Cherokee County School District

Teaching & Learning Standards

5th GRADE

ELA | Math | Science | Social Studies



5th Grade
English Language Arts

Scope & Sequence Structure by Quarter

Domain Four domains structure the overall framework for English Language Arts Standards: Foundations, Language, Texts, and Practices.

Big Idea The Georgia Department of Education has provided Big Ideas that serve as over-arching goals for student learning across grade levels in each domain. Cherokee County School District has adapted these Big Ideas to match the rigor and responsibility that define our literacy instruction.

Standard: Standards represent specific knowledge and skills that students should learn or master across grade bands.

Expectation: Standards are broken down by grade level through expectations.

Foundations Domain *(K-2, 3-5)* Students develop foundational literacy skills that support the interpretation and construction of texts.

Phonics Cherokee County students learn the relationships between the sounds of spoken language and the letters of written language as they decode and encode words in context and in isolation.

Fluency Cherokee County students read texts aloud or silently with speed, accuracy, and expression.

Handwriting Cherokee County students develop handwriting skills in print and cursive.

Language Domain *(K-2, 3-5, 6-8, 9-12)* Students learn and apply the structures and conventions of standard English. Students analyze how grammar works in reading and writing. Students expand vocabularies and determine word meanings as they relate to reading and writing.

Grammar Conventions Cherokee County students observe, analyze, and use the structures and conventions of Standard English grammar, usage, and mechanics as they interpret and construct texts.

Vocabulary Cherokee County students engage in a wide range of written and spoken activities during which they expand and deepen their vocabularies, build word analysis skillsets (morphology), and determine or clarify the meanings of words and phrases.

Texts Domain *(K-2, 3-5, 6-8, 9-12)* Students think critically and creatively as they develop the knowledge and skills to actively engage with a variety of texts.

Context Cherokee County students investigate the relationships between authors, purposes, and audiences of texts, and analyze the influence of contextual factors.

Structures & Style Cherokee County students analyze and use organizational structures and styles to shape ideas and information.

Techniques: Cherokee County students evaluate and apply various techniques to comprehend and shape meaning.

Research & Analysis Cherokee County students use, discuss, analyze, and curate texts as they engage in various conversations, activities, and projects about a range of grade-level texts and topics.

Practices Domain *(K-12)* Students engage routinely in four literacy practices that ground, shape, and inform the expectations of the Foundations, Language, and Texts domains.

Engagement & Intention for Comprehension & Composition (EICC) Cherokee County students develop personal and academic identities as readers and writers, approaching texts for a variety of tasks and purposes and engaging in reading and writing processes in order to deepen comprehension and strengthen composition.

Situating Texts (ST) Cherokee County students develop and apply a multilayered understanding of context, author, audience, and purpose to ground and propel the interpretation and construction of texts.

Author's Craft (AC) Cherokee County students apply knowledge of author's craft to enhance the interpretation and construction of texts.

Collaboration & Presentation (CP) Cherokee County students build and share knowledge as they engage with others in a range of settings and for a variety of purposes.

Year Long English Language Arts Practices:

Engagement & Intention for Comprehension & Composition (EICC)

K-12.P.EICC.1:Build an identity as a reader and writer, developing a repertoire of resources and tools to continuously expand participation as an active consumer and producer of texts.

K-12.P.EICC.2: Engage in written or spoken dialogue as author and audience for a variety of tasks and purposes, making intentional connections within, between, and beyond texts.

K-12.P.EICC.3: Engage with a range of complex texts for a variety of tasks and purposes, accessing and using strategies for comprehension* before, during, and after reading as part of the meaning-making process.

K-12.P.EICC.4: Compose a range of texts for a variety of purposes and audiences, flexibly engaging in writing processes to plan, draft, evaluate, revise, and edit texts.

Author's Craft (AC)

K-12.P.AC.1: Interpret texts through the author's lens by identifying, analyzing, and evaluating craft techniques that are connected to the responses, thoughts, decisions, and questions triggered by the text.

K-12.P.AC.2: Construct texts with the audience's experience in mind, basing decisions about craft techniques on context and purpose.

- K-12.P.AC.3.a: Explore and create texts in various modes and genres, developing and applying knowledge of how specific features impact meaning, tone, style, purpose, and audience
- K-12.P.AC.3.b: Apply knowledge of how mode and genre impact what kinds of ideas and information are included in texts.
- K-12.P.AC.3.d: Consume and produce multimodal texts, integrating a variety of genres, text features, and craft techniques to influence target audiences and achieve specific purposes.

Situating Texts (ST)

K-12.P.ST.1 Develop and apply knowledge of key components of context such as background information, geographic location, cultural influences, time period, and contemporary events when interpreting and constructing texts.

K-12.P.ST.2: Interpret and construct texts by developing and applying knowledge of the strategies and techniques authors use to accommodate the target audience and achieve the text's purpose.

Collaboration & Presentation (CP)

K-12.P.CP.1: Collaborate with others to accomplish shared goals and projects.

K-12.P.CP.2: Use presentation skills to tailor communication to target audiences for specific purposes.

Quarter 1

Foundations Domain

Phonics

5.F.P.4.a:	Decode and encode words with graphemes that represent multiple letter-sound correspondences.
5.F.P.4.b:	Decode and encode single-syllable and multisyllabic words of all syllable types.
5.F.P.4.c:	Decode and encode words with common prefixes and suffixes.

Fluency

5.F.F.1.a:	Increase sight word vocabulary by reading regularly and irregularly spelled words in isolation and context with accuracy and automaticity.
5.F.F.1.b:	Read a wide range of unfamiliar grade-level texts with expression to show meaning and to demonstrate an understanding of tone.

Handwriting

5.F.H.3.a:	Read a variety of texts written in cursive.

Language Domain

Grammar, Usage, and Mechanics

3-5.L.GC.1:	• 1.40 Use commas after introductory phrases or clauses.

Syntax

5.L.GC.2.a:	Apply understandings of sentence structure to comprehend a wide variety of grade-level texts.
5.L.GC.2.b:	Use a variety of simple, compound, and complex sentences to strengthen clarity and coherence, maintaining consistent verb tense throughout the entire text.

Vocabulary

5.L.V.1.a:	Acquire a range of general, academic, and specialized vocabulary words and phrases through grade-level texts and content.
5.L.V.2.a:	Deconstruct words using knowledge of Greek and Latin roots, root words, and affixes to determine meaning.
5.L.V.2.b:	Explain the connection between roots, root words, affixes, and parts of speech to determine the meaning of words (e.g., discuss as a verb vs. discussion as a noun).
5.L.V.2.c:	Construct words using knowledge of Greek and Latin roots, root words, and affixes.

Texts Domain

Context

5.T.C.1.c:	Create multimodal texts, using features of pre-selected modes for a specific purpose and audience.

Structures & Style

5.T.SS.1.a:	Describe how text features (e.g., chapter titles, diagrams) and text structure (e.g., chapters, problem/solution) function in conjunction to represent ideas and information coherently in texts.
5.T.SS.1.b:	Design texts using a variety of text structures and features, according to purpose and audience.

Techniques: Students should be able to flexibly employ all techniques across writing exercises.

5.T.T.1.a:	Analyze the use of narrative techniques to present ideas, design texts, and convey information about characters, setting, and plot.
5.T.T.1.e:	Apply narrative techniques (e.g., character [protagonist and antagonist], setting, conflict, climax, resolution, and dialogue) to develop a real or imagined experience using descriptive details, clear event sequences, and a conclusion.
5.T.T.2.a:	Discuss and evaluate techniques used to present and design expository texts, including multiple main ideas, facts, and key details used to support the main idea.
5.T.T.4a:	Discuss and explain techniques used to present and design poetry, including rhyme and structure.

Research & Analysis

5.T.RA.1.a:	Generate questions about a self-selected topic of interest to be researched, asking probing questions to compare and contrast related topics.

Practices Domain

Author's Craft (AC)

K-12.AC.3.c:	Apply knowledge of how mode and genre impact how ideas and information are structured and arranged in texts.

Quarter 2 *Cumulative review of skills from quarter 1 will continue as new skills are introduced.*

Foundations Domain

Phonics

Review skills from quarter 1 as needed.

Fluency

5.F.F.1.c: Read a wide range of grade-level texts aloud with accurate and automatic prosody (phrasing, expression, juncture/pause, and intonation) to aid comprehension.

5.F.F.1.d: Self-correct while reading grade-level text (silently or aloud) to aid comprehension and fluency, rereading as necessary.

Handwriting

5.F.H.4.a: Produce texts using cursive writing legibly and efficiently.

5.F.H.4.b: Use appropriate spacing throughout the body of a text when writing in cursive.

Language Domain

Grammar, Usage, and Mechanics

3-5.L.GC.1:

- 1.29 Ensure pronoun-antecedent agreement.
- 1.42 Use intensive pronouns.
- 1.43 Form and use the progressive, perfect, and perfect progressive verb aspects.
- 1.44 Form and use participles.
- 1.45 Recognize and correct vague pronoun references.
- 1.54 Use conventional capitalization, quotation marks, commas, end punctuation, and parentheses (citations) when incorporating textual evidence.

Syntax

5.L.GC.2.c: Use correct subject and verb agreement to consistently achieve clarity in a variety of sentences.

Vocabulary

5.L.V.1.b: Use grade-level general, academic, and specialized vocabulary words and phrases to enhance communication in a variety of settings.

5.L.V.3.a: Use context (e.g., cause/effect relationships and comparisons in text) to determine or clarify the meaning of unknown and multiple-meaning words and phrases.

5.L.V.3.b: Identify analogies and use synonyms, antonyms, homophones, and homographs to clarify intended meaning.

Texts Domain

Context

5.T.C.1.a:	Determine audience and identify multiple purposes found across a text.
5.T.C.2.c:	Make inferences about the context in which the text is written (e.g., time period, individual, situational).

Structures & Style

5.T.SS.1.d:	Craft related ideas into cohesive paragraphs that follow a logical structure using transitions.

Techniques: Students should be able to flexibly employ all techniques across writing exercises.

5.T.T.1.b:	Analyze how setting, events, conflict, and characterization contribute to the plot.
5.T.T.2.b:	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.
5.T.T.2.c:	Compare and contrast first and secondhand accounts of the same event or topic using primary and/or secondary sources.
5.T.T.2.d:	Apply expository techniques that clearly introduce a topic, group paragraphs or sections to develop the topic with facts and other information (e.g., definitions, concrete details, quotations), use precise language, and provide a concluding statement or section.
5.T.T.3.a:	Discuss and evaluate techniques used to present and design opinion and argumentative texts, including author's opinion or claim, supporting reasons, and evidence.

Research & Analysis

5.T.RA.1.b:	Conduct research by locating, gathering, curating, and integrating information from multiple credible sources, including print, digital, and personal communication, about a self-selected topic.
5.T.RA.1.c:	Consider and integrate information from research, including relevant and accurate evidence from two or more credible sources.
5.T.RA.2.a:	Refer to specific passages or quotations from a text to support an idea, answer, or opinion, recording the referenced information's page number.
5.T.RA.2.b:	Determine credibility and relevance by assessing the strengths and weaknesses of source texts to support a topic or message.
5.T.RA.2.c:	Use basic parenthetical citations (AuthorLastName) to credit the source used.

Quarter 3 *Cumulative review of skills from quarters 1 and 2 will continue as new skills are introduced.*

Foundations Domain

Review skills from quarters 1 and 2 as needed.

Language Domain

Grammar, Usage, and Mechanics

3-5.L.GC.1:
- 1.28 Form and use comparative and superlative adjectives and adverbs.
- 1.38 Use indefinite pronouns, ensuring correct agreement.
- 1.39 Use subordinating conjunctions to join clauses.
- 1.46 Use correlative conjunctions to join words, phrases, or clauses.
- 1.47 Use conventional capitalization, quotation marks, commas, end punctuation, and attributions to indicate exact words and lines of dialogue.

Syntax

5.L.GC.2.d: Elaborate on ideas and information, using adjectives and adverbs when incorporating details and descriptions to convey precise meaning and engage audiences.

Vocabulary

5.L.V.3.c: Distinguish shades of meaning among related words, including verbs, adjectives, and/or adverbs, to clarify intended meaning.

5.L.V.3.e: Use knowledge of word relationships and learned vocabulary words and phrases to make precise word choices when speaking and writing.

Texts Domain

Context

5.T.C.2.a: Describe how a narrator or speaker's perspective influences the text.

Structures & Style

5.T.SS.1.c: Use conjunctions and transition words or phrases, such as similarly and in contrast, to show relationships between ideas and information.

5.T.SS.2.a: Describe the impact of the use of figurative language including of similes, metaphors, idioms, hyperboles, and personification in response to audience and purpose, in various modes and genres.

Techniques: Students should be able to flexibly employ all techniques across writing exercises.

5.T.T.1.c: Explain how a theme is demonstrated through a character's growth or conflict resolution.

5.T.T.1.d: Compare and contrast stories in the same genre (e.g., mysteries, adventures) from diverse cultures on their approaches to similar themes and topics.

5.T.T.3.c: Apply opinion techniques to create opinion pieces that introduce the topic, state an opinion about the topic, supply reasons and evidence to support the opinion with linking words (e.g., because, therefore, since, for example) to connec5.T.T.t the opinion and reasons, and provide a concluding statement or section.

Research & Analysis

Review skills from quarters 1 and 2 as needed.

Quarter 4 *Cumulative review of skills from quarters 1, 2, and 3 will continue as new skills are introduced.*

Foundations Domain

Review and continue skills from quarter 1.

Language Domain

Grammar, Usage, and Mechanics

3-5.L.GC.1:
- Use semicolons to separate items in a series or list when at least one of the items already contains commas.
- Use conventional capitalization and underlining, quotation marks, or italics to indicate titles of works in text and in a list of works cited.

Syntax

Review and continue skills from quarters 1, 2, and 3.

Vocabulary

5.L.V.3.d: Use print and digital reference materials (e.g., dictionaries, glossaries, thesauruses) to check spelling and determine or clarify the precise meaning of words and phrases.

Texts Domain

Context

5.T.C.1.b: Classify various texts by mode and describe how the mode is impacted by audiences and contributes to the overall purpose and effect.

Structures & Style

5.T.SS.2.b: Use figurative language for intentional effects when expressing ideas or conveying information.

Techniques: Students should be able to flexibly employ all techniques across writing exercises.

5.T.T.2.c: Compare and contrast first and secondhand accounts of the same event or topic using primary and/or secondary sources.

5.T.T.4.b: Apply poetic techniques (e.g., rhyme, rhyme scheme, structure) to produce different types of poetry (e.g., free verse, rhymed verse, haiku, limerick).

Research & Analysis

Review and continue skills from quarters 1, 2, and 3.

5th Grade
Science

Course Description

The Fifth Grade Cherokee Teaching & Learning Standards for Science engage students in investigations of scientific concepts. Students are active learners through hands-on activities to discover and explain phenomena. Students can conduct experiments and report their findings in the form of written reports, charts, and various other presentations including multi-media projects. Their scientific explanations emphasize evidence and begin to use scientific principles, models, and theories. Fifth graders use numerical data to describe and compare objects, convert fractions to decimals in scientific calculations, and identify the largest and smallest possible value of something. They use a variety of text resources to locate scientific information. Students at this grade level are able to identify the causes of some of Earth's surface features, explain the difference between a physical and a chemical change, investigate electricity and magnetism and the relationship between them, use scientific procedures to classify organisms, understand the difference between behaviors and traits, contrast the parts of animal and plant cells, and argue from evidence on how microorganisms can be beneficial or harmful to other organisms.

Science standards integrate the three dimensions of **Science and Engineering Practices (SEPs)**, **Crosscutting Concepts (CCCs)**, and **Disciplinary Core Ideas (DCIs)** to provide a comprehensive framework that emphasizes active engagement, interdisciplinary connections, and core scientific principles. Together, they show how science standards engage *students* in obtaining, evaluating, and communicating information.

<table>
<tr><th>Science and Engineering Practices</th><th>Crosscutting Concepts</th><th>Disciplinary Core Ideas</th></tr>
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<tr><td>Developing and Using Models</td></tr>
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<tr><td>Analyzing and Interpreting Data</td><td>Systems and System Models</td></tr>
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Flows, Cycles, and Conservation</td><td rowspan="2">Life Science (L)</td></tr>
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5th Grade
Science

Science and Engineering Practices are fundamental approaches that scientists and engineers use to investigate the natural world and solve practical problems. **Crosscutting Concepts** in science are overarching themes that bridge various disciplines, helping students and researchers see connections and deepen their understanding of the natural world. **Disciplinary Core Ideas** are fundamental concepts that students need to understand to develop a deep knowledge of science across various disciplines.

Semester 1 (August – December)

Unit 0 – Thinking Like a Scientist (1 week)

This unit aims to immerse fifth-grade students in the process of scientific inquiry, focusing on developing intermediate scientific thinking skills. Students will learn to design experiments, analyze data, and draw evidence-based conclusions. Throughout the unit, students will use more complex scientific vocabulary, formulate hypotheses, conduct controlled experiments, utilize a range of tools and technology to gather and analyze data, and effectively communicate their results and conclusions. Thinking Like a Scientist standards should continue to be embedded and developed throughout the course across the entire school year.

Overarching Standard for Unit 0

TLS3-5: Develop intermediate scientific thinking skills by designing experiments, analyzing data, and drawing evidence-based conclusions (e.g., engineering design process, problem-solving process, design challenges, etc.).

Supporting Standards for Student Mastery in Unit 0

TLS3-5.a: Use more complex scientific vocabulary such as data, claim, hypothesis, evidence, analyze, reasoning, variables, and justification.

TLS3-5.b: Formulate hypotheses and conduct controlled experiments.

TLS3-5.c: Use a range of tools and technology to gather, measure, explain, and analyze data. Read and interpret data in a graph to answer questions about totals and simple comparisons.

- Use of metric units begins in 4th grade.

TLS3-5.d: Collaborate and communicate results and conclusions effectively, using various formats (e.g., reports, presentations, argument boards).

Unit 1 – Earth and Changes Over Time (6 weeks)

In this unit, students will learn about the surface features of the Earth and the processes that shape them. Students will construct arguments to identify surface features, develop models to collect data and illustrate surface changes, and ask questions to understand how technology is used to limit and predict the impacts of constructive and destructive processes.

Overarching Standard for Unit 1

5E1: Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive and/or destructive processes.

5E1.a: Construct an argument supported by scientific evidence to identify surface features (examples could include deltas, sand dunes, mountains, volcanoes) as being caused by constructive and/or destructive processes (examples could include deposition, weathering, erosion, and impact of organisms).

Supporting Standards for Student Mastery in Unit 1

5E1.b: Develop simple interactive models to collect data that illustrate how changes in surface features are/were caused by constructive and/or destructive processes.

5E1.c: Ask questions to obtain information on how technology is used to limit and/or predict the impact of constructive and destructive processes.

(*Clarification statement*: Examples could include seismological studies, flood forecasting (GIS maps), engineering/ construction methods and materials, and infrared/satellite imagery.)

Milestones Achievement Level Descriptors for Unit 1

Beginning	Developing	Proficient	Distinguished
Can identify surface features of Earth.	Can recognize an argument supported by evidence to identify surface features of Earth as being caused by constructive or destructive processes.	Can construct an argument with evidence to identify surface features of Earth (deltas, sand dunes, mountains, volcanoes) as being caused by constructive or destructive processes.	Can analyze and compare evidence of surface features of Earth to describe how they are caused by constructive or destructive processes.
Can explain that changes in surface features are/were caused by constructive and/or destructive processes.	Can recognize simple models used to collect data that illustrate how changes in surface features are/were caused by constructive and/or destructive processes.	Can develop simple interactive models to collect data that illustrate how changes in surface features are/were caused by constructive and/or destructive processes.	Can develop complex interactive models to collect data that illustrate how changes in surface features are/were caused by constructive and/or destructive processes.
Can recognize that technology is used to limit and/or predict the impact of constructive and destructive processes.	Can explain that technology is used to limit and/or predict the impact of constructive and destructive processes.	Can ask questions to obtain information on how technology is used to limit and/or predict the impact of constructive and destructive processes.	Can analyze and compare how different forms of technology are used to limit and/or predict the impact of constructive and destructive processes.

Unit 2 – Classification and Traits (7 weeks)

In this unit, students will learn about scientific classification and the characteristics of organisms. Students will develop models to illustrate what classification patterns help sort plants and animals into groups. Students will also investigate cause and effect relationships to distinguish between inherited (those passed from parents to offspring) and acquired (those developed over an organism's life) traits.

Overarching Standards for Unit 2

5L1: Obtain, evaluate, and communicate information to group organisms using scientific classification procedures.

- Students can create dichotomous keys or other organizational charts showing how organisms are grouped by characteristics.

5L1.a: Develop a model that illustrates how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal) using data from multiple sources.

5L1.b: Develop a model that illustrates how plants are sorted into groups (seed producers, non-seed producers) using data from multiple sources.

5L2: Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited, and other characteristics are acquired.

5L2.a: Ask questions to compare and contrast instincts and learned behaviors.

5L2.b: Ask questions to compare and contrast inherited and acquired physical traits.

(*Clarification statement*: Punnett squares and genetics are taught in future grades.)

Milestones Achievement Level Descriptors for Unit 2

Beginning	Developing	Proficient	Distinguished
Can explain that animals are sorted into groups based on their characteristics.	Can recognize a model that illustrates how animals are sorted into groups and how vertebrates are sorted into groups using data.	Can develop a model that illustrates how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal) using data from multiple sources.	Can refine a model that illustrates how animals are sorted into groups and how vertebrates are sorted into groups using data from multiple sources of different types of data.
Can explain that plants are sorted into groups based on their characteristics.	Can recognize a model that illustrates how plants are sorted into groups using data.	Can develop a model that illustrates how plants are sorted into groups (seed producers, non-seed producers) using data from multiple sources.	Can compare models that illustrate how plants are sorted into groups using data from multiple sources.
Can identify the difference between instincts and learned behaviors.	Can compare and contrast instincts and learned behaviors.	Can ask questions to compare and contrast instincts and learned behaviors.	Can refine questions that can be used to compare and contrast instincts and learned behaviors.
Can identify the difference between inherited and acquired physical traits.	Can compare and contrast inherited and acquired physical traits.	Can ask questions to compare and inherited and acquired physical traits.	Can refine questions that can be used to compare and contrast inherited and acquired physical traits.

Unit 3 – Physical and Chemical Changes (4 weeks)

In this unit, students will learn to distinguish between physical and chemical changes through various investigations. Students will explore structure and properties of matter to construct arguments from evidence.

Overarching Standard for Unit 3

5P1: Obtain, evaluate, and communicate information to explain the differences between a physical change and a chemical change.

5P1.b: Construct an argument based on observations to support a claim that the physical changes in the state of water are due to temperature changes, which cause small particles that cannot be seen to move differently.

5P1.c: Plan and carry out an investigation to determine if a chemical change occurred based on observable evidence (color, gas, temperature change, odor, new substance produced).

Supporting Standards for Student Mastery in Unit 3

5P1.a: Plan and carry out investigations of physical changes by manipulating, separating, and mixing dry and liquid materials.

Milestones Achievement Level Descriptors for Unit 3

Beginning	Developing	Proficient	Distinguished
Can recognize physical changes in objects or substances.	Can identify investigations that can be used to explore physical changes by manipulating, separating, and mixing dry and liquid materials.	Can plan and carry out investigations of physical changes by manipulating, separating, and mixing dry and liquid materials.	Can refine investigations of physical changes.
Can recognize that water can change state.	Can recognize the physical changes in the state of water are due to temperature changes.	Can construct an argument based on observations to support a claim that the physical changes in the state of water are due to temperature changes, which cause small particles that cannot be seen to move differently.	Can evaluate claims to determine which one(s) best support(s) an argument that the physical changes in the state of water are due to temperature changes.
Can recognize evidence that can be used to prove that a chemical change occurred to a substance.	Can recognize an investigation that could be used to determine if a chemical change occurred based on observable evidence.	Can plan and carry out an investigation to determine if a chemical change occurred based on observable evidence (color, gas, temperature change, odor, new substance produced).	Can refine an investigation used to determine if a chemical change occurred based on observable evidence.

Semester 2 (January – May)

Unit 4 – Cells and Microorganisms (7 weeks)

In this unit, students will learn about the microscopic world of cells and microorganisms, including their structures and impacts on larger organisms. Students will gather evidence, develop models, and construct explanations/arguments from evidence. They will explore scale, proportion, and quantity as well as structure and function as they learn about the microscopic structures and the impacts of microorganisms.

Overarching Standards for Unit 4

5L3: Obtain, evaluate, and communicate information to compare and contrast the parts of plant and animal cells.

5L3.c: Construct an explanation that differentiates between the structure of plant and animal cells.

5L4: Obtain, evaluate, and communicate information about how microorganisms benefit or harm larger organisms.
(*Clarification statement*: Possible microorganisms could include Tardigrades, Lactobacillus, Probiotics, Rotifers, Salmonella, Clostridium botulinum (Botox), E-coli, Algae, etc. Students are not expected to know these specific microorganisms. The list is provided to give teachers examples.)

5L4.a: Construct an argument using scientific evidence to support a claim that some microorganisms are beneficial.

5L4.b: Construct an argument using scientific evidence to support a claim that some microorganisms are harmful.

Supporting Standards for Student Mastery in Unit 4

5L3.a: Gather evidence by utilizing technology tools (microscopes) to support a claim that plants and animals are comprised of cells too small to be seen without magnification.

5L3.b: Develop a model to identify and label parts of a plant cell (membrane, wall, cytoplasm, nucleus, chloroplasts) and of an animal cell (membrane, cytoplasm, and nucleus).

Milestones Achievement Level Descriptors for Unit 4

Beginning	Developing	Proficient	Distinguished
Can recognize that cells are too small to be seen without magnification.	Can identify how technology tools can be used to support a claim that plants and animals are comprised of cells too small to be seen without magnification.	Can gather evidence by utilizing technology tools to support a claim that plants and animals are comprised of cells too small to be seen without magnification.	Can analyze evidence collected utilizing technology tools to support a claim that plants and animals are comprised of cells too small to be seen without magnification.
Can recognize a plant cell and an animal cell.	Can identify and label the parts of a plant cell and an animal cell. Can compare the structures of plant and animal cells.	Can develop a model to identify and label parts of a plant cell (membrane, wall, cytoplasm, nucleus, chloroplasts) and of an animal cell (membrane, cytoplasm, and nucleus). Can construct an explanation that differentiates between the structure of plant and animal cells.	Can refine a model that shows the parts of a plant cell and of an animal cell. Can refine an explanation that differentiates between the structure of plant and animal cells.
Can recognize that microorganisms play different roles in natural systems.	Can explain that some microorganisms are beneficial and some are harmful.	Can construct an argument using scientific evidence to support a claim that some microorganisms are beneficial and some are harmful.	Can provide multiple examples of how microorganisms can be both beneficial and harmful to support a claim.

Unit 5 – Energy Transfer through Electricity and Magnetism (6 weeks)

In this unit, students will learn about electricity and magnetism, focusing on their properties, uses, and interrelationship. Students will design and conduct investigations to learn about the cause and effect principles of electricity and magnetism.

Overarching Standards for Unit 5

5P2: Obtain, evaluate, and communicate information to investigate electricity.

5P2.a: Obtain and combine information from multiple sources to explain the difference between naturally occurring electricity (static) and human-harnessed electricity.

5P2.b: Design a complete, simple electric circuit, and explain all necessary components.

5P3: Obtain, evaluate, and communicate information about magnetism and its relationship to electricity.

5P3.a: Construct an argument based on experimental evidence to communicate the differences in function and purpose of an electromagnet and a magnet.

(*Clarification statement*: Function is limited to understanding temporary and permanent magnetism.)

- Determine if an object is magnetic or not magnetic.

Supporting Standards for Student Mastery in Unit 5

5P2.c: Plan and carry out investigations on common materials to determine if they are insulators or conductors of electricity.

5P3.b: Plan and carry out an investigation to observe the interaction between a magnetic field and a magnetic object.

(*Clarification statement*: The interaction should include placing materials of various types (wood, paper, glass, metal, and rocks) and thickness between the magnet and the magnetic object.)

Milestones Achievement Level Descriptors for Unit 5

Beginning	Developing	Proficient	Distinguished
Can recognize the difference between naturally occurring electricity (static) and human-harnessed electricity.	Can explain the difference between naturally occurring electricity (static) and human-harnessed electricity.	Can obtain and combine information from multiple sources to explain the difference between naturally occurring electricity (static) and human-harnessed electricity.	Can analyze information from multiple sources to explain the difference between naturally occurring electricity (static) and human-harnessed electricity.
Can identify the components of a simple circuit.	Can design a complete, simple circuit.	Can design a complete, simple electric circuit, and explain all necessary components.	Can design a complete, simple electric circuit, and explain all necessary components.
Can identify a conductor and/or an insulator of electricity.	Can identify whether common materials are insulators or conductors of electricity.	Can plan and carry out investigations on common materials to determine if they are insulators or conductors of electricity.	Can refine investigations that use common materials to determine if they are insulators or conductors of electricity.
Can recognize a difference between an electromagnet and a magnet.	Can recognize the differences in function and purpose of an electromagnet and a magnet.	Can construct an argument based on experimental evidence that communicates the differences in function and purpose of an electromagnet and a magnet.	Can analyze an argument based on experimental evidence to determine if it accurately communicates the differences in function and purpose of an electromagnet and a magnet.
Can select an example that correctly shows the interaction between a magnetic field and a magnetic object.	Can describe the interaction between a magnetic field and a magnetic object.	Can play and carry out an investigation to observe the interaction between a magnetic field and a magnetic object.	Can refine an investigation used to observe the interaction between a magnetic field and a magnetic object.

Unit 6 – Milestones Review and Capstone Project (5 weeks)

This unit is designed to consolidate and reinforce the key scientific concepts and skills that fifth grade students have learned throughout the year. This intensive review period will help prepare students for the Georgia Milestones assessment by revisiting core standards through engaging, hands-on activities and comprehensive review sessions. The capstone project will provide an opportunity for students to apply their knowledge in a real-world context, demonstrating their understanding of scientific principles and their ability to communicate information effectively.

Overarching Standards for Unit 6

5E1. Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive and/or destructive processes.

5P1. Obtain, evaluate, and communicate information to explain the differences between a physical change and a chemical change.

5P2. Obtain, evaluate, and communicate information to investigate electricity.

5P3. Obtain, evaluate, and communicate information about magnetism and its relationship to electricity.

5L1. Obtain, evaluate, and communicate information to group organisms using scientific classification procedures.

5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.

5L3. Obtain, evaluate, and communicate information to compare and contrast the parts of plant and animal cells.

5L4. Obtain, evaluate, and communicate information about how microorganisms benefit or harm larger organisms.

5th Grade
Social Studies

United States History – Industrialization to the Digital Age

In fifth grade, students are in the final year of a three-year study of United States history in which all four strands (history, geography, civics/government, and economics) are integrated. Students begin the year learning about the growth of 19th century industry and innovation in the United States and culminate the study with the events and impact of September 11, 2001. The geography strand emphasizes the influence of geography on U.S. history during these same time periods. In the civics/government strand, students learn about the rights of citizens contained within the Constitution, and how changes have been made over time to the Constitution to protect the rights of citizens. In the economic strand, students explore the ways consumers and producers have interacted in the American economy.

Social Studies standards integrate the three dimensions of **Information Processing Skills (ISPs)**, **Map and Globe Skills (MGSs)**, and **Disciplinary Domains (DDs)** to provide a comprehensive framework that emphasizes active engagement, interdisciplinary connections, and K-12 Connecting Themes and Enduring Understandings. Together, they show how social studies standards engage *students* in obtaining, evaluating, and communicating information.

Information Processing Skills	Map and Globe Skills	Disciplinary Domains
IPS. 1: **Compare** similarities and differences (A)	**MGS.1:** Introduce the use of a compass rose to successfully identify cardinal directions (north, south, east, west). (A)	Historical Understandings (H)
IPS. 2: **Organize** items chronologically (A)	**MGS.2:** Introduce the use of intermediate directions when describing location (northeast, southeast, northwest, southwest). (A)	
IPS.3: **Identify** issues and/or problems and alternative solutions (M)	**MGS.3:** Use a letter/number grid system to determine location. (A)	
IPS.4: Distinguish between facts and opinion. (A)	**MGS.4:** Compare and contrast the categories of natural, cultural, and political features on a map. (A)	Geographic Understandings (G)
IPS.5: Identify main idea, detail, sequence of events, and cause and effect in a social studies context. (A)	**MGS.5:** Use graphic scales to determine distances on a map. (M)	
IPS.6: Identify and use primary and secondary sources. (A)	**MGS.6:** Use a map key/legend to acquire information from historical, physical, political, resource, product, and economic maps. (A)	

IPS.7: Interpret timelines, charts, and tables. (A)	**MGS.7:** Use a map to explain the impact of geography on historical and current events. (A)	Government/Civic Understandings (CG)
IPS.8: Identify social studies reference resources to use for a specific purpose. (A)	**MGS.8:** Draw conclusions and make generalizations based on information from maps. (A)	
IPS.9: Construct charts and tables. (A)	**MGS.9:** Use latitude and longitude to determine location. (D)	
IPS.10: Analyze artifacts. (M)		
IPS.11: Draw conclusions and make generalizations. (A)		
IPS.12: Analyze graphs and diagrams. (M)		
IPS.13: Translate dates into centuries, eras, or ages. (M)	**MGS.10:** Compare maps of the same place at different points in time and from different perspectives to determine changes, identify trends and generalize about human activities. (M)	Economic Understandings (E)
IPS.14: Formulate appropriate research questions. (M)	**MGS.11:** Compare maps with data sets (charts, tables, graphs) and/or readings to draw conclusions and make generalizations. (M)	
IPS.15: Determine adequacy and/or relevancy of information. (M)		
IPS.16: Check for consistency of information. (M)		
IPS.17: Interpret political cartoons. (D)		

The goal of the **Information Processing Skills (IPS)** is for a student to be able to locate, analyze, and synthesize information related to social studies topics and apply this information to solve problems and/or make decisions. Students are working to master these skills over multiple grade levels. **Map and Globe Skills (MGS)** are the expected skills that a student should successfully use to retrieve social studies information from maps. The expected level of mastery for IPS and MGS are indicated by one of the following letters in parentheses: Introduced (I), Developing (D), Mastery (M), and Application (A). **Disciplinary Domains** are the four areas of fundamental concepts that students need to understand to develop a deep knowledge of social studies.

Semester 1 (August – December)

Unit 1 – Connecting Themes

Students will be reviewing Year 1 and Year 2 of the United States history study in preparation for the final content presented in Year 3.

Students will make connections and inferences using prior knowledge about the next events in the sequence.

IPS.5: Identify main idea, detail, sequence of events, and cause and effect in a social studies context.

IPS.2: Organize items chronologically.

IPS.7: Interpret timelines, charts, and tables.

IPS.11: Draw conclusions and make generalizations.

Unit 2 – Citizenship, Business & The Government (4 weeks)

CG1: Explain how a citizen's rights are protected under the U.S. Constitution.

CG2: Explain the process by which amendments to the U.S. Constitution are made.

CG3: Explain how amendments to the U. S. Constitution have maintained a representative democracy/republic.

CG1.a: Explain the responsibilities of a citizen.

CG1.b: Explain the concept of due process of law and describe how the U.S. Constitution protects a citizen's rights by due process.

CG2.a: Explain the amendment process outlined in the Constitution.

CG2.b: Describe the purpose for the amendment process.

CG3.a: Explain how voting rights are protected by the 15th, 19th, 23rd, 24th, and 26th amendments.

Unit 3 – Economics: Building a Budget – (4 weeks)

E2: Describe the functions of four major sectors in the U. S. economy.

E3: Describe how consumers and producers interact in the U. S. economy.

E4: Identify the elements of a personal budget (income, expenditures, and saving) and explain why personal spending and saving decisions are important.

E2.a: Describe the household function in providing resources and consuming goods and services.

E2.b: Describe the private business function in producing goods and services.

E2.c: Describe the bank function in providing checking accounts, savings accounts, and loans.

E2.d: Describe the government function in taxation and providing certain public goods and public services.

E3.a: Describe how competition, markets, and prices influence consumer behavior.

E3.b: Describe how people earn income by selling their labor to businesses.

E3.c: Describe how entrepreneurs take risks to develop new goods and services to start a business.

Unit 4 – Bigger, Better, Faster: The Changing Nation (4 weeks)

H1: Describe how life changed in America at the turn of the century.

H1.a: Describe the role of the cattle trails in the late 19th century; include the Black Cowboys of Texas, the Great Western Cattle Trail, and the Chisholm Trail.

H1.b: Describe the impact on American life of the Wright brothers (flight), George Washington Carver (science), Alexander Graham Bell (communication), and Thomas Edison (electricity).

H1.c: Explain how William McKinley and Theodore Roosevelt expanded America's role in the world; include the Spanish-American War and the building of the Panama Canal.

H1.d: Describe the reasons people immigrated to the United States, from where they emigrated, and where they settled.

G1.a: Locate important man-made places in the United States - the Chisholm Trail; Pittsburgh, PA; Kitty Hawk, NC; ~~Pearl Harbor, HI;~~ Chicago, IL.

G2.a: Locate primary agricultural and industrial locations between the end of the Civil War and 1900 and explain how factors such as population, transportation, and resources have influenced these areas (e.g., Pittsburgh's rapid growth in the late nineteenth century).

G2.b: Locate primary agricultural and industrial locations since the turn of the 20th century and explain how factors such as population, transportation, and resources have influenced these areas (e.g., Chicago's rapid growth at the turn of the century).

E1.b: Explain how price incentives affect people's behavior and choices (e.g., decisions to participate in cattle trails because of increased beef prices).

E1.d: Describe how trade and voluntary exchange promotes economic activity (e.g., how the Panama Canal increases trade among countries).

MGS.3: Use a letter/number grid system to determine location.

MGS.6: Use a map key/legend to acquire information from historical, physical, political, resource, product, and economic maps.

MGS.7: Use a map to explain the impact of geography on historical and current events.

MGS.8: Draw conclusions and make generalizations based on information from maps.

MGS.9: Use latitude and longitude to determine location.

MGS10: Compare maps of the same place at different points in time and from different perspectives to determine changes, identify trends, and generalize about human activities.

MSG11: Compare maps with data sets (charts, tables, graphs) and/or readings to draw conclusions and make generalizations.

Unit 5 – War and Prosperity: World War I & The 1920s (5 weeks)

H2: Describe U.S. involvement in World War I and post-World War I America.

H2.a: Explain how German attacks on U.S. shipping during the war in Europe (1914-1917) ultimately led the U.S. to join the fight against Germany; include the sinking of the Lusitania and concerns over safety of U.S. ships, U.S. contributions to the war, and the impact of the Treaty of Versailles in 1919.

H2.b: Describe the cultural developments and individual contributions in the 1920s of the Jazz Age (Louis Armstrong), the Harlem Renaissance (Langston Hughes), baseball (Babe Ruth), the automobile (Henry Ford), and transatlantic flight (Charles Lindbergh)

CG1.a: Explain the responsibilities of a citizen.

CG1.b: Explain the concept of due process of law and describe how the U.S. Constitution protects a citizen's rights by due process.

CG2.b: Describe the purpose for the amendment process.

CG3.a: Explain how voting rights are protected by the 15th, 19th, 23rd, 24th, and 26th amendments.

E1.c: Describe how specialization can improve standards of living and productivity (e.g., how Henry Ford's use of the assembly line reduced the price of automobiles).

Semester 2 (January – May)

Unit 6 – The Great Depression and the New Deal (3 weeks)

H3: Explain how the Great Depression and New Deal affected the lives of millions of Americans.

H3.a: Discuss the Stock Market Crash of 1929, Herbert Hoover, Franklin Roosevelt, the Dust Bowl, and soup kitchens.

H3.b: Analyze the main features of the New Deal; include the significance of the Civilian Conservation Corps, Works Progress Administration, and the Tennessee Valley Authority.

H3.c: Discuss important cultural elements of the 1930s; include Duke Ellington, Margaret Mitchell, and Jesse Owens.

Unit 7 – Another World War (4 weeks)

H4: Explain America's involvement in World War II.

H4.a: Describe German aggression in Europe and Japanese aggression in Asia.

H4.b: Describe major events in the war in both Europe and the Pacific; include Pearl Harbor, Iwo Jima, D-Day, VE and VJ Days, and the Holocaust.

H4.c: Discuss President Truman's decision to drop the atomic bombs on Hiroshima and Nagasaki.

H4.d: Identify Roosevelt, Stalin, Churchill, Hirohito, Truman, Mussolini, and Hitler.

H4.e: Describe the effects of rationing and the changing role of women and African Americans or Blacks; include "Rosie the Riveter" and the Tuskegee Airmen.

H4.f: Explain the role of Eleanor Roosevelt and the U.S. in the formation of the United Nations.

G1.a: Locate important man-made places in the United States – ~~the Chisholm Trail; Pittsburgh, PA; Kitty Hawk, NC;~~ Pearl Harbor, HI; ~~Chicago, IL~~.

E1.a: Describe opportunity costs and their relationship to decision-making across time (e.g., decisions by individuals in response to rationing during WWII).

MGS.3: Use a letter/number grid system to determine location.

MGS.6: Use a map key/legend to acquire information from historical, physical, political, resource, product, and economic maps.

MGS.9: Use latitude and longitude to determine location.

MGS10: Compare maps of the same place at different points in time and from different perspectives to determine changes, identify trends, and generalize about human activities.

Unit 8 – War Turns Cold (4 weeks)

H5: Discuss the origins and consequences of the Cold War.

H5.a: Explain the origin and meaning of the term "Iron Curtain."

H5.b: Explain how the United States sought to stop the spread of communism through the Berlin airlift, the Korean War, and the North Atlantic Treaty Organization.

H5.c: Identify Joseph McCarthy and Nikita Khrushchev.

H5.d: Discuss the importance of the Cuban Missile Crisis and the Vietnam War.

CG1.a: Explain the responsibilities of a citizen.

CG1.b: Explain the concept of due process of law and describe how the U.S. Constitution protects a citizen's rights by due process.

CG2.b: Describe the purpose for the amendment process.

CG3.a: Explain how voting rights are protected by the 15th, 19th, 23rd, 24th, and 26th amendments.

Unit 9 – Civil Rights address civil wrongs (4 weeks)

H6: Describe the importance of key people, events, and developments between 1950 – 1975.

H6.a: Analyze the effects of Jim Crow laws and practices.

H6.b: Explain the key events and people of the Civil Rights movement: *Brown v. Board of Education* (1954), Montgomery Bus Boycott, the March on Washington, Civil Rights Act, Voting Rights Act, and civil rights activities of Thurgood Marshall, Lyndon B. Johnson, Cesar Chavez, Rosa Parks, and Martin Luther King, Jr.

H6.c: Describe the impact on American society of the assassinations of President John F. Kennedy, Robert F. Kennedy, and Martin Luther King, Jr.

H6.d: Discuss the significance of the technologies of television and space exploration.

CG1.a: Explain the responsibilities of a citizen.

CG1.b: Explain the concept of due process of law and describe how the U.S. Constitution protects a citizen's rights by due process.

CG2.b: Describe the purpose for the amendment process.

CG3.a: Explain how voting rights are protected by the 15th, 19th, 23rd, 24th, and 26th amendments.

Unit 10 – United States from 1975 to the Digital Age (3 weeks)

H7: Trace important developments in America from 1975 to 2001.

H7.a: Describe the collapse of the Soviet Union, including the role of Ronald Reagan.

H7.b: Describe the events of September 11, 2001, and analyze their impact on American life.

H7.c: Explain the impact of the personal computer and the Internet on American life.

Year Long Mathematical Practices (MP):

Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration, and expression. Seek help and apply feedback. Set and monitor goals.

MP.1 – Make sense of problems and persevere in solving them.

MP.2 – Reason abstractly and quantitatively

MP.3 – Construct viable arguments and critique reasoning of others.

MP.4 – Model with mathematics.

MP.5 – Use appropriate tools strategically.

MP.6 – Attend to precision.

MP.7 – Look for and make use of structure.

MP.8 – Look for and express regularity in repeated reasoning.

Semester 1 (August – December)

Unit 1 – Building Conceptual Understanding of Place Value and Working with Decimals to Solve Problems (4 - 5 weeks)

In Unit 1, students will explore and explain patterns when multiplying and dividing by powers of 10. Extending their fourth-grade understanding that a digit in one place represents ten times the value of the same digit in the place to its right, students build on this reasoning as they learn that a digit in one place represents $\frac{1}{10}$ of what that same digit represents in the place to its left. Students use their understanding of place value to locate, compare, and order decimals to the thousandths place. They will use place value reasoning to round decimals to the tenths and hundredths places. Students will extend their understanding of whole number operations to add and subtract decimals using representations and strategies based on place value and properties of operations.

Overarching Standards for Unit 1

NR.1: Use place value understanding to solve real-life, mathematical problems.

NR.4: Read, write, and compare decimal numbers to the thousandths place. Round and perform operations with decimal numbers to the hundredths place to solve relevant, mathematical problems.

Standards for Student Mastery for Unit 1

NR.1.1: Explain that in a multi-digit number, a digit in a specific place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.

NR.1.2: Explain patterns in the placement of digits when multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10, up to 10^3 .

NR.4.1: Read and write decimal numbers to the thousandths place using base-ten numerals written in standard form and expanded form.

NR.4.2: Represent, compare, and order decimal numbers to the thousandths place based on the meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

NR.4.3: Use place value understanding to round decimal numbers to the nearest whole, tenth, or hundredth.

NR.4.4: Solve problems involving addition and subtraction of decimal numbers to the hundredths place using a variety of strategies.

Unit 2 – Extending Place Value Understanding Using Measurement and Data Reasoning (3 - 4 weeks)

In this unit, students will apply their understanding of place value and patterns when multiplying and dividing by powers of 10 to convert within the same measurement system. Students will also ask and answer statistical questions about metric measurements, customary measurements, and time.

Overarching Standards for Unit 2

MDR.7: Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.

Standards for Student Mastery for Unit 2

MDR.7.1: Explore realistic problems involving different units of measurement, including distance, mass, weight, capacity, and time.

MDR.7.2: Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

MDR.7.3: Convert among units within the metric system. Apply these conversions to solve multistep, practical problems.

MDR.7.4: Convert among units within relative sizes of measurement units within the customary measurement system.

Unit 3 – Building Conceptual Understanding of Multiplication & Division with Whole Numbers (5 - 6 weeks)

In Unit 3, students build on previous learning to multiply and divide multi-digit whole numbers using place value understanding, properties of operations, and the relationship between multiplication and division. Students also apply their understanding of the four operations to write, interpret, and evaluate numerical expressions.

Overarching Standards for Unit 3

NR.2: Multiply and divide multi-digit whole numbers to solve real-life, mathematical problems.
NR.5: Write, interpret, and evaluate numerical expressions within real-life problems.

Standards for Student Mastery for Unit 3

NR.2.1: Multiply multi-digit (up to 3-digit by 2-digit) whole numbers fluently to solve real-life problems.
NR.2.2: Divide multi-digit whole numbers (up to 4- digit dividends and 2-digit divisors no greater than 25) fluently to solve real-life problems.

NR.5.1: Write, interpret, and evaluate simple numerical expressions involving whole numbers with or without grouping symbols to represent real-life situations.

Unit 4 – Investigating Volume of Solid Figures (3 - 4 weeks)

In this unit, students are introduced to volume as a measurable attribute of solid figures by building on their understandings of area and multiplication. Students begin by making sense of volume by building objects and counting the cubes, then analyzing images of prisms constructed of unit cubes and analyzing their structure. Students observe that multiplying the number of cubes in one layer by the number of layers of cubes gives the volume. Students recognize that the number of cubes in one layer represents the area of a rectangle. Students then generalize that they can use the product of the area of the base and the height of a rectangular prism to determine its volume and write expressions to represent the volume.

Overarching Standards for Unit 4

GSR.8: Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.

NR.5: Write, interpret, and evaluate numerical expressions within real-life problems.

Standards for Student Mastery for Unit 4

GSR.8.3: Investigate volume of right rectangular prisms by packing them with unit cubes without gaps or overlaps. Then, determine the total volume to solve problems.

GSR.8.4: Discover and explain how the volume of a right rectangular prism can be found by multiplying the area of the base times the height to solve real-life, mathematical problems.

NR.5.1: Write, interpret, and evaluate simple numerical expressions involving whole numbers with or without grouping symbols to represent real-life situations involving volume of right rectangular prisms.

Semester 2 (January – May)

Unit 5 – Building Fraction Understanding (5 - 6 weeks)

In Unit 5, students will compare and order fractions and add and subtract fractions with unlike denominators. Students will extend their understanding of linear representations and use number lines to solve problems with dot plots showing measurements with 1/2, 1/4, and 1/8. Students will also ask and answer statistical questions by collecting, organizing, and interpreting data.

Overarching Standards for Unit 5

NR.3: Describe fractions and perform operations with fractions to solve real-life, mathematical problems using part whole strategies and visual models.

MDR.7: Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.

Standards for Student Mastery for Unit 5

NR.3.2: Compare and order up to three fractions with different numerators and/or different denominators using a variety of tools and strategies.

NR.3.3: Model and solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators.

MDR.7.2: Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems involving fractions relevant to everyday life.

Unit 6 – Making Sense of Fraction Multiplication and Division (4 - 5 weeks)

In this unit, students solve problems involving division of whole numbers with answers that are fractions (which could be in the form of mixed numbers). They develop an understanding of fractions as the division of the numerator by the denominator. Building upon prior knowledge of multiplying and dividing with whole numbers in terms of equal-sized groups, students will use multiplication to represent equal-sized groups of fractional amounts. They will use properties of operations to solve problems that involve the multiplication of a whole number by a fraction or mixed number. Students will make sense of division of fractions from situations that involve a whole number and a unit fraction and recall that division can be understood in terms of finding the number of equal-sized groups or finding the size of each group. Students will use multiplicative comparison to compare the size of a product of a fraction and a whole number to the size of one of the factors.

Overarching Standards for Unit 6

NR.3: Describe fractions and perform operations with fractions to solve real-life, mathematical problems using part whole strategies and visual models.

Standards for Student Mastery for Unit 6

NR.3.1: Explain the meaning of a fraction as division of the numerator by the denominator ($\frac{a}{b}$ = a ÷ b). Solve problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.

NR.3.4: Model and solve problems involving multiplication of a fraction and a whole number.

NR.3.5: Explain why multiplying a whole number by a fraction greater than one results in a product greater than the whole number. Explain why multiplying a whole number by a fraction less than one results in a product less than the whole number. Explain why multiplying a whole number by a fraction equal to one results in a product equal to the whole number.

NR.3.6: Model and solve problems involving division of a unit fraction by a whole number and a whole number by a unit fraction.

Unit 7– Exploring Geometry and the Coordinate Plane (5 - 6 weeks)

In this unit, students are introduced to the structure of the coordinate grid and the convention/notation of coordinates to name points. This unit also allows students the opportunity to build on their understanding of shapes by classifying, comparing, and contrasting polygons based on their properties. In their work with patterns, students generate two different numerical patterns and identify relationships between the corresponding terms within those patterns.

Overarching Standards for Unit 7

PAR.6: Solve real-life problems by creating and analyzing numerical patterns using the given rule(s).

GSR.8: Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.

Standards for Student Mastery for Unit 7

PAR.6.1: Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms by completing a table.

PAR.6.2: Represent problems by plotting ordered pairs. Interpret coordinate values of points in the first quadrant of the coordinate plane.

GSR.8.1: Classify, compare, and contrast polygons based on properties.

GSR.8.2: Determine, through exploration and investigation, that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

Unit 8 – Culminating Task (1 - 2 weeks)

The culminating task allows students to apply content learned in previous units throughout the school year while engaging in open-ended, inquiry-based learning. This task should invite students to investigate a real-world mathematical problem using the Mathematical Modeling Framework and/or the Framework for Statistical Reasoning. Students will demonstrate deep understanding of the standards by creating a presentation, report, or demonstration that answers an overarching driving question.

Overarching Standards for Unit 8

NR.1: Use place value understanding to solve real-life, mathematical problems.
NR.2: Multiply and divide multi-digit whole numbers to solve real-life, mathematical problems.
NR.3: Describe fractions and perform operations with fractions to solve real-life, mathematical problems using part whole strategies and visual models.
NR.4: Read, write, and compare decimal numbers to the thousandths place. Round and perform operations with decimal numbers to the hundredths place to solve real-life, mathematical problems.
NR.5: Write, interpret, and evaluate numerical expressions within real-life problems.
MDR.7: Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.
PAR.6: Solve real-life problems by creating and analyzing numerical patterns using the given rule(s).
GSR.8: Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.

Standards for Student Mastery for Unit 8

ALL associated learning objectives.