

Pine Hill Public Schools Curriculum

Content Area:	Science		
Course Title/ Grade Level: Third Grade	Grade 3		
Unit 1:	Forces and Interactions	Duration:	5 weeks
Unit 2:	Interdependent Relationships in Ecosystems	Duration::	5 weeks
Unit 3:	Heredity, Inheritance and Variation of Traits	Duration:	5 weeks
Unit 4:	Weather and Climate	Duration:	5 weeks
BOE Approved Revision:			
BOE Initial Adoption Date:	August 15, 2017		

Pine Hill Public Schools
Curriculum

Unit Title Forces and Interactions		Unit #: 1
Course or Grade Level: Third		Length of Time: 5 weeks
Performance Expectations	3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object 3-PS2-2. Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion. 3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. 3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.	
Content	<ul style="list-style-type: none"> ● effects of balanced and unbalanced forces on the motion of an object ● pull of gravity ● effects of static electricity ● magnets and magnetic relationships 	
Assessments	<ul style="list-style-type: none"> ● Formative: Anecdotal Records; Teacher Observation; Independent Practice; Investigations; Student Journals ● Summative: Unit Tests; Performance Tasks 	
Inter-disciplinary Connections	ELA/Literacy - <ul style="list-style-type: none"> ● RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-PS2-1),(3-PS2-3) ● RI.3.3 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.3.8 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) ● W.3.7 Conduct short research projects that build knowledge about a topic. (3-PS2-1),(3-PS2-2) ● W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-PS2-1),(3-PS2-2) ● SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. (3-PS2-3) Mathematics - <ul style="list-style-type: none"> ● MP.2 Reason abstractly and quantitatively. (3-PS2-1) ● MP.5 Use appropriate tools strategically. (3-PS2-1) ● 3.MD.A.2 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-PS2-1) ● 	
Lesson resources / Activities	<ul style="list-style-type: none"> ● Front Row ● Internet Resources ● Classroom Library ● Google Drive ● Science A to Z ● Science textbook: Macmillan McGraw-Hill 	
New Jersey Student Learning Standards for Science		
Science and Engineering Practices: <ul style="list-style-type: none"> ● planning and carrying out an investigation ● asking questions and defining problem 		Disciplinary Core Ideas: <ul style="list-style-type: none"> ● PS2.A: Forces and Motion ● PS2.B: Types of Interactions
Cross-Cutting Concepts: <ul style="list-style-type: none"> ● cause and effect ● patterns 		

<u>21st Century Themes</u>							
X	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
X	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration	X	Information Literacy
X	Media Literacy	X	ICT Literacy	X	Life and Career Skills		
8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.							
Strand: A. Technology Operations and Concepts: <i>Students demonstrate a sound understanding of technology concepts, systems and operations.</i>			Content Statement: Understand and use technology systems.		Indicator: 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.		

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Unit Title Interdependent Relationships in Ecosystems

Unit #: 2

Course or Grade Level: Third

Length of Time: 5 weeks

Performance Expectations

3-LS2-1. Construct an argument that some animals form groups that help members survive.
 3-LS4-3. 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.
 3-LS4-4. 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.
 3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

Content

- different habitats in the world
- adaptations and traits that help an animal survive
- how habitats may change
- fossils

Assessments

- Formative: Anecdotal Records; Teacher Observation; Independent Practice; Investigations; Student Journals
- Summative: Unit Tests; Performance Tasks

Inter-disciplinary Connections

ELA/Literacy —

- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS2-1)
- RI.3.3 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)
- RI.3.7 Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). (3-LS1-1)
- SL.3.5 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)
- W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS2-1)

Mathematics —

- 3.NBT Number and Operations in Base Ten (3-LS1-1)
- 3.NF Number and Operations—Fractions (3-LS1-1)
- MP.4 Model with mathematics. (3-LS2-1)
- 3.NBT Number and Operations in Base Ten. (3-LS2-1)

Lesson resources / Activities

- Front Row
- Internet Resources
- Classroom Library
- [Google Drive](#)
- [Science A to Z](#)
- [Science](#) textbook: Macmillan McGraw-Hill

New Jersey Student Learning Standards for Science

Science and Engineering Practices:

- analyzing and interpreting data
- engaging in argument from evidence

Disciplinary Core Ideas:

- LS2.C: Ecosystem Dynamics, Functioning, and Resilience
- LS2.D: Social Interactions and Group Behavior
- LS4.A: Evidence of Common Ancestry and Diversity
- LS4.C: Adaptation
- LS4.D: Biodiversity and Humans

Cross-Cutting Concepts:

- cause and effect
- scale, proportion, and quantity

- systems and system models

21st Century Themes

X	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy	X	Civic Literacy		Health Literacy
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21st Century Skills

X	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration	X	Information Literacy
X	Media Literacy	X	ICT Literacy	X	Life and Career Skills		

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

<p>Strand: A. Technology Operations and Concepts: <i>Students demonstrate a sound understanding of technology concepts, systems and operations.</i></p>	<p>Content Statement: Understand and use technology systems.</p>	<p>Indicator: 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.</p>
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Unit Title Heredity, Inheritance and Variation of Traits		Unit #: 3
Course or Grade Level: Third		Length of Time: 5 weeks
Performance Expectations	<p>3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p> <p>3-LS3-1. 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</p> <p>3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.</p> <p>3-LS4-2. 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.</p>	
Content	<ul style="list-style-type: none"> ● life cycles: birth, growth, reproduction, death ● certain traits are inherited from parents ● some traits can be influenced by the environment ● some traits in an organism can give it an advantage over other organisms 	
Assessments	<ul style="list-style-type: none"> ● Formative: Anecdotal Records; Teacher Observation; Independent Practice; Investigations; Student Journals ● Summative: Unit Tests; Performance Tasks 	
Inter-disciplinary Connections	<p>ELA/Literacy —</p> <ul style="list-style-type: none"> ● RI.3.1 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.3.2 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.3.3 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) ● W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS4-1),(3-LS4-3),(3-LS4-4) ● W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS3-1),(3-LS3-2) ● SL.3.4 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) ● W.3.8 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) <p>Mathematics —</p> <ul style="list-style-type: none"> ● MP.2 Reason abstractly and quantitatively. (3-LS3-1),(3-LS3-2) ● MP.4 Model with mathematics. (3-LS3-1),(3-LS3-2) ● MP.5 Use appropriate tools strategically. (3-LS4-1) ● 3.MD.B.3 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.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) 	
Lesson resources / Activities	<ul style="list-style-type: none"> ● Front Row ● Internet Resources ● Classroom Library ● Google Drive ● Science A to Z ● Science textbook: Macmillan McGraw-Hill 	
New Jersey Student Learning Standards for Science		

Science and Engineering Practices: <ul style="list-style-type: none"> developing and using models analyzing and interpreting data constructing explanations and designing solutions 				Disciplinary Core Ideas: <ul style="list-style-type: none"> LS1.B: Growth and Development of Organisms LS3.A: Inheritance of Traits LS3.B: Variation of Traits LS4.B: Natural Selection 			
Cross-Cutting Concepts: <ul style="list-style-type: none"> patterns cause and effect 							
21st Century Themes							
X	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy	X	Health Literacy
21st Century Skills							
X	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration	X	Information Literacy
X	Media Literacy	X	ICT Literacy	X	Life and Career Skills		
8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.							
Strand: A. Technology Operations and Concepts: <i>Students demonstrate a sound understanding of technology concepts, systems and operations.</i>			Content Statement: Understand and use technology systems.		Indicator: 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.		

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Unit Title Weather and Climate		Unit #: 4
Course or Grade Level: Third		Length of Time: 5 weeks
Performance Expectations	3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.	
Content	<ul style="list-style-type: none"> typical weather conditions expected during a particular season climates in different regions of the world reducing the impact of weather-related hazards 	
Assessments	<ul style="list-style-type: none"> Formative: Anecdotal Records; Teacher Observation; Independent Practice; Investigations; Student Journals Summative: Unit Tests; Performance Tasks 	
Inter-disciplinary Connections	ELA/Literacy — <ul style="list-style-type: none"> RI.3.1 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.3.9 Compare and contrast the most important points and key details presented in two texts on the same topic. (3-ESS2-2) W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-ESS3-1) W.3.7 Conduct short research projects that build knowledge about a topic. (3-ESS3-1) W.3.8 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) Mathematics — <ul style="list-style-type: none"> MP.2 Reason abstractly and quantitatively. (3-ESS2-1),(3-ESS2-2) MP.4 Model with mathematics. (3-ESS2-1),(3-ESS2-2) MP.5 Use appropriate tools strategically. (3-ESS2-1) 3.MD.A.2 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.B.3 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) ELA/Literacy —	
Lesson resources / Activities	<ul style="list-style-type: none"> Front Row Internet Resources Classroom Library Google Drive Science A to Z Science textbook: Macmillan McGraw-Hill 	
New Jersey Student Learning Standards for Science		
Science and Engineering Practices: <ul style="list-style-type: none"> analyzing and interpreting data engaging in argument from evidence obtaining, evaluating and communicating information 		Disciplinary Core Ideas: <ul style="list-style-type: none"> ESS2.D: Weather and Climate ESS3.B: Natural Hazards
Cross-Cutting Concepts: <ul style="list-style-type: none"> patterns cause and effect 		

<u>21st Century Themes</u>							
X	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
X	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration	X	Information Literacy
X	Media Literacy	X	ICT Literacy				
8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.							
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