correctly evaluate and interpret expressions. They will learn about the coordinate plane and use it to represent and solve real-world problems, and they will generate and extend numerical patterns, exploring how patterns can be graphed as points on a coordinate plane.	**5.OA.A.1**-Use parentheses or brackets in numerical expressions, and evaluate expressions with these symbols. **5.OA.A.2**-Write simple expressions that record calculations with whole numbers, fractions, and decimals, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 (8 + 7). Recognize that 3 x (18,932 + 9.21) is three times as large as 18,932 + 9.21, without having to calculate the indicated sum or product. **5.OA.B.3**-Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so. **5.G.A.1**-Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number in the ordered pair indicates how far to travel from the origin in the direction of one axis, and the second number in the ordered pair indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate). **5.G.A.2**-Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	Through discussions and activities related to environmental problem-solving, teachers can encourage students to consider multiple different cultural perspectives on environmental issues. They can explore how different cultures interact with their environment, addressing topics such as traditional ecological knowledge, indigenous land management practices, and environmental justice movements. This fosters an appreciation for the perspectives of different cultures while promoting critical thinking about environmental challenges and solutions.	Application and Problem-Solving: Integrate multi-step problems that require students to apply their understanding of equations, grouping symbols, the coordinate plane, and numerical patterns to solve real-world problems. Encourage students to explain their problem-solving strategies and justify their solutions using mathematical reasoning. Reflection and Self-Assessment: Conclude the assessment with a reflection component where students can evaluate their own understanding of the concepts covered in the unit. Provide prompts for students to reflect on what they found challenging, what strategies helped them succeed, and areas where they would like to improve.

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

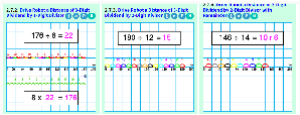
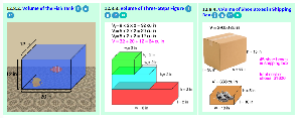
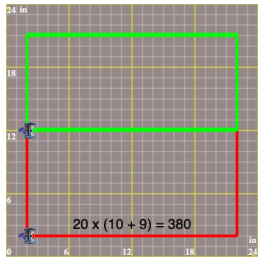
Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

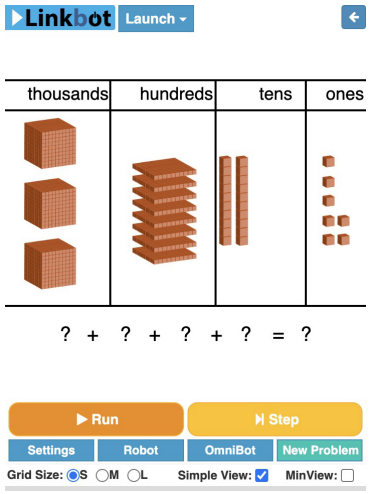
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 1: Whole Number Operations and Applications: Volume, Multiplication, and Division	**Length of Unit**	Unit 1: 27 days
Focus	Whole Number Operations and Applications	**Standards Addressed in this Unit**	**5.MD.C.3a** **5.MD.C.3b** **5.MD.C.4** **5.MD.C.5a** **5.MD.C.5b** **5.MD.C.5c** **5.NBT.B.5** **5.NBT.B.6**
Inquiry Questions (Engaging-Debatable):	How can you find volume? How can you multiply multi-digit numbers? How can you divide multi-digit numbers?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. Students will investigate how color affects heat absorption and relate it to different habitats and the organisms that live there. Students will fill ¼ full two clear bowls or jars with water. Then, they will measure and record	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.**	**Computer science standards: 1B-AP-08 Compare and refine multiple algorithms for the same task and determine which is the most appropriate. 1B-AP-10 Create programs that include sequences, events, loops and conditionals.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lessons 1.12, 2.7 and 12.8 address both math standards and computer science standards. 1.12 Students will review place values up to 100 million.	**Standard: VA-AP-E4 Recognize that there are many possibilities and choices in the processes for designing and producing visual arts** Volume Sculptures Start with a brief discussion on volume and how it measures the amount of space inside a 3D object. Explain the formulas for calculating the volume of basic shapes: Cube: \(V = a^3 \) Rectangular Prism: \(V = l \times w \times h \)	**CCSS Math Standards: 5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.** **Activity Statement:** **A rectangle is split into two smaller rectangles. Change the values of the preplaced blocks to (1) draw the red and green rectangles and find their areas, (2) find the area of the red and green rectangle combined using the distributive property.**

	the temperature. Then, students will put one clear container of water on black paper while the other container will be put on white paper. Both containers will be placed under a heat lamp for five minutes. Students will measure and record the new temperatures. Discussion questions could include the following: Did the background color make a difference? How could this information be applied to animals who live in the desert? If you were going somewhere hot, what color would you want to wear and why?	♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses**	Students will also review multiplication with exponents of base 10, multiplication with 1 digit, multiplication with 2 digits, and the relationship between multiplication and division. In addition, students will review the order of operations to solve numerical expressions with multiple operations.  2.7 Students will review dividing multi-digit dividends by 1-digit and 2-digit divisors.  12.8 Students will review identifying three-dimensional solid figures and find the volume of rectangular prisms. 	Cylinder: \(V = \pi r^2 h \) Examples and Practice: Show examples of simple 3D shapes and calculate their volumes together as a class. Provide a worksheet with a few practice problems for students to solve individually or in pairs. Planning the Sculpture: Have students plan their sculptures using a combination of cubes, rectangular prisms, and cylinders. They should sketch their design on paper and label the dimensions of each shape. Building the Sculpture: Provide students with cardboard or construction paper to create the shapes for their sculptures. Use rulers to measure and cut out the shapes accurately. Glue or tape the shapes together to form the final sculpture. Ensure each student calculates the volume of each shape used and the total volume of their sculpture. Decorating the Sculpture: Once the sculptures are assembled, allow students to decorate them using markers, paint, or other art supplies. Encourage	UC Davis Roboblocky Chapters 12, 1, and 2.  Activity ID: 1911 Subjects: Robotics, Coding, Math Grades: Grade 5 Keywords: multiplication, area, distributive property

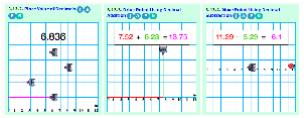
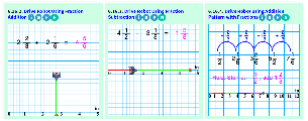
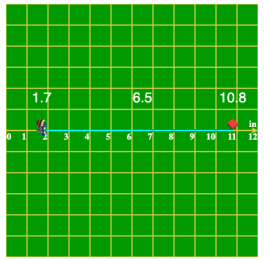
		that support lifelong learning,			

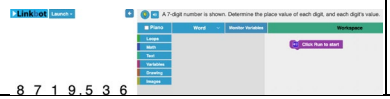
		collaboration, personal pursuits, and productivity. **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lessons Below: 		creativity and personal expression in the decoration process. Showcase and Explanation: Have students display their sculptures and explain their design. Each student should describe the shapes they used, how they calculated the volume, and the total volume of their sculpture. Reflection: Discuss the activity with the class. Ask questions like: What did you learn about volume through this activity? How did building and decorating the sculpture help you understand the concept of volume? What challenges did you face, and how did you overcome them?	

Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 2: Decimals and Fractions: Place Value, Addition, and Subtraction	**Length of Unit**	Unit 2: 37 days
Focus	Decimals and Fractions:	**Standards Addressed in this Unit**	**5.NBT.A.1** **5.NBT.A.2** **5.NBT.A.3a** **5.NBT.A.3b** **5.NBT.A.4**
Inquiry Questions (Engaging-Debatable):	How can you read and write decimals? How can you compare and round decimals? How can you add and subtract decimals?		

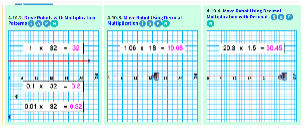
STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Engineering standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. Students will design a waterproof covering for a small, absorbent object following the criteria and constraints suggested.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences. 2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process,**	**Computer science standards: 1B-AP-08 Compare and refine multiple algorithms for the same task and determine which is the most appropriate. 1B-AP-10 Create programs that include sequences, events, loops and conditionals.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lessons 3.13 and 6.16 address math standards and computer science standards. 3.13 Students will review decimal numbers, including identifying place values, comparing, rounding, adding, and subtracting with decimal numbers.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** Complete the linked art assignment (Complete fraction and decimal column only.)https://mason.gmu.edu/~jsuh4/math%20masterpiece.pdf	**CCSS Math Standards: 5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Activity Statement: Modify the program to move the robot to the foam cube first and then move backwards to the hackysack. The robot's initial position and the positions of the foam cube and hackysack are displayed on the grid. Use the activity**

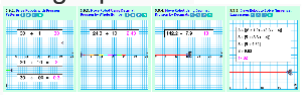
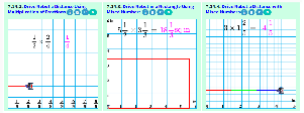
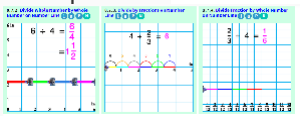
	Criteria: The waterproof design must do the following: keep the object dry when submerged in water for five seconds and accommodate the size of the object being submerged. Constraints: The object cannot be placed into a bag, and students must only use the materials provided.	**and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts**	 6.16 Students will review adding and subtracting fractions and mixed fractions with unlike denominators. 		**Subtraction Calculation with Decimals to help you calculate the difference.** UC Davis chapters 3 and 6  Activity ID: 259 Subjects: Robotics, Coding, Math Grades: Grade 5 Keywords: Addition, Subtraction, Decimals

		♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lesson Below: 			

Curriculum Development Overview
Planning for Each Unit

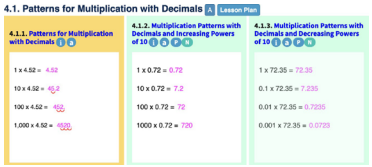
Unit Title	Unit 3: More Decimals and Fractions: Multiplication and Division	**Length of Unit**	Unit 3: 41 days
Focus	More Decimals and Fractions	**Standards Addressed in this Unit**	**5.NBT.B.7** **5.NF.B.3** **5.NF.B.4a**
Inquiry Questions (Engaging-Debatable):	How can you multiply and divide decimals? How can you multiply fractions to find area? How can you divide fractions?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-PS2-1 Support an argument that the gravitational force exerted by Earth on objects is directed down. Students will experiment with how different shapes of paper can affect the rate at which the paper falls. Students will drop pieces of paper from a height (such as a step ladder or a chair) and record how long it takes for each type of paper to land using a stopwatch. Students will investigate, including recording, the rates at which a flat piece of paper, a paper folded into fourths, a crumpled ball of paper	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.**	**Computer science standards: 1B-AP-08 Compare and refine multiple algorithms for the same task and determine which is the most appropriate. 1B-AP-10 Create programs that include sequences, events, loops and conditionals.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lessons 4.10, 5.9, 7.14 and 8.7 address both math standards and computer science standards. 4.10 Students will review multiplying decimals by whole numbers and decimals. 	**Standard: M-CE-E3 Improvise or compose and perform simple musical ideas, such as echoing melody or short rhythmic patterns** **M-CE-E5 Participate in organized musical activities including singing, playing, and movement** Musical Math: Multiplying and Dividing Decimals and Fractions Begin with a brief review of how to multiply and divide decimals and fractions. Provide examples on the whiteboard and solve a few problems together as a class. Musical Rhythm Introduction:	**CCSS Math Standards: 5.NF.B.4.a Interpret the product as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations. For example, use a visual fraction model to show , and create a story context for this equation. Do the same with (In general, .)** **Activity Statement: The pizza below is cut into halves and then each half is cut into fourths. Follow the steps to multiply and find the fraction of pizza that each slice represents.** UC Davis Chapters 4,5,7, and 8

	and a shaper of his/her choice.	**3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.**	5.9 In this lesson, students will learn to divide with decimals using a pattern.  7.14 Students will review multiplying with fractions by interpreting the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b, explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number and explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.  8.7 Students will review division with fractions by interpreting division of a whole number by a unit fraction, and compute such quotients. 	Introduce the concept of rhythm and beats in music. Demonstrate simple rhythms using percussion instruments or clapping. Rhythmic Math Practice): Divide the class into small groups and give each group a set of percussion instruments. Provide each group with a worksheet containing multiplication and division problems involving decimals and fractions. Each group takes turns solving a problem. Once they have the correct answer, they create a rhythm that corresponds to the digits in their answer. For example, if the answer is 1.25, they could create a rhythm with one long beat, followed by two short beats, and another short beat. Groups present their rhythms to the class, and everyone claps along to reinforce the concept. Musical Composition with Math: Assign each group a series of math problems. Once they solve the problems, they use the answers to compose a short musical piece. Each digit of their answers can correspond to a specific rhythm or beat pattern.	 Activity ID: 2158 Subjects: Math Grades: Grade 5 Keywords: multiplication, fraction

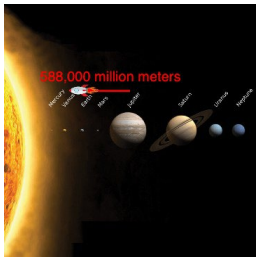
		♦ **Students are proficient in the use of technology.**			

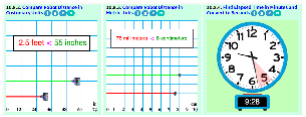
Curriculum Development Overview
Planning for Each Unit

		Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lesson Below:  4.1. Patterns for Multiplication with Decimals A Lesson Plan 4.1.1. Patterns for Multiplication with Decimals 1 x 4.52 = 4.52 10 x 4.52 = 45.2 100 x 4.52 = 452 1,000 x 4.52 = 4520 4.1.2. Multiplication Patterns with Decimals and Increasing Powers of 10 1 x 0.72 = 0.72 10 x 0.72 = 7.2 100 x 0.72 = 72 1000 x 0.72 = 720 4.1.3. Multiplication Patterns with Decimals and Decreasing Powers of 10 1 x 72.35 = 72.35 0.1 x 72.35 = 7.235 0.01 x 72.35 = 0.7235 0.001 x 72.35 = 0.0723		Encourage creativity in combining the rhythms to form a cohesive musical piece. Performance and Explanation: Each group performs their musical piece for the class. After the performance, they explain the math problems they solved and how they translated the answers into rhythms.	

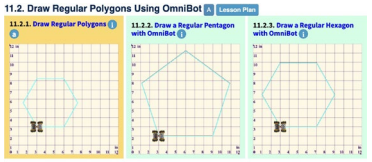
Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 4: Measurement, Data, and Geometry: Converting Units, Using Data, and Classifying Figures	**Length of Unit**	Unit 4: 22 days
Focus	Measurement, Data, and Geometry	**Standards Addressed in this Unit**	**5.MD.A.1** **5.MD.B.2** **5.G.B.3** **5.G.B.4**
Inquiry Questions (Engaging-Debatable):	How can you convert measurement units? How can you make line plots and interpret data? How can you classify two-dimensional figures?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standards: 3-PS2-2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. 3-ESS3-1 Make a claim about the merit of a design solution that reduces the impact of a weather-related hazard Students will investigate how hurricanes move. Students will fill a bowl halfway with water and use a spoon to quickly stir the water ensuring the spoon is in the middle and using small, tight circles. Students will remove the spoon and immediately put a drop of food coloring in	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.**	**Computer science standards: 1B-AP-08 Compare and refine multiple algorithms for the same task and determine which is the most appropriate. 1B-AP-10 Create programs that include sequences, events, loops and conditionals.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lessons 10.8 and 11.7 address both math standards and computer science standards. 10.8 Students will review converting units within the customary units and within the metric units. Students will also review finding the elapsed time.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** 3D Triangle Sculptures: *Provide materials such as clay or wire. *Instruct students to create 3D sculptures featuring different types of triangles. *Discuss the geometric properties of each type of triangle in the context of their sculptures.	**CCSS Math Standards: 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert cm to m), and use these conversions in solving multi-step, real-world problems.** UC Davis Chapters 10 and 11  Activity ID: 2114 Subjects: Math

	the center of the water. Students will observe and record what happens. Students will then repeat the process but view from the side instead of from the top.	**3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.**	 11.7 Students will review identifying polygons, including triangles and quadrilaterals, by their sides and vertices. 		Grades: Grade 5 Keywords: Unit Conversion Activity Statement: Find the distance between Jupiter and Earth in kilometers if you know that the distance between the two planets is 558,000 million meters.

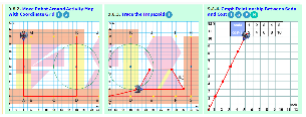
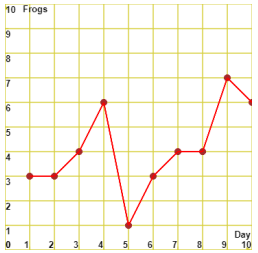
		♦ **Students are proficient in the use of technology.**			

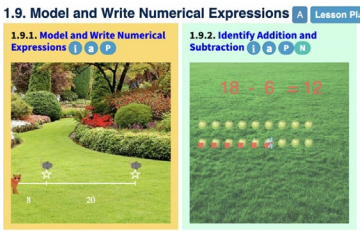
		Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lesson Below: 			

Curriculum Development Overview
Planning for Each Unit

Unit Title	Unit 5: Algebraic Thinking and the Coordinate Plane: Expressions, Graphing Points, Patterns and Relationships	**Length of Unit**	Unit 5: 18 days
Focus	Algebraic Thinking and the Coordinate Plane	**Standards Addressed in this Unit**	**5.OA.A.1** **5.OA.A.2** **5.OA.B.3** **5.G.A.1** **5.G.A.2**
Inquiry Questions (Engaging-Debatable):	How can you evaluate, write, and interpret expressions? How can you use a coordinate plane? How can you analyze patterns and relationships?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. Students will create an aqueduct that can transport water from one place to another following the criteria and constraints suggested.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences. 2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process,**	**Computer science standards: 1B-AP-08 Compare and refine multiple algorithms for the same task and determine which is the most appropriate. 1B-AP-10 Create programs that include sequences, events, loops and conditionals.** Students will complete STEM activities aligned with the math curriculum through UC-Davis and Roboblocky. Specifically, lesson 9.8 addresses both math standards and computer science standards 9.8 Students will review creating and interpreting line plots, and graphing ordered pairs and data on the coordinate grid.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** Have students look at examples of fractals and fractal art. Explore the idea that a fractal is a smaller portion of the whole original. For instance, you could start with a triangle and then draw an upside down triangle inside of the original. This would be a quarter of the original triangle, but still the same shape. You could then create another triangle inside of your 2nd triangle, which would be another 1/4 (or 1/8th of the original). Create a piece of Fractal Art by selecting a	**CCSS Math Standards: 5.G.A.2 Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. Activity Statement: Sally goes to a pond every day for 10 days and records the number of frogs she sees each day. She represents her data with a line chart. Interpret the line graph.** UC Davis Chapter 9

	Criteria: Designs must do the following: move water from one place to another, at least three feet apart, and empty water into a shallow bowl with splashing. Constraints: Students may only use materials provided and the water at the beginning of the aqueduct should be at least 2 feet of the ground to model mountain elevation.	**and the final results through the use of informed decision-making skills.** **3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts**		shape and then measuring fractals of that same shape onto other pieces of paper and cutting them out. Label each fractal as its corresponding fraction to the original shape. Then, create a piece of art using the original shape and its fractals.	 Activity ID: 1244 Subjects: Math Grades: Grade 5 Keywords: line chart, data, graph

		♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students will complete STEM activities aligned with the i-Ready math curriculum through UC-Davis and Roboblocky, each week the activities will directly correlate with the current lesson and topic being covered in math. These activities will include Real-world application of the math concepts, use of robotics to solve problems, use of Roboblocky platform, design and engineering activities based on the content being learned, and virtual activities to verify knowledge and application of daily math concepts. See Lesson Below: 			

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Science	**Grade Level**	Fifth Grade
Curriculum /Program	PhD Science		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
Module 1: Matter (36 days)	Essential Question: What caused the Statue of Liberty to change over time? **Conceptual Overview** Heating or mixing substances may result in the formation of new substances; this process can be explained by using a particle model of matter. 1. Materials can be identified based on their properties. 2. All matter is made of particles too small to see with the human eye. 3. When a substance changes state, it remains the same substance. 4. Mixing substances may result in the formation of one or more new substances. 5. When matter undergoes a change, its total weight is conserved (even when a new substance is formed).	**NGSS Performance Expectations** **5-PS1 Matter and Its Interactions** 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. 5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 5-PS1-3 Make observations and measurements to identify materials based on their properties. 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. **3–5-ETS1 Engineering Design** 3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	How does the color change on the Statue of Liberty impact the structure?	Heat Capacity Students will test the heat capacity of different liquids, such as salt water, olive oil, and liquid soap with a hot plate. Students will plot their results.

Curriculum Development Course at a Glance
Planning for Each Grade Level

Module 2: Ecosystems (38 days)	Essential Question: How can trees support so much life? **Conceptual Overview** Ecosystems support the needs of living things as matter and energy move between organisms and the environment. 1. Plants get the matter they need for growth from air and water. 2. Life's matter moves between plants, animals, decomposers, and the environment as it cycles through an ecosystem. 3. Life's energy can be traced from the Sun to plants and then to animals and decomposers as it flows through an ecosystem.	**NGSS Performance Expectations** **5-LS1 From Molecules to Organisms: Structures and Processes** 5-LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water. **5-LS2 Ecosystems: Interactions, Energy, and Dynamics** 5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. **5-PS3 Energy** 5-PS3-1 Use models to describe that energy in animals' food (used for body repair, growth, and motion and to maintain body warmth) was once energy from the sun. **3–5-ETS1 Engineering Design** 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	What is the impact of an invasive species on an ecosystem?	Food Decomposition Ask the question: "Which food will rot (decompose) the fastest?" Have students hypothesize, observe, and then report their findings.
Module 3: Earth Systems (37 days)	Essential Question: How has Balinese rice farming endured for 1, 000 years? **Conceptual Overview** Earth is composed of four continuously interacting subsystems that can be positively or negatively affected by human activity. 1.Together, the biosphere, hydrosphere, atmosphere, and	**NGSS Performance Expectations** **5-ESS2 Earth's Systems** 5-ESS2-1 Develop a model using an example to describe ways in which the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 5-ESS2-2	How do human activities can have positive or negative effects on Earth's systems, and they can disrupt or stabilize systems?	How to stop soil erosion with plants Students will test three different scenarios where they place only soil, soil and wood chips, and soil with flowers. They will pour the same amount of water into each container and collect the runoff water to make inferences on the impact

	geosphere include all the living things, water, rock, soil, and air on Earth. 2. Earth's systems continuously interact, and these interactions can cause changes to Earth's water and surface materials. 3. Human activities can have positive or negative effects on Earth's systems, and they can disrupt or stabilize systems.	Describe and graph the amounts of saltwater and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. **5-ESS3 Earth and Human Activity** 5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. **3–5-ETS1 Engineering Design** 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.		vegetation has on soil erosion.
Module 4: Orbit and Rotation (38 days)	Essential Question: How can we explain our observations of the Sun, the Moon, and stars from Earth? **Conceptual Overview** Earth's rotation on its axis, Earth's orbit around the Sun, and the Moon's orbit around Earth cause observable patterns in Earth's sky. 1. The apparent daily motion of the Sun across the sky can be explained by Earth's rotation. The daily pattern of daytime and nighttime on Earth can be explained by the exposure of different parts of Earth to the Sun at different times. 2. The apparent daily motion of the Moon across the sky can be explained by Earth's rotation. The monthly pattern of changing	**NGSS Performance Expectations** **5-PS2 Motion and Stability: Forces and Interactions** 5-PS2-1 Support an argument that the gravitational force exerted by Earth on objects is directed down. **5-ESS1 Earth's Place in the Universe** 5-ESS1-1 Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	How does an eclipse impact the Earth?	**Earth's Tilt and Seasons** With the Kinesthetic Astronomy: Longer Days, Shorter Nights lesson, students use a kinesthetic activity to better understand how the tilt of the Earth relates to changing patterns of light and the change in seasons. This lesson addresses common misconceptions about the relationship between the seasons and the Earth's position in relation to the Sun. *Questions*: At what time of the year is Earth closest to the Sun? How is the angle of the Sun's rays that reach the Earth related to the season? **An Earth Year**

	moonrise times on Earth can be explained by the Moon's orbit around Earth. 3. The apparent daily motion of stars across the sky can be explained by Earth's rotation. The yearly pattern of star visibility on Earth can be explained by Earth's orbit around the Sun.			With the Kinesthetic Astronomy: The Meaning of a Year lesson, students use a kinesthetic activity to model the difference between Earth's daily rotation and year-long orbit around the Sun. *Questions*: What is the difference between an orbit and a rotation? Which direction does the Earth orbit the Sun? How long does a single orbit of the Earth around the Sun take?

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 1: Matter		**Length of Unit**	36 days
Focus	Matter	**Standards Addressed in this Unit**	5-PS1-1, 5-PS1-2, 5-PS1-3, 5-PS1-4, and 3–5-ETS1-3	
Inquiry Questions (Engaging-Debatable):	Essential Question: What caused the Statue of Liberty to change over time?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-PS1-3 Make observations and measurements to identify materials based on their properties. Students will create a message using lemon juice that appears invisible once dry. They will then heat up the surface of the message with a lamp or a hairdryer and observe the reaction.	**Standards:1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences. 4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and**	**Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students, in partner groups, will create a slime recipe following the criteria and constraints proposed. Criteria: The slime must contain a chemical reaction, have a non-sticky/slimy consistency, and have a mix-in that gives it a unique look and/or feel. Constraints: The slime recipe may use a maximum of three	**Standards: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** Heat Capacity Students will test the heat capacity of different liquids, such as salt water, olive oil, and liquid soap with a hot plate. Students will plot their results. **Students will also draw a model of their tests and with labels.**	**Volume Expansion in States of Matter:** Explore the concept of volume expansion in gases through hands-on experiments. Provide students with balloons or sealed plastic bags filled with air. Guide students to measure the volume of each balloon or bag using rulers or measuring tapes. Then, have students place the balloons or bags in warm water and observe how the volume of the gas inside expands as it heats up. They can measure the new volume and calculate the percentage increase in volume. This activity reinforces math skills in measurement, calculation, and data analysis.

		technological innovations based on the appropriateness to specific tasks. **6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** States of Matter Students will investigate the states of matter using the interactive applet and present a summary of their findings using Google Slides.	ingredients (not including the mix-ins), and students may only choose from the ingredients and materials provided.		**Volume and Mass of States of Matter:** Provide students with various substances representing different states of matter, such as water (liquid), ice (solid), and air (gas). Guide students to measure the volume and mass of each substance using graduated cylinders and balances. They can record their measurements and calculate the density of each substance using the formula density = mass/volume. This activity reinforces math skills in measurement, calculation, and data analysis.

Unit Title	Module 2: Ecosystems		**Length of Unit**	38 days
Focus	Ecosystems	**Standards Addressed in this Unit**	5-LS1-1, 5-LS2-1, 5-PS3-1, and 3–5-ETS1-1	
Inquiry Questions (Engaging-Debatable):	Essential Question: How can trees support so much life?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)**	**Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes**	**Standard: VA-CE-E1 Explore and identify imagery from a variety**	**Tree Canopy Cover Calculation:** Discuss the importance of tree canopy cover in

	want that includes specified criteria for success and constraints on materials, time, or cost. **Students will design a creative and informative lesson about the roles and importance of decomposers in food webs. Then, they will present their lesson to younger students.** Criteria: Students' presentations must inform students about a food web with an energy source, a producer, two consumers and a decomposer; Presentations must highlight and explain the importance of decomposers; Presentations must have a creative visual aid that is used during the presentation. Constraints: The presentation must be between two and three minutes long, and students may	♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Interactive Rabbits and Wolves in an Ecosystem Students will study the relationship between rabbits and wolves in an ecosystem and create a single sheet pictorial diagram explaining this relationship using Canva.	**specified criteria for success and constraints on materials, time, or cost.** Students will design and build a compost bin using the following materials: soil, food scraps, water, small plastic tub and disposable gloves. Students will observe and record the changes within the compost bin every three days over the course of two weeks.	**of sources and create visual representations** Constructing Ecosystems Models Students will make a model of an aquarium ecosystem and terrarium ecosystem. **Students will draw a model of the ecosystems with labels.**	providing habitat and support for diverse forms of life. Provide students with aerial images or maps of different areas, such as school grounds or local parks, showing tree canopy cover. Have students estimate the percentage of land covered by tree canopy in each area using grid paper or digital tools. They can calculate the total area covered by tree canopy and compare it to the total area of the land. This activity reinforces math skills in estimation, proportion, and calculation **Tree Growth Rate Analysis:** Investigate the growth rates of trees in different environments and conditions. Provide students with tree core samples or growth rings from various tree species. Guide students to analyze the growth rings and calculate the annual growth rate of each tree. They can compare growth rates

	only used materials provided to them.				between trees of the same species growing in different locations, such as urban versus rural areas, or areas with varying levels of pollution. This activity reinforces math skills in measurement, calculation, and data interpretation.

Unit Title	Module 3: Earth Systems		**Length of Unit**	37 days
Focus	Earth Systems	**Standards Addressed in this Unit**	5-ESS2-1, 5-ESS2-2, 5-ESS3-1, and 3–5-ETS1-2	
Inquiry Questions (Engaging-Debatable):	Essential Question: How has Balinese rice farming endured for 1, 000 years?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water. Students will investigate photosynthesis by conducting an experiment on elodea. Using a clear	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.**	**Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.** Students will create a mini herb garden planter that could be sold at a local garden store.	**Standard: VA-CE-E1 Explore and identify imagery from a variety of sources and create visual representations** Design a biosphere project Students will research and select a biosphere to design a 3D project.	**Rice Field Geometry**: Introduce students to the layout and design of Balinese rice terraces, which are known for their intricate irrigation systems and geometric patterns. Provide students with images or diagrams of rice terraces and guide them to identify

	jar, students will add at least 18 inches of elodea to the bottom of the jar and weigh it down with a rock. Students will then pour a baking soda and water mixture (¼ tsp baking soda to 2 cups of water) over the plant. With the light off, students will count how many air bubbles come to the surface within five minutes. Students will turn the light on and repeat the counting of bubbles. Students will compare results and discuss conclusions that can be determined.	♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** This is Home Students will use Google Earth to locate their home.	Criteria: Planter must have the following: places for four different types of herb plants to grow, labels for each plant, the ability to carry all four plants together, and a unique design or decorations that customers will enjoy.		geometric shapes such as squares, rectangles, and triangles within the terraced landscape. Have students calculate the area and perimeter of each terrace using measurement tools such as rulers or measuring tapes. They can then compare the sizes of different terraces and analyze how geometric principles are applied in rice farming. **Rice Harvest Data Analysis**: Provide students with historical data on rice harvests in Bali over the past century. Guide students to analyze the data to identify trends and patterns in rice production over time. They can create line graphs or scatter plots to visualize the fluctuations in harvest yields and discuss the factors that may have influenced these changes, such as climate, technology, and farming practices. Students can also calculate measures of

					central tendency and variability to describe the distribution of harvest yields. This activity reinforces math skills in data analysis, graphing, and interpretation.

Curriculum Development Overview
Planning for Each Unit

Unit Title	Module 4: Orbit and Rotation		**Length of Unit**	38 days
Focus	Orbit and Rotation	**Standards Addressed in this Unit**	5-PS2-1, 5-ESS1-1, and 5-ESS1-2	
Inquiry Questions (Engaging-Debatable):	Essential Question: How can we explain our observations of the Sun, the Moon, and stars from Earth?			

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-ESS1-1 Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. Students will investigate the cause of stars' appearances to be less bright as the sun's apparent brightness. Students will cut a piece of construction paper that will cover the face of a flashlight. Using holes to poke holes, students will create a model of stars. With the room as dark as possible, students will shine the flashlight on the ceiling and observe.	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.**	**Science standard: 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.** Students will learn why our ancestors divided the day into hours and how clocks measure the Sun's apparent movement. In the activity, Make a Shadow Clock, students make their own sundials. First, students use flashlights indoors to understand how the position of the light affects the time shown on the clock. Then, students take their shadow clocks outside to see how the	**Standard: D-AP-E3 Identify and discuss how dance affects thoughts and feelings** **D-AP-E4 Recognize that there are many possibilities and choices available in the process of creating a dance** Dancing Planets: Understanding Orbit and Rotation Begin with a brief explanation of orbit (the path a planet takes around the Sun) and rotation (the spinning of a planet on its axis). Use the whiteboard to draw diagrams	**Stellar Constellation Mapping**: Explore the concept of constellations by mapping the positions of stars in the night sky. Provide students with star charts or constellation guides and take them outside to observe the stars on a clear night. Have students identify and sketch the positions of prominent constellations such as Orion or the Big Dipper. They can use protractors or angle-measuring tools to estimate the angular distances between stars and trace the outlines of the constellations. Back in

	The teacher will slowly make the room brighter as students observe what happens to the appearance of the stars.	♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks** Earth Space Lab Students will study the Earth's orbit around the sun, solar time, and moon phases and work in groups to create a digital depiction of earths orbit using the Roboblocky platform used in math. After this, they will all share their creations and coding.	position of the Sun can tell them the time of day. https://mysteryscience.com/astronomy/mystery-2/earth-s-rotation-daily-shadow-patterns/74	illustrating these concepts. Discuss how the Earth rotates on its axis, causing day and night, and orbits the Sun, causing the seasons. Assigning Roles: Divide students into groups, with each group representing different celestial bodies (e.g., the Sun, Earth, Moon, and other planets). Give each student a label to wear identifying their role. Demonstrating Rotation: Have the "Earth" students stand in place and slowly spin around to demonstrate rotation. Explain that one full spin represents one day. Play music to help keep a steady pace and make it more fun. Demonstrating Orbit: Position the "Sun" students in the center of the space.	the classroom, students can compare their sketches to constellation diagrams and discuss the significance of star patterns in different cultures. This activity reinforces math concepts related to angles, geometry, and spatial orientation. **Time-lapse Photography of Celestial Motion**: Use time-lapse photography to observe the apparent motion of celestial objects across the sky. Set up a camera with a wide-angle lens or a smartphone on a tripod and aim it at a clear view of the horizon. Take photos at regular intervals throughout the night, adjusting the exposure settings as needed to capture stars, planets, and other celestial objects. Afterward, compile the photos into a time-lapse video and discuss the apparent motion of the stars and planets as the Earth rotates. This activity reinforces

				Have the "Earth" students slowly walk in a circular path around the "Sun" to demonstrate orbit. Explain that one full circle represents one year. Use the music to help maintain a steady walking pace. Combining Orbit and Rotation: Now have the "Earth" students spin (rotate) while walking (orbiting) around the "Sun." Introduce "Moon" students to orbit around their "Earth" counterparts while the Earth students continue to rotate and orbit around the "Sun." Explain how the Moon's orbit around Earth and Earth's rotation and orbit around the Sun all happen simultaneously. Adding Other Planets: Introduce other planets with their own "orbit" paths around the "Sun." Have these students demonstrate their planets' unique rotation	math concepts related to time, motion, and observation.

				speeds and orbit paths. Use labels to identify each planet, and explain how their orbits vary in length. Reflection and Discussion: After the dance demonstration, gather the class for a reflection discussion. Ask questions like: How did moving like the planets help you understand orbit and rotation? What was the most challenging part of the activity? How do the movements of the planets and moons compare to each other?	

Curriculum Development Course at a Glance
Planning for Each Grade Level

Content Area	Social Studies	**Grade Level**	5th grade
Curriculum/ Program	Louisiana Student Standards for Social Studies		

Units Title/ Length of Unit	**Unit Overview**	**Standard (s) Addressed: (Main standards of the anchor text/ but not limited to):**	**Theme Connection Environmental Science Humanities/Multicultural Exposure**	**End of Unit PBL Assessment**
The Medieval World (6 weeks)	**Topic 1:** The society and culture of Western Europe throughout the early and middle Medieval Period. **Topic 2**: The origins and spread of Islam, the Crusades, and some political changes that occurred in England during the Late Middle Ages. **Topic 3:** The Hundred Years' War, one of the most significant conflicts between England and France, and the Black Death (bubonic plague epidemic) in Western Eurasia and North Africa.	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.8 Describe the origin and spread of major world religions as they developed throughout history. 5.9 Describe the geographic, political, economic, and	Students can explore the dynamic relationship between human societies and their environments. They can investigate how environmental factors influenced historical events and vice versa, fostering a deeper understanding of the interconnectedness between cultures, civilizations, and the natural world.	News Report: Students can imagine they are reporters living during the time of the Hundred Years' War and the Black Death. They can create a news report or series of news articles describing the events, causes, and effects of both the war and the epidemic. They should include interviews with fictional characters representing different perspectives. Medical Investigation: Students can investigate the causes and spread of the Black Death from a medical perspective. They can research the symptoms of the disease, its transmission, and historical attempts to treat or prevent it. They can present their findings through posters, presentations, or even a skit demonstrating the spread of the disease.

		cultural structures of Europe during the Middle Ages. a. Identify and locate geographic features of Europe, including the Alps, Atlantic Ocean, North European Plain, English Channel, Ural Mountains and the Mediterranean Sea. b. Describe the role of monasteries in the preservation of knowledge and the spread of the Catholic Church throughout Europe. c. Explain how Charlemagne shaped and defined medieval Europe, including the creation of the Holy Roman Empire, and the establishment of Christianity as the religion of the Empire. d. Describe the development of feudalism and manorialism and their role in the medieval European economy. e. Describe the significance of the Magna Carta, including limiting the power of the monarch, the rule of law, and the right to trial by jury. f. Explain how the Crusades affected Christian, Muslim, and Jewish populations in Europe. 5.9 Describe the geographic, political, economic, and cultural structures of Europe during the Middle Ages. a. Identify and locate geographic features of Europe, including the Alps, Atlantic Ocean, North European Plain, English Channel, Ural Mountains and the Mediterranean Sea. b. Describe the role of monasteries in the preservation of knowledge and the spread of the Catholic Church throughout Europe. c. Explain how Charlemagne shaped and defined medieval Europe, including the creation of the Holy Roman Empire, and the establishment of Christianity as the religion of the Empire. d. Describe the development of feudalism and manorialism and their role in the medieval European economy. e. Describe the significance of the Magna Carta, including limiting the power of the monarch, the rule of law, and the right to trial by jury. f. Explain how the Crusades affected Christian, Muslim, and Jewish populations in Europe.		

		g. Describe the economic and social effects of the spread of the Black Death (Bubonic Plague) from Central Asia to China, the Middle East, and Europe, and its effect on the global population. h. Describe the significance of the Hundred Years' War, including the roles of Henry V in shaping English culture and language and Joan of Arc in promoting a peaceful end to the war. 5.10 Describe the geographic, political, economic, and cultural structures of Southwest Asia and North Africa. a. Identify and locate the geographic features of Southwest Asia and North Africa, including the Arabian Peninsula, the Persian Gulf, Arabian Sea, Red Sea, Black Sea, and the Caspian Sea. b. Describe the diffusion of Islam, its culture, and the Arabic language throughout North Africa and Southwest Asia. c. Summarize the contributions of Islamic scholars in the areas of art, medicine, science, and mathematics.		
African Kingdoms (4 weeks)	**Topic 1:** The complex societies that formed the Ghana Empire, the introduction of the camel, trade routes and trade resources including gold, ivory, and salt. **Topic 2**: The Mali Empire, how it became renowned for the wealth of its rulers, especially Mansa Musa I, as well as its cultural influence on West Africa. **Topic 3:** The Songhai Empire that dominated the western Sahel in the 15th and 16th centuries and the important cities in the empire including Timbuktu and Djenné.	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics,	Students can read and discuss the …Environmental Impact in Trade Routes and Resources: ● The establishment of trade routes linking the Ghana, Mali, and Songhai Empires was instrumental in their prosperity. These routes facilitated the exchange of goods such as gold, ivory, and salt, highlighting the environmental variety and resource richness of	PBL Assessment Ideas: Timbuktu Travel Brochure: Students design a travel brochure promoting Timbuktu and other important cities in the Songhai Empire, highlighting their significance. Songhai Empire Timeline: Students create a timeline showcasing the rise and fall of the Songhai Empire, including key events and rulers.

		including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.8 Describe the origin and spread of major world religions as they developed throughout history. 5.11 Describe the geographic, political, economic, and cultural structures of Medieval West African Kingdoms. a. Identify and locate the geographic features of West Africa, including the Atlantic Ocean, Niger River, Djenne, the Sahara, Gulf of Guinea, and Timbuktu. b. Describe the growth of the kingdoms of Ghana, Mali, and Songhai, including cities such as Djenne and Timbuktu as centers of trade, culture, and learning. c. Describe the role of the Trans-Saharan caravan trade in the changing religious and cultural characteristics of West Africa and in the exchange of salt, gold, and enslaved people. d. Explain the importance of the Malian king Mansa Musa and his pilgrimage to Mecca.	the regions they traversed. ● The introduction of the camel as a means of transportation revolutionized trade, enabling the efficient movement of goods across vast distances. This innovation reshaped the environmental dynamics of the Sahel region, impacting ecosystems and human interactions with the landscape.	Djenné Architecture Project: Have students research and recreate traditional architecture from Djenné using clay or other materials. Role-play Debates: Divide students into groups representing different factions within the Songhai Empire and stage debates on issues such as governance, trade, and culture.
Civilization in North America (6 weeks)	**Topic 1:** This region has long been occupied by hunter-gatherers and agricultural people including the Ancestral Pueblo peoples who are renowned for their architectural and cultural achievements. **Topic 2**: This area includes tribes originating in northeastern and Midwest US,	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with	Students can examine the sustainability of traditional indigenous practices in comparison to modern environmental challenges. Highlight how indigenous communities often had deep ecological knowledge and sustainable practices that can offer insights into contemporary environmental issues	Students could create a multimedia presentation or poster board highlighting the lifestyles of Plains tribes, including their hunting and gathering practices, nomadic lifestyle, and eventual adoption of farming.

	and southeastern Canada including the 5 nations of the Iroquois League that developed a powerful confederacy. **Topic 3:** Mississippian cultures flourished in this area, known for agriculture, mound building, and artwork. Many tribes experienced consequences of diseases after contact with Europeans. **Topic 4**: Tribes here hunted (some followed bison), gathered, and some eventually farmed.	relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.8 Describe the origin and spread of major world religions as they developed throughout history. 5.13 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate the geographic features of the Americas, including the Andes Mountains, Appalachian Mountains, Great Plains, Pacific Ocean Mountains, Gulf of Mexico, Rocky Mountains, Atlantic Ocean, Mississippi River, Amazon River, South America, Caribbean Sea, North America, Yucatan Peninsula, and the Central Mexican Plateau. b. Explain the effects of geographic features on Indigenous North American cultures (Northeast, Southeast, and Plains), including clothing, housing, and agriculture. c. Describe the existence of varied networks of Indigenous North American cultures, including varied languages, customs, and economic and political structures.		They could explore the cultural significance of the buffalo/bison to Plains tribes and its role in their daily life, spirituality, and economy. Students could also research and present on the impact of European contact and diseases on Plains tribes, including population decline and cultural changes. For each topic, you could design specific criteria and rubrics for assessing student learning and understanding of the material. Additionally, you could encourage students to collaborate, conduct research, and present their findings in creative and engaging ways.

The Inca and Aztec Empires (4.5 weeks)	**Topic 1:** The largest pre-Columbian empire in western South America known for architecture, road networks, textiles, record keeping and communication (using quipu), and agricultural innovations. **Topic 2**: This Mesoamerican tribe flourished in central Mexico before it was conquered by Spanish conquistador Hernán Cortés. They expanded their empire by trade and military conquests and were known for their religious traditions as well as architectural and artistic accomplishments.	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.13 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate the geographic features of the Americas, including the Andes Mountains, Appalachian Mountains, Great Plains, Pacific Ocean Mountains, Gulf of Mexico, Rocky Mountains, Atlantic Ocean, Mississippi River, Amazon River, South America, Caribbean Sea, North America, Yucatan Peninsula, and the Central Mexican Plateau.	Students can read and discuss…Cultural Practices of the Aztec Empire: The Aztec civilization was renowned for its rich cultural heritage, including elaborate religious ceremonies, artistic expressions, and intricate social hierarchies. The Aztecs honored multiple different deities representing various aspects of nature and human life, reflecting their complex cosmology and spiritual beliefs. Connection: By examining the environmental sustainability and multiple cultures of the Inca and Aztec Empires, students can explore how these ancient societies thrived in multiple different ecological settings while celebrating their unique cultural identities. Through interdisciplinary learning, students develop a holistic understanding of the interplay between human civilizations, the natural environment, and different cultures fostering a deeper appreciation for both ancient and contemporary societies.	Research and Presentation: Students should research and prepare a presentation about the empire, covering its key features such as architecture, road networks, textiles, record keeping, communication (using quipu), and agricultural innovations. Visual Aids: Encourage students to include visual aids such as pictures, diagrams, and maps to enhance their presentation. Quipu Interpretation: Students can demonstrate an understanding of the communication system by interpreting a simple quipu or creating their own.

		d. Explain the effects of geographic features and climate on the agricultural practices and settlement of the Aztec and Incan civilizations. i. Explain how the Inca built and organized their empire and how Inca engineers overcame challenges presented by the geography of the land. j. Explain how the Inca kept their empire together without a written language.		
Renaissance and Reformation (5 weeks)	**Topic 1:** This period in European history marked the transition from the Middle Ages to modernity, including great social change and an effort to revive and surpass ideas and achievements of the past. **Topic 2**: A movement within Western Christianity in 16th-cent Europe led by Martin Luther that posed a religious and political challenge to the Catholic Church.	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.8 Describe the origin and spread of major world religions as they developed throughout history.	Discuss the environmental impact of innovations during the Renaissance, such as the printing press, advances in architecture, and exploration. For example, discuss deforestation for shipbuilding or pollution from early industries. This can lead to discussions on sustainable practices and the importance of considering environmental consequences.	Written Component: Students write short descriptions or explanations for each artifact, detailing its historical significance and relevance to the Renaissance or Reformation. They can also write fictional diary entries or letters from the perspective of someone living during the Renaissance or Reformation. Presentation: Students present their time capsules to the class, explaining the contents and the significance of each artifact. Encourage peers to ask questions and engage in discussions about the Renaissance and Reformation.

		5.12 Describe the origins, accomplishments, and geographic diffusion of the Renaissance as well as the historical developments of the Protestant Reformation and Scientific Revolution. a. Explain how the location of the Italian Peninsula affected the movement of resources, knowledge, and culture throughout Italy's independent trade cities. b. Identify the importance of Florence, Italy and the Medici Family in the early stages of the Renaissance. c. Explain the development of Renaissance art, including the significance of Leonardo da Vinci, Michelangelo, William Shakespeare, and systems of patronage. d. Explain how Johannes Gutenberg's printing press affected the growth of literacy and diffusion of knowledge. e. Explain the significant causes of the Protestant Reformation, including the selling of indulgences and Martin Luther's 95 Theses. f. Compare and contrast heliocentric and geocentric theories of the Greeks (geocentric) and Copernicus (heliocentric). g. Describe Galileo Galilei's theories and improvement of scientific tools, including the telescope and microscope.		Reflection: After presentations, students reflect on what they've learned about the Renaissance and Reformation, discussing how these historical periods have influenced the world today.
The First Global Age (4 weeks)	**Topic 1:** Age of Exploration (approx. 15th-17th cent) when Europeans explored, colonized, and conquered regions across the globe. The Portuguese and Spanish were at the forefront of overseas exploration, but were	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources.	Human-Environment Interactions: Through the lens of the First Global Age, students can analyze how human societies interacted with their environments during exploration and	Project Components: Research Phase: Each group will conduct research on a specific topic related to the First Global

	later joined by the Dutch, English, and French. **Topic 2**: Exploration led to the rise of international trade and colonial empires, between the Old and New World, leading to the Columbian exchange-the transfer of plants, animals, food, human populations (including enslaved people), diseases, and culture between Eastern & Western Hemispheres.	5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.13 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate the geographic features of the Americas, including the Andes Mountains, Appalachian Mountains, Great Plains, Pacific Ocean Mountains, Gulf of Mexico, Rocky Mountains, Atlantic Ocean, Mississippi River, Amazon River, South America, Caribbean Sea, North America, Yucatan Peninsula, and the Central Mexican Plateau. 5.14 Analyze the motivations for the movement of people from Europe to the Americas and describe the effects of exploration by Europeans. a. Analyze why European countries were motivated to	colonization. They can explore how environmental factors influenced the success or failure of exploration ventures and how human activities, in turn, impacted the environment.	Age, such as a famous explorer (e.g., Christopher Columbus, Vasco da Gama), a significant event (e.g., the Columbian Exchange), or a cultural aspect (e.g., trade routes, indigenous peoples). Students will gather information from textbooks, online resources, and primary sources to understand the historical context and significance of their chosen topic. Presentation/Exhibit Design: Based on their research, each group will design a presentation or exhibit that showcases their findings. They can choose from various formats, including posters, dioramas, PowerPoint presentations, or even short skits. Encourage creativity and use of multimedia elements to make the presentation/exhibit engaging and informative.

		explore the world, including religion, political rivalry, and economic gain. b. Identify the significance of the voyages and routes of discovery of the following explorers by their sponsoring country: England: Henry Hudson; France: Jacques Cartier; Portugal: Vasco da Gama, Bartolomeu Dias; Spain: Christopher Columbus, Hernando de Soto, Ferdinand Magellan, and Amerigo Vespucci. c. Describe Prince Henry the Navigator's influence on exploration, voyages, cartographic improvements, and tools related to exploration, including the compass, caravel, and astrolabe. d. Describe how the Aztec and Inca empires were eventually defeated by Spanish conquistadors. e. Explain the impact of the Columbian Exchange on people, plants, animals, technology, culture, ideas, and diseases among Europe, Africa, Asia, and the Americas in the fifteenth and sixteenth centuries, and examine the major effects on each continent. f. Explain how Spanish colonization introduced Christianity, the mission system, and the encomienda system to the Americas as well as the transition to African slavery. g. Describe the development of the transatlantic slave trade and the experiences of enslaved people in the Americas.		

Curriculum Development Course at a Glance
Planning for Each Grade Level

STEAM 21st Century Skills

Problem Solving: *Apply understanding to new and novel situations.*

Innovation: *Creatively use science, mathematics, and technology concepts and principles by applying them to the engineering design process.*

Collaboration: *Working Together, Learning Together*

Self-Reliance: *Own Your Learning*

Invention: *Recognizes the needs of the world and creatively design, test, redesign, and then implement solutions (engineering process).*

Logical Thinking: *Able to apply rational and logical thought processes of science, mathematics, and engineering design, to innovation and invention.*

Technological Literacy: *Understand and explain the nature of technology, develop the skills needed, and apply technology appropriately*

Curriculum Development Overview
Planning for Each Unit

Unit Title	The Medieval World	**Length of Unit**	6 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	5th grade builds on what students learned about ancient and classical civilizations in grade 4. In this course, students will examine: Medieval Europe and Africa, Aztec and Inca civilizations, the Renaissance and Reformation, the Age of Exploration, and the European conquest and colonization of the Americas. Students will examine the growth in economic interactions among civilizations as well as the exchange of ideas, beliefs, technologies, and commodities.	**Standards Addressed in this Unit**	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.8 Describe the origin and spread of major world religions as they developed throughout history. 5.9 Describe the geographic, political, economic, and cultural structures of Europe during the Middle Ages. a. Identify and locate geographic features of Europe, including the Alps, Atlantic Ocean, North European Plain, English Channel, Ural Mountains and the Mediterranean Sea. b. Describe the role of monasteries in the preservation of knowledge and the spread of the Catholic Church throughout Europe. c. Explain how Charlemagne shaped and defined medieval Europe, including the creation of the Holy Roman Empire, and the establishment of Christianity as the religion of the Empire. d. Describe the development of feudalism and manorialism and their role in the medieval European economy.

			e. Describe the significance of the Magna Carta, including limiting the power of the monarch, the rule of law, and the right to trial by jury. f. Explain how the Crusades affected Christian, Muslim, and Jewish populations in Europe. 5.9 Describe the geographic, political, economic, and cultural structures of Europe during the Middle Ages. a. Identify and locate geographic features of Europe, including the Alps, Atlantic Ocean, North European Plain, English Channel, Ural Mountains and the Mediterranean Sea. b. Describe the role of monasteries in the preservation of knowledge and the spread of the Catholic Church throughout Europe. c. Explain how Charlemagne shaped and defined medieval Europe, including the creation of the Holy Roman Empire, and the establishment of Christianity as the religion of the Empire. d. Describe the development of feudalism and manorialism and their role in the medieval European economy. e. Describe the significance of the Magna Carta, including limiting the power of the monarch, the rule of law, and the right to trial by jury. f. Explain how the Crusades affected Christian, Muslim, and Jewish populations in Europe. g. Describe the economic and social effects of the spread of the Black Death (Bubonic Plague) from Central Asia to China, the Middle East, and Europe, and its effect on the global population. h. Describe the significance of the Hundred Years' War, including the roles of Henry V in shaping English culture and language and Joan of Arc in promoting a peaceful end to the war. 5.10 Describe the geographic, political, economic, and cultural structures of Southwest Asia and North Africa. a. Identify and locate the geographic features of Southwest Asia and North Africa, including the Arabian Peninsula, the Persian Gulf, Arabian Sea, Red Sea, Black Sea, and the Caspian Sea. b. Describe the diffusion of Islam, its culture, and the

			Arabic language throughout North Africa and Southwest Asia. c. Summarize the contributions of Islamic scholars in the areas of art, medicine, science, and mathematics.
Inquiry Questions (Engaging-Debatable):	What was life like in Europe during the Medieval Period? How did conflict and new belief systems influence the development of the Medieval World? How did the Black Death and the Hundred Years War Affect Europe?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-PS1-3 Make observations and measurements to identify materials based on their properties Students will investigate the pH of favorite candy types using pH indicator paper and reference sheet. Students will choose their favorite type of candy and soak in water. Students, after 10 minutes, will put the pH indicator paper into the solution. They will refer to the reference sheet to determine the level of pH most closely related to that of the solution. Students will connect this investigation to	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.** **6. Basic Operations and Concepts**	**Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students will design and build a catapult following criteria and constraints provided. Criteria: The catapult must launch the material (marshmallow) at least 5 inches, and the catapult must use elastic potential energy to move the material. Constraints: Students must only use the materials provided. Students are	**Standards: TH-CA-E3 Identify and discuss the theme, message, or story idea conveyed in a dramatic work. TH-CA-E4 Use basic theater arts vocabulary to express and explain opinions about scripts and performances** Medieval World Theater Divide the class into small groups. Assign each group a specific aspect of medieval life to focus on, such as a scene in a castle, a village market day, a knight's training, or a significant historical event. Each group decides on their characters (e.g., king, queen, knight, peasant, merchant, etc.) and their roles in the scene. Script Writing and Planning	**Medieval Feast Planning**: Explore fractions and proportions through the planning of a medieval feast. Provide students with a menu of medieval dishes and recipes, each with a specified number of servings. Challenge students to scale the recipes up or down based on the number of guests attending the feast. They can use fractions and proportions to adjust ingredient quantities and ensure that each dish serves the appropriate number of people. This activity reinforces math skills **Medieval Money Exchange**: Explore medieval currency and the concept of money exchange through a hands-on activity. Create a "marketplace" where students can exchange different types of

	some that may have occurred with alchemists during the Middle Ages.	♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.** Students can investigate the technological advancements of the Medieval period, including developments in architecture (Gothic cathedrals), printing press, and weaponry. Then split into groups and have each group present one of the topics address above using Google Slides.	allowed a maximum of six rubber bands.	- Provide each group with templates and historical information to help them write a short script for their scene. - Encourage students to include dialogue that reflects historical facts and social structures. - Each group creates a storyboard or outline of their scene to help with planning. Rehearsal - Allow time for groups to rehearse their scenes. - Provide simple costumes and props to help bring their characters to life. - Circulate and provide feedback, helping groups stay historically accurate and engaging. Performance - Each group performs their scene for the class. - Encourage students to be expressive and project their voices. - After each performance, have a brief discussion about the historical accuracy and what was learned from the scene. Reflection and Discussion: - After all performances, gather the class for a reflection discussion. - Ask questions like:	medieval coins or tokens representing various denominations. Provide students with conversion rates between different types of currency and challenge them to exchange coins to make specific amounts. They can practice addition, subtraction, and multiplication as they calculate the value of their transactions and make change, fractions, ratios, and scaling.

Curriculum Development Overview
Planning for Each Unit

				What did you learn about the medieval world through this activity? How did acting out scenes help you understand the roles and daily life of people in the medieval world? Which scene or aspect of medieval life did you find most interesting and why?.	

Unit Title	African Kingdoms	**Length of Unit**	4 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	5th grade builds on what students learned about ancient and classical civilizations in grade 4. In this course, students will examine: Medieval Europe and Africa, Aztec and Inca civilizations, the Renaissance and Reformation, the Age of Exploration, and the European conquest and colonization of the Americas. Students will examine the growth in economic interactions among civilizations as well as the exchange of ideas, beliefs, technologies, and commodities.	**Standards Addressed in this Unit**	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.8 Describe the origin and spread of major world religions as they developed throughout history. 5.11 Describe the geographic, political, economic, and cultural structures of Medieval West African Kingdoms. a. Identify and locate the geographic features of West Africa, including the Atlantic Ocean, Niger River, Djenne, the Sahara, Gulf of Guinea, and Timbuktu. b. Describe the growth of the kingdoms of Ghana, Mali, and Songhai, including cities such as Djenne and Timbuktu as centers of trade, culture, and learning. c. Describe the role of the Trans-Saharan caravan trade in the changing religious and cultural characteristics of West Africa and in the exchange of salt, gold, and enslaved people.

			d. Explain the importance of the Malian king Mansa Musa and his pilgrimage to Mecca.
Inquiry Questions (Engaging-Debatable):	How did geography and the movement of goods and ideas contribute to the rise of the Kingdom and Empire of Ghana? What made Mali one of the richest kingdoms in history? What were the major accomplishments of the Songhai Empire?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-PS1-4 **Conduct an investigation to determine whether the mixing of two or more substances results in new substances.** Students will investigate why some items rust and others do not. Students will place various metal objects into small plastic cups with water. Students will record observations after seven days. Students will recreate the experiment but with two of each metal object. One of each object will be put into filtered water while the other will be put into salt water. After seven days, students will observe and record what happened and reflect upon why.	**Standards:** **1. Technology Communication Tools (Communication Foundation Skill)** ♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** **2. Technology Problem-Solving and Decision-Making Tools (Problem Solving Foundation Skill)** ♦ **Students use appropriate technology resources for solving problems and making informed decisions.** ♦ **Students employ technology for real world problem solving.** ♦ **Students evaluate the technology selected, the process, and the final results through the use of informed decision-making skills.** Students can examine the technological advancements in trade, such as the use of caravans	**Standard: 3–5-ETS1-1** **Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students can investigate the engineering behind building and maintaining trade routes, including roads and bridges. Then, they can decide which structures to model using materials provided.	**Standard: M-HP-E2** **Recognize and discuss the function of music within historical and cultural contexts, including celebrations, ceremonies, and special occasions** **M-CE-E5 Participate in organized musical activities including singing, playing, and movement** Discovering African Kingdoms Through Drumming Begin with a brief overview of major African kingdoms such as Mali, Ghana, and Songhai. Discuss their history, culture, economy, and notable leaders like Mansa Musa. Use a map to show the locations of these kingdoms in Africa.	**Trade Route Mapping**: Introduce students to the trade routes of the Ghana Empire by creating a hands-on map activity. Provide students with a large map of West Africa and mark the locations of major trade routes, such as the Trans-Saharan trade route. Then, give students different colored strings or markers to represent various trade goods (e.g., gold, salt, ivory). They can use the strings to trace the paths of trade routes and identify key trading centers along the way. This activity reinforces math skills in map reading, spatial reasoning, and geometric visualization. **Mathematics of Gold Weights**: Explore the mathematical concepts behind weighing and measuring gold, a key

		and camel saddles. After they determine these advancements, they can create a plan to better a current way of futuristic transportation of goods in our world. They can create a single page using Canva to explain their new method.		Introduction to African Drumming - Play audio samples of traditional African drumming. - Discuss the role of drumming in African societies, including its use in communication, ceremonies, storytelling, and social gatherings. - Show images or videos of traditional African drums and drumming performances. Basic Drumming Techniques - Teach students basic drumming techniques, including different types of sounds (bass, tone, slap) and how to produce them. - Demonstrate simple rhythmic patterns and have students practice them on their drums. - Use call-and-response exercises to engage students and build their confidence. Group Assignments - Divide the class into small groups. - Assign each group a specific African kingdom to focus on (e.g., one group studies Mali, another studies Ghana, etc.). - Provide each group with resources to learn more about their assigned kingdom and its musical	component of trade in the Ghana Empire. Provide students with replicas or pictures of traditional gold weights used by Ghanaian traders, such as the Sankofa bird or geometric shapes with specific weights. Challenge students to compare and convert between different units of measurement for gold, such as grams, ounces, and carats. They can also practice multiplication and division by calculating the value of gold based on its weight and purity. This activity reinforces math skills in measurement conversion, multiplication, and understanding of units.

				traditions, particularly drumming. Research and Planning - Have each group research their assigned kingdom, focusing on key aspects such as important historical events, cultural practices, and traditional drumming. - Provide worksheets for students to organize their findings and plan a short presentation. - Each group decides on a drumming piece inspired by their kingdom to perform. Rehearsal - Give each group time to practice their drumming performance. - Encourage them to incorporate elements of traditional African drumming they have learned about. - Help groups refine their rhythms and ensure they are playing cohesively. 7. **Presentations and Performances - Each group presents their findings about their assigned kingdom, followed by their drumming performance. - Encourage students to explain the significance of the drumming and how it relates to their kingdom's culture.	

				Reflection and Discussion - After all presentations, gather the class for a reflection discussion. - Ask questions like: What did you learn about the African kingdoms and their drumming traditions? How did playing the drums help you understand these cultures better? Which kingdom or drumming tradition did you find most interesting and why?	

Unit Title	Civilizations in North America	**Length of Unit**	6 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	5th grade builds on what students learned about ancient and classical civilizations in grade 4. In this course, students will examine: Medieval Europe and Africa, Aztec and Inca civilizations, the Renaissance and Reformation, the Age of Exploration, and the European conquest and colonization of the Americas. Students will examine the growth in economic interactions among civilizations as well as the exchange of ideas, beliefs, technologies, and commodities.	**Standards Addressed in this Unit**	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.8 Describe the origin and spread of major world religions as they developed throughout history. 5.13 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate the geographic features of the Americas, including the Andes Mountains, Appalachian Mountains, Great Plains, Pacific Ocean Mountains, Gulf of Mexico, Rocky Mountains, Atlantic Ocean, Mississippi River, Amazon River, South America, Caribbean Sea, North America, Yucatan Peninsula, and the Central Mexican Plateau. b. Explain the effects of geographic features on Indigenous North American cultures (Northeast, Southeast, and Plains), including clothing, housing,

			and agriculture. c. Describe the existence of different networks of Indigenous North American cultures, including varied languages, customs, and economic and political structures.
Inquiry Questions (Engaging-Debatable):	What are some of the achievements of the Pueblo and Inuit peoples? What are some of the achievements of the Algonquian and Iroquois (Haudenosaunee) peoples? How did the Mound Builders and their descendants adapt to their environment? What do the Mandan and Hidatsa cultures reveal about life in the Great Plains region of North America?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 5-ESS2-1 Develop a model using an example to describe ways in which the geosphere, biosphere, hydrosphere, and/or atmosphere interact. Students will investigate the rain shadow effect and discuss how it affected civilizations' locations. The teacher will create a mound of dirt/sand/soil in the center of an aquarium tank. The teacher will have a small glass container of water on one side. Students will predict where the cloud created when the teacher places a small amount of dry ice into the container of water	**Standards:4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** **5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning,**	**Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students can explore the engineering feats of ancient North American civilizations. Students can learn about the construction techniques used to build structures like the Mayan pyramids, Aztec temples, or Incan stone cities. They can also engage in hands-on activities such as building model structures using materials like clay, cardboard, or popsicle sticks.	**Standard: VA-HP-E1 Identify the subject, basic style, and culture represented by various works of art** Study the art and culture of North American civilizations. This can involve examining artifacts such as pottery, textiles, sculptures, and paintings. Students can learn about the symbolism, materials, and techniques used in these artworks and create their own pieces inspired by ancient North American art.	**Three Sisters Garden Planning**: Explore traditional agriculture practices used by Mandan and Hidatsa people, such as the Three Sisters gardening technique. Provide students with a garden plot or grid paper representing a Three Sisters garden. Guide students to plan and layout their gardens by planting corn, beans, and squash in intercropped rows. Students can use math skills to calculate spacing and arrangement of plants, estimate seed quantities, and determine optimal planting times based on seasonal cycles. This activity reinforces math skills in measurement,

	will travel. (Will it go over the mountain and spread throughout the aquarium?) Discussion about how the lack of rain on one side of a mountain may cause some people to not settle in that region will need to occur.	**collaboration, personal pursuits, and productivity.** Students can investigate the technological advancements of North American civilizations. This might include studying Maya architecture, Aztec irrigation systems, Inca road networks, or Native American tools and crafts. Discuss how these technologies were developed and their impact on daily life and society.	They will be tasked with choosing one such structure and building a model of said structure.		estimation, and agricultural planning. **Tipi Design and Measurement**: Introduce students to the traditional dwelling of the Mandan and Hidatsa people, the tipi. Provide students with materials such as craft sticks, fabric, and string to construct their own miniature tipis. Challenge students to design tipis that are historically accurate in size and proportions. They can use rulers and measuring tapes to ensure that their tipis meet specific dimensions based on historical records. This activity reinforces math skills in measurement, geometry, and spatial reasoning.

Unit Title	The Inca and Aztec Empires	**Length of Unit**	4.5 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	5th grade builds on what students learned about ancient and classical civilizations in grade 4. In this course, students will examine: Medieval Europe and Africa, Aztec and Inca civilizations, the Renaissance and Reformation, the Age of Exploration, and the European conquest and colonization of the Americas. Students will examine the growth in economic interactions among civilizations as well as the exchange of ideas, beliefs, technologies, and commodities.	**Standards Addressed in this Unit**	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.13 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate the geographic features of the Americas, including the Andes Mountains, Appalachian Mountains, Great Plains, Pacific Ocean Mountains, Gulf of Mexico, Rocky Mountains, Atlantic Ocean, Mississippi River, Amazon River, South America, Caribbean Sea, North America, Yucatan Peninsula, and the Central Mexican Plateau. d. Explain the effects of geographic features and climate on the agricultural practices and settlement of the Aztec and Incan civilizations. i. Explain how the Inca built and organized their empire and how Inca engineers overcame

			challenges presented by the geography of the land. j. Explain how the Inca kept their empire together without a written language.
Inquiry Questions (Engaging-Debatable):	How did the Inca adapt to challenges posed by their environment? How was the Aztec Empire able to conquer much of Central America?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. Students will try to create floating gardens that model Aztec chinampas. Aztec people used raised beds surrounded by water for growing food crops and floating rafts of reeds as seed beds. Questions for discussion: How many ways can you think of to make a garden float on water? A garden will get heavier as the plants grow. What could we do to stop the garden from sinking	**Standards:6. Basic Operations and Concepts** ♦ **Students demonstrate a sound understanding of the nature and operation of technology systems.** ♦ **Students are proficient in the use of technology.3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** Study the impressive architectural achievements of the Inca and Aztec civilizations, including Machu Picchu and Tenochtitlan. Students can create models of these structures using Tinkercad or Blender.	**Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students will create a dam that works to stop water flow. The teacher will create model rivers by using long sections of aluminum foil and pouring water from a pitcher. Students will create a dam with natural materials such as leaves, rocks and sticks. Students will test by having the teacher pour the water. Students will redesign their dam if unsuccessful. This time, they are allowed to use modeling clay and other materials to make a better	**Standard: VA-HP-E1 Identify the subject, basic style, and culture represented by various works of art** Study the pottery styles of the Aztec and Inca civilizations, noting the differences in design, technique, and purpose. Students can create their own pottery using air-dry clay or traditional firing methods.	**Aztec Pyramids and Volume**: Introduce students to the architecture of Aztec pyramids and guide them in calculating the volume of these structures. Provide students with images or models of Aztec pyramids and challenge them to determine the volume of each pyramid using geometric formulas. They can measure the dimensions of the pyramid base and height, then calculate the volume using the formula for the volume of a pyramid (1/3 × base area × height). This activity reinforces math skills in geometry, measurement, and volume calculation. **Aztec Codex Mapping**: Explore the art of Aztec codices and guide students in creating their own maps inspired by

			dam. Students may also test whether a straight or curved dam is more efficient.		these historical documents. Provide students with large sheets of paper or parchment and instruct them to draw maps depicting the geography of the Aztec Empire, including major cities, landmarks, and trade routes. Students can use rulers, compasses, and scales to accurately represent distances and proportions on their maps. They can also incorporate symbols and labels to indicate different features of the landscape. This activity reinforces math skills in map reading, scale, and cartography.

Unit Title	Renaissance and Reformation	**Length of Unit**	5 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	5th grade builds on what students learned about ancient and classical civilizations in grade 4. In this course, students will examine: Medieval Europe and Africa, Aztec and Inca civilizations, the Renaissance and Reformation, the Age of Exploration, and the European conquest and colonization of the Americas. Students will examine the growth in economic interactions among civilizations as well as the exchange of ideas, beliefs, technologies, and commodities.	**Standards Addressed in this Unit**	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.8 Describe the origin and spread of major world religions as they developed throughout history. 5.12 Describe the origins, accomplishments, and geographic diffusion of the Renaissance as well as the historical developments of the Protestant Reformation and Scientific Revolution. a. Explain how the location of the Italian Peninsula affected the movement of resources, knowledge, and culture throughout Italy's independent trade cities. b. Identify the importance of Florence, Italy and the Medici Family in the early stages of the Renaissance. c. Explain the development of Renaissance art, including the significance of Leonardo da Vinci, Michelangelo, William Shakespeare, and systems of

			patronage. d. Explain how Johannes Gutenberg's printing press affected the growth of literacy and diffusion of knowledge. e. Explain the significant causes of the Protestant Reformation, including the selling of indulgences and Martin Luther's 95 Theses. f. Compare and contrast heliocentric and geocentric theories of the Greeks (geocentric) and Copernicus (heliocentric). g. Describe Galileo Galilei's theories and improvement of scientific tools, including the telescope and microscope.
Inquiry Questions (Engaging-Debatable):	In what ways are the ideas and values of the Renaissance different from the Medieval Period? How did new ideas cause conflict and change in western Europe during the 16th century?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**
	Standard: 3-PS2-3 Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. Students can conduct simple experiments related to Renaissance scientific discoveries, such as exploring gravity, pendulum	**Standards:5. Social, Ethical, and Human Issues (Citizenship Foundation Skill)** ♦ **Students understand the ethical, cultural, and societal issues related to technology.** ♦ **Students practice responsible use of technology systems, information, and software.** ♦ **Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.1. Technology Communication Tools (Communication Foundation Skill)**	**Standards: 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time or cost.** This activity is also listed in 5th grade ELA as it directly relates to the Renaissance period. Students will design, create and build a working model of a printing press. Criteria: It must contain a lever or a screw, and it must	**Standard: D-CA-E3 Recognize and discuss the sequencing of movements in dance** M-HP-M2 Compare and contrast the function of music within historical and cultural contexts, such as celebrations, ceremonies, and events Renaissance Music and Dance Extravaganza - Begin with a brief overview of the	**Scientific Instruments and Measurement**: Explore the advancements in scientific instruments and measurement tools during the 16th century. Provide students with replicas or diagrams of historical instruments such as astrolabes, quadrants, and compasses. Guide students to understand how these instruments were used for navigation,

	motion, or basic astronomy. Students will create a magnetic pendulum. Then, they will observe and record observations. Students will create a pendulum by placing chairs about four feet apart and suspending a broom across the seat area. They will tie a magnetic wand to the broom and place small magnetic objects on the floor beneath. They will then pull the magnetic wand slightly and release it over the objects. Students should observe non consistent movement from the pendulum as the magnetic objects pull the magnetic wand in different directions.	♦ **Students use telecommunications to collaborate, publish, and interact with peers, experts and other audiences.** ♦ **Students use a variety of media and formats to communicate and present information and ideas effectively to multiple audiences.** Students can discuss technological advancements of the Renaissance, such as the printing press invented by Johannes Gutenberg, which revolutionized the spread of information. Students can then report on modern methods people can get information to spread in our current climate.	effectively press down when operated manually. Constraint: Students are limited to the supplies provided by the teacher and the time limit set by the teacher.	Renaissance period, highlighting its cultural and artistic achievements. - Discuss the role of music during the Renaissance, focusing on its use in courts, churches, and public celebrations. - Play audio samples of Renaissance music. Introduction to Renaissance Instruments - Show pictures or videos of common Renaissance instruments, such as the lute, recorder, harpsichord, and viol. Introduction to Renaissance Dance - Discuss the importance of dance during the Renaissance, particularly in social and courtly settings. - Show videos or pictures of Renaissance dances, such as the Pavane, Galliard, and Branle. - Explain basic dance movements and formations used during the period. Learning a Simple Renaissance Dance - Teach students a simple Renaissance dance, such as the Branle. - Break down the steps and movements, and practice them slowly. - Use Renaissance music as a background to help	astronomy, and surveying. Students can create their own simplified versions of these instruments using household materials and experiment with measuring angles, distances, and celestial observations. This activity reinforces math skills in measurement, geometry, and scientific inquiry. **Renaissance Art Geometry**: Introduce students to the geometric principles behind Renaissance art and architecture. Provide students with images of famous Renaissance artworks, such as Leonardo da Vinci's Vitruvian Man or Michelangelo's David. Guide students to identify geometric shapes such as circles, triangles, and rectangles within the compositions. Have students measure and calculate the dimensions of key elements using rulers or measuring tapes. This activity reinforces math skills in geometry, measurement, and spatial reasoning.

				students get into the rhythm and style. Group Practice - Divide the class into small groups and have them practice the dance together. - Encourage students to help each other and perfect their movements. - Walk around and provide feedback to ensure accuracy and enthusiasm. Performance - Have each group perform the Renaissance dance for the class. - If possible, provide simple costumes or props to enhance the experience. - Encourage students to express themselves and have fun while performing. Reflection and Discussion - After all performances, gather the class for a reflection discussion. - Ask questions like: What did you learn about Renaissance music and dance? How did learning and performing the dance help you understand the culture of the Renaissance? What was your favorite part of the activity and why?	

Curriculum Development Overview
Planning for Each Unit

Unit Title	The First Global Age	**Length of Unit**	4 Weeks

Curriculum Development Overview
Planning for Each Unit

Focus	5th grade builds on what students learned about ancient and classical civilizations in grade 4. In this course, students will examine: Medieval Europe and Africa, Aztec and Inca civilizations, the Renaissance and Reformation, the Age of Exploration, and the European conquest and colonization of the Americas. Students will examine the growth in economic interactions among civilizations as well as the exchange of ideas, beliefs, technologies, and commodities.	**Standards Addressed in this Unit**	5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity. 5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources. 5.3 Explain connections between ideas, events, and developments in world history. 5.4 Compare and contrast events and developments in world history. 5.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims. 5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment. 5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires. 5.13 Describe the geographic, political, economic, and cultural structures of Indigenous civilizations of the Americas. a. Identify and locate the geographic features of the Americas, including the Andes Mountains, Appalachian Mountains, Great Plains, Pacific Ocean Mountains, Gulf of Mexico, Rocky Mountains, Atlantic Ocean, Mississippi River, Amazon River, South America, Caribbean Sea, North America, Yucatan Peninsula, and the Central Mexican Plateau. 5.14 Analyze the motivations for the movement of people from Europe to the Americas and describe the effects of exploration by Europeans. a. Analyze why European countries were motivated to explore the world, including religion, political rivalry, and economic gain.

			b. Identify the significance of the voyages and routes of discovery of the following explorers by their sponsoring country: England: Henry Hudson; France: Jacques Cartier; Portugal: Vasco da Gama, Bartolomeu Dias; Spain: Christopher Columbus, Hernando de Soto, Ferdinand Magellan, and Amerigo Vespucci. c. Describe Prince Henry the Navigator's influence on exploration, voyages, cartographic improvements, and tools related to exploration, including the compass, caravel, and astrolabe. d. Describe how the Aztec and Inca empires were eventually defeated by Spanish conquistadors. e. Explain the impact of the Columbian Exchange on people, plants, animals, technology, culture, ideas, and diseases among Europe, Africa, Asia, and the Americas in the fifteenth and sixteenth centuries, and examine the major effects on each continent. f. Explain how Spanish colonization introduced Christianity, the mission system, and the encomienda system to the Americas as well as the transition to African slavery. g. Describe the development of the transatlantic slave trade and the experiences of enslaved people in the Americas.
Inquiry Questions (Engaging-Debatable):	How did factors and developments enable and motivate European exploration and conquest of the Americas? How did the colonization of the Americas affect Africans, Europeans, and Indigenous peoples differently?		

STEAM Integration	**Science**	**Technology**	**Engineering**	**Art**	**Math**

	Standard: 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. Students will investigate using a chemical reaction to power a boat created by a plastic bottle with a pop-top cap. Students will create a chemical reaction using vinegar and baking soda that will propel a plastic bottle with a pop-top cap in a container of water. Students will discuss how different this type of boat is compared to the boats that traveled across the Atlantic during the Global Age.	**Standards:3. Technology Productivity Tools (Resource Access and Utilization Foundation Skill)** ♦ **Students use technology tools to enhance learning, increase productivity, and promote creativity.** ♦ **Students use productivity tools to work collaboratively in developing technology-rich, authentic, student-centered products.** **4. Technology Research Tools (Linking and Generating Knowledge Foundation Skill)** ♦ **Students use appropriate technology to locate, evaluate, and collect information from a variety of sources.** ♦ **Students use technology tools to process data and report results.** ♦ **Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** Have students create interactive maps using online tools or physical materials to track the explorations of famous explorers like Christopher Columbus, Vasco da Gama, and Ferdinand Magellan. They can incorporate STEAM elements by designing and building 3D representations of the ships, using mathematics to scale distances, and incorporating historical research into their projects.	**Standard: Standard: 3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** Students will design and create an anemometer that responds to wind power using common materials and will be measured by the amount of turns compared to wind speed of a fan. This device would have been helpful during the Global Age to sailors to detect differential wind speeds.	**Standard: VA-CE-E5 Draw on imagination, individual experience, and group activities to generate ideas for visual expression** Integrate art into the curriculum by studying the artwork produced during the First Global Age. Discuss how art was used to document discoveries, depict new lands, and communicate cultural encounters. Students can create their own artwork inspired by the explorations, using different mediums such as painting, sketching, or digital art.	**Food and Resource Sharing**: Explore the concepts of food production and resource management among Africans, Europeans, and Indigenous peoples through a collaborative activity. Provide students with examples of staple foods, crops, and natural resources that were important to each group's livelihood. Students can work together to create a "food and resource sharing" plan that reflects the interdependence and cooperation among different cultural groups. They can calculate quantities of food and resources needed to sustain their communities and allocate them based on historical consumption patterns and availability. This activity reinforces math skills in estimation, proportion, and collaborative problem-solving.