

Pine Hill Public Schools Curriculum

Content Area:	Science		
Course Title/ Grade Level: Science	Grade 2		
Unit 1:	Structure and Properties of Matter	Duration:	5 weeks
Unit 2:	Interdependent Relationships in Ecosystems	Duration::	5 weeks
Unit 3:	Earth's Systems: Processes that Shape the Earth	Duration:	5 weeks
BOE Approved Revision:			
BOE Initial Adoption Date:	August 15, 2017		

**Pine Hill Public Schools
Curriculum**

Unit Title Structures and Properties of Matter		Unit #: 1
Course or Grade Level: Second		Length of Time: 5 weeks
Performance Expectations	2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties 2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose 2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. 2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	
Content	<ul style="list-style-type: none"> ● What is the world made of? ● Observable properties of matter ● Similarities and differences of matter ● physical and chemical changes to matter 	
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.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (2-PS1-4) ● RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. (2-PS1-4) ● RI.2.8 Describe how reasons support specific points the author makes in a text. (2-PS1-2),(2-PS1-4) ● W.2.1 Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section. (2-PS1-4) ● W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2-PS1-1),(2-PS1-2),(2-PS1-3) ● W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-PS1-1),(2-PS1-2),(2-PS1-3) Mathematics – <ul style="list-style-type: none"> ● MP.2 Reason abstractly and quantitatively. (2-PS1-2) ● MP.4 Model with mathematics. (2-PS1-1),(2-PS1-2) ● MP.5 Use appropriate tools strategically. (2-PS1-2) ● 2.MD.D.10 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. (2-PS1-1),(2-PS1-2) 	
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"> ● Planning and Carrying Out Investigations ● Analyzing and Interpreting Data ● Constructing Explanations and Designing Solutions 		Disciplinary Core Ideas: <ul style="list-style-type: none"> ● PS1.A: Structures and Properties of Matter ● PS1.B: Chemical Reactions

<ul style="list-style-type: none"> ● Engaging in Argument from Evidence ● Connections to Nature of Science: Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena 							
Cross-Cutting Concepts: <ul style="list-style-type: none"> ● Patterns ● Cause and Effect ● Energy and Matter ● Connections to Engineering, Technology, and Applications of Science: Influence of Engineering, Technology, and Science on Society and the Natural World 							
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).		

Pine Hill Public Schools Curriculum							
Unit Title Interdependent Relationships in Ecosystems						Unit #: 2	
Course or Grade Level: Second				Length of Time: 5 weeks			
Performance Expectations		2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow 2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats					
Content		<ul style="list-style-type: none"> • Characteristics of living and nonliving things • Plants use parts to meet its basic needs. (growth) • Seeds and pollination • Different types of plants and animals live in different habitats. (biodiversity) 					
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"> • W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2-LS2-1),(2-LS4-1) • W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-LS2-1),(2-LS4-1) • SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (2-LS2-2) Mathematics – <ul style="list-style-type: none"> • MP.2 Reason abstractly and quantitatively. (2-LS2-1),(2-LS4-1) • MP.4 Model with mathematics. (2-LS2-1),(2-LS2-2),(2-LS4-1) • MP.5 Use appropriate tools strategically. (2-LS2-1) • 2.MD.D.10 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. (2-LS2-2),(2-LS4-1) 					
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"> • Developing and Using Models • Planning and Carrying Out Investigations • Connections to Nature of Science: Scientific Knowledge is Based on Empirical Evidence 				Disciplinary Core Ideas: <ul style="list-style-type: none"> • LS2.A: Interdependent Relationships in Ecosystems • LS4.D: Biodiversity in Humans • ETS1.B: Developing Possible Solutions 			
Cross-Cutting Concepts: <ul style="list-style-type: none"> • Cause and Effect • Structure and Function 							
21 st Century Themes							
x	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy	X	Health Literacy
21 st 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).
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Pine Hill Public Schools Curriculum	
Unit Title Earth's Systems: Processes that Shape the Earth	Unit #: 3
Course or Grade Level: Second	Length of Time: 5 weeks
Performance Expectations	2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid. 2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area 2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. 2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
Content	<ul style="list-style-type: none"> ● Properties of water. (solid or liquid) ● Where water is found on Earth ● Bodies of water ● Landforms ● Wind and water can change the shape of land
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.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (2-ESS1-1) ● RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. (2-ESS1-1),(2-ESS2-1) ● RI.2.9 Compare and contrast the most important points presented by two texts on the same topic. (2-ESS2-1) ● W.2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (2-ESS1-1),(2-ESS2-3) ● W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2-ESS1-1) ● W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-ESS1-1),(2-ESS2-3) ● SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. (2-ESS1-1)

	<ul style="list-style-type: none"> ● SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (2-ESS2-2) <p>Mathematics –</p> <ul style="list-style-type: none"> ● MP.2 Reason abstractly and quantitatively. (2-ESS2-1),(2-ESS2-1),(2-ESS2-2) ● MP.4 Model with mathematics. (2-ESS1-1),(2-ESS2-1),(2-ESS2-2) ● MP.5 Use appropriate tools strategically. (2-ESS2-1) ● 2.NBT.A Understand place value. (2-ESS1-1) ● 2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (2-ESS2-2) ● 2.MD.B.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
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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
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New Jersey Student Learning Standards for Science

<p>Science and Engineering Practices:</p> <ul style="list-style-type: none"> ● Developing and Using Models ● Constructing Explanations and Designing Solutions ● Obtaining, Evaluating, and Communicating Information 	<p>Disciplinary Core Ideas:</p> <ul style="list-style-type: none"> ● ESS1.C: The History of Planet Earth ● ESS2.A: Earth Materials and Systems ● ESS2.B: Plate Tectonics and Large-Scale System Interactions ● ESS2.C: The Roles of Water in Earth’s Surface Processes ● ETS1.C: Optimizing the Design Solution
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<p>Cross-Cutting Concepts:</p> <ul style="list-style-type: none"> ● Patterns ● Stability and Change ● Connections to Engineering, Technology, and Applications of Science: Influence of Engineering, Technology, and Science on Society and the Natural World ● Connections to Nature of Science: Science Addresses Questions About the Natural and Material World

21st Century Themes

x	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		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		

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