

Pine Hill Public Schools Curriculum

Content Area:	Science		
Course Title/ Grade Level: Kindergarten	Kindergarten		
Unit 1:	Forces and Interactions: Pushes and Pulls	Duration:	5 weeks
Unit 2:	Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment	Duration:	5 weeks
Unit 3:	Weather and Climate	Duration:	5 weeks
BOE Approved Revision:			
BOE Initial Adoption Date:	August 15, 2017		

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Unit Title Forces and Interactions: Pushes and Pulls						Unit #: 1	
Course or Grade Level: Kindergarten				Length of Time: 5 weeks			
Performance Expectations		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 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					
Content		<ul style="list-style-type: none"> a push and/or a pull is a force that affects motion. an object moves in the direction of the push or pull. - pushes and pulls can speed up, slow down, or change the direction of an object. - size, weight, and shape of an object affects its motion. 					
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		<ul style="list-style-type: none"> 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 K.MD.A.1 K.MD.A.2 Reason abstractly and quantitatively. (K-PS2-1) Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1) 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) 					
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:				Disciplinary Core Ideas:			
<ul style="list-style-type: none"> Planning and Carrying Out Investigations Analyzing and Interpreting Data 				<ul style="list-style-type: none"> PS2.A: Forces and Motion PS2.B: Types of Interactions PS3.C: Relationship Between Energy and Forces ETS1.A: Defining Engineering Problems 			
Cross-Cutting Concepts:							
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	X	Critical Thinking and Problem	X	Communication and	X	Information Literacy

	Innovation		Solving		Collaboration		
X	Media Literacy	X	ICT Literacy	X	Life and Career Skills		
<p>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>							
<p>Strand:: A. Technology Operations and Concepts: <i>Students demonstrate a sound understanding of technology concepts, systems and operations.</i></p>		<p>Content Statement: Select and use applications effectively and productively.</p>		<p>Indicator: 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p>			

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Unit Title Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment		Unit #: 2
Course or Grade Level: Kindergarten		Length of Time: 5 weeks
Performance Expectations	<p>K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive</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</p> <p>K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live</p> <p>K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment</p>	
Content	<ul style="list-style-type: none"> ● Living and Nonliving Things ● Ecosystems and Habitat ● Wants vs. Needs and Human Survival ● Needs, Habitats and Ecosystems of Humans, Plants, and Animals ● Environmental Changes ● Human Impacts ● Reducing Human Impact 	
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	<ul style="list-style-type: none"> ● Common Core State Standards Connections: <ul style="list-style-type: none"> ELA/Literacy – <ul style="list-style-type: none"> RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-ESS2-2) W.K.1 Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book. (K-ESS2-2) W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. (K-ESS2-2),(K-ESS3-3) 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-LS1-1) SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail. (K-ESS3-1) Mathematics – <ul style="list-style-type: none"> MP.2 Reason abstractly and quantitatively. (K-ESS3-1) MP.4 Model with mathematics. (K-ESS3-1) K.CC Counting and Cardinality (K-ESS3-1) 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-LS1-1) 	
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:		Disciplinary Core Ideas:
<ul style="list-style-type: none"> ● Developing and Using Models 		<ul style="list-style-type: none"> ● LS1.C: Organization for Matter and Energy

<ul style="list-style-type: none"> Analyzing and Interpreting Data Engaging in Argument from Evidence Obtaining, Evaluating, and Communicating Information 				<p>Flow in Organisms</p> <ul style="list-style-type: none"> ESS2.E: Biogeology ESS3.A: Natural Resources ESS3.C: Human Impacts on Earth Systems ETS1.B: Developing Possible Solutions 			
<p>Cross-Cutting Concepts:</p> <ul style="list-style-type: none"> Patterns Cause and Effect Systems and System Models 							
21st Century Themes							
X	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy	X	Civic Literacy		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		
<p>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>							
<p>Strand: A. Technology Operations and Concepts: <i>Students demonstrate a sound understanding of technology concepts, systems and operations.</i></p>			<p>Content Statement: Select and use applications effectively and productively.</p>		<p>Indicator: 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p>		

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Unit Title Weather and Climate		Unit #: 3
Course or Grade Level: Kindergarten		Length of Time: 5 weeks
Performance Expectations	K-PS3-1 Make observations to determine the effect of sunlight on Earth’s surface K-PS3-2 Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time K-ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.	
Content	<ul style="list-style-type: none"> ● sunlight warms the Earth surfaces ● Earth surfaces in the schoolyard ● difference between weather and climate ● recording weather over time helps show weather patterns ● forecasting weather can help prepare for severe weather 	
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	<ul style="list-style-type: none"> ● 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-ESS3-2) 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-PS3-1),(K-PS3-2),(K-ESS2-1) SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-ESS3-2) Mathematics – MP.2 Reason abstractly and quantitatively. (K-ESS2-1) MP.4 Model with mathematics. (K-ESS2-1),(K-ESS3-2) K.CC Counting and Cardinality (K-ESS3-2) K.CC.A Know number names and the count sequence. (K-ESS2-1) K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-ESS2-1) 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-PS3-1),(K-PS3-2) K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count. (K-ESS2-1) 	
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:	Disciplinary Core Ideas:
<ul style="list-style-type: none"> ● Asking Questions and Defining Problems ● Planning and Carrying Out Investigations ● Analyzing and Interpreting Data 	<ul style="list-style-type: none"> ● PS3.B: Conservation of Energy and Energy Transfer ● ESS2.D: Weather and Climate

<ul style="list-style-type: none"> ● Constructing Explanations and Designing Solutions ● Obtaining, Evaluating, and Communicating Information 		<ul style="list-style-type: none"> ● ESS3.B: Natural Hazards ● ETS1.A: Defining and Delimiting an Engineering Problem 					
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		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: Select and use applications effectively and productively.		Indicator: 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).		