Quinton Township School District
Science
Grade 2
[Pacing Guide]

Unit	1	**Unit Title:**	Relationships in Habitats	**Pacing:**	27 Days

Unit Summary: In this unit of study, students develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination. Students also compare the diversity of life in different habitats. The crosscutting concepts of *cause and effect* and *structure and function* are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in planning and carrying out investigations and developing and using models. Students are also expected to use these practices to demonstrate understanding of the core ideas. Students will also examine how climate change impacts environments and how field biologists support animal habitats. They will watch a video from Asian American WWF expert Nilanga Jayasinghe. @ #

Essential Questions:
Why do we see different living things in different habitats?

Objectives:
- Identify what plants need to live and grow.
- Observe and recognize that plants depend on water and light. Predict and investigate the growth of plants when the amount of light is altered.
- Plan and conduct an investigation to determine whether plants need water to grow. Use evidence from an investigation to explain what happens if plants do not get water.
- Explain how plants depend on animals for pollination.
- Explain why plants and humans depend on bees for pollination. Recognize why a decline in the bee population is a problem and identify possible solutions.
- Describe how animals help move a plant's seed.

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● Develop a model that shows how animals disperse seeds. Conduct an investigation using the model and revise the model as necessary. ● Recognize that living things exist everywhere. Identify some living things that live on land and in water. ● Describe the living and nonliving things on the sandy coast. ● Describe how living things depend on their habitat for survival. ● Describe a wetland habitat. Identify living things in a wetland. ● Describe a grassland habitat and some living things that are found there. ● Observe and interpret a map to compare the diversity of living things in different African habitats. ● Connect the concepts of wildlife and habitat conservation with the work of a field biologist.
NJSLS-Science Standards: 2-LS4-1, 2-LS2-1, 2-LS2-2, and K-2-ETS1-1

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Planning and Carrying Out Investigations Make observations (firsthand or from media) to collect data that can be used to make comparisons. **Asking Questions and Defining Problems** Ask questions based on observations to find more information about the natural and/or designed world(s). Define a simple problem that can be solved through the development of a new or improved object or tool. **Developing and Using Models**	**Biodiversity and Humans** There are many different kinds of living things in any area, and they exist in different places on land and in water. **Interdependent Relationships in Ecosystems** Plants depend on water and light to grow. Plants depend on animals for pollination or to move their seeds around. **Developing Possible Solutions** Designs can be conveyed through sketches, drawings, or physical models. These	**Patterns** Scientists look for patterns and order when making observations about the world.

Develop a simple model based on evidence to represent a proposed object or tool.	representations are useful in communicating ideas for a problem's solutions to other people. **Defining and Delimiting Engineering Problems** A situation that people want to change or create can be approached as a problem to be solved through engineering. Asking questions, making observations, and gathering information are helpful in thinking about problems.	

Interdisciplinary Connections: W.WR.2.5, SL.PE.2.1

Career Readiness, Life Literacies, and Key Skills: 9.1.2.CR.2, 9.4.2.CT.1

Computer Science and Design Thinking: 9.4.2.DC.7, 8.1.2.DA.3

Career Education: 9.2.2.CAP.1, 9.2.2.CAP.3

Overview of Activity/Focus	Instructional Materials	Technology Infusion
• Using firsthand observations and media resources, students explore and collect data about different habitats that exist in the world and how plants and animals have structures that help them survive in their habitats. • Evaluate data for patterns in the structures that enable organisms to support their existence in specific habitats.	**Core Materials** *National Geographic Science* **Supplemental Resources** Mystery Science Little Science Thinkers	Smart Board Applications Google Applications Chromebooks Gizmo IXL

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• Grow plants in different conditions to conduct an investigation about plant needs for water and light, collecting data on each constraint. • After reviewing media resources to learn about bees' role in pollination and animals' role in seed dispersal, design and develop simple models that mimic the function of an animal in dispersing seeds or pollinating plants. • Using multimedia resources, develop a description of wildlife biologists' contributions to conservation, noting the work of Asian American WWF expert Nilanga Jayasinghe. @ #	PBS Learning Media NatGeo Science Video: Elephants & Ecosystem	

Assessments	
Formative Assessments • Class Discussions • Self Assessment • Science Investigation Data Collection	**Summative Assessments** • Model of Seed Dispersal or Pollination • Post-investigation Oral Assessments • Final Project
Benchmark Assessments • District-assigned Benchmark Assessments (e.g. LinkIt, content-specific benchmarks)	**Alternative Assessments** • Alternative Choice Projects • Oral Assessments

Differentiation			
Special Education	**MLL**	**At Risk**	**Gifted and Talented**
• Modify and accommodate as listed in student IEP or 504 plan. • Communicate clear, concise directions and repeat, reword,	• Basic Skills Instruction • Speech/Language Therapy • Rosetta Stone • Provide English/Native Language Dictionary for use.	• Basic Skills Instruction • Provide after-school tutoring services. • Hold fall and spring parent conferences.	• Allow self-directed learning for growth though independent projects. • Challenge students with age-appropriate texts at

modify as necessary. ● Use visual aids in lessons. ● Utilize extended time and/or reduce item number for homework and tests. ● Vary formative assessment styles to drive next point of instruction. ● Create modified assessments. ● Allow students to utilize online audio books, when appropriate. ● Allow for collaboration through strategically selected groups. ● Utilize assistive technology as appropriate. ● Utilize graphic organizers. ● Provide and model sentence frames/sentence starters. ● Utilize manipulatives as necessary. ● Provide breaks to allow for refocusing as necessary.	● Place with native-language-speaking teacher/paraprofessional as available. ● Use target words and cognates to understand texts. ● Remind students to underline passages and list words they don't understand. ● Learn/Utilize/Display some words in the students' native language. ● Provide and model sentence frames to help students participate in discussion. ● Provide word banks to help students write. ● Translate printed communications in native language for parents. ● Hold conferences with translator present.	● Make modifications to instructional plans based on I and RS Plan. ● Utilize wait time effectively. ● Develop a record system to encourage good behavior and completion of work. ● Utilize scaffolding to support instruction. ● Provide counseling if necessary to help students cope with challenges. ● Utilize strategic grouping with a positive academic role model. ● Utilize graphic organizers.	higher reading levels. ● Allow for the development and application of productive thinking skills to enable students to re-conceptualize existing knowledge and/or generate new knowledge. ● Provide for the development of self-understanding of one's relationships with people, societal institutions, nature and culture.

Quinton Township School District
Science
Grade 2

Unit	2	Unit Title:	Structure and Properties of Matter	Pacing:	15 Days
Unit Summary: In this unit of study, students demonstrate an understanding of observable properties of materials through analysis and classification of different materials. The crosscutting concepts of *patterns*, *cause and effect*, and the influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in planning and carrying out investigations and analyzing and interpreting data. Students are also expected to use these practices to demonstrate understanding of the core ideas. They also learn about materials science as a career path.					
Essential Questions: How do the properties of materials determine their use? How can we sort objects into groups that have similar patterns?					
Objectives: ● Explain that everything is made of matter and that different kinds of matter exist. ● Describe the properties of a liquid, including that water is a liquid when the temperature is above freezing. ● Identify solids as a kind of matter and describe the properties of solids. ● Observe solids and liquids in different containers, concluding that a solid has definite shape and a liquid takes the shape of its container. ● Describe that matter can be described and classified by its properties. ● Explain that color is a property of matter. ● Define texture and recognize that is a property of matter that can be observed and described. ● Describe objects as hard or soft. ● Recognize bending and stretching as characteristics of flexibility, a property of materials.					

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- Recognize that the ability to sink or float is a property of objects.
- Plan and conduct an investigation to observe and classify objects based on their properties.
- Make predictions about the absorption of different materials. Draw evidence-based conclusions about which materials absorb the most water.
- Describe how large objects can be built from many small pieces.
- Identify water in its solid and liquid states. Describe how water changes when it is cooled.
- Describe how ice changes when it is heated. Recognize that freezing and melting can happen over and over again.
- Recognize that heating causes some changes to matter that can not be reserved.
- Construct an argument based on evidence that some changes caused by heating or cooling can be reserved and some cannot.
- Connect the concepts of matter, properties, and change in matter with the work of a materials scientist.

NJSLS-Science Standards: 2-PS1-1, 2-PS1-2, K-2-ETS1-3

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Planning and Carrying Out Investigations Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. **Analyzing and Interpreting Data** Analyze data from tests of an object or tool to determine if it works as intended.	**Structure and Properties of Matter** Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. Different properties are suited to different purposes. **Optimizing the Design Solution** Because there is always more than one possible solution to a problem, it is useful to compare and test designs.	**Patterns** Patterns in the natural and human designed world can be observed and used as evidence. **Cause and Effect** Simple tests can be designed to gather evidence to support or refute student ideas about causes.

Interdisciplinary Connections: W.WR.1.5, 6.1.2.CivicsCM.2

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Career Readiness, Life Literacies, and Key Skills: 9.4.2.CI.1, 9.4.2.CT.1, 9.4.2.CT.2, 9.4.2.CT.3		
Computer Science and Design Thinking: : 8.1.2.DA.3, 8.1.2.NI.1		
Career Education: 9.2.2.CAP.1, 9.2.2.CAP.3		
Overview of Activity/Focus	**Instructional Materials**	**Technology Infusion**
● Conduct experiments on materials' properties, such as shaking rocks in a container to see how easily they break apart or exploring viscosity by pouring a set amount of various liquids, such as glue, oil, and water from one container to another to observe the relative speed that each flows. Record evidence and draw conclusions. ● After reading stories or watching videos, engage in the engineering and design process by investigating which materials make the best structure. Examples would be designing a bridge for a toy car or a marble roller coaster. #	**Core Materials** *National Geographic Science* **Supplemental Resources** Mystery Science videos & activities Little Science Thinkers PBS Learning Media NatGeo Science Lesson: Exploring Reversible Changes of State and Exploring Irreversible Changes of State Lesson: Discovering Science: classifying and categorizing Jack Hartman Matter Song	Smart Board Applications Google Applications Chromebooks Gizmo IXL Science Games: Properties of Matter
Assessments		
Formative Assessments ● Class Discussions	**Summative Assessments** ● Materials Structure Group Projects	

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● Materials and Properties of Matter Investigation Data ● Exit Tickets ● Journal Responses	● Post-investigation Oral Assessments ● Unit Assessment
Benchmark Assessments ● District-assigned Benchmark Assessments (e.g. LinkIt, content-specific benchmarks)	**Alternative Assessments** ● Alternative Choice Projects ● Oral Assessments

Differentiation			
Special Education	**MLL**	**At Risk**	**Gifted and Talented**
● Modify and accommodate as listed in student IEP or 504 plan. ● Utilize wait time effectively. ● Communicate clear, concise directions and repeat, reword, modify as necessary. ● Use visual aids during lessons and small-group time. ● Utilize open-ended questioning techniques. ● Utilize extended time and/or reduce number of items given for homework, quizzes, and tests. ● Vary formative assessment styles to drive next point of instruction. ● Create modified assessments. ● Allow students to utilize online audio books, when appropriate. ● Allow for collaboration through strategically selected	● Basic Skills Instruction ● Speech/Language Therapy ● Rosetta Stone ● Provide English/Native Language Dictionary for use. ● Place with native-language-speaking teacher/paraprofessional as available. ● Use target words and cognates to understand texts. ● Remind students to underline passages and list words they don't understand. ● Learn/Utilize/Display some words in the students' native language. ● Provide and model sentence frames to help students participate in discussion. ● Provide word banks to help students write. ● Translate printed communications in native language for parents. ● Hold conferences with	● Basic Skills Instruction ● Provide after-school tutoring services. ● Hold fall and spring parent conferences. ● Make modifications to instructional plans based on I and RS Plan. ● Utilize wait time effectively. ● Develop a record system to encourage good behavior and completion of work. ● Utilize scaffolding to support instruction. ● Provide counseling if necessary to help students cope with challenges. ● Utilize strategic grouping with a positive academic role model. ● Utilize graphic organizers.	● self-directed learning for growth though independent projects. ● Challenge students with age-appropriate texts at higher reading levels. ● Allow for the development and application of productive thinking skills to enable students to re-conceptualize existing knowledge and/or generate new knowledge. ● Provide for the development of self-understanding of one's relationships with people, societal institutions, nature and culture.

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groups. • Utilize assistive technology as appropriate. • Utilize graphic organizers. • Provide and model sentence frames/sentence starters. • Utilize manipulatives as necessary. • Provide breaks to allow for refocusing as necessary.	translator present.		

Quinton Township School District
Science
Grade 2

Unit	3	Unit Title:	Changes to Matter	Pacing:	11 Days

Unit Summary: In this unit of study, students continue to develop an understanding of observable properties of materials through analysis and classification of different materials. The crosscutting concepts of *cause and effect* and *energy and matter* are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in *constructing explanations*, *designing solutions*, and *engaging in argument from evidence*. Students are also expected to use these practices to demonstrate understanding of the core ideas. Students will also explore Watts Tower, an immigrant-created landmark in the predominantly black LA neighborhood. *** ()**

Essential Questions:

How can objects change?
Are all changes reversible?

Objectives:

- Explain that objects may break into smaller pieces and be put together into larger pieces or change shapes.
- 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.
- Construct an argument with evidence to support a claim.
- Recognize kinds of matter exist and many of them can be either solid or liquid, depending on temperature.
- Describe and classify matter by its observable properties.

NJSLS-Science Standards: 2-PS1-3 and 2-PS1-4

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Analyzing and Interpreting Data	**Structure and Properties of Matter**	**Cause and Effect**

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Analyze and interpret data to make sense of phenomena using logical reasoning. **Constructing Explanations and Designing Solutions** Make observations (firsthand or frommedia) to construct an evidence-based account for natural phenomena. **Engaging in Argument from Evidence** Construct an argument with evidence to support a claim.	Different properties are suited to different purposes. A great variety of objects can be built up from a small set of pieces. **Chemical Reactions** Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.	Events have causes that generate observable patterns. **Energy and Matter** Objects may break into smaller pieces and be put together into larger pieces, or change shapes.

Interdisciplinary Connections: 6.1.2.CivicsCM.2, W.WR.2.5, SL.PI.2.4

Career Readiness, Life Literacies, and Key Skills: 9.1.2.CR.1, 9.4.2.CT.1, 9.4.2.CT.2

Computer Science and Design Thinking: 9.4.2.DC.7, 8.1.2.DA.1

Overview of Activity/Focus	Instructional Materials	Technology Infusion
• Watch video and read about Watts Tower, discussing its creation and meaning to the community.* **()** • Using blocks, building bricks, and other small objects such as Legos, student groups build an object, and then a second student group takes apart the object and builds another using those same small blocks or bricks, documenting the process in their science journals, explaining how they went about reconstructing the	**Core Materials** *National Geographic Science* **Supplemental Resources** Mystery Science videos & activities Little Science Thinkers PBS Learning Media	Smart Board Applications Google Applications Chromebooks Gizmo IXL

pieces into a new object. • With close supervision and guidance by teachers, students investigate heating or cooling changes, such as melting butter, chocolate chips, or pieces of crayon; freezing water; and melting ice. Through video, observe an egg before and after cooking or a small piece of paper or cardboard before and after burning to determine if changes are always reversible.	NatGeo Science Video: Watts Tower Read Aloud: *Watts Tower* Magic School Bus: Get Ready, Get Set, Dough	

Assessments	
Formative Assessments • Class Discussions • Recorded Observations of Predictions, Changes, and Results • Exit Tickets • Journal Responses	**Summative Assessments** • Post-investigation Oral Assessments • Unit Assessment
Benchmark Assessments • District-assigned Benchmark Assessments (e.g. LinkIt, content-specific benchmarks)	**Alternative Assessments** • Alternative Choice Projects • Oral Assessments

Differentiation			
Special Education	**MLL**	**At Risk**	**Gifted and Talented**
• **Modify and accommodate as listed in student IEP or 504 plan.** • **Communicate clear, concise directions and repeat, reword, modify as necessary.**	• **Basic Skills Instruction** • **Speech/Language Therapy** • **Rosetta Stone** • **Provide English/Native Language Dictionary for use.** • **Place with**	• **Basic Skills Instruction** • **Provide after-school tutoring services.** • **Hold fall and spring parent conferences.** • **Make modifications to**	• **self-directed learning for growth though independent projects.** • **Challenge students with age-appropriate texts at higher reading levels.**

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• **Use visual aids in instruction.** • **Utilize extended time and/or reduce number of items given for homework, quizzes, and tests.** • **Vary formative assessment styles to drive next point of instruction.** • **Create modified assessments.** • **Allow students to utilize online audio books, when appropriate.** • **Utilize assistive technology as appropriate.** • **Utilize graphic organizers.** • **Provide and model sentence frames/sentence starters.** • **Utilize manipulatives as necessary.** • **Provide breaks to allow for refocusing as necessary.**	**native-language-speaking teacher/paraprofessional as available.** • **Use target words and cognates to understand texts.** • **Remind students to underline passages and list words they don't understand.** • **Learn/Utilize/Display some words in the students' native language.** • **Provide and model sentence frames to help students participate in discussion.** • **Provide word banks to help students write.** • **Translate printed communications in native language for parents.** • **Hold conferences with translator present.**	**instructional plans based on I and RS Plan.** • **Utilize wait time effectively.** • **Develop a record system to encourage good behavior and completion of work.** • **Utilize scaffolding to support instruction.** • **Provide counseling if necessary to help students cope with challenges.** • **Utilize strategic grouping with a positive academic role model.** • **Utilize graphic organizers.**	• **Allow for the development and application of productive thinking skills to enable students to re-conceptualize existing knowledge and/or generate new knowledge.** • **Provide for the development of self-understanding of one's relationships with people, societal institutions, nature and culture.**

Quinton Township School District
Science
Grade 2

Unit	4	Unit Title:	Earth's Land & Water	Pacing:	15 Days

Unit Summary: In this unit of study, students use information and models to identify and represent the shapes and kinds of land and bodies of water in an area and where water is found on Earth. The crosscutting concept of *patterns* is called out as an organizing concept for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in *developing and using models* and *obtaining, evaluating, and communicating information*. Students are also expected to use these practices to demonstrate understanding of the core ideas. They will also examine the role of specialized climate scientists called glaciologists. #

Essential Questions:
Where do we find water?

Objectives:
- Explain how rivers form and connect to the ocean.
- Explain that water is found in lakes and ponds.
- Describe how lakes and ponds form.
- Develop a model to represent the shapes and kinds of land and bodies of water in an area.
- Explain how their model helps them understand how land is shaped.
- Describe Earth's water that exists as solid ice.
- Obtain information from a map to identify where solid and liquid water can be found on Earth
- Connect the concept of looking for patterns and order when making observations about the world with the career of a glaciologist.

NJSLS-Science Standards: 2-ESS2-3 and 2-ESS2-2

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts

Obtaining, Evaluating, and Communicating Information Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. **Developing and Using Models** Develop a model to represent patterns in the natural world.	**The Roles of Water in Earth's Surface Processes** Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. **Plate Tectonics and Large-Scale System Interactions** Maps show where things are located. One can map the shapes and kinds of land and water in any area.	**Patterns** Patterns in the natural world can be observed.

Interdisciplinary Connections: W.IW.2.2, 2.DL.A.1, 6.1.2.Geo.SV.1, 6.1.2.Geo.SV.3, 6.1.2.Geo.HE.1

Career Readiness, Life Literacies, and Key Skills: 9.4.2.CT.1

Computer Science and Design Thinking: 9.4.2.DC.7, 9.4.2.IML.1, 9.4.2.IML.2, 8.1.2.DA.1

Career Education: 9.2.2.CAP.1, 9.2.2.CAP.2

Overview of Activity/Focus	Instructional Materials	Technology Infusion
• Using texts, maps, globes, and other resources (including appropriate online resources), students explain where water is found in liquid form (e.g. oceans, rivers, lakes, and ponds) and in solid form (e.g. snowcaps and glaciers). • Using firsthand observations and media resources, students identify patterns among the types of landforms	**Core Materials** *National Geographic Science* **Supplemental Resources** Mystery Science videos & activities Little Science Thinkers	Smart Board Applications Google Applications Chromebooks Gizmo IXL

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and bodies of water. • Draw/create a basic map of New Jersey, showing various landforms (e.g., hills, coastlines, and islands) and bodies of water (e.g., rivers, lakes, ponds, and the ocean). • Watch videos about glaciologists and discuss their role in helping the environment. #	PBS Learning Media NatGeo Science	

Assessments	
Formative Assessments • Class Discussions • Recorded Observations of Water Around the World • Design Process Discussions and Prototype Drafts • Exit Tickets • Journal Responses	**Summative Assessments** • Completed Map Project • Post-investigation Oral Assessments • Unit Assessment
Benchmark Assessments • District-assigned Benchmark Assessments (e.g. LinkIt, content-specific benchmarks)	**Alternative Assessments** • Alternative Choice Projects • Oral Assessments

Differentiation			
Special Education	**MLL**	**At Risk**	**Gifted and Talented**
• Modify and accommodate as listed in student IEP or 504 plan. • Communicate clear, concise directions and repeat, reword, modify as necessary. • Use visual aids in instruction. • Utilize extended time and/or reduce number of items given	• Basic Skills Instruction • Speech/Language Therapy • Rosetta Stone • Provide English/Native Language Dictionary for use. • Place with native-language-speaking teacher/paraprofessional as available.	• Basic Skills Instruction • Provide after-school tutoring services. • Hold fall and spring parent conferences. • Make modifications to instructional plans based on I and RS Plan. • Utilize wait time effectively.	• self-directed learning for growth though independent projects. • Challenge students with age-appropriate texts at higher reading levels. • Allow for the development and application of productive thinking skills to enable

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for homework, quizzes, and tests. • Vary formative assessment styles to drive next point of instruction. • Create modified assessments. • Allow students to utilize online audio books, when appropriate. • Allow for collaboration through strategically selected groups. • Utilize assistive technology as appropriate. • Utilize graphic organizers. • Provide and model sentence frames/sentence starters. • Utilize manipulatives as necessary. • Provide breaks to allow for refocusing as necessary.	• Use target words and cognates to understand texts. • Remind students to underline passages and list words they don't understand. • Learn/Utilize/Display some words in the students' native language. • Provide and model sentence frames to help students participate in discussion. • Provide word banks to help students write. • Translate printed communications in native language for parents. • Hold conferences with translator present.	• Develop a record system to encourage good behavior and completion of work. • Utilize scaffolding to support instruction. • Provide counseling if necessary to help students cope with challenges. • Utilize strategic grouping with a positive academic role model. • Utilize graphic organizers.	students to re-conceptualize existing knowledge and/or generate new knowledge. • Provide for the development of self-understanding of one's relationships with people, societal institutions, nature and culture.

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Science
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Unit	5	Unit Title:	Changes to Earth's Land	Pacing:	22 Days
Unit Summary: In this unit of study, students apply their understanding of the idea that wind and water can change the shape of land to compare design solutions to slow or prevent such change. The crosscutting concepts of *stability and change; structure and function*; and *the influence of engineering, technology, and science on society and the natural world* are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in asking questions and defining problems, developing and using models, and constructing explanations and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas. #					
Essential Questions: In what ways do humans slow or prevent wind or water from changing the shape of the land?					
Objectives: ● Describe what happens during an earthquake. ● Explain how volcanic eruptions can cause rapid change to Earth's surface. ● Explain how wind and water can change the shape of the land. ● Recognize that some events happen very quickly and others occur very slowly. ● Devise a way to slow or prevent erosion of the soil. ● Observe pictures of Earth events to determine whether an event happened quickly or slowly. ● Cite evidence drawn from the pictures to support their interpretation. ● Identify a problem caused by an Earth event that happens quickly. ● Identify the solution to a problem caused by water changing the shape of the land. ● Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. ● Interpret the symbols on a map to identify the shapes and kinds of land and water shown.					

NJSLS-Science Standards: 2-ESS1-1, 2-ESS2-1, K-2-ETS1-1, and K-2-ETS1-2		
Science and Engineering Practices	**Disciplinary Core Ideas**	**Crosscutting Concepts**
Constructing Explanations and Designing Solutions Make observations from several sources to construct an evidence-based account for natural phenomena. Compare multiple solutions to a problem. **Asking Questions and Defining Problems** Ask questions based on observations to find more information about the natural and/or designed world(s). Define a simple problem that can be solved through the development of a new or improved object or tool. **Developing and Using Models** Develop a simple model based on evidence to represent a proposed object or tool.	**The History of Planet Earth** Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. **Earth Materials and Systems** Wind and water can change the shape of the land. **Defining and Delimiting Engineering Problems** A situation that people want to change or create can be approached as a problem to be solved through engineering. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem. **Developing Possible Solutions** Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**Stability and Change** Things may change slowly or rapidly. **Structure and Function** The shape and stability of structures of natural and designed objects are related to their function(s). **Influence of Engineering, Technology, and Science on Society and the Natural World** Developing and using technology has impacts on the natural world.

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Interdisciplinary Connections: W.WR.2.5, SL.PE.2.1, 6.1.2.Geo.SV.1, 6.1.2.Geo.SV.3, 6.1.2.Geo.HE.1

Career Readiness, Life Literacies, and Key Skills: 9.1.2.CR.1, 9.1.2.CR.2, 9.4.2.CT.1, 9.4.2.CT.2

Computer Science and Design Thinking: 9.4.2.DC.7, 9.4.2.TL.7, 8.1.2.DA.4

Overview of Activity/Focus	Instructional Materials	Technology Infusion
● As a class, brainstorm a list of natural Earth events, such as volcanoes, earthquakes, tsunamis, or floods. Select one Earth event to research in order to gather more information. ● Conduct research on the selected Earth event using books and other reliable sources, gathering information about the problems caused by the selected event and ways in which humans have minimized the effects of the chosen earth event. ● Through nature walks and multimedia look for examples in the community of ways that humans have minimized the effect of natural Earth events. # ● Working in groups, select one solution found through research and develop a simple sketch, drawing, or physical model to illustrate how it minimizes the effects of the selected Earth event. ● Present to class.	**Core Materials** *National Geographic Science* **Supplemental Resources** Mystery Science videos & activities Little Science Thinkers PBS Learning Media NatGeo Science Lesson: Changing the Shape of Land Video: Wind and Water Whoosh	Smart Board Applications Google Applications Chromebooks Gizmo IXL

Assessments	
Formative Assessments ● Class Discussions	**Summative Assessments** ● Presentations

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● Recorded Human Impact Research ● Exit Tickets ● Journal Responses	● Post-investigation Oral Assessments ● Unit Assessment
Benchmark Assessments ● District-assigned Benchmark Assessments (e.g. LinkIt, content-specific benchmarks)	**Alternative Assessments** ● Alternative Choice Projects ● Oral Assessments

Differentiation			
Special Education	**MLL**	**At Risk**	**Gifted and Talented**
● Modify and accommodate as listed in student IEP or 504 plan. ● Communicate clear, concise directions and repeat, reword, modify as necessary. ● Use visual aids in instruction. ● Utilize extended time and/or reduce number of items given for homework, quizzes, and tests. ● Vary formative assessment styles to drive next point of instruction. ● Create modified assessments. ● Allow students to utilize online audio books, when appropriate. ● Allow for collaboration through strategically selected groups. ● Utilize assistive technology as appropriate. ● Utilize graphic organizers. ● Provide and model sentence	● Basic Skills Instruction ● Speech/Language Therapy ● Rosetta Stone ● Provide English/Native Language Dictionary for use. ● Place with native-language-speaking teacher/paraprofessional as available. ● Use target words and cognates to understand texts. ● Remind students to underline passages and list words they don't understand. ● Learn/Utilize/Display some words in the students' native language. ● Provide and model sentence frames to help students participate in discussion. ● Provide word banks to help students write. ● Translate printed communications in native language for parents. ● Hold conferences with	● Basic Skills Instruction ● Provide after-school tutoring services. ● Hold fall and spring parent conferences. ● Make modifications to instructional plans based on I and RS Plan. ● Utilize wait time effectively. ● Develop a record system to encourage good behavior and completion of work. ● Utilize scaffolding to support instruction. ● Provide counseling if necessary to help students cope with challenges. ● Utilize strategic grouping with a positive academic role model. ● Utilize graphic organizers.	● self-directed learning for growth though independent projects. ● Challenge students with age-appropriate texts at higher reading levels. ● Allow for the development and application of productive thinking skills to enable students to re-conceptualize existing knowledge and/or generate new knowledge. ● Provide for the development of self-understanding of one's relationships with people, societal institutions, nature and culture.

Key: *Amistad ^Holocaust #Climate Change ()DEI @AAPI

frames/sentence starters. • Utilize manipulatives as necessary. • Provide breaks to allow for refocusing as necessary.	translator present.		

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