

Pine Hill Public Schools Curriculum

Content Area:	Science		
Course Title/ Grade Level: First Grade	Grade 1		
Unit 1:	Waves: Light and Sound	Duration:	5 weeks
Unit 2:	Structure, Function, and Information Processing	Duration::	5 weeks
Unit 3:	Space Systems: Patterns and Cycles	Duration:	5 weeks
BOE Approved Revision:			
BOE Initial Adoption Date:	August 15, 2017		

**Pine Hill Public Schools
Curriculum**

Unit Title Waves: Light and Sound

Unit #: 1

Course or Grade Level: First

Length of Time: 5 weeks

Performance Expectations

1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated
 1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.
 1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
 1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance

Content

- Sounds are made when something vibrates
- the availability of light affects the ability to see objects
- We use sound and light to communicate
- A shadow is made when something blocks the light

Assessments

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

Inter-disciplinary Connections

- Common Core State Standards Connections:
 ELA/Literacy –
 W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure. (1-PS4-2)
 W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions). (1-PS4-1),(1-PS4-2),(1-PS4-3),(1-PS4-4)
 W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. (1-PS4-1),(1-PS4-2),(1-PS4-3)
 SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. (1-PS4-1),(1-PS4-2),(1-PS4-3)
 Mathematics –
 MP.5 1.MD.A.1 1.MD.A.2
 Use appropriate tools strategically. (1-PS4-4)
 Order three objects by length; compare the lengths of two objects indirectly by using a third object. (1-PS4-4)
 Express the length of an object as a whole number of length units, by layering multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. (1-PS4-4)

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:

- **Planning and Carrying Out Investigations**
- **Constructing Explanations and Designing Solutions**

Disciplinary Core Ideas:

- **PS4.A: Wave Properties**
- **PS4.B: Electromagnetic Radiation**
- **PS4.C: Information Technologies and Instrumentation**

Cross-Cutting Concepts:

<ul style="list-style-type: none"> • 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		
<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>		

**Pine Hill Public Schools
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Unit Title Structure, Function, and Information Technology		Unit #: 2
Course or Grade Level: First		Length of Time: 5 weeks
Performance Expectations	<p>1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.</p> <p>1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.</p> <p>1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.</p>	
Content	<ul style="list-style-type: none"> ● external parts of an animal ● external parts can help an animal survive ● parts of a plant and their importance for survival ● compare and contrast parents and their offspring ● how behavior of parents and offspring help offspring survive 	
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 – <ul style="list-style-type: none"> RI.1.1 Ask and answer questions about key details in a text. (1-LS1-2),(1-LS3-1) RI.1.2 Identify the main topic and retell key details of a text. (1-LS1-2) RI.1.10 With prompting and support, read informational texts appropriately complex for grade. (1-LS1-2) W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions). (1-LS1-1),(1-LS3-1) W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. (1-LS3-1) ● Mathematics – <ul style="list-style-type: none"> MP.2 MP.5 1.NBT.B.3 1.NBT.C.4 1.NBT.C.5 1.NBT.C.6 1.MD.A.1 Reason abstractly and quantitatively. (1-LS3-1) Use appropriate tools strategically. (1-LS3-1) Compare two two-digit numbers based on the meanings of the tens and one digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. (1-LS1-2) Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning uses. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. (1-LS1-2) Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. (1-LS1-2) Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. (1-LS1-2) Order three objects by length; compare the lengths of two objects indirectly by using a third object. (1-LS3-1) 	
Lesson resources / Activities	<ul style="list-style-type: none"> ● Front Row ● Internet Resources ● Classroom Library 	

- [Google Drive](#)
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New Jersey Student Learning Standards for Science

Science and Engineering Practices: <ul style="list-style-type: none"> • Constructing Explanations and Designing Solutions • Obtaining, Evaluating, and Communicating Information 	Disciplinary Core Ideas: <ul style="list-style-type: none"> • LS1.A: Structure and Function • LS1.B: Growth and Development of Organisms • LS1.D: Information Processing • LS3.A: Inheritance of Traits • LS3.B: Variation of Traits
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Cross-Cutting Concepts: <ul style="list-style-type: none"> • Patterns • Structure and Function

21st Century Themes

X	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy	X	Civic Literacy	X	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.

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 Space Systems: Patterns and Cycles						Unit #: 3	
Course or Grade Level: First				Length of Time: 5 weeks			
Performance Expectations		1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year. 1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.					
Content		<ul style="list-style-type: none"> patterns we see in the movement of objects in the sky phases of the moon day and night seasons sun and stars 					
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 – W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions). (1-ESS1-1),(1-ESS1-2) W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. (1-ESS1-1),(1-ESS1-2) Mathematics – MP.2 Reason abstractly and quantitatively. (1-ESS1-2) MP.4 Model with mathematics. (1-ESS1-2) MP.5 Use appropriate tools strategically. (1-ESS1-2) 1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations to represent the problem. (1-ESS1-2) 1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. (1-ESS1-2) 					
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:				Disciplinary Core Ideas:			
<ul style="list-style-type: none"> Planning and Carrying Out Investigations Analyzing and Interpreting Data 				<ul style="list-style-type: none"> ESS1.A: The Universe and Its Stars ESS1.B: Earth and the Solar System 			
Cross-Cutting Concepts:							
<ul style="list-style-type: none"> Patterns 							
21 st Century Themes							
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21st Century Skills

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X	Media Literacy	X	ICT Literacy	X	Life and Career Skills		

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