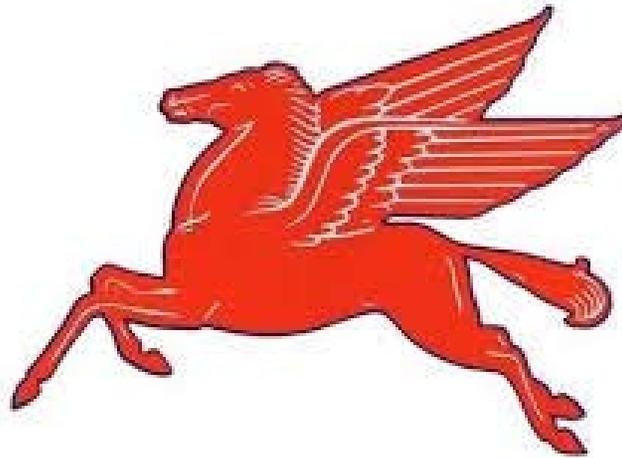


# Curriculum Management System

*PAULSBORO PUBLIC SCHOOLS*



**Science Curriculum- Second Grade**

**UPDATED JUNE 2016**

For adoption by all regular education programs as specified and for adoption or adaptation by all Special Education Programs in accordance with Board of Education Policy.

Board Approved: August 2016

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# **Paulsboro Public Schools**

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# **Paulsboro Public Schools**

## **Mission Statement**

The mission of the Paulsboro School District is to provide each student the educational opportunities to assist in attaining their full potential in a democratic society. Our instructional programs will take place in a responsive, community based school system that fosters respect among all people. Our expectation is that all students will achieve the New Jersey Core Curriculum Content Standards (NJCCCS) at every grade level.

# New Jersey State Department of Education 21st Century College and Career Readiness Standards

## **The 12 Career Ready Practices**

These practices outline the skills that all individuals need to have to truly be adaptable, reflective, and proactive in life and careers. These are researched practices that are essential to career readiness.

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP3. Attend to personal health and financial well-being.
- CRP4. Communicate clearly and effectively and with reason.
- CRP5. Consider the environmental, social and economic impacts of decisions.
- CRP6. Demonstrate creativity and innovation.
- CRP7. Employ valid and reliable research strategies.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP9. Model integrity, ethical leadership and effective management.
- CRP10. Plan education and career paths aligned to personal goals.
- CRP11. Use technology to enhance productivity.
- CRP12. Work productively in teams while using cultural global competence.

## **MODIFICATIONS**

### **Special Education:**

Students Hands on activity, cooperative learning, peer tutoring, extended time, reteach in utilizing various methods. Utilize remediation resources which include assessment and intervention, in planning and instruction.

### **English Language Learners:**

Provide hands-on activities and explanations. Use reduced text, so that print is not so dense. Assess comprehension through demonstration or other alternative means (gestures, drawings). Give instructions/directions in writing and orally. Use of translation dictionaries to locate words in the native language.

Use English Learners resources such as study guides, assessments and a visual glossary.

### **At-Risk Students:**

Hands on activities cooperative learning, reteach using various methods. Make use of remediation lessons and quizzes when appropriate.

### **Gifted and Talented Students:**

Utilize Pre-AP Resources such as the pacing, assignment and best practices guide.

<b>Reading Unit</b>	<b>Reading Standards</b>	<b>Writing Unit</b>	<b>Writing Standards</b>	<b>Speaking &amp; Listening Standards</b>	<b>Language Standards</b>	<b>Foundational Skills Standards</b>
Taking Charge of Reading	RL.2.1, RL.2.5, RL.2.7	Launching Writing Workshop	W.2.3, W.2.5	SL.2.1, SL.2.3	L.2.1a L.2.2a	RF.2.3a, b RF.2.4a,c
Tackling Trouble	RI.2.2, RI.2.4	Narrative	W.2.3, W.2.5	SL.2.1, SL.2.3	L.2.1a L.2.2a, L.2.4a, d	RF.2.3a,b,c RF.2.4a
Characters Face Bigger Challenges	RL.2.3, RL.2.7	Narrative: Small Moments	W.2.3, W.2.8	SL.2.4, SL.2.6	L.2.1b,c,d L.2.2b, L.2.5a	RF.2.3a,b RF.2.4
Non Fiction	RI.2.1, RI.2.4, RI.2.7, RI.2.8	Non Fiction Chapter Books	W.2.2, W.2.6, W.2.7	SL.2.2	L.2.2d,e L.2.3	RF.2.3e RF.2.4
Series Reading/ Reading Clubs	RI.2.1, RL.2.6	Writing About Reading	W.2.2, W.2.5, W.2.8	SL.2.1, S.2.2	L.2.1b,e L.2.2a, c, L.2.5b	RF.2.3e RF.2.4
Poetry/ Fables	RI.2.1, RL.2.2, RL.2.4, RL.2.9	Poetry	W.2.2, W.2.5, W.2.8	SL.2.5	L.2.2a,c L.2.4e	RF.e,f RF.2.4
Nonfiction Reading Clubs	RI.2.1, RI.2.3, RI.2.5, RI.2.7, RI.2.9, RL.2.5	Non Fiction Opinion	W.2.1, W.2.5	SL.2.2, SL.2.5	L.2.1f, L.2.4b,c, L.2.6	RF.2.3d RF.2.4
Reading & Role Playing	RL.2.1, RL.2.2, RL.2.3, RL.2.9, RL.2.10, RI.2.8	Realistic Fiction/ Opinion	W.2.1, W.2.5	SL.2.1, SL.2.4	L.2.2c, L.2.5	RF.2.3 RF.2.4
Science Topics	RI.2.6, RI.2.10	Lab Reports & Science Books/ Opinon	W.2.1, W.2.6, W.2.8	SL.2.3, SL.2.6	L.2.4, L.2.6	RF.2.3 RF.2.4

## Scope and Sequence

### Quarter 1 - Grade 2

**Relationships in Habitats** - 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.

**Big Idea: Understanding of how does the diversity of plants and animals compare among different habitats. (NJ DOE Unit 1)**

(INTERACTIVE SCIENCE: Students learn about different plants and animals habitats in Chapter 3, Lesson 4, “Where do plants and animals live?” on SE/TE pages 94-99. On SE/TE page 94, Inquiry: Explore It!, students investigate what kind of plant can live in deserts. On TE page 99 Science Notebook, students illustrate and write about different habitats, the plants and animals that live there, and how they depend on each other to fulfill their needs. On TE page 99b, Lesson Check, students identify different habitats and their characteristics. In STEM Building a Bug Box, Quick Lab: “Where Are the Insects?” on page 1B-2B, students make observations of an insect and its habitat).

**Big Idea: Understanding of what plants need to live and grow. (NJ DOE**

**Unit 1)** (INTERACTIVE SCIENCE: Students learn about different plants and animals habitats in Chapter 3, Lesson 4, “Where do plants and animals live?” on SE/TE pages 94-99. On SE/TE page 94, Inquiry: Explore It!, students investigate what kind of plant can live in deserts. On TE page 99 Science Notebook, students illustrate and write about different habitats, the plants and animals that live there, and how they depend on each other to fulfill their needs. On TE page 99b, Lesson Check, students identify different habitats and their characteristics. In STEM Building a Bug Box, Quick Lab: “Where Are the Insects?” on page 1B-2B, students make observations of an insect and its habitat).

**Big Idea: Understanding of the relationship between plants and animals for reproduction. (NJ DOE Unit 1)**

(INTERACTIVE SCIENCE: Students learn about different plants and animals habitats in Chapter 3, Lesson 4, “Where do plants and animals live?” on SE/TE pages 94-99. On SE/TE page 94, Inquiry: Explore It!, students investigate what kind of plant can live in deserts. On TE page 99 Science Notebook, students illustrate and write about different habitats, the plants and animals that live there, and how they depend on each other to fulfill their needs. On TE page 99b, Lesson Check, students identify different habitats and their characteristics. In STEM Building a Bug Box, Quick Lab: “Where Are the Insects?” on page 1B-2B, students make observations of an insect and its habitat).

## Scope and Sequence

## Quarter 2 - Grade \_2\_

**Properties to Matter-** 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.

**Big Idea: Understanding that some materials can be a solid or a liquid and objects can be sorted into groups based on their patterns.** (NJ DOE unit 2) (INTERACTIVE SCIENCE: Students obtain information about properties of matter in Chapter 8, Lesson 1, “What are some properties of matter?” on SE/TE pages 274-281. Students classify matter as metal or nonmetal and identify a classification, #4, in “Inquiry: Explore It” on SE/TE page 274. They record the properties of objects at home in “At-Home Lab” on SE/TE page 276. In Science Notebook on TE only page 279, students describe objects by their properties. In the Lesson 1, lesson check on TE only page 281b, students identify three properties of an object).

**Big Idea: Understanding that every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.** (NJ DOE unit 2)

INTERACTIVE SCIENCE: Students make observations about matter they change in Chapter 8, Explore It! SE/TE page 288. They learn about small pieces of matter being reconstructed to create a new object in “Mold It, Fold It, Tear It, Bend It” on SE/TE page 290. In Lesson Check, TE only page 293b, students tell and draw ways to change objects. In the Hands-on Inquiry, STEM Designing Recycled Paper, page 4P, students make observations as they change clay and explain results. In Plan and Draw, STEM pages 7P-8P, students make observations as they create an object of small pieces, recycled paper.

## Quarter 3 - Grade   2

**Matter – Students** 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.

**Big Idea: 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.** (NJ DOE Unit 3) INTERACTIVE SCIENCE: Students make observations about matter they change in Chapter 8, Explore It! SE/TE page 288. They learn about small pieces of matter being reconstructed to create a new object in “Mold It, Fold It, Tear It, Bend It” on SE/TE page 290. In Lesson Check, TE only page 293b, students tell and draw ways to change objects. In the Hands-on Inquiry, STEM Designing Recycled Paper, page 4P, students make observations as they change clay and explain results. In Plan and Draw, STEM pages 7P-8P, students make observations as they create an object of small pieces, recycled paper.

**Big Idea: Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.** (NJ

Doe Unit 3) NTERACTIVE SCIENCE: Students learn about irreversible changes caused by heating in Chapter 8, Lesson 3, “Other Ways Matter Can Change” on SE/TE page 291. Students gain knowledge about cooling changes in Lesson 4, “How can water change?” on SE/TE pages 296- 297. Students investigate an irreversible change in “Inquiry: Investigate It” on SE/TE pages 298-299.

## Scope and Sequence

## Quarter 4 - Grade   2

## **Planet Earth**

**Big Idea:** 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. They 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 patterns, stability and change; structure and function; and the influence of engineering, technology, and science on society and the natural world as the 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.

### **Big Idea: Obtain information to identify where water is found on Earth and that it can be solid or liquid. (NJ DOE Unit 4) INTERACTIVE**

SCIENCE: Students obtain information about where water is found on Earth in Chapter 5, Lesson 4, “What are some kinds of land and water?” on SE/TE page 183 and 184, 186-187. In the Science to Math activity on page 186, students visually represent the area of the earth covered by oceans. Students obtain information about water being solid or liquid in Chapter 8, Lesson 4, “How can water change?” on SE TE pages 294-297. The Lesson Check on TE page 297b allows students to apply their knowledge about solids and liquids.

### **Big Idea: Develop a model to represent the shapes and kinds of land and bodies of water in an area. (NJ DOE unit 4) INTERACTIVE SCIENCE:**

Students gain knowledge of landforms and bodies of water in Chapter 5, Lesson 4, “What are some kinds of land and water?” on SE/TE pages 182-187. In “At-Home Lab” on SE/TE page 184 students illustrate land forms and write a comparison. On TE page 185, 21st Century Learning, students develop models of landforms using clay and markers that they share with the class. In Differentiated Instruction, TE page 187, students create models of different bodies of water by creating books and dictionaries. In the Lesson Check, TE page 187b, students apply their knowledge of landforms and bodies.

### **Big Idea: Use information from several sources to provide evidence that Earth events can occur quickly or slowly. (NJ DOE unit 5) INTERACTIVE**

SCIENCE: Students learn about erosion, weathering and deposition in Grade 3, Chapter 6, Lesson 6, “What are weathering and erosion?” on SE/TE pages 250-255.

### **Big Idea: Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land (NJ DOE unit 5)**

INTERACTIVE SCIENCE: Students learn about erosion, weathering and deposition in Grade 3, Chapter 6, Lesson 6, “What are weathering and erosion?” on SE/TE pages 250-255.

## QUARTER 1 - 6 days

**Big Idea: Understanding of how the diversity of plants and animals compare among different habitats.**

**Topic: Relationships and Habitats**

<p><b>Standards:</b> <b>2-LS4-1.</b> Make observations of plants and animals to compare the diversity of life in different habitats. [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]</p> <p><b>2-LS2-1.</b> Plan and conduct an investigation to determine if plants need sunlight and water to grow. [Assessment Boundary: Assessment is limited to testing one variable at a time.]</p> <p><b>2-LS2-2.</b> Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p> <p><b>K-2-ETS1-1.</b> Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p><b>Common Core State Standards Connections:</b>  <b>ELA/Literacy</b> - Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-LS2-1) W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-LS2-1), (K-2-ETS1-1) W.2.8</b> Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <b>(2-LS2-2) SL.2.5</b> With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(K-2-ETS1-1) W.2.6</b> Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. <b>(K-2-ETS1-1) RI.2.1</b></p> <p><b>Mathematics</b>- Reason abstractly and quantitatively. <b>(2-LS2-1), (K-2-ETS1-1) MP.2</b> Model with mathematics. <b>(2-LS2-1), (2-LS2-2), (K-2-ETS1-1) MP.4</b> Use appropriate tools strategically. <b>(2-LS2-1), (K-2-ETS1-1) MP.5</b> Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <b>(2-LS2-2) 2.MD.D.10</b></p> <p><b>Career Ready Practices - CRP4.</b> Communicate clearly and effectively and with reason. <b>CRP5.</b> Consider the environmental, social and economic impacts of decisions. <b>CRP6.</b> Demonstrate creativity and innovation. <b>CRP7.</b> Employ valid and reliable research strategies. <b>CRP8.</b> Utilize critical thinking to make sense of problems and persevere in solving them. <b>CRP11.</b> Use technology to enhance productivity. <b>CRP12.</b> Work productively in teams while using cultural global competence.</p>	<b>GOAL</b>	
	Students will be able to look for patterns and order when making observations about the world, make observations (firsthand or from media) to collect data that can be used to make comparisons and make observations of plants and animals to compare the diversity of life in different habitats.	
	<b>Essential Questions</b>	<b>Assessments</b>
	<ol style="list-style-type: none"> <li>1. What do people look for when making observations?</li> <li>2. How does the diversity of plants and animals compare among different habitats?</li> </ol>	<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
<b>Enduring Understanding</b>	<b>Resources</b>	
<ol style="list-style-type: none"> <li>1. People look for patterns and order when making observations about the world.</li> <li>2. There are many different kinds of living things in any area, and they exist in different places on land and in water.</li> </ol>	<p>Interactive Science Series            Trade Books/Classroom Library            Assorted Manipulatives            NJ DOE Model Curriculum            NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a>            NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>	

<p><b>QUARTER 1 - 6 days</b></p> <p><b>Big Idea: Understandn of what plants need to live and grow.</b></p> <p><b>Topic: Relationships and Habitats</b></p>		
<p><b>Standards:</b> <b>2-LS4-1.</b> Make observations of plants and animals to compare the diversity of life in different habitats. [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]</p> <p><b>2-LS2-1.</b> Plan and conduct an investigation to determine if plants need sunlight and water to grow. [Assessment Boundary: Assessment is limited to testing one variable at a time.]</p> <p><b>2-LS2-2.</b> Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p> <p><b>K-2- ETS1-1.</b> Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA/Literacy</b> - Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-LS2-1) W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-LS2-1),(K-2-ETS1-1) W.2.8</b> Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <b>(2-LS2-2) SL.2.5</b> With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(K-2-ETS1-1) W.2.6</b> Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. <b>(K-2-ETS1-1) RI.2.1</b></p> <p><b>Mathematics</b> - Reason abstractly and quantitatively. <b>(2-LS2-1),(K-2-ETS1-1) MP.2</b> Model with mathematics. <b>(2-LS2-1),(2-LS2-2),(K-2-ETS1-1) MP.4</b> Use appropriate tools strategically. <b>(2-LS2-1),(K-2-ETS1-1) MP.5</b> Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <b>(2-LS2-2) 2.MD.D.10</b></p> <p><b>Career Ready Practices - CRP4.</b> Communicate clearly and effectively and with reason. <b>CRP5.</b> Consider the environmental, social and economic impacts of decisions. <b>CRP6.</b> Demonstrate creativity and innovation. <b>CRP7.</b> Employ valid and reliable research strategies. <b>CRP8.</b> Utilize critical thinking to make sense of problems and persevere in solving them. <b>CRP11.</b> Use technology to enhance productivity. <b>CRP12.</b> Work productively in teams while using cultural global competence.</p>	<p><b>GOAL</b></p>	
	<p>Students will be able to observe patterns in events generated by cause-and-effect relationships, plan and conduct an investigation collaboratively to produce data to serve as a basis for evidence to answer a question, and plan and conduct an investigation to determine whether plants need sunlight and water to grow.</p>	
	<p><b>Essential Questions</b></p>	<p><b>Assessments</b></p>
	<ol style="list-style-type: none"> <li>1. What has causes that generate observable patterns?</li> <li>2. What do plants need to live and grow?</li> </ol>	<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
<p><b>Enduring Understanding</b></p>	<p><b>Resources</b></p>	
<ol style="list-style-type: none"> <li>1. Events have causes that generate observable patterns.</li> <li>2. Plants depend on water and light to grow</li> </ol>	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a> NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>	

<p><b>QUARTER 1 – 12 days</b></p> <p><b>Big Idea: Understanding of the relationship between plants and animals for reproduction.</b></p> <p><b>Topic: Relationships and Habitats</b></p>		
<p><b>Standards:</b> <b>2-LS4-1.</b> Make observations of plants and animals to compare the diversity of life in different habitats. [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]</p> <p><b>2-LS2-1.</b> Plan and conduct an investigation to determine if plants need sunlight and water to grow. [Assessment Boundary: Assessment is limited to testing one variable at a time.]</p> <p><b>2-LS2-2.</b> Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p> <p><b>K-2-ETS1-1.</b> Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA/Literacy</b> - Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-LS2-1) W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-LS2-1),(K-2-ETS1-1) W.2.8</b> Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <b>(2-LS2-2) SL.2.5</b> With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(K-2-ETS1-1) W.2.6</b> Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. <b>(K-2-ETS1-1) RI.2.1</b></p> <p><b>Mathematics</b>- Reason abstractly and quantitatively. <b>(2-LS2-1),(K-2-ETS1-1) MP.2</b> Model with mathematics. <b>(2-LS2-1),(2-LS2-2),(K-2-ETS1-1) MP.4</b> Use appropriate tools strategically. <b>(2-LS2-1),(K-2-ETS1-1) MP.5</b> Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <b>(2-LS2-2) 2.MD.D.10</b></p> <p><b>Career Ready Practices - CRP4.</b> Communicate clearly and effectively and with reason. <b>CRP5.</b> Consider the environmental, social and economic impacts of decisions. <b>CRP6.</b> Demonstrate creativity and innovation. <b>CRP7.</b> Employ valid and reliable research strategies. <b>CRP8.</b> Utilize critical thinking to make sense of problems and persevere in solving them. <b>CRP11.</b> Use technology to enhance productivity. <b>CRP12.</b> Work productively in teams while using cultural global competence.</p>	<p><b>GOAL</b></p>	
	<p>Students will be able to describe how the shape and stability of structures are related to their function, develop a simple model based on evidence to represent a proposed object or tool, develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants, and develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p>	
	<p><b>Essential Questions</b></p>	<p><b>Assessments</b></p>
	<ol style="list-style-type: none"> <li>1. How can we use designs when communicating ideas?</li> <li>2. How are shape and stability related?</li> <li>3. Why do some plants rely on animals for reproduction?</li> </ol>	<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
	<p><b>Enduring Understanding</b></p>	<p><b>Resources</b></p>
<ol style="list-style-type: none"> <li>1. The shape and stability of structures of natural and designed objects are related to their function.</li> <li>2. Plants depend on animals for pollination or to move their seeds around.</li> <li>3. Designs can be conveyed through sketches, drawings, or physical models they are used to communicate ideas for a problem's solutions to other people.</li> </ol>	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a> NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>	

## QUARTER 2 – 10 days

**Big Idea Understanding that some materials can be a solid or a liquid and objects can be sorted into groups based on their patterns.**

### Topic: Properties of Matter

<p><b>Standards:</b></p> <p><b>2-PS1-1.</b> Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p> <p><b>2-PS1-2.</b> Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.</p> <p><b>K-2-ETS1-3.</b> Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA/Literacy</b> - Describe how reasons support specific points the author makes in a text. <b>(2-PS1-2) RI.2.8</b> With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(K-2-ETS1-3) W.2.6</b> Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-PS1-1),(2-PS1-2) W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-PS1-1),(2-PS1-2),(K-2-ETS1-3) W.2.8</b></p> <p><b>Mathematics</b>- Reason abstractly and quantitatively. <b>(2-PS1-2), (K-2-ETS1-3) MP.2</b> Model with mathematics. <b>(2-PS1-1),(2-PS1-2, (K-2-ETS1-3)) MP.4</b> Use appropriate tools strategically. <b>(2-PS1-2), (K-2-ETS1-3) MP.5</b> Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <b>(2-PS1-1),(2-PS1-2), (K-2-ETS1-3) 2.MD.D.10</b></p> <p><b>Career Ready Practices</b> - CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.</p>	<p><b>GOAL</b></p> <p>Students will be able to observe patterns in the natural and human-designed world, plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question, and plan and conduct an investigation to describe and classify different kinds of material by their observable properties.</p>				
	<table border="1" style="width: 100%;"> <tr> <th style="width: 50%; text-align: left;">Essential Questions</th> <th style="width: 50%; text-align: left;">Assessments</th> </tr> <tr> <td> <ol style="list-style-type: none"> <li>1. Can we observe patterns?</li> <li>2. Can some materials be a solid or a liquid?</li> <li>3. How can we sort objects into groups that have similar patterns?</li> </ol> </td> <td> <p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p> </td> </tr> </table>	Essential Questions	Assessments	<ol style="list-style-type: none"> <li>1. Can we observe patterns?</li> <li>2. Can some materials be a solid or a liquid?</li> <li>3. How can we sort objects into groups that have similar patterns?</li> </ol>	<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
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## QUARTER 2 - 12 days

**Big Idea: Understanding that every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.**

### Topic: Properties of Matter

<p><b>Standards:</b></p> <p><b>2-PS1-1.</b> Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p> <p><b>2-PS1-2.</b> Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.</p> <p><b>K-2-ETS1-3.</b> Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA/Literacy</b> - Describe how reasons support specific points the author makes in a text. <b>(2-PS1-2) RI.2.8</b> With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(K-2-ETS1-3) W.2.6</b> Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-PS1-1),(2-PS1-2) W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-PS1-1),(2-PS1-2),(K-2-ETS1-3) W.2.8</b></p> <p><b>Mathematics</b>- Reason abstractly and quantitatively. <b>(2-PS1-2), (K-2-ETS1-3) MP.2</b> Model with mathematics. <b>(2-PS1-1),(2-PS1-2, (K-2-ETS1-3)) MP.4</b> Use appropriate tools strategically. <b>(2-PS1-2), (K-2-ETS1-3) MP.5</b> Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <b>(2-PS1-1),(2-PS1-2), (K-2-ETS1-3) 2.MD.D.10</b></p> <p><b>Career Ready Practices</b> - CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.</p>	<b>GOAL</b>	
	Students will be able to design simple tests to gather evidence to support or refute student ideas about causes, analyze data from tests of an object or tool to determine if it works as intended and, analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.	
	<b>Essential Questions</b>	<b>Assessments</b>
	<ol style="list-style-type: none"> <li>1. What are human-made products used for?</li> <li>2. What do we use different properties for?</li> <li>3. What should the three little pigs have used to build their houses?</li> </ol>	<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
<b>Enduring Understanding</b>	<b>Resources</b>	
<ol style="list-style-type: none"> <li>1. Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.</li> <li>2. Simple tests can be designed to gather evidence to support or refute student ideas about causes.</li> <li>3. Different properties are suited to different purposes.</li> <li>4. Because there is always more than one possible solution to a problem, it is useful to compare and test designs.</li> </ol>	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a> NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>	

## QUARTER 3- 11 days

**Big Idea: 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.**

**Topic: Changes to Matter**

<p><b>Standards:</b></p> <p><b>2-PS1-3.</b> 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. [Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.]</p> <p><b>2-PS1-4.</b> Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. [Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA/Literacy</b></p> <p>Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. <b>(2-PS1-4)</b></p> <p><b>RI.2.1</b> Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. <b>(2-PS1-4)</b></p> <p><b>RI.2.3</b> Describe how reasons support specific points the author makes in a text. <b>(2-PS1- 4) RI.2.8</b></p> <p>Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section. <b>(2-PS1-4)</b></p> <p><b>W.2.1</b> Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-PS1-3)</b></p> <p><b>W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-PS1-3)</b></p> <p><b>W.2.8</b></p> <p><b>Career Ready Practices</b></p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p>	<p><b>GOAL</b></p> <p>Students will be able to break objects into smaller pieces and put them together into larger pieces or change shapes, make observations to construct an evidence-based account for natural phenomena, and 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.</p>
	<p><b>Essential Questions</b></p> <ol style="list-style-type: none"> <li>1. What happens when we break objects into pieces?</li> <li>2. In what ways can an object made of a small set of pieces be disassembled and made into a new object?</li> </ol>
	<p><b>Assessments</b></p> <p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
	<p><b>Enduring Understanding</b></p> <ol style="list-style-type: none"> <li>1. Objects may break into smaller pieces and be put together into larger pieces or change shapes.</li> <li>2. Different properties are suited to different purposes.</li> <li>3. A great variety of objects can be built up from a small set of pieces</li> </ol>
	<p><b>Resources</b></p> <p>Interactive Science Series</p> <p>Trade Books/Classroom Library</p> <p>Assorted Manipulatives</p> <p>NJ DOE Model Curriculum</p> <p>NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a></p> <p>NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>

## QUARTER 3 - 11 days

**Big Idea: Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.**

**Topic: Changes to Matter**

<p><b>Standards:</b></p> <p><b>2-PS1-3.</b> 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. [Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.]</p> <p><b>2-PS1-4.</b> Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. [Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA/Literacy</b></p> <p>Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. <b>(2-PS1-4)</b></p> <p><b>RI.2.1</b> Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. <b>(2-PS1-4)</b></p> <p><b>RI.2.3</b> Describe how reasons support specific points the author makes in a text. <b>(2-PS1- 4) RI.2.8</b></p> <p>Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section. <b>(2-PS1-4)</b></p> <p><b>W.2.1</b> Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-PS1-3)</b></p> <p><b>W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-PS1-3)</b></p> <p><b>W.2.8</b></p> <p><b>Career Ready Practices</b></p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p>	<b>GOAL</b>	
	Students will be able to observe patterns in events generated due to cause-and-effect relationships, construct an argument with evidence to support a claim and, construct an argument with evidence that some changes caused by heating or cooling can be reversed, and some cannot.	
	<b>Essential Questions</b>	<b>Assessments</b>
	<ol style="list-style-type: none"> <li>How can we explain natural events?</li> <li>Can all changes caused by heating or cooling be reversed?</li> </ol>	<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
<b>Enduring Understanding</b>		<b>Resources</b>
<ol style="list-style-type: none"> <li>People search for cause-and-effect relationships to explain natural events.</li> <li>Events have causes that generate observable patterns.</li> <li>Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.</li> </ol>	<p>Interactive Science Series</p> <p>Trade Books/Classroom Library</p> <p>Assorted Manipulatives</p> <p>NJ DOE Model Curriculum</p> <p>NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a></p> <p>NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>	

## QUARTER 4 – 5 days

**Big Idea: Obtain information to identify where water is found on Earth and that it can be solid or liquid.**

**Topic: Planet Earth**

<p><b>Standards:</b></p> <p><b>2-ESS1-1.</b> Use information from several sources to provide evidence that Earth events can occur quickly or slowly.</p> <p><b>2-ESS2-1.</b> Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.*</p> <p><b>2-ESS2-2.</b> Develop a model to represent the shapes and kinds of land and bodies of water in an area.</p> <p><b>2-ESS2-3.</b> Obtain information to identify where water is found on Earth and that it can be solid or liquid.</p> <p><b>K-2- ETS1-1.</b> Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p><b>K-2- ETS1-2.</b> Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA/Literacy</b> - With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(2-ESS2-3) W.2.6</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-ESS2-3) W.2.8</b> Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <b>(2-ESS2-2) SL.2.5</b> <b>Mathematics-</b> Reason abstractly and quantitatively. <b>(2-ESS2-2) MP.2</b> Model with mathematics. <b>(2-ESS2-2) MP.4</b> Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. <b>(2-ESS2-2) 2.NBT.A.3</b> Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. <b>(2-ESS2-1) 2.MD.B.5</b></p> <p><b>Career Ready Practices</b></p> <p><b>CRP4.</b> Communicate clearly and effectively and with reason.</p> <p><b>CRP5.</b> Consider the environmental, social and economic impacts of decisions. <b>CRP6.</b> Demonstrate creativity and innovation.</p> <p><b>CRP7.</b> Employ valid and reliable research strategies.</p> <p><b>CRP8.</b> Utilize critical thinking to make sense of problems and persevere in solving them. <b>CRP11.</b> Use technology to enhance productivity. <b>CRP12.</b> Work productively in teams while using cultural global competence.</p>	<b>GOAL</b>	
	Students will be able to observe patterns in the natural world, obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) and other media that will be useful in answering a scientific question and obtain information to identify where water is found on Earth and to communicate that it can be a solid or liquid.	
	<b>Essential Questions</b>	<b>Assessments</b>
	<ol style="list-style-type: none"> <li>1. Can we observe patterns of water?</li> <li>2. Where is water found?</li> <li>3. How can we identify where water is found on Earth and if it is a solid or liquid?</li> </ol>	<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
<b>Enduring Understanding</b>		<b>Resources</b>
<ol style="list-style-type: none"> <li>1. Patterns in the natural world can be observed.</li> <li>2. Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.</li> </ol>	<p>Interactive Science Series</p> <p>Trade Books/Classroom Library</p> <p>Assorted Manipulatives</p> <p>NJ DOE Model Curriculum</p> <p>NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a></p> <p>NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>	

## QUARTER 4 - 7 days

**Big Idea: Develop a model to represent the shapes and kinds of land bodies of water in an area.**

**Topic: Planet Earth**

<p><b>Standards:</b></p> <p><b>2-ESS2-3.</b> Obtain information to identify where water is found on Earth and that it can be solid or liquid.</p> <p><b>2-ESS2-2.</b> Develop a model to represent the shapes and kinds of land and bodies of water in an area. [Assessment Boundary: Assessment does not include quantitative scaling in models.]</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA/Literacy</b></p> <p>With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(2-ESS2-3) W.2.6</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-ESS2-3) W.2.8</b> Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <b>(2-ESS2-2) SL.2.5</b></p> <p><b>Mathematics</b></p> <p>Reason abstractly and quantitatively. <b>(2-ESS2-2) MP.2</b> Model with mathematics. <b>(2-ESS2-2) MP.4</b> Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. <b>(2-ESS2-2) 2.NBT.A.3</b> Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. <b>(2-ESS2-1) 2.MD.B.5</b></p> <p><b>Career Ready Practices</b></p> <p><b>CRP4.</b> Communicate clearly and effectively and with reason.</p> <p><b>CRP5.</b> Consider the environmental, social and economic impacts of decisions.</p> <p><b>CRP6.</b> Demonstrate creativity and innovation.</p> <p><b>CRP7.</b> Employ valid and reliable research strategies.</p> <p><b>CRP8.</b> Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p><b>CRP11.</b> Use technology to enhance productivity.</p> <p><b>CRP12.</b> Work productively in teams while using cultural global competence.</p>	<b>GOAL</b>	
	Students will be able to observe patterns in the natural world, develop a model to represent patterns in the natural world and develop a model to represent the shapes and kinds of land and bodies of water in an area.	
	<b>Essential Questions</b>	
	<ol style="list-style-type: none"> <li>1. What can we observe in the natural world?</li> <li>2. What do maps show us?</li> <li>3. What can we map?</li> <li>4. In what ways can you represent the shapes and kinds of land and bodies of water in an area?</li> </ol>	<p style="text-align: center;"><b>Assessments</b></p> <p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p><b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
	<b>Enduring Understanding</b>	
<ol style="list-style-type: none"> <li>1. Patterns in the natural world can be observed.</li> <li>2. Maps show where things are located.</li> <li>3. One can map the shapes and kinds of land and water in any area.</li> </ol>	<p style="text-align: center;"><b>Resources</b></p> <p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a> NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>	

## QUARTER 4 – 3 days

**Big Idea: Use information from several sources to provide evidence that Earth events can occur quickly or slowly.**

**Topic: Planet Earth**

Standards:	GOAL		
<p><b>2-ESS1-1.</b> Use information from several sources to provide evidence that Earth events can occur quickly or slowly. [Clarification Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.] [Assessment Boundary: Assessment does not include quantitative measurements of timescales.] <b>2-ESS2-1.</b> Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. [Clarification Statement: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.] <b>K-2-ETS1-1.</b> Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. <b>K-2-ETS1-2.</b> Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p><b>Common Core State Standards Connections:</b>  <b>ELA/Literacy</b> Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. <b>(2-ESS1-1), (K-2-ETS1-1) RI.2.1</b> Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. <b>(2-ESS1-1) RI.2.3</b> With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(2-ESS1-1), (K-2-ETS1-1) W.2.6</b> Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-ESS1-1) W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-ESS1-1), (K-2-ETS1-1) W.2.8</b> Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. <b>(2-ESS1-1) SL.2.2</b> Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. <b>(2-ESS2-1) RI.2.3</b> Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <b>(K-2-ETS1-2) SL.2.5</b> Compare and contrast the most important points presented by two texts on the same topic. <b>(2-ESS2-1) RI.2.9</b>  <b>Mathematics</b> -Reason abstractly and quantitatively. <b>(2-ESS1-1), (2-ESS2-1), (K-2-ETS1-1) MP.2</b> Model with mathematics. <b>(2-ESS1-1), (2-ESS2-1) MP.4</b> Use appropriate tools strategically. <b>(2-ESS2-1), (K-2-ETS1-1) MP.5</b> Understand place value. <b>(2-ESS1-1) 2.NBT.A</b> Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. <b>(2-ESS2-1) 2.MD.B.5</b> Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <b>(K-2-ETS1-1) 2.MD.D.10</b>  <b>Career Ready Practices</b>  <b>CRP4.</b> Communicate clearly and effectively and with reason.  <b>CRP5.</b> Consider the environmental, social and economic impacts of decisions.  <b>CRP6.</b> Demonstrate creativity and innovation.  <b>CRP7.</b> Employ valid and reliable research strategies.  <b>CRP8.</b> Utilize critical thinking to make sense of problems and persevere in solving them.  <b>CRP11.</b> Use technology to enhance productivity.  <b>CRP12.</b> Work productively in teams while using cultural global competence.</p>	Essential Questions		
	<p>1. What evidence can we find to prove that Earth events can occur quickly or slowly?</p>		Assessments
	<p>1. Some events happen very quickly; others occur very slowly over a time period much longer than one can observe.</p> <p>2. Things may change slowly or rapidly.</p>		<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks  <b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>
	Enduring Understanding		Resources
		<p>Interactive Science Series                      Trade Books/Classroom Library                      Assorted Manipulatives                      NJ DOE Model Curriculum                      NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a>                      NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>	

## QUARTER 4 – 10 days

**Big Idea: Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.**

**Topic: Planet Earth**

Standards:	GOAL		
<p><b>Common Core State Standards Connections:</b>  <b>ELA/Literacy</b> Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. <b>(2-ESS1-1), (K-2-ETS1-1) RI.2.1</b> Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. <b>(2-ESS1-1) RI.2.3</b> With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <b>(2-ESS1-1), (K-2-ETS1-1) W.2.6</b> Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). <b>(2-ESS1-1) W.2.7</b> Recall information from experiences or gather information from provided sources to answer a question. <b>(2-ESS1-1), (K-2-ETS1-1) W.2.8</b> Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. <b>(2-ESS1-1) SL.2.2</b> Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. <b>(2-ESS2-1) RI.2.3</b> Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <b>(K-2-ETS1-2) SL.2.5</b> Compare and contrast the most important points presented by two texts on the same topic. <b>(2-ESS2-1) RI.2.9 Mathematics</b> Reason abstractly and quantitatively. <b>(2-ESS1-1), (2-ESS2-1), (K-2-ETS1-1) MP.2</b> Model with mathematics. <b>(2-ESS1-1), (2-ESS2-1) MP.4</b> Use appropriate tools strategically. <b>(2-ESS2-1, (K-2-ETS1-1) MP.5</b> Understand place value. <b>(2-ESS1-1) 2.NBT.A</b> Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. <b>(2-ESS2-1) 2.MD.B.5</b> Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <b>(K-2-ETS1-1) 2.MD.D.10 Career Ready Practices</b>  <b>CRP4.</b> Communicate clearly and effectively and with reason. <b>CRP5.</b> Consider the environmental, social and economic impacts of <b>decisions</b>.  <b>CRP6.</b> Demonstrate creativity and innovation. <b>CRP7.</b> Employ valid and reliable research strategies. <b>CRP8.</b> Utilize critical thinking to make sense of problems and persevere in solving them. <b>CRP11.</b> Use technology to enhance productivity.  <b>CRP12.</b> Work productively in teams while using cultural global competence.</p>	<p>Students will be able to compare multiple solutions to a problem designed to slow or prevent wind or water from changing the shape of the land, ask questions based on observations to find more information about the natural and/or designed world, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p>		
	Essential Questions	Assessments	
	<ol style="list-style-type: none"> <li>1. How do things change?</li> <li>2. What impacts the natural world?</li> <li>3. Who studies the natural world?</li> <li>4. In what ways do humans slow or prevent wind or water from changing the shape of the land?</li> <li>5. Why is it important to ask questions, making observations, gather information, design a solution, and test designs?</li> </ol>	<p><b>Formative:</b> participation in team activities, research, verbal response, observations, experiments, interactive notebooks  <b>Summative Topic Assessment:</b> Interactive Science assessments, formal lab sheets, experiments</p>	
Enduring Understanding	Resources		
<ol style="list-style-type: none"> <li>1. Things may change slowly or rapidly.</li> <li>2. Developing and using technology has impacts on the natural world.</li> <li>3. Scientists study the natural and material world.</li> <li>4. The shape and stability of structures of natural and designed objects are related to their function(s).</li> <li>5. Wind and water can change the shape of the land.</li> <li>6. Because there is always more than one possible solution to a problem, it is useful to compare and test designs.</li> <li>7. Asking questions, making observations, and gathering information are helpful in thinking about problems.</li> <li>8. Before beginning to design a solution, it is important to clearly understand designs can be conveyed through sketches, drawings, or physical models.</li> <li>9. These representations are useful in communicating ideas for a problem’s solutions to other people.</li> </ol>	<p>Interactive Science Series            Trade Books/Classroom Library            Assorted Manipulatives            NJ DOE Model Curriculum            NGSS <a href="http://www.nextgenerationscience.org/">www.nextgenerationscience.org/</a>            NSTA <a href="http://www.nsta.org">www.nsta.org</a></p>		