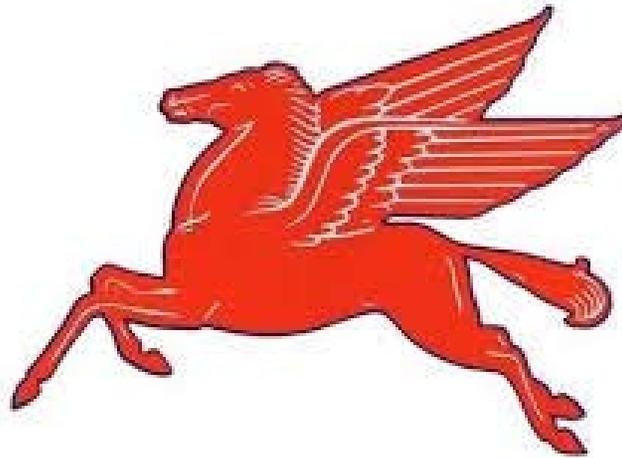


Curriculum Management System

PAULSBORO PUBLIC SCHOOLS



Science Curriculum- Third 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: September 2016

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Ms. Mildred Tolbert, Principal, grades 7-8
Mr. Paul Morina, Principal, grades 9-12

Curriculum Writing Team

Mrs. Krista Lange, Curriculum Facilitator

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
Building a Reading Life	RL.3.3, RL.3.6	Launching Writing Workshop	W.3.3, W.3.10	SL.3.1, SL.3.6	L.3.2, L.3.4	FS.3.3, FS.3.4
Following Characters into Meaning	RI.3.3, RI.3.6, RI.3.8	Narrative: Crafting True Stories	W.3.2, W.3.4, W.3.5	SL.3.1, SL.3.6	L.3.2, L.3.4	FS.3.3, FS.3.4
Informational Reading	RL.3.1, RL.3.2, RL.3.7	Informational Writing	W.3.2, W.3.4, W.3.5, W.3.10	SL.3.1, SL.3.6	L.3.1, L.3.3	FS.3.3, FS.3.4
Nonfiction Reading: Expository Texts	RI.3.1, RI.3.2, RI.3.7	Non Fiction Chapter Books	W.3.2, W.3.5, W.3.6, W.3.7, W.3.8	SL.3.1, SL.3.2, SL.3.4	L.3.1, L.3.3	FS.3.3, FS.3.4
Mystery Book Clubs	RL.3.2, RL.3.4, RL.3.5, RL.3.10	Opinion: Changing the World	W.3.1, W.3.5, W.3.6, W.3.7, W.3.8	SL.3.3, SL.3.4	L.3.5, L.3.6	FS.3.3, FS.3.4
Biography Book Clubs	RI.3.2, RI.3.3, RI.3.4, RI.3.5	Opinion; Changing the World	W.3.1, W.3.5, W.3.6, W.3.7, W.3.8	SL.3.3, SL.3.4	L.3.5, L.3.6	FS.3.3, FS.3.4
Series Book Clubs	RL.3.5, RL.3.10	Opinion: Changing the World	W.3.1, W.3.7	SL.3.1, SL.3.6	L.3.2, L.3.4	FS.3.3, FS.3.4
Test Preparation	RL.3.1, RL.3.9, RI.3.2, RI.3.9	Test Preparation	W.3.1, W.3.6	SL.3.2, SL.3.4	L.3.1, L.3.3	FS.3.3, FS.3.4
Social Issues Book Clubs	RI.3.10	Fairy Tales	W.3.3, W.3.5, W.3.10	SL.3.5	L.3.6	FS.3.3, FS.3.4

Scope and Sequence

Quarter 1 - Grade 3

Big Idea #1: Weather and Climate- In this unit of study, students organize and use data to describe typical weather conditions expected during a particular season. By applying their understanding of weather-related hazards, students are able to make a claim about the merit of a design solution that reduces the impacts of such hazards. 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 asking questions and defining problems, analyzing and interpreting data, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas. (NJ DOE Unit 1)

Scope and Sequence

Quarter 2 - Grade _3_

Big Idea #1: Forces and Motion- In this unit of study, students are able to determine the effects of balanced and unbalanced forces on the motion of an object. The crosscutting concepts of patterns and cause and effect are identified as organizing concepts for these disciplinary core ideas. In the third-grade performance expectations, students are expected to demonstrate grade-appropriate proficiency by planning and carrying out investigations. Students are expected to use these practices to demonstrate understanding of the core ideas. (NJ DOE Unit 2)

Big Idea #2: Electrical and Magnetic Forces- In this unit of study, students determine the effects of balanced and unbalanced forces on the motion of an object and the cause-and-effect relationships of electrical or magnetic interactions to define a simple design problem that can be solved with magnets. The crosscutting concept of cause and effect, and the interdependence 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 these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in asking questions and defining problems. Students are also expected to use these practices to demonstrate understanding of the core ideas. (NJ DOE Unit 3)

Scope and Sequence

Quarter 3 - Grade _3_

Big Idea #1: Traits- In this unit of study, students acquire an understanding that organisms have different inherited traits and that the environment can also affect the traits that an organism develops. The crosscutting concepts of patterns and cause and effect are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in analyzing and interpreting data, constructing explanations, and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas. (NJ DOE Unit 4)

Big Idea #2: Continuing the Cycle- In this unit of study, students develop an understanding of the similarities and differences in organisms' life cycles. In addition, students use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. The crosscutting concepts of patterns and cause and effect are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in developing and using models and constructing explanations and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas. (NJ DOE Unit 5)

Scope and Sequence

Quarter 4 - Grade 3

Big Idea #1: Organisms and The Environment- In this unit of study, students develop an understanding of the idea that when the environment changes, some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die. The crosscutting concepts of cause and effect and the interdependence of science, engineering, and technology are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in engaging in argument from evidence. Students are also expected to use this practice to demonstrate understanding of the core ideas.

Big Idea #2: Using Evidence to Understand Change in Environments-In this unit of study, students develop an understanding of the types of organisms that lived long ago and also about the nature of their environments. Students develop an understanding of the idea that when the environment changes, some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die. The crosscutting concepts of systems and system models; scale, proportion, and quantity; 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 are expected to demonstrate grade-appropriate proficiency in asking questions and defining problems, analyzing and interpreting data, and engaging in argument from evidence. Students are also expected to use these practices to demonstrate understanding of the core ideas.

QUARTER 1 - 22 days
Big Idea: Weather and Climate

Topic: Understanding How Weather and Climate Change Through Seasons

<p>Standards: Develop a model using an analogy, to describe how weather and climate are related. (ESS2.D) [Note: This SLO is based on the disciplinary core ideas found in the Framework. It is intended to serve as a scaffold to 3-ESS2-1.] Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. [Clarification Statement: Examples of data could include average temperature, precipitation, and wind direction.] [Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change.] (3-ESS2-1) Obtain and combine information to describe climates in different regions of the world. (3-ESS2-2) Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. [Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.] (3-ESS3-1) Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-ESS2-2) RI.3.1 Compare and contrast the most important points and key details presented in two texts on the same topic. (3-ESS2-2) RI.3.9 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-ESS3-1) W.3.1</p>	GOAL	
	Students will be able to organize and use data to describe typical weather conditions expected during a particular season.	
	<p>Essential Questions</p> <ol style="list-style-type: none"> 1. Can we predict the kind of weather that we will see in the spring, summer, autumn, or winter? 2. How can we protect people from natural hazards such as flooding, fast wind, or lightening? 3. How can we protect people from natural hazards such as flooding, fast wind, or lightening? 	<p>Assessments</p> <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> <ol style="list-style-type: none"> 1. Patterns of change can be used to make predictions. People record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. 2. Patterns of change can be used to make predictions. Climate describes the range of an area’s typical weather conditions and the extent to which those conditions vary over years. 3. Cause-and-effect relationships are routinely identified, tested, and used 	<p>Resources</p> <p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org</p>

Conduct short research projects that build knowledge about a topic. (3-ESS3-1) W.3.7
Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-ESS2-2) W.3.9 Reason abstractly and quantitatively. (3-ESS2-1),(3-ESS2-2),(3-ESS3-1) MP.2
Model with mathematics. (3-ESS2-1),(3-ESS2-2), (3-ESS3-1) MP.4
Use appropriate tools strategically. (3-ESS2-1) MP.5
Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (3-ESS2-1) 3.MD.A.2
Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in bar graphs. (3-ESS2-1) 3.MD.B.3
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.

to explain change. Science affects everyday life. People’s needs and wants change over time, as do their demands for new and improved technologies. A variety of natural hazards result from natural processes (e.g., flooding, fast wind, or lightning). Humans cannot eliminate natural hazards but can take steps to reduce their impacts.

QUARTER 2 - 10 days

Big Idea: Forces of Motion

Topic: Understanding How Equal and Unequal Forces on an Object Affect the Object

<p>Standards: Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. [Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.] [Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.] (3-PS2-1) Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion. [Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.] [Assessment Boundary: Assessment does not include technical terms such as period and frequency.] (3-PS2-2) Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object’s speed or direction of motion. (Boundary: Qualitative and conceptual, but not quantitative addition of forces are used at this level.) (3-PS2-1)</p> <ul style="list-style-type: none"> • The patterns of an object’s motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it. (Boundary: Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.) (3-PS2-2) Ask and answer 	GOAL	
	Students will be able to determine the effects of balanced and unbalanced forces on the motion of an object	
	Essential Questions	
	<ol style="list-style-type: none"> 1. How do scientists play soccer? 2. Can we use patterns that we observed to predict the future? 	
	Assessments	
<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		
<ol style="list-style-type: none"> 1. Science investigations use a variety of methods, tools, and techniques. Cause-and-effect relationships are routinely identified. Objects in contact exert forces on each other. Each force that acts on a particular object has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to zero net force on the object. Forces that do not sum to zero can cause changes in the object’s speed or direction of motion. (Qualitative and conceptual, but not quantitative, addition of forces are used at this level.) 		
Resources		
<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org</p>		

questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. RI.3.1 (3-PS2-1)

Conduct short research projects that build knowledge about a topic. W.3.7 (3-PS2-1),(3-PS2-2)

Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. W.3.8 (3-PS2-1),(3-PS2-2) Reason abstractly and quantitatively. MP.2 (3-PS2-1)

Use appropriate tools strategically. MP.5 (3-PS2-1)

Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. 3.MD.A.2 (3-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.

2. Science findings are based on recognizing patterns. Patterns of change can be used to make predictions. The patterns of an object's motion in various situations can be observed and measured. When past motion exhibits a regular pattern, future motion can be predicted from it. (Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.)

QUARTER 2 - 15 days

Big Idea: Electrical and Magnetic Forces

Topic: Understandings How Magnets Can be Used to Solve Problems

<p>Standards: Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. [Clarification Statement: Examples of an electric force could include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.] [Assessment Boundary: Assessment is limited to forces produced by objects that can be manipulated by students, and electrical interactions are limited to static electricity.] (3-PS2-3) Define a simple design problem that can be solved by applying scientific ideas about magnets.* [Clarification Statement: Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.] (3-PS2-4) Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. (3-5-ETS1-1 PS2.B: Types of Interactions</p> <ul style="list-style-type: none"> • Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. (3-PS2-3),(3-PS2-4) ETS1.A: Defining and Delimiting Engineering Problems. Possible solutions to 	GOAL	
	Students will be able to determine the effects of balanced and unbalanced forces on the motion of an object and the cause-and-effect relationships of electrical or magnetic interactions to define a simple design problem that can be solved with magnets.	
	Essential Questions	Assessments
	<ol style="list-style-type: none"> 1. What are the relationships between electrical and magnetic forces? 2. How can we use our understandings about magnets be used to solve problems? 	<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. Cause-and-effect relationships are routinely identified, tested, and used to explain change. Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. 2. Scientific discoveries about the natural world can often lead to new and improved technologies, which are developed through the engineering design process. People's 	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org</p>	

a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (3-5-ETS1-1)) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-PS2-3) RI.3.1
Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-PS2-3) RI.3.3
Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). (3-PS2-3) RI.3.8
Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. (3-PS2-3) SL.3.3
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.

needs and wants change over time, as do their demands for new and improved technologies. Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart. For forces between two magnets, the size of the force depends on their orientation relative to each other. Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account.

QUARTER 3 - 12 days

Big Idea: Traits

Topic: Understanding That Traits are Passed on From Parent to Offspring and Environmental Factors Influence the Traits of a Specific Organism

<p>Standards:</p> <p>Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. [Clarification Statement: Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.] [Assessment Boundary: Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.] (3-LS3-1) Use evidence to support the explanation that traits can be influenced by the environment. [Clarification Statement: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight.] (3-LS3-2) Many characteristics of organisms are inherited from their parents. (3-LS3-1) Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2)</p> <p>LS3.B: Variation of Traits Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1) The environment also affects the traits that an organism develops. (3-LS3-2) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS3-1), (3-LS3-2) RI.3.1 Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS3-1), (3-LS3-2) RI.3.2</p>	GOAL	
	Students will acquire an understanding that organisms have different inherited traits and that the environment can also affect the traits that an organism develops	
	Essential Questions	Assessments
	<ol style="list-style-type: none"> 1. What kinds of traits are passed on from parent to offspring? 2. What environmental factors might influence the traits of a specific organism? 	<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. Similarities and differences in patterns can be used to sort and classify natural phenomena (e.g., inherited traits that occur naturally). Many characteristics of organisms are inherited from their parents. Different organisms vary in how they look and function because they have different inherited information. 2. Cause-and-effect relationships are routinely identified and used to explain change. Other characteristics, which can range from diet to learning, result from individuals' interaction with the environment. 	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org</p>	

Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS3-1),(3-LS3-2) RI.3.3

Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS3-1),(3-LS3-2),(3-LS4-2) W.3.2

Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS3-1),(3-LS3-2) SL.3.4

Reason abstractly and quantitatively. (3-LS3-1),(3-LS3-2) MP.2

Model with mathematics. (3-LS3-1),(3-LS3-2) MP.4

Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. (3-LS3-1),(3-LS3-2) 3.MD.B.4

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.

Many characteristics involve both inheritance and environment. The environment also affects the traits that an organism develops.

QUARTER 3 - 10 days

Big Idea: Continuing the Cycle

Topic: Understanding the Similarities and Differences of the Life Cycle of Living Things

<p>Standards: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. [Clarification Statement: Changes organisms go through during their life form a pattern.] [Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.] (3-LS1-1) Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. [Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.] (3-LS4-2) Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2) Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS4-2) RI.3.1 Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS4-2) RI.3.2 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS4-2) RI.3.3 Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate</p>	GOAL	
	Students will develop an understanding of the similarities and differences in an organisms' life cycles. In addition, students use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.	
	Essential Questions	Assessments
	<ol style="list-style-type: none"> Do all living things have the same life cycle? Are there advantages to being different? 	<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"> Science findings are based on recognizing patterns. Similarities and differences in patterns can be used to sort and classify natural phenomena. Patterns of change can be used to make predictions. Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. Cause-and-effect relationships are routinely identified and used to explain change. Sometimes the differences in characteristics between individuals of the same species 	Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org	

understanding of the text (e.g., where, when, why, and how key events occur). (3-LS1-1) RI.3.7
Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS4-2) SL.3.4
Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. (3-LS1-1) SL.3.5
Write informative/explanatory texts to Reason abstractly and quantitatively. (3-LS4-2) MP.2
Model with mathematics. (3-LS1-1), (3-LS4-2) MP.4
Number and Operations in Base Ten (3-LS1-1) 3.NBT
Number and Operations—Fractions (3-LS1-1) 3.NF
Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. (3-LS4-2) 3.MD.B.3
Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. (3-LS4-1) 3.MD.B.4
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.

provide advantages in surviving, finding mates, and reproducing.

QUARTER 4 - 10

Big Idea: Organisms and The Environment

Topic: Understanding How Organisms Survive in the Environment

<p>Standards: Construct an argument that some animals form groups that help members survive. (3-LS2-1) Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.] (3-LS4-3) Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size (Note: Moved from K-2). (3-LS2-1) For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS2-1), (3-LS4-3) RI.3.1 Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS4-3) RI.3.2 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS2-1),(3-LS4-3) RI.3.3 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS2-1), (3-LS4-3) W.3.1 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS4-3) W.3.2 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS4-3) SL.3.4</p>	GOAL	
	Students will develop an understanding of the idea that when the environment changes, some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die.	
	Essential Questions	Assessments
	1. In a particular habitat, why do some organisms survive well, some survive less well, and some not survive at all?	<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
1. Cause-and-effect relationships are routinely identified and used to explain change. Knowledge of relevant scientific concepts and research findings is important in engineering. For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. Organisms and their habitat make up a system in which the parts depend on each other.	Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org	

Model with mathematics. (3-LS2-1),(3-LS4-3) MP.4
Number and Operations in Base Ten. (3-LS2-1) 3.NBT
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.

QUARTER 4 - 14

Big Idea: Using Evidence to Understand Change in Environments

Topic: Understanding What Fossils Tell Us About the Organisms and the Environments in Which They Lived

<p>Standards: Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. [Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.] (3-LS4-1) Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.* [Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.] [Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.] (3-LS4-4) Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. (3-5-ETS1-1) Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (3-LS4-1) Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1) Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4) Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well</p>	GOAL	
	Students will develop an understanding of the types of organisms that lived long ago and also about the nature of their environments. Students develop an understanding of the idea that when the environment changes, some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die.	
	Essential Questions	Assessments
	<ol style="list-style-type: none"> 1. What do fossils tell us about the organisms and the environments in which they lived? 2. What happens to the plants and animals when the environment changes? 	<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. Observable phenomena exist from very short to very long periods of time. Science assumes consistent patterns in natural systems. Some kinds of plants and animals that once lived on Earth are no longer found anywhere. Fossils provide evidence about the types of organisms that lived long ago, and also about the nature of their environments. 2. A system can be described in terms of its components and their interactions. People’s needs and wants change over time, as do their demands for new and improved 	<p>Interactive Science Series Trade Books/Classroom Library Assorted Manipulatives NJ DOE Model Curriculum NGSS www.nextgenerationscience.org/ NSTA www.nsta.org</p>	

<p>each one meets the specified criteria for success or how well each takes the constraints into account. (3-5-ETS1-1) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS4-4) RI.3.1</p> <p>Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS4-1),(3-LS4-4) RI.3.2</p> <p>Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS4-1),(3-LS4-4) RI.3.3</p> <p>Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS4-1),(3-LS4-4) W.3.1</p> <p>Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS4-1),(3-LS4-4) W.3.2</p> <p>Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-LS4-1) W.3.8</p> <p>Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (3-5-ETS1-1) W.5.7</p> <p>Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (3-5-ETS1-1) W.5.8</p> <p>Draw evidence from literary or informational texts to support analysis, reflection, and research. (3-5-ETS1-1) W.5.9</p> <p>Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS4-4) SL.3.4 Reason abstractly and quantitatively. (3-LS4-1),(3-LS4-4), (3-5-ETS1-1) MP.2</p>	<p>technologies. Populations live in a variety of habitats, and change in those habitats affects the organisms living there. When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, others move into the transformed environment, and some die. Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success.</p>	
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Model with mathematics. (3-LS4-1),(3-LS4-4), (3-5-ETS1-1) MP.4
Use appropriate tools strategically. (3-LS4-1), (3-5-ETS1-1) MP.5
Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. (3-LS4-2),(3-LS4-3) 3.MD.B.3
Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. (3-LS4-1) 3.MD.B.4
Operations and Algebraic Thinking (3-ETS1-1) 3-5.OA
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.

