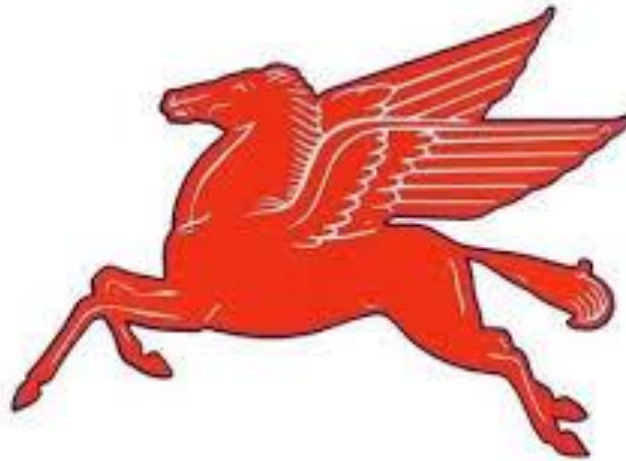


Curriculum Management System

PAULSBORO PUBLIC SCHOOLS



Science Curriculum- Grade Kindergarten

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: September 2016

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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.

Reading Unit	Reading Standards	Writing Unit	Writing Standards	Speaking & Listening Standards	Language Standards	Foundational Skills Standards
We Are Readers	RL.K.2, RL.K.3	Letter Formation/Favorite Foods, Activities & People	W.K.1, W.K.8	SL.K.1, SL.K.2, SL.K.3	L.K.5.a	RF.K.1a, RF.K.2a,b RF.K.3a, RF.K.4
Readers Read, Think, & Talk	RL.K.2, RL.K.3, RL.K.4, RL.K.6, RL.K.9, RI.K.5	Letter Formation/Favorite Foods, Activities & People	W.K.1, W.K.8	SL.K.1, SL.K.2, SL.K.3	L.K.1.a, L.K.2.c,d, L.K.5.c	RF.K.1a, RF.K.2a, d, RF.K.3a, RF.K.4
Readers Read, Think, & Talk	RL.K.2, RL.K.3, RL.K.4, RL.K.9, RI.K.5	Letter Formation/Favorite Foods, Activities & People	W.K.1, W.K.8	SL.K.1, SL.K.2, SL.K.3	L.K.1.a	RF.K.1a RF.K.2a, d, RF.K.3a, RF.K.4
Readers Use Super Powers	RL.K.1, RI.K.1, RL.K.10	Launching Writing Workshop	W.K.2, W.K.3	SL.K.1, SL.K.2, SL.K.3, SL.K.4, SL.K.5, SL.K.6	L.K.1b, c, e L.K.5d, L.K.6	RF.K.1a, b, c RF.K.3a, RF.K.4
We Can Be Reading Teachers	RL.K.1, RI.K.1, RI.K.10	Launching Writing Workshop	W.K.2, W.K.3	SL.K.1, SL.K.2, SL.K.3, SL.K.4, SL.K.5, SL.K.6	L.K.1b, c, e L.K.5d, L.K.6	RF.K.1a, b, c RF.K.3a, RF.K.4
We Can Be Reading Teachers	RL.K.2, RL.K.3, RL.K.4, RL.K.5, RL.K.7, RI.K.3, RI.K.7	Writing for Readers	W.K.2, W.K.6, W.K.7	SL.K.1, SL.K.5, SL.K.6	L.K.1a,b, c, e L.K.5d, L.K.6	RF.K.2a,b,c RF.K.3c
Reading For Information	RI.K.2, RI.K.4, RI.K.6, RI.K.8, RL.K.9	How To Books	W.K.5, W.K.8	SL.K.4	L.K.1, L.K.4a, L.K.5	RF.K.2c, RF.K.4
Readers Are Brave & Resourceful	RL.K.2, RL.K.9, RI.K.3, RI.K.4, RI.K.9	Persuasive Writing of All Kinds	W.K.1, W.K.3, W.K.5	SL.K.3	L.K.2, L.K.4	RF.K.1d, e, RF.K.3, RF.K.4
Readers Get to Know Characters	RL.K.2, RL.K.6, RL.K.9, RI.K.3, RI.K.4, RI.K.9	Persuasive Writing of All Kinds	W.K.1, W.K.3, W.K.5	SL.K.3	L.K.2, L.K.4	RF.K.1d, e, RF.K.3, RF.K.4

Scope and Sequence

Quarter 1 - Grade K

Pushes and Pulls: Students will be able to apply an understanding of the effects of different strengths or different directions of pushes and pulls on the motion of an object to analyze a design solution through the demonstration of grade-appropriate proficiency in planning and carrying out investigations and analyzing and interpreting data.

Big Idea: Understanding how pushes and pulls work (DOE Unit 1) (INTERACTIVE SCIENCE: Students discuss position and motion of an object on SE page 86/TE page 237. They draw a plan for a slide and share their plans on the SE page 86 Activity/TE page 238)

- Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

Big Idea: Understand how we can design a simple way to change the speed or direction of an object using push or pull from another object (DOE Unit 1) (INTERACTIVE SCIENCE: Students discuss position and motion of an object on SE page 86/TE page 237. They draw a plan for a slide and share their plans on the SE page 86 Activity/TE page 238)

- Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

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Scope and Sequence

Quarter 2 - Grade <u> K </u>

The Sun: Students will be able to apply an understanding in of the effects of the sun on the Earth’s surface. Students will use crosscutting concepts such as cause and effect and structure to guide them in organizing core ideas. Students are expected to demonstrate grade appropriate proficiency in developing models, planning and carrying out investigations, analyzing and interpreting data, and designing solutions. Students are expected to use these practices to demonstrate an understanding of the core ideas.

Big Idea: Make observations to determine the effect of sunlight on Earth’s surface. * *[Clarification Statement: Examples of Earth’s surface could include sand, soil, rocks, and water]* *[Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]* (DOE Unit 2) (INTERACTIVE SCIENCE: Students gain information about the sun in Chapter 5, “Earth and Sky,” SE pages 49-50/TE pages 140-143. In Lesson 5, “What Are Some Kinds of Weather?”, SE pages 51-52/TE pages 146-147, students describe weather. In 21st Century Learning, TE page 146, students observe the weather of the day and discuss its effects on their choice of clothing).

- 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.

Big Idea: Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. * *[Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]* (DOE Unit 2) (INTERACTIVE SCIENCE: Students learn about the sun on SE pages 49-50/TE pages 140-143)

- 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.

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Scope and Sequence

Quarter 3 - Grade <u> K </u>

Weather: Students will be able to develop an understanding of patterns and variations in local weather and the use of weather forecasting to prepare for and respond to severe weather. The cross cutting concepts of patterns, cause and effect, interdependence of science, of science, engineering, and technology; and the influence of engineering, technology and science on society and the natural world are called out as organizing concepts for the disciplinary cored ideas. Students are expected to demonstrate grade appropriate proficiency in asking questions, analyzing and interpreting data, and obtaining, evaluating, and communicating information.

Big Idea: Use and share observations of local weather conditions to describe patterns over time. *[Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.]* **[Assessment Boundary:** Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.**]****INTERACTIVE SCIENCE:** Students learn about weather forecasting and discuss preparation for weather on SE page 55/TE page 151. In the SE page 55 Activity, students match sunny weather to the items that would be used. In Home Activity, students watch a weather report and choose clothes to

Big Idea: Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.* *[Clarification Statement: Emphasis is on local forms of severe weather.]***INTERACTIVE SCIENCE:** Students learn about weather forecasting and discuss preparation for weather on SE page 55/TE page 151. In the SE page 55 Activity, students match sunny weather to the items that would be used. In Home Activity, students watch a weather report and choose clothes to match the day’s weather. On TE page 151, Teach with Visuals, students discuss a weather map and how a weather forecast helps people get ready for their day).

- 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.

match the day's weather. On TE page 151, Teach with Visuals, students discuss a weather map and how a weather forecast helps people get ready for their day).

- 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.

Scope and Sequence

Quarter 4 - Grade

Basic Needs of Living Things: Students will be able to develop an understanding of what plants, animals, and humans need to survive and the relationship between their needs and where they live. Students compare and contrast what plants, animals, and humans need to survive and the relationship between the needs of living things and where they live. The crosscutting concepts of patterns and system and system models and cause and effect are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade appropriate proficiency in developing and using models, analyzing and interpreting data, asking questions, defining problems, evaluation, communicating information, and engaging in argument from evidence. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Big Idea: Use observations to describe patterns of what plants and animals need to survive. *[Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]* (DOE Unit 4) (INTERACTIVE SCIENCE: Students learn about similarities of living things on SE pages 25/TE page 77. In Explore, TE 82, students share observations of plants and animals being tended and their needs. They discuss needs of living things on SE pages 28/TE pages 82-83. They state similarities of living things on SE page 30/TE pages 86-87).

Big Idea: Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. *[Clarification Statement: Examples of relationships could include*

living things on SE page 30/TE pages 86-87.)

Big Idea: Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. *[Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]* (INTERACTIVE SCIENCE: Students learn how humans can change the environment in the Designing Trails and Roads activity, Trails that Last, on STEM pages 1T-a to 21T. In Stem Project, Plan and Draw, page 9T, students choose their materials and support choices with explanations).

Big Idea: Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.* *[Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]* (DOE Unit 5) (INTERACTIVE SCIENCE: Students learn how humans can change the environment in the Designing Trails and Roads activity, Trails that Last, on STEM pages 1T-a to 21T. In Stem Project, Plan and Draw, page 9T, students choose their materials and support choices with explanations).

that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system./ (DOE Unit 4)
(INTERACTIVE SCIENCE: Students learn about similarities of living things on SE pages 25/TE page 77. In Explore, TE 82, students share observations of plants and animals being tended and their needs. They discuss needs of living things on SE pages 28/TE pages 82-83. They state similarities of

- 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.

QUARTER 1 - 10 days
Big Idea: Understanding how pushes and pulls work
Topic: Pushes and Pulls in the World

Standards:
K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.]
K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.* [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.]
Common Core State Standards Connections:
ELA/Literacy – RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2) W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2)
Mathematics – MP.2 Reason abstractly and quantitatively. (K-PS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-PS2-1)
Career Ready Practices
 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.

GOAL	
Students will be able to plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.	
Essential Questions	Assessments
<ol style="list-style-type: none"> 1. How can we study the world? 2. How do pushes and pulls work? 3. What happens when two objects collide? 4. How does the speed of a push impact an object? 5. Why is it important to conduct tests? 	<p>Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p>Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments</p>
Enduring Understanding	Resources
<ol style="list-style-type: none"> 1. People use different ways to study the world, simple tests can be designed to support or refute your ideas. 2. Pushes and pulls can have different strengths and directions. Pushing or pulling an object can change the speed, directions, or it can start or stop an object. 3. When objects touch or collide, they push on one another and can change motion. 4. A bigger push or pull makes things speed up or slow down more quickly. 5. There is always more than one possible solution to a problem, it is useful to compare and test designs. 	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org</p>

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.		

QUARTER 1 - 5 days
Big Idea: Understand how we can design a simple way to change the speed or direction of an object using push or Pushes and Pulls
Topic: Push & Pulls - Analyzing Data

<p>Standards: K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.] K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.* [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.] Common Core State Standards Connections: ELA/Literacy - RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2) W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2) Mathematics - MP.2 Reason abstractly and quantitatively. (K-PS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-PS2-1) Career Ready Practices - 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.</p>	GOAL		
	Students will be able to design simple tests to gather evidence to support or refute ideas about cause-and-effect relationships, analyze data from tests of an object or tool to determine if it works as intended, analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs, analyze data to determine whether a design solution works as intended to change the speed or direction of an object with a push or a pull.		
	Essential Questions		Assessments
	1. How can we design a simple way to change the speed or direction of an object using a push or pull from another object?	Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments	
	Enduring Understanding		Resources
1. Simple tests can be designed to gather evidence to support or refute ideas about pushes and pull. 2. Pushes and pulls can have different strengths and directions. 3. Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. 4. A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. 5. There is always more than one possible solution to a problem, it is useful to compare and test designs.	Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org		

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.		
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QUARTER 2 – 5 days

Big Idea: Make observations to determine the effect of sunlight on Earth’s surface

Topic: Effects of the Sun

Standards:	GOAL	
<p>K-PS3-1. Make observations to determine the effect of sunlight on Earth’s surface. [Clarification Statement: Examples of Earth’s surface could include sand, soil, rocks, and water.] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]</p> <p>K-PS3-2. Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth’s surface.* [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]</p> <p>K-2- ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>K-2- ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p>Common Core State Standards Connections: ELA/Literacy – RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2) W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2) Mathematics – MP.2 Reason abstractly and quantitatively. (K-PS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-PS2-1) Career Ready Practices 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>	Students will be able to make observations to determine the effect of sunlight on Earth’s surface.	
	Essential Questions	Assessments
	<ol style="list-style-type: none"> 1. How do Scientists study the world? 2. What cause generate observable patterns? 3. How does sunlight affect our Earth? 	<p>Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p>Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments</p>
	Enduring Understanding	Resources
<ol style="list-style-type: none"> 1. Scientists use different ways to study the world. 2. Events have causes that generate observable patterns. 3. Sunlight warms Earth’s surface. 	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org</p>	

<p>QUARTER 2 - 10 days</p> <p>Big Idea: Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.</p> <p>Topic: Effects of the Sun</p>		
<p>Standards:</p> <p>K-PS3-1. Make observations to determine the effect of sunlight on Earth’s surface. [Clarification Statement: Examples of Earth’s surface could include sand, soil, rocks, and water.] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]</p> <p>K-PS3-2. Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth’s surface.* [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]</p> <p>K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p>Common Core State Standards Connections:</p> <p>ELA/Literacy - RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2) W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2)</p> <p>Mathematics - MP.2 Reason abstractly and quantitatively. (K-PS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-PS2-1)</p> <p>Career Ready Practices</p> <p>CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>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.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p>	<p>GOAL</p>	
	<p>Students will be able to use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area</p>	
	<p>Essential Questions</p>	<p>Assessments</p>
	<ol style="list-style-type: none"> 1. Imagine that we have been asked to design a new playground. How would we keep the sand, soil, rocks, and water found on the playground cool during the summer? 2. Why is the shape of our design important? 3. How can we communicate our ideas to other people? 4. Why is it important to test our designs? 	<p>Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p>Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments</p>
	<p>Enduring Understanding</p>	<p>Resources</p>
<ol style="list-style-type: none"> 1. The shape and stability of structures of natural and designed objects are related to their function(s). 2. 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. 3. Because there is always more than one possible solution to a problem, it is useful to compare and test designs. 	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org</p>	

QUARTER 3- 5 days

Big Idea: Understanding how observations of local weather conditions help describe patterns over time.
Topic: Weather- The Effects of the Sun

Standards:

K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.]

K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.* [Clarification Statement: Emphasis is on local forms of severe weather.]

K-2- ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Common Core State Standards Connections:

ELA/Literacy: Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-ESS2-1) **W.K.7** With prompting and support, ask and answer questions about key details in a text. (K-ESS3-2) **RI.K.1** Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-ESS3-2) **SL.K.3** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (K-2-ETS1-1) **RI.2.1** With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (K-2-ETS1-1) **W.2.6** Recall information from experiences or gather information from provided sources to answer a question. (K-2-ETS1-1) **W.2.8**

Mathematics: Reason abstractly and quantitatively. (K-ESS2-1),(K-2-ETS1-1) **MP.2** Model with mathematics. (K-ESS2-1),(K-ESS3-2),(K-2-ETS1-1) **MP.4** Use appropriate tools strategically. (K-2-ETS1-1) **MP.5** Counting and Cardinality (K-ESS3-2) **K.CC** Know number names and the count sequence. (K-ESS2-1) **K.CC.A** Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-ESS2-1) **K.MD.A.1** Classify objects into given categories; count the number of objects in each category and sort the categories by count. (K-ESS2-1) **K.MD.B.3**

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. (K-2-ETS1-1) **2.MD.D.10**

Career Ready Practices

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.

GOAL

Students will be able to develop an understanding of patterns and variations in local weather. and the use of weather forecasting to prepare for and respond to severe weather

Essential Questions

1. What types of patterns can be observed in local weather conditions?
2. What is weather?
3. How is weather measured?

Assessments

Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks
Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments

Enduring Understanding

4. Scientists look for patterns and order when making observations about the world.
5. Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
6. Weather is the combination of sunlight, wind, snow, or rain and temperature in a particular region at a particular time.
7. People measure these conditions to describe and record the weather and to notice patterns over time.

Resources

Interactive Science Series
 Trade Books/Classroom Library
 Assorted Manipulatives
 NJ DOE Model Curriculum
 NGSS www.nextgenerationscience.org/
 NSTA www.nsta.org

QUARTER 3 – 10 days

Big Idea: Understanding how to ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather

Topic: Weather - Forecasting

<p>Standards:</p> <p>K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.]</p> <p>K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.* [Clarification Statement: Emphasis is on local forms of severe weather.]</p> <p>K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>Common Core State Standards Connections:</p> <p>ELA/Literacy: Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-ESS2-1) W.K.7 With prompting and support, ask and answer questions about key details in a text. (K-ESS3-2)</p> <p>RI.K.1 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-ESS3-2) SL.K.3 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (K-2-ETS1-1) RI.2.1 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (K-2-ETS1-1) W.2.6 Recall information from experiences or gather information from provided sources to answer a question. (K-2-ETS1-1) W.2.8</p> <p>Mathematics: Reason abstractly and quantitatively. (K-ESS2-1),(K-2-ETS1-1) MP.2 Model with mathematics. (K-ESS2-1),(K-ESS3-2),(K-2-ETS1-1) MP.4 Use appropriate tools strategically. (K-2-ETS1-1) MP.5 Counting and Cardinality (K-ESS3-2) K.CC Know number names and the count sequence. (K-ESS2-1) K.CC.A Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-ESS2-1) K.MD.A.1 Classify objects into given categories; count the number of objects in each category and sort the categories by count. (K-ESS2-1) K.MD.B.3</p> <p>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. (K-2-ETS1-1) 2.MD.D.10</p> <p>Career Ready Practices</p> <p>CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>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>GOAL</p> <p>Students will be able to develop an understanding of the use of weather forecasting to prepare for and respond to severe weather</p>				
	<table border="1" style="width: 100%;"> <tr> <th style="width: 50%;">Essential Questions</th> <th style="width: 50%;">Assessments</th> </tr> <tr> <td style="vertical-align: top;"> <ol style="list-style-type: none"> 1. How does weather forecasting help us to prepare for and respond to severe weather? 2. Do people question our natural world? 3. Is severe weather are more likely in a given region? 4. Why is it important to forecast severe weather? 5. Is technology important? 6. How does designing a solution and asking a question help us to understand a problem? 7. How does engineering help us in our daily lives? </td> <td style="vertical-align: top;"> <p>Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p>Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments</p> </td> </tr> </table>	Essential Questions	Assessments	<ol style="list-style-type: none"> 1. How does weather forecasting help us to prepare for and respond to severe weather? 2. Do people question our natural world? 3. Is severe weather are more likely in a given region? 4. Why is it important to forecast severe weather? 5. Is technology important? 6. How does designing a solution and asking a question help us to understand a problem? 7. How does engineering help us in our daily lives? 	<p>Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p>Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments</p>
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QUARTER 4 - 15 days

Big Idea: Understand the relationship between the needs of different plants and animals and the places they live
Topic: Basic Needs of Humans, Plants, & Animals

Standards:

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]

K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]

Common Core State Standards Connections:

ELA/Literacy - RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2) W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2)

Mathematics - MP.2 Reason abstractly and quantitatively. (K-PS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. (K-PS2-1)

Career Ready Practices

- 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.

GOAL

Student will be able to use observations to describe patterns of what plants and animals need to survive.

Essential Questions

1. What do scientists use to observe the world?
2. What do plants need to live and grow?
3. What can be observed and used as evidence?

Assessments

Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks
Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments

Enduring Understanding

1. Scientists look for patterns and order when making observations about the world.
2. Patterns in the natural and human-designed world can be observed and used as evidence.
3. Plants need water and light to live and grow.

Resources

Interactive Science Series
 Trade Books/Classroom Library
 Assorted Manipulatives
 NJ DOE Model Curriculum
 NGSS www.nextgenerationscience.org/
 NSTA www.nsta.org

QUARTER 4 - 10 days

Big Idea Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

Topic: Basic Needs of Living Things

Standards:

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]

K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]

Common Core State Standards Connections:

ELA/Literacy - RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2) W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2)

Mathematics - MP.2 Reason abstractly and quantitatively. (K-PS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. (K-PS2-1)

Career Ready Practices

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.

GOAL

Students will be able to use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live

Essential Questions

1. How would we describe a system?
2. What is the relationship between what plants need and where they live?

Assessments

Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks
Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments

Enduring Understanding

1. Systems in the natural and designed world have parts that work together.
2. Living things need water, air, and resources from the land, and they live in places that have the things they need.

Resources

Interactive Science Series
 Trade Books/Classroom Library
 Assorted Manipulatives
 NJ DOE Model Curriculum
 NGSS www.nextgenerationscience.org/
 NSTA www.nsta.org

QUARTER 4 - 10 days

Big Idea: Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
Topic: Basic Needs of Living Things

<p>Standards:</p> <p>K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]</p> <p>K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]</p> <p>K-2- ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]</p> <p>Common Core State Standards Connections:</p> <p>ELA/Literacy - RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2) W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2)</p> <p>Mathematics - MP.2 Reason abstractly and quantitatively. (K-PS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-PS2-1)</p> <p>Career Ready Practices</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>	GOAL	
	Students will be able to construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs	
	Essential Questions	Assessments
	<ol style="list-style-type: none"> Why are patterns important when making observations. What do plants need to live and grow? 	<p>Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p>Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments</p>
Enduring Understanding		Resources
<ol style="list-style-type: none"> Scientists look for patterns and order when making observations about the world. Patterns in the natural and human-designed world can be observed and used as evidence. Plants need water and light to live and grow. 	<p>Interactive Science Series</p> <p>Trade Books/Classroom Library</p> <p>Assorted Manipulatives</p> <p>NJ DOE Model Curriculum</p> <p>NGSS www.nextgenerationscience.org/</p> <p>NSTA www.nsta.org</p>	

QUARTER 4 - 10 days

Big Idea: Communicate solutions that will reduce the impact of humans on the land, water, air,/or other living things in the local environment.

Topic: Needs of Living Things

<p>Standards:</p> <p>K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]</p> <p>K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]</p> <p>K-2- ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]</p> <p>Common Core State Standards Connections:</p> <p>ELA/Literacy - RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-PS2-2) W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2)</p> <p>Mathematics - MP.2 Reason abstractly and quantitatively. (K-PS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-PS2-1)</p> <p>Career Ready Practices</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>	GOAL	
	Students will be able to communicate solutions that will reduce the impact of humans on the land, water, air/or other living things in the local environment.	
	Essential Questions	Assessments
	<ol style="list-style-type: none"> 1. What do systems in the natural world have? 2. What is the relationship between what plants need and where they live? 	<p>Formative: participation in team activities, research, verbal response, observations, experiments, interactive notebooks</p> <p>Summative/Topic Assessment: Interactive Science assessments, formal lab sheets, experiments</p>
Enduring Understanding		Resources
<ol style="list-style-type: none"> 1. Systems in the natural and designed world have parts that work together. 2. Living things need water, air, and resources from the land, and they live in places that have the things they need. 	<p>Interactive Science Series</p> <p>Trade Books/Classroom Library</p> <p>Assorted Manipulatives</p> <p>NJ DOE Model Curriculum</p> <p>NGSS www.nextgenerationscience.org/</p> <p>NSTA www.nsta.org</p>	

