

Wandell School Science Curricula

Aligned to the Next Generation Science Standards (NGSS)

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Introduction

There is no doubt that science—and, therefore, science education—is central to the lives of all Americans. Never before has our world been so complex and science knowledge so critical to making sense of it all. When comprehending current events, choosing and using technology, or making informed decisions about one's healthcare, science understanding is key. Science is also at the heart of the United States' ability to continue to innovate, lead, and create the jobs of the future.

Through a collaborative, state-led process, new K–12 science standards have been developed that are rich in content and practice and arranged in a coherent manner across disciplines and grades to provide all students an internationally benchmarked science education. The Next Generation Science Standards are based on the Framework for K–12 Science Education developed by the National Research Council.

Every NGSS standard has three dimensions: disciplinary core ideas (content), scientific and engineering practices, and cross-cutting concepts.

The NGSS focus on a smaller set of Disciplinary Core Ideas (DCI) that students should know by the time they graduate from high school, focusing on deeper understanding and application of content. → Science and engineering are integrated into science education by raising engineering design to the same level as scientific inquiry in science classroom instruction at all levels, and by emphasizing the core ideas of engineering design and technology applications

The NGSS content is focused on preparing students for college and careers. The NGSS are aligned, by grade level and cognitive demand with the English Language Arts and Mathematics Common Core State Standards. This allows an opportunity both for science to be a part of a child's comprehensive education as well as ensuring an aligned sequence of learning in all content areas. The three sets of standards overlap and are reinforcing in meaningful and substantive ways.

Coupling practice with content gives the learning context, whereas practices alone are activities and content alone is memorization. It is through integration that science begins to make sense and allows students to apply the material.

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Unit A Overview

Content Area: Science

Unit Title: Unit A Science, Engineering, and Technology

Target Course/Grade Level: K

Unit Summary

Natural science comprises the knowledge of the universe and processes for exploring it. Natural science is organized into three main areas of knowledge – Earth and space science, physical science, and life science. The processes of science involve scientific methods of investigation and the use of process skills such as observing, classifying, making and using models, and recording data. Questioning is an essential part of science processes. Children begin to gain an understanding of natural science as they ask questions and make and communicate observations of the world around them.

In this unit students will learn how scientists study the world around them. Students will learn to ask questions about science, test ideas, make observations, and share information. This unit introduces the tools used to make observations, to measure, and to record information. In addition, students will learn about the tools and rules that help them stay safe when studying science.

Primary interdisciplinary connections: Math, Reading, Writing, Art, Social Studies, Rhyme

21st century skills:

- **Creativity and Innovation**
 - Think Creatively
 - Work Creatively with Others
 - Implement Innovations
- **Critical Thinking and Problem Solving**
 - Reason Effectively
 - Use Systems Thinking
 - Make Judgments and Decisions
 - Solve Problems
- **Communication and Collaboration**
 - Communicate Clearly
 - Collaborate with Others

Standard(s)

- **K-2-ETS1 Engineering Design**

Performance Expectations

- **K-2-ETS1-1** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- **K-2-ETS1-2** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- **K-2-ETS1-3** Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

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<p>Science and Engineering Practices</p> <p><u>Asking Questions and Defining Problems</u></p> <ul style="list-style-type: none"> Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions. <p><u>Developing and Using Models</u></p> <ul style="list-style-type: none"> Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. <p><u>Analyzing and Interpreting Data</u></p> <ul style="list-style-type: none"> Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. 	
<p>Disciplinary Core Ideas</p> <ul style="list-style-type: none"> ETS1.A: Defining and Delimiting Engineering Problems ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution 	
Performance Expectation (PE)	Supporting Concepts, Practices, and Ideas
K-2-ETS1-1	A situation that people want to change or create can be approached as a problem to be solved through engineering.
K-2-ETS1-1	Asking questions, making observations, and gathering information are helpful in thinking about problems.
K-2-ETS1-1	Before beginning to design a solution, it is important to clearly understand the problem.
K-2-ETS1-1	Ask questions based on observations to find more information about the natural and/or designed world(s).
K-2-ETS1-1	Define a simple problem that can be solved through the development of a new or improved object or tool.
K-2-ETS1-2	Develop a simple model based on evidence to represent a proposed object or tool.
K-2-ETS1-2	Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem’s solutions to other people.
K-2-ETS1-2	The shape and stability of structures of natural and designed objects are related to their function.
K-2-ETS1-3	Because there is always more than one possible solution to a problem, it is useful to compare and test designs.
K-2-ETS1-3	Analyze data from tests of an object or tool to determine if it works as intended.
<p>Related Common Core ELA Standards</p>	
RI.2.1	Ask and answer such questions as <i>who</i> , <i>what</i> , <i>where</i> , <i>when</i> , <i>why</i> , and <i>how</i> to demonstrate understanding of key details in a text. (K-2-ETS1-1)
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. (K-2-ETS1-1, K-2-ETS1-3)
W.2.8	Recall information from experiences or gather information from provided sources to

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	answer a question. (K-2-ETS1-1, K-2-ETS1-3)	
SL.2.5	Create audio recording of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (K-2-ETS1-2)	
Related Common Core Mathematics Standards		
MP.2	Reason abstractly and quantitatively. (K-2-ETS1-1, K-2-ETS1-3)	
MP.4	Model with mathematics (K-2-ETS1-1, K-2-ETS1-3)	
MP.5	Use appropriate tools strategically (K-2-ETS1-1, K-2-ETS1-3)	
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. (K-2-ETS1-1, K-2-ETS1-3)	
Crosscutting Concepts		
<ul style="list-style-type: none"> • Structure and Function 		
Unit Essential Questions <ul style="list-style-type: none"> • What is science? • What questions can you ask? • How do you observe? • How do you learn together? • How do you share what you learn? • What do you use to observe? • How do you stay safe? • What problems can you solve? • How can you make a plan? • How can you share your ideas with others? 	Unit Enduring Understandings <ul style="list-style-type: none"> • Scientific inquiry involves asking scientifically oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying explanations. • Safety comes first. 	
Unit Learning Targets <i>Students will be Able To:</i> <ul style="list-style-type: none"> • tell about working together to ask and answer questions. • explain that we observe by using the senses. • tell that children can learn together as they conduct fair tests. • identify ways to record and share information about observations and tests. • tell how to use tools to observe and collect data. • identify how using tools and following rules help children stay safe in science class. 		
Evidence of Learning		
Summative Assessments at the end of each chapter Equipment needed: See teacher edition Teacher Resources: Pearson Interactive Science https://www.pearsonsuccessnet.com/snpapp/login/PsnLandingPage.jsp?showLandingPage=true&ticket=ST-1368125-E9Ki92wc0g5CVII9xxk5-b3-rumba-prod-01-01		

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Lesson Plans	
Chapter/Lesson	Time frame
Chapter 1: Lesson 1 <i>What Questions Can You Ask?</i>	20 minutes
Chapter 1: Lesson 2 <i>How Do You Observe?</i>	20 minutes
Chapter 1: Lesson 3 <i>How Do You Learn Together?</i>	20 minutes
Chapter 1: Lesson 4 <i>How Do You Share What You Learn?</i>	20 minutes
Chapter 1: Lesson 5 <i>What Do You Use to Observe?</i>	20 minutes
Chapter 1: Lesson 6 <i>How Do You Stay Safe?</i>	20 minutes
Chapter 2: Lesson 1 <i>What Problems Can You Solve?</i>	20 minutes
Chapter 2: Lesson 2 <i>How Can You Make A Plan?</i>	20 minutes
Chapter 2: Lesson 3 <i>How Can You Share Your Ideas With Others?</i>	20 minutes
Inquiry: <ul style="list-style-type: none"> • How do we observe? • How do things look? • What makes things look even bigger? • What can this object do? • How can you lift heavy things? • How can you make a maze? • How can you move other objects up? 	
Teacher Notes:	
Curriculum Development Resources Click the links below to access additional resources used to design this unit: <ul style="list-style-type: none"> • Next Generation Science Standards (NGSS) http://www.nextgenscience.org/ • 21st Century Skills http://www.p21.org/our-work/p21-framework • New Jersey Standards Clarification Project http://www.nj.gov/education/aps/njscp/Phase1allAreas.pdf 	

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Chapter 1 - Lesson 1					
Content Area: Science					
Lesson Title: What Questions Can You Ask?				Timeframe: 20 minutes	
Lesson Components [Each * Item is Optional, and "As Needed"]					
<u>*21st Century Themes</u>					
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>science</i>					

Learning Outcomes <small>(Note: Each outcome should include a formative assessment)</small>	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> tell about working together to ask and answer questions. 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge about a time when students did something together with another person. 3. Explain: how people can work together to ask and answer questions 4. Elaborate: Incorporate the Reading strategies of inference and cause and effect in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation:</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

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Chapter 1 - Lesson 2					
Content Area: Science					
Lesson Title: How Do You Observe?				Timeframe: 20 minutes	
Lesson Components [Each * Item is Optional, and "As Needed"]					
<u>*21st Century Themes</u>					
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>observe</i>					

Learning Outcomes <small>(Note: Each outcome should include a formative assessment)</small>	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> explain that we observe by using the senses. 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to describe a familiar object. 3. Explain: People observe things by using their senses. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i> and <i>analyze</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation:</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

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Chapter 1 - Lesson 3					
Content Area: Science					
Lesson Title: How Do You Learn Together?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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		
Media Literacy	ICT Literacy	x Life and Career Skills			
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>no new vocabulary</i>					

Learning Outcomes <small>(Note: Each outcome should include a formative assessment)</small>	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> tell that children can learn together as they conduct their tests 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about a time they spilled something and what they used to clean it up. 3. Explain: People can learn together as they do tests. 4. Elaborate: Incorporate the Reading strategies of <i>draw conclusions</i> and <i>predict</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
<p>Resources Provided</p> <ul style="list-style-type: none"> <i>Pearson Interactive Science</i> 	

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Chapter 1 - Lesson 4					
Content Area: Science					
Lesson Title: How Do You Share What You Learn?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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		
Media Literacy	ICT Literacy	x Life and Career Skills			
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>no new vocabulary</i>					

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> identify ways to record and share information about observations and tests 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to talk about times when they have shared information with another person. 3. Explain: There are ways to record and share information. 4. Elaborate: Incorporate the Reading strategies of <i>draw conclusions, analyze, and apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided <i>Pearson Interactive Science</i>	

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Chapter 1 - Lesson 5					
Content Area: Science					
Lesson Title: What Do You Use to Observe?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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
	Media Literacy		ICT Literacy	x	Information Literacy
			Life and Career Skills		
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>hand lens, measure</i>					

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> tell how to use tools to observe and collect data 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to name tools they have seen people use. 3. Explain: Science uses tools to observe and collect data. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i> and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 1 - Lesson 6							
Content Area: Science							
Lesson Title: How Do You Stay Safe?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>safety, rules</i>							

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> identify how using tools and following rules help children stay safe in science class. 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to name some rules they follow at home or at school. 3. Explain: Using tools and following rules will help keep children safe in science class. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i>, <i>predict</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

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Chapter 2 - Lesson 1							
Content Area: Science							
Lesson Title: What Problem Can You Solve?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>problem, design</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> identify a problem and a design and materials for solving it 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about the cups, glasses, and containers they use when they drink milk or juice. 3. Explain: People design things to solve problems. 4. Elaborate: Incorporate the Reading strategies of <i>analyze, draw conclusions, and apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 2 - Lesson 2							
Content Area: Science							
Lesson Title: How Can You Make A Plan?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>problem, design</i>							
Learning Outcome			Learning Activities/Instructional Strategies				
Students Will Be Able To: <ul style="list-style-type: none"> • note that one can draw and plan, create, and test solutions 			Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by having students work with partners to build a structure with blocks. Discuss how they decided what to make and how to make it. 3. Explain: People can plan, create, and test solutions to problems. 4. Elaborate: Incorporate the Reading strategies of <i>cause and effect, infer,</i> and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal. 				
Differentiation Embedded in the program are <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 							
Resources Provided: <i>Pearson Interactive Science</i>							

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Chapter 2 - Lesson 3					
Content Area: Science					
Lesson Title: How Can You Share Your Ideas With Others?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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
	Media Literacy		ICT Literacy	x	Life and Career Skills
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>label</i>					

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> explain that solutions can be shared in different ways 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about times they use straws. 3. Explain: People can share solutions by displaying and telling about them. 4. Elaborate: Incorporate the Reading strategies of <i>compare and contrast</i>, <i>draw conclusions</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Unit B Overview

Content Area: Science

Unit Title: Unit B Life Science: Living & Nonliving Things and Plants & Animals

Target Course/Grade Level: K

Unit Summary

Distinguishing living from nonliving matter can be a complex task. For example, mold growing on bread is just as alive as a water lily or a frog. Living things demonstrate these vital characteristics:

- Made up of one or more cells
- Obtains and uses energy
- Grows and develops
- Responds to the environment
- Reproduces
- Adapts to the environment

However, even scientists cannot agree whether viruses, which cause many illnesses, are living things. Viruses are not cells and cannot move, feed, or grow until they enter a living cell. Then they take over the cell and reproduce themselves, causing symptoms. In addition to an energy source (food), water, air, and space, living things also need to live within certain temperature ranges.

Students will learn how to distinguish between living and nonliving things by learning about the needs of living things. This unit will also present the ways that animals are alike and different, and how plants are alike and different.

Students learn that plants, animals, and people grow and change during their lives. Students also learn about some plants and animals that live on land and in the water.

Primary interdisciplinary connections: Math, Reading, Writing

21st century skills:

- **Creativity and Innovation**
 - Think Creatively
 - Work Creatively with Others
 - Implement Innovations
- **Critical Thinking and Problem Solving**
 - Reason Effectively
 - Use Systems Thinking
 - Make Judgments and Decisions
 - Solve Problems
- **Communication and Collaboration**
 - Communicate Clearly
 - Collaborate with Others

Standard(s)

- **K-LS1 From Molecules to Organisms: Structure and Processes**

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Performance Expectations <ul style="list-style-type: none"> • K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive. 	
Science and Engineering Practices <u>Analyzing and Interpreting Data</u> <ul style="list-style-type: none"> • Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. <u>Scientific Knowledge is Based on Empirical Evidence</u>	
Disciplinary Core Ideas <ul style="list-style-type: none"> • LS1.C: Organization for Matter and Energy Flow in Organisms 	
Performance Expectation (PE)	Supporting Concepts, Practices, and Ideas
K-LS1-1	Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
K-LS1-1	Scientists look for patterns and order when making observations about the world.
K-LS1-1	All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.
K-LS1-1	Patterns in the natural and human designed world can be observed and used as evidence.
Related Common Core ELA Standards	
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.
Related Common Core Mathematics Standards	
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.
Crosscutting Concepts <ul style="list-style-type: none"> • Structure and Function 	
Unit Essential Questions <ul style="list-style-type: none"> • What are nonliving things? • What are living things? • What do living things need? • How are animals alike and different? • How are plants alike and different? • How are young animals like their parents? • How do animals change? • How do plants change? • How do people change? • What are some plants and animals that live on land? • What are some plants and animals that live in 	Unit Enduring Understandings <ul style="list-style-type: none"> • All organisms transfer matter and convert energy from one form to another. f • Both matter and energy are necessary to build and maintain structures within the organism. • Organisms are grouped in taxonomy based upon similarity. • The structural and functional characteristics of an organism determine their continued survival over time under changing environmental conditions. • Organisms and their environments are interconnected.

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water?	
Unit Learning Targets <i>Students will be Able To:</i> <ul style="list-style-type: none"> • identify nonliving things • identify living things • identify needs of living things • tell some ways animals are alike and different • tell some ways plants are alike and different 	
Evidence of Learning	
Summative Assessments: <ul style="list-style-type: none"> • at the end of each chapter (written) • performance-based assessment Equipment needed: see teacher's edition Teacher Resources: Pearson Interactive Science https://www.pearsuccessnet.com/snpapp/login/PsnLandingPage.jsp?showLandingPage=true&ticket=ST-1368125-E9Ki92wc0g5CVII9xxk5-b3-rumba-prod-01-01	

Formative Assessments	
<ul style="list-style-type: none"> • teacher observation • student responses to questions • student participation in inquiry activities 	<ul style="list-style-type: none"> • student responses in interactive science journal • •
Lesson Plans	
Chapter/Lesson	Time frame
Chapter 3: Lesson 1 <i>What Are Nonliving Things?</i>	20 minutes
Chapter 3: Lesson 2 <i>What Are Living Things?</i>	20 minutes
Chapter 3: Lesson 3 <i>What Do Living Things Need?</i>	20 minutes
Chapter 3: Lesson 4 <i>How Are Animals Alike and Different?</i>	20 minutes
Chapter 3: Lesson 5 <i>How Are Plants Alike and Different?</i>	20 minutes
Chapter 4: Lesson 1 <i>How Are Young Animals Like Their Parents?</i>	20 minutes
Chapter 4: Lesson 2 <i>How Do Animals Change?</i>	20 minutes
Chapter 4: Lesson 3 <i>How Do Plants Change?</i>	20 minutes
Chapter 4: Lesson 4 <i>How Do People Change?</i>	20 minutes
Chapter 4: Lesson 5 <i>What Are Some Plants and Animals That Live on Land?</i>	20 minutes
Chapter 4: Lesson 6	20 minutes

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<i>What Are Some Plants and Animals That Live in Water?</i>	
Inquiry: <ul style="list-style-type: none"> What things are living? How are animals and plants different? What other ways are plants and animals different? How do seeds change? How does a butterfly change? What food will a butterfly eat? 	
Teacher Notes:	
Curriculum Development Resources <ul style="list-style-type: none"> Next Generation Science Standards (NGSS) http://www.nextgenscience.org/ 21st Century Skills http://www.p21.org/our-work/p21-framework New Jersey Standards Clarification Project http://www.nj.gov/education/aps/njscp/Phase1allAreas.pdf 	

Chapter 3 - Lesson 1							
Content Area: Science							
Lesson Title: What Are Nonliving Things?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>nonliving</i>							

Learning Outcome	Learning Activities/Instructional Strategies
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<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • identify nonliving things 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about how they move their toys around and why their toys do not change. 3. Explain: Students will learn how to identify nonliving things. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i>, and <i>cause and effect</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 3 - Lesson 2					
Content Area: Science					
Lesson Title: What Are Living Things?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>living</i>					

Learning Outcome	Learning Activities/Instructional Strategies
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<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • identify living things 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to name things they saw at a park or another natural setting. 3. Explain: Students will learn how to identify living things. 4. Elaborate: Incorporate the Reading strategies of <i>analyze</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 3 - Lesson 3					
Content Area: Science					
Lesson Title: What Do Living Things Need?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>needs</i>					

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Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> • identify needs of living things 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to talk about a time when they observed someone taking care of plants or animals and describe what the people did for the living things. 3. Explain: Students will learn what living things need. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i>, and <i>synthesize</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

Chapter 3 - Lesson 4							
Content Area: Science							
Lesson Title: How Are Animals Alike and Different?						Time frame: 20 minutes	
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							

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Lesson Vocabulary: *fur, feathers, scales*

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none">• tell some ways animals are alike and different	Lesson Sequence <ol style="list-style-type: none">1. Engage: lesson opener2. Explore: Activate prior knowledge by asking students to think about a pet or any animals they have seen in their neighborhood, at a zoo, or on a farm.3. Explain: Students will learn some ways that animals are alike and different.4. Elaborate: Incorporate the Reading strategies of <i>infer, compare and contrast, and analyze</i> in discussions.5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none">• strategies for English Language Learners• leveled readers• resources to address multiple intelligences	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 3 - Lesson 5					
Content Area: Science					
Lesson Title: How Are Plants Alike and Different?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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
	Media Literacy		ICT Literacy	x	Information Literacy
			Life and Career Skills		
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>rough, smooth</i>					

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> tell some ways plants are alike and different 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to think about plants they have seen in or around their homes, in their neighborhood, or in a garden or a park. 3. Explain: Students will learn some ways that plants are alike and different. 4. Elaborate: Incorporate the Reading strategies of <i>infer, compare and contrast</i>, and <i>draw conclusions</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 4 - Lesson 1					
Content Area: Science					
Lesson Title: How Are Young Animals Like Their Parents?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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		
Media Literacy	ICT Literacy	x Life and Career Skills			
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>babies, parents</i>					

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> match young animals with their parents 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to think about young animals and parents they have seen in real life or in pictures. Make a list of the animal names. 3. Explain: Students will learn how to match young animals with their parents. 4. Elaborate: Incorporate the Reading strategies of <i>compare and contrast</i>, and <i>draw conclusions</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 4 - Lesson 2							
Content Area: Science							
Lesson Title: How Do Animals Change?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>tadpole, puppy</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> describe how animals change as they grow 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to recall baby animals and parents they have seen. Have them show the size of each using their hands. 3. Explain: Students will learn some ways baby animals change as they grow. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i>, <i>analyze</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 4 - Lesson 3							
Content Area: Science							
Lesson Title: How Do Plants Change?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>seed</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> tell how plants change as they grow 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by displaying a variety of seeds, and ask students to tell what they now about seeds. 3. Explain: Students will learn how plants change as they grow. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i>, <i>predict</i>, and <i>synthesize</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 4 - Lesson 4							
Content Area: Science							
Lesson Title: How Do People Change?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>no new vocabulary</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> tell some ways plants are alike and different 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about ways they have changed since they were babies. Invite them to show what they can do now but could not do as a baby. 3. Explain: Students will learn some ways that people change as they grow. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i> and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 4 - Lesson 5							
Content Area: Science							
Lesson Title: What Are Some Plants and Animals That Live on Land?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>no new vocabulary</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> tell about plants and animals that live on land 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about plants and animals they see where they live. 3. Explain: Students will learn about some plants and animals that live on land. 4. Elaborate: Incorporate the Reading strategies of <i>infer, compare and contrast, and analyze</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 4 - Lesson 6							
Content Area: Science							
Lesson Title: What Are Some Plants and Animals That Live in Water?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>no new vocabulary</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> tell about plants and animals that live in water 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell what they know about animals that live in water. Encourage them to describe the animals. 3. Explain: Students will learn about plants and animals that live in water. 4. Elaborate: Incorporate the Reading strategies of <i>infer, compare and contrast</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Unit C Overview

Content Area: Science

Unit Title: Unit C Earth Science: Earth and Sky

Target Course/Grade Level: K

Unit Summary

Day and night occur on Earth because Earth rotates on its axis. Earth makes one complete rotation in about 24 hours. Day occurs when a region is turned toward the sun. Night occurs when the region is turned away from the sun. Because of Earth's motion, the sun appears to move across the sky from east to west. Earth also continually revolves in an elliptical path around the sun. Earth makes a complete revolution every 365.24 days. Earth is always tilted about 23.4° on its axis. Because of this tilt, different places are tilted toward the sun at different times of the year, and Earth has seasons.

Primary interdisciplinary connections: Math, Reading, Writing, Social Studies, Art, Rhyme

21st century skills:

- **Creativity and Innovation**
 - Think Creatively
 - Work Creatively with Others
 - Implement Innovations
- **Critical Thinking and Problem Solving**
 - Reason Effectively
 - Use Systems Thinking
 - Make Judgments and Decisions
 - Solve Problems
- **Communication and Collaboration**
 - Communicate Clearly
 - Collaborate with Others

Standard(s)

- **KESS2 Earth's Systems**

Performance Expectations

- **KESS2-1: Use and share observations of local weather conditions to describe patterns over time.**
- **1-ESS1-1: Use observations of the sun, moon, and stars to describe patterns that can be predicted.**
- **1-ESS1-2: Make observations at different times of year to relate the amount of daylight to the time of year.**

Science and Engineering Practices

Planning and Carrying Out Investigations

- **Planning and carrying out investigations to answer questions or test solutions in K-2 build on prior**

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<p>experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</p> <p><u>Analyzing and Interpreting Data</u></p> <ul style="list-style-type: none"> Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. <p><u>Scientific Knowledge is Based on Empirical Evidence</u></p>	
<p>Disciplinary Core Ideas</p> <ul style="list-style-type: none"> ESS2.D: Weather and Climate ESS1.A: The Universe and its Stars ESS1.B: Earth and the Solar System 	
Performance Expectation (PE)	Supporting Concepts, Practices, and Ideas
KESS2-1 1-ESS1-1	Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
KESS2-1	Scientists look for patterns and order when making observations about the world.
KESS2-1	Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time.
KESS2-1	Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
1-ESS1-1	Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.
1-ESS1-1 1-ESS1-2	Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
1-ESS1-1	Science assumes natural events happen today as they have happened in the past.
1-ESS1-1	Many events are repeated.
1-ESS1-2	Make observations (firsthand or from media) to collect data that can be used to make comparisons.
1-ESS1-2	Seasonal patterns of sunrise and sunset can be observed, described, and predicted.
<p>Related Common Core ELA Standards</p>	
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).
W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
<p>Related Common Core Mathematics Standards</p>	
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)
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)

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Crosscutting Concepts

- Patterns
- Scientific Knowledge Assumes an Order and Consistency in Natural Systems

Unit Essential Questions

- What are Earth and the sky like?
- What makes up Earth?
- What can you see in the day sky?
- How does the sun seem to move?
- What can you see in the night sky?
- What are some kinds of weather?
- What are the seasons?

Unit Enduring Understandings

- There are observable, predictable patterns of movement in the Sun, Earth, and Moon system that account for day/night
- The shape of the Earth is similar to a sphere.
- From Earth many objects may be seen in the sky including the Sun, the Moon, stars, and manmade objects.
- The Sun and Moon appear to move slowly across the sky.
- The pattern of day and night repeats every 24 hours. The Sun can only be seen in the daytime.
- The Moon can be observed sometimes at night and sometimes during the day.
- Earth's components form systems. These systems continually interact at different rates of time, affecting the Earth locally and globally.

Unit Learning Targets

Students will be Able To:

- tell about water and land covering the Earth
- tell when the sun, clouds, and moon can be seen in the sky
- tell where the sun is in the sky at different times of the day
- tell when the moon, clouds and stars can be seen in the sky
- describe and record weather
- identify weather patterns of the seasons

Evidence of Learning

Summative Assessments at the end of each chapter

Equipment needed: see teacher's edition

Teacher Resources: Pearson Interactive Science

<https://www.pearsuccessnet.com/snapp/login/PsnLandingPage.jsp?showLandingPage=true&ticket=ST-1368125-E9Ki92wc0g5CVII9xxk5-b3-rumba-prod-01-01>

Formative Assessments

- teacher observation
- student responses to questions
- student participation in inquiry activities
- student interactive science journal
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Lesson Plans	
Chapter/Lesson	Time frame
Chapter 5: Lesson 1 <i>What Makes Up the Earth?</i>	20 minutes
Chapter 5: Lesson 2 <i>What Can You See in the Day Sky?</i>	20 minutes
Chapter 5: Lesson 3 <i>How Does the Sun Seem to Move?</i>	20 minutes
Chapter 5: Lesson 4 <i>What Can You See In the Night Sky?</i>	20 minutes
Chapter 5: Lesson 5 <i>What Are Some Kinds of Weather?</i>	20 minutes
Chapter 5: Lesson 6 <i>What are the seasons?</i>	20 minutes
Inquiry: <ul style="list-style-type: none">• How does weather change?• What do the day and night skies look like?• What is always found in the sky?	
Teacher Notes:	
Curriculum Development Resources <ul style="list-style-type: none">• Next Generation Science Standards (NGSS) http://www.nextgenscience.org/• 21st Century Skills http://www.p21.org/our-work/p21-frame-work• Delaware Dept. of Education Science Standards Grade Level Expectations http://www.udel.edu/cds/dapa/08-09/GLE/Sci 5.pdf• New Jersey Standards Clarification Project http://www.nj.gov/education/aps/njscp/Phase1allAreas.pdf	

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Chapter 5 - Lesson 1							
Content Area: Science							
Lesson Title: What makes up Earth?				Time frame: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>Earth, ocean, mountains</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> • tell about plants and animals that live in water 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about land they have seen. Prompt descriptions by asking questions such as <i>Was it flat? Was it dry?</i> 3. Explain: Students will know about the water and land covering Earth. 4. Elaborate: Incorporate the Reading strategies of <i>infer, compare and contrast</i>, and <i>draw conclusions</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation	

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Embedded in the program are

- strategies for English Language Learners
- leveled readers
- resources to address multiple intelligences

Resources Provided: *Pearson Interactive Science*

Chapter 5 - Lesson 2

Content Area: Science

Lesson Title: What Can You See in the Day Sky?

Timeframe: 20 minutes

Lesson Components

21st Century Themes

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
	Media Literacy		ICT Literacy	x	Life and Career Skills		

Interdisciplinary Connections: see unit overview

Integration of Technology: Pearson Interactive Science program

Equipment needed: see teacher's edition

Lesson Vocabulary: *sun, day*

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • tell when the sun, clouds, and moon can be seen in the sky 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to name things they can see in the daytime sky. List what they name on chart paper. Ask questions to prompt ideas if necessary. 3. Explain: Students will know when the sun, clouds, and moon can be seen in the sky. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i>, <i>analyze</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.

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<p>Differentiation Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences
<p>Resources Provided: <i>Pearson Interactive Science</i></p>

Chapter 5 - Lesson 3					
Content Area: Science					
Lesson Title: How Does the Sun Seem to Move?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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
Media Literacy		ICT Literacy	x	Life and Career Skills	
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>no new vocabulary</i>					

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • tell where the sun seems to be in the sky at different times of the day. 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell what they know about the sun and its position in the sky. 3. Explain: Students will know where the sun seems to be in the sky at different times of day. 4. Elaborate: Incorporate the Reading strategies of <i>compare and contrast</i>, and <i>draw conclusions</i> in discussions. 5. Evaluate: Students complete the appropriate page in

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	<p>their science journal.</p>
<p>Differentiation Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 5 - Lesson 4					
Content Area: Science					
Lesson Title: What Can You See in the Night Sky?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>night</i>					

Learning Outcome	Learning Activities/Instructional Strategies
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<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • tell when the moon, clouds, and stars can be seen in the sky 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking questions to help students identify objects they can see in the night sky. List what they name on chart paper. 3. Explain: Students will know when the moon, clouds, and stars can be seen in the sky. 4. Elaborate: Incorporate the Reading strategies of <i>infer</i>, <i>compare and contrast</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 5 - Lesson 5							
Content Area: Science							
Lesson Title: What Are Some Kinds of Weather?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>weather</i>							

Learning Outcome	Learning Activities/Instructional Strategies
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<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • describe and record weather 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about today's weather. Encourage them to tell how they can find out about the weather. 3. Explain: Students will know ways to describe and record weather. 4. Elaborate: Incorporate the Reading strategies of <i>synthesize, draw conclusions, and apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 5 - Lesson 6							
Content Area: Science							
Lesson Title: What Are the Seasons?				Time frame: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>no new vocabulary</i>							

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Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • identify weather patterns of seasons 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell what they know about each of the seasons as named by the teacher. 3. Explain: Students will know weather patterns of the seasons 4. Elaborate: Incorporate the Reading strategies of <i>sequence, compare and contrast, and draw conclusions</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Unit D Overview
Content Area: Science
Unit Title: Unit D Physical Science
Target Course/Grade Level: K
<p>Unit Summary</p> <p>Properties are the traits or attributes of objects that help us distinguish them from other objects. Among the many observable properties are color, size, shape, and texture. Size includes an object’s length, width, depth, area, and volume. These are observable properties that can be measured. Length, width, and depth are measured in linear units. Area is measured in square units; volume is given in cubic units. Observable properties can be used to classify or sort objects. Two common types of sorting involve sequences and categories. Objects can be sequenced along a continuum or placed into sets based on specified properties. Objects may be sequenced smallest to largest; objects can be sorted into sets and subsets based on attributes.</p> <p>A mixture has component parts that have different properties. It is heterogeneous. A handful of sand is heterogeneous because it contains dark and light grains of various sizes. By contrast, each substance in a mixture is homogeneous. When substances form a mixture, they keep the same properties. They do not change chemically. They may look different, however. Mixture components can be separated by physical means. For example, a magnet can be used to separate paperclips from plastic buttons.</p> <p>Isaac Newton developed theories of motion in the 1600s. His first law of motion states that an object at rest will</p>

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remain at rest unless a force acts on it. Conversely, an object in motion will continue to move in the same way unless a force acts on it. This tendency of resting or moving objects to resist change is called *inertia*. To change an object's motion, a force must be great enough to overcome the object's inertia. Newton's second law explains acceleration. According to the law, an object will accelerate in the direction of an unbalanced force acting on it. *Acceleration* is any change in speed or direction. An object is accelerating if a force causes its speed to change from fast to slow or slow to fast. An object is also accelerating if it changes direction.

Primary interdisciplinary connections: Math, Reading, Writing, Social Studies, Art, Rhyme

21st century skills:

- **Creativity and Innovation**
 - Think Creatively
 - Work Creatively with Others
 - Implement Innovations
- **Critical Thinking and Problem Solving**
 - Reason Effectively
 - Use Systems Thinking
 - Make Judgments and Decisions
 - Solve Problems
- **Communication and Collaboration**
 - Communicate Clearly
 - Collaborate with Others

Standard(s)

- **K-PS2 Motion and Stability: Forces and Interactions**
- **2-PS1 Matter and Its Interactions**
-

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.
- **2-PS1-1** Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
-

Science and Engineering Practices

Planning and Carrying Out Investigations

- Planning and carrying out investigations to answer questions or test solutions in K-2 build on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

Analyzing and Interpreting Data

- Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

Scientific Investigations Use a Variety of Methods

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Disciplinary Core Ideas	
<ul style="list-style-type: none"> • PS1.A: Structure and Properties of Matter • PS2.A: Forces and Motion • PS2.B: Types of Interactions • PS3.C: Relationship Between Energy and Forces • ETS1.A: Defining Engineering Problems 	
Performance Expectation (PE)	Supporting Concepts, Practices, and Ideas
K-PS2-1	With guidance, plan and conduct an investigation in collaboration with peers.
	Scientists use different ways to study the world.
	Pushes and pulls can have different strengths and directions.
	Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.
	When objects touch or collide, they push on one another and can change motion.
	A bigger push or pull makes things speed up or slow down more quickly.
	Simple tests can be designed to gather evidence to support or refute student ideas about causes.
2-PS1-1	Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties.
	Patterns in the natural and human-designed world can be observed.
K-PS2-2	Analyze data from tests of an object or tool to determine if it works as intended.
	Pushes and pulls can have different strengths and directions.
	Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.
	A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.
	Simple tests can be designed to gather evidence to support or refute student ideas about causes.
Related Common Core ELA Standards	
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)
Related Common Core Mathematics Standards	
MP.2	Reason abstractly and quantitatively. (K-PS2-1)
K.MD.A.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-PS2-1)

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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-PS2-1)
Crosscutting Concepts <ul style="list-style-type: none"> • Cause and Effect • Patterns 	
Unit Essential Questions <ul style="list-style-type: none"> • What are objects like? • What are your five senses? • What are objects made of? • What can you tell about objects? • How can you sort objects? • How can you use objects? • How is sound made? • What are solids like? • What are liquids like? • What are gases like? • How can water change? • What is a mixture? • What can you tell about an object’s position? • What makes objects move? • What are some ways objects move? • What are magnets? 	Unit Enduring Understandings <ul style="list-style-type: none"> • The same basic rules govern the motion of all bodies, from planets and stars to birds and billiard balls. • The structures of materials determine their properties. • The position of an object gives its location relative to where you are (e.g., above, below, in front, or behind). The motion of an object describes how its position is changing. Pushing or pulling on an object can change its position or motion. • When balanced forces act on an object it will remain at rest, but if unbalanced forces act on the object it will begin to move. • The properties of materials influence their use. Some materials are more suitable for making a particular product or device.
Unit Learning Targets <i>Students will be Able To:</i> <ul style="list-style-type: none"> • identify and describe what they observe with the senses • describe objects by their composition • describe objects by their characteristics • sort objects by their characteristics • identify and compare ways to use objects based on their characteristics • identify loud and soft sounds • identify and measure solid objects • observe how liquids take the shape of their containers • tell that gases fill their containers • tell how water changes by freezing, melting, and boiling • tell what is in some mixtures • use position words to tell where objects are located • tell that a push or a pull can change how an object moves • order objects by how fast they move • identify objects a magnet attracts 	
Evidence of Learning	

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Summative Assessments at the end of each chapter

Equipment needed: see teacher's edition

Teacher Resources: Pearson Interactive Science

<https://www.pearsonsuccessnet.com/snpapp/login/PsnLandingPage.jsp?showLandingPage=true&ticket=ST-1368125-E9Ki92we0g5CVII9xxk5-b3-rumba-prod-01-01>

Formative Assessments

- teacher observation
- student responses to questions
- student participation in inquiry activities
- student interactive science journal
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Lesson Plans

Chapter/Lesson	Time frame
Chapter 6: Lesson 1 <i>What Are Your Five Senses?</i>	20 minutes
Chapter 6: Lesson 2 <i>What Are Objects Made Of?</i>	20 minutes
Chapter 6: Lesson 3 <i>What Can You Tell About Objects?</i>	20 minutes
Chapter 6: Lesson 4 <i>How Can You Sort Objects?</i>	20 minutes
Chapter 6: Lesson 5 <i>How Can You Use Objects?</i>	20 minutes
Chapter 6: Lesson 6 <i>How Is Sound Made?</i>	20 minutes
Chapter 7: Lesson 1 <i>What Are Solids Like?</i>	20 minutes
Chapter 7: Lesson 2 <i>What Are Liquids Like?</i>	20 minutes
Chapter 7: Lesson 3 <i>What Are Gases Like?</i>	20 minutes
Chapter 7: Lesson 4 <i>How Can Water Change?</i>	20 minutes
Chapter 7: Lesson 5 <i>What Is a Mixture?</i>	20 minutes
Chapter 8: Lesson 1 <i>What Can You Tell About An Object's Position?</i>	20 minutes
Chapter 8: Lesson 2 <i>What Makes Objects Move?</i>	20 minutes
Chapter 8: Lesson 3 <i>What Are Some Ways Objects Move?</i>	20 minutes
Chapter 8: Lesson 4 <i>What Are Magnets?</i>	20 minutes

Inquiry:

- How can you sort objects?

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- Which object is heavier?
- Which object is harder?
- How do materials change?
- What is in a mixture?
- How can you use a strainer to separate a mixture?
- How do objects move?
- How can you move the car?
- What other ways can you move the car?

Teacher Notes:

Curriculum Development Resources

- Next Generation Science Standards (NGSS) <http://www.nextgenscience.org/>
- 21st Century Skills <http://www.p21.org/our-work/p21-framework>
- Delaware Dept. of Education Science Standards Grade Level Expectations [http://www.udel.edu/cds/dapa/08-09/GLE/Sci 5.pdf](http://www.udel.edu/cds/dapa/08-09/GLE/Sci%205.pdf)
- New Jersey Standards Clarification Project <http://www.nj.gov/education/aps/njsep/Phase1allAreas.pdf>

Chapter 6 - Lesson 1							
Content Area: Science							
Lesson Title: What Are Your Five Senses?				Time frame: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>senses</i>							

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Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none">• identify and describe what they observe with the senses	<p>Lesson Sequence</p> <ol style="list-style-type: none">1. Engage: lesson opener2. Explore: Activate prior knowledge by asking students to think about their five senses and the body parts that go with the senses.3. Explain: Students will know how to identify and describe what I observe with my senses.4. Elaborate: Incorporate the Reading strategies of <i>analyze</i>, and <i>predict</i> in discussions.5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none">• strategies for English Language Learners• leveled readers• resources to address multiple intelligences	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

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Chapter 6 - Lesson 2							
Content Area: Science							
Lesson Title: What Are Objects Made Of?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>clay, wood, metal</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> describe objects by their composition 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by displaying plastic, wooden, and metal spoons. Ask children to help you sort the spoons by telling which are metal, which are wooden, and which are plastic. 3. Explain: Students will know what objects are made of and how to sort them by their makeup. 4. Elaborate: Incorporate the Reading strategies of <i>classify, compare and contrast</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 6 - Lesson 3					
Content Area: Science					
Lesson Title: What Can You Tell About Objects?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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
	Media Literacy		ICT Literacy	x	Information Literacy
			Life and Career Skills		
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>size, color, shape</i>					

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> describe objects by their characteristics 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by inviting students to display and describe a classroom object. Ask them to name the object, tell what it is used for, and identify its characteristics. 3. Explain: Students will know how to describe objects by their characteristics. 4. Elaborate: Incorporate the Reading strategies of <i>infer, compare and contrast</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
Resources Provided: <i>Pearson Interactive Science</i>	

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Chapter 6 - Lesson 4							
Content Area: Science							
Lesson Title: How Can You Sort Objects?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>sort</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> sort objects by their characteristics 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by reminding students that they can describe objects by their sizes, shapes, and colors. Point to two objects in the classroom. Ask students to tell about their sizes, shapes, and color. 3. Explain: Students will know how to sort objects by their characteristics. 4. Elaborate: Incorporate the Reading strategies of <i>draw conclusions</i>, <i>compare and contrast</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	

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Resources Provided: *Pearson Interactive Science*

Chapter 6 - Lesson 5							
Content Area: Science							
Lesson Title: How Can You Use Objects?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>round, square</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> identify and compare ways to use objects based on their characteristics 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by giving students blocks and balls. Tell them to use the toys to build toy structures. Ask which shapes worked best in their buildings. 3. Explain: Students will know about ways to use objects given their characteristics. 4. Elaborate: Incorporate the Reading strategies of <i>analyze, infer,</i> and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers 	

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- resources to address multiple intelligences

Resources Provided: *Pearson Interactive Science*

Chapter 6 - Lesson 6

Content Area: Science

Lesson Title: How is Sound Made?

Timeframe: 20 minutes

Lesson Components

21st Century Themes

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
	Media Literacy		ICT Literacy	x	Life and Career Skills		

Interdisciplinary Connections: see unit overview

Integration of Technology: Pearson Interactive Science program

Equipment needed: see teacher's edition

Lesson Vocabulary: *sound, soft, loud, vibrate*

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> identify loud and soft sounds 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> Engage: lesson opener Explore: Activate prior knowledge by having students tell about loud and soft sounds. Explain: Students will know to identify loud and soft sounds. Elaborate: Incorporate the Reading strategies of <i>draw conclusions, infer,</i> and <i>apply</i> in discussions. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> strategies for English Language Learners leveled readers 	

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- resources to address multiple intelligences

Resources Provided: *Pearson Interactive Science*

Chapter 7 - Lesson 1					
Content Area: Science					
Lesson Title: What are Solids Like?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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
Media Literacy		ICT Literacy	x	Life and Career Skills	
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>matter, solid</i>					

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> identify and measure solid objects 	Lesson Sequence <ol style="list-style-type: none"> Engage: lesson opener Explore: Activate prior knowledge by asking students to tell about something they have built with blocks. Explain: Students will know how to identify and measure solids. Elaborate: Incorporate the Reading strategies of <i>synthesize, infer, and apply</i> in discussions. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners leveled readers 	

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- resources to address multiple intelligences

Resources Provided: *Pearson Interactive Science*

Chapter 7 - Lesson 2					
Content Area: Science					
Lesson Title: What Are Liquids Like?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
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
	Media Literacy		ICT Literacy	x	Information Literacy
	Life and Career Skills				
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					
Lesson Vocabulary: <i>liquid</i>					

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> observe how liquids take the shape of their containers 	Lesson Sequence <ol style="list-style-type: none"> Engage: lesson opener Explore: Activate prior knowledge by asking students to name some liquids and tell what they know about them. Explain: Students will know that liquids take the shape of their containers. Elaborate: Incorporate the Reading strategies of <i>draw conclusions</i>, <i>predict</i>, and <i>apply</i> in discussions. Evaluate: Students complete the appropriate page in their science journal.
Differentiation Embedded in the program are <ul style="list-style-type: none"> strategies for English Language Learners 	

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- leveled readers
- resources to address multiple intelligences

Resources Provided: *Pearson Interactive Science*

Chapter 7 - Lesson 3							
Content Area: Science							
Lesson Title: What are Gases Like?						Timeframe: 20 minutes	
Lesson Components							
<u>21st Century Themes</u>							
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>gas</i>							

Learning Outcome	Learning Activities/Instructional Strategies
Students Will Be Able To: <ul style="list-style-type: none"> • tell that gases fill their containers 	Lesson Sequence <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about times they have had balloons. What did they do with the balloons? 3. Explain: Students will know that gases fill their containers. 4. Elaborate: Incorporate the Reading strategies of <i>draw conclusions, compare and contrast, compare, and apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.

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Differentiation

Embedded in the program are

- strategies for English Language Learners
- leveled readers
- resources to address multiple intelligences

Resources Provided: *Pearson Interactive Science*

Chapter 7 - Lesson 4

Content Area: Science

Lesson Title: How Can Water Change?

Time frame: 20 minutes

Lesson Components

21st Century Themes

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
	Media Literacy		ICT Literacy	x	Life and Career Skills		

Interdisciplinary Connections: see unit overview

Integration of Technology: Pearson Interactive Science program

Equipment needed: see teacher's edition

Lesson Vocabulary: *no new vocabulary*

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Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • tell how water changes by freezing, melting, and boiling 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell what they know about the way ice can change and the ways water can change. 3. Explain: Students will know water changes by freezing, melting, and boiling. 4. Elaborate: Incorporate the Reading strategies of <i>draw conclusions, cause and effect, and predict</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 7 - Lesson 5					
Content Area: Science					
Lesson Title: What Is A Mixture?				Timeframe: 20 minutes	
Lesson Components					
<u>21st Century Themes</u>					
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills
Interdisciplinary Connections: see unit overview					
Integration of Technology: Pearson Interactive Science program					
Equipment needed: see teacher's edition					

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Lesson Vocabulary: *mixture*

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> tell what is in some mixtures 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> Engage: lesson opener Explore: Activate prior knowledge by asking students to tell about something they like to eat that has different foods mixed together. Explain: Students will know what is in some mixtures. Elaborate: Incorporate the Reading strategies of <i>draw conclusions, infer, and cause and effect</i> in discussions. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 8 - Lesson 1						
Content Area: Science						
Lesson Title: What Can You Tell About an Object's Position?					Timeframe: 20 minutes	
Lesson Components						
<u>21st Century Themes</u>						
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills	
Interdisciplinary Connections: see unit overview						
Integration of Technology: Pearson Interactive Science program						

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Equipment needed: see teacher's edition

Lesson Vocabulary: *position, above, below*

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • use position words to tell where objects are located 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by putting a large toy on a desk. Ask children to tell where the toy is. 3. Explain: Students will know how to use position words to tell where an object is located. 4. Elaborate: Incorporate the Reading strategies of <i>draw conclusions, infer,</i> and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 8 - Lesson 2						
Content Area: Science						
Lesson Title: What Makes Objects Move?					Timeframe: 20 minutes	
Lesson Components						
<u>21st Century Themes</u>						
	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
	Media Literacy		ICT Literacy	x	Life and Career Skills	

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Interdisciplinary Connections: see unit overview
Integration of Technology: Pearson Interactive Science program
Equipment needed: see teacher's edition
Lesson Vocabulary: <i>push, pull</i>

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> tell that a push or a pull can change how an object moves 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by having students make crayons move and then stop. Discuss what they did to make the crayons stop and go. 3. Explain: Students will know that a push or a pull can change how an object moves.. 4. Elaborate: Incorporate the Reading strategies of <i>compare and contrast, predict, and cause and effect</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> strategies for English Language Learners leveled readers resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 8 - Lesson 3							
Content Area: Science							
Lesson Title: What Are Some Ways Objects Move?				Timeframe: 20 minutes			
Lesson Components							
<u>21st Century Themes</u>							
	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

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Media Literacy		ICT Literacy	x	Life and Career Skills
Interdisciplinary Connections: see unit overview				
Integration of Technology: Pearson Interactive Science program				
Equipment needed: see teacher's edition				
Lesson Vocabulary: <i>fast, slow</i>				

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • order objects by how fast they move 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell about something they like to eat that has different foods mixed together. 3. Explain: Students will know how to order objects by how fast they move. 4. Elaborate: Incorporate the Reading strategies <i>synthesize, compare and contrast</i>, and <i>apply</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

Chapter 8 - Lesson 4				
Content Area: Science				
Lesson Title: What Are Magnets?			Timeframe: 20 minutes	
Lesson Components				
<u>21st Century Themes</u>				
	Global Awareness	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy
				Health Literacy

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<u>21st Century Skills</u>							
x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration	x	Information Literacy
	Media Literacy		ICT Literacy	x	Life and Career Skills		
Interdisciplinary Connections: see unit overview							
Integration of Technology: Pearson Interactive Science program							
Equipment needed: see teacher's edition							
Lesson Vocabulary: <i>magnet, attract</i>							

Learning Outcome	Learning Activities/Instructional Strategies
<p>Students Will Be Able To:</p> <ul style="list-style-type: none"> • identify objects a magnet attracts 	<p>Lesson Sequence</p> <ol style="list-style-type: none"> 1. Engage: lesson opener 2. Explore: Activate prior knowledge by asking students to tell what they know about magnets. 3. Explain: Students will identify objects that a magnet can attract. 4. Elaborate: Incorporate the Reading strategies of <i>draw conclusions, apply, and predict</i> in discussions. 5. Evaluate: Students complete the appropriate page in their science journal.
<p>Differentiation</p> <p>Embedded in the program are</p> <ul style="list-style-type: none"> • strategies for English Language Learners • leveled readers • resources to address multiple intelligences 	
<p>Resources Provided: <i>Pearson Interactive Science</i></p>	

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LESSON REFLECTION

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities:	Strongly	Moderately	Weakly
Are challenging and require higher order thinking and problem solving skills			
Allow for student choice			
Provide scaffolding for acquiring targeted knowledge/skills			
Integrate global perspectives			
Integrate 21 st century skills			
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills			
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills			
Are varied to address different student learning styles and preferences			
Are differentiated based on student needs			
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process			
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives			
Provide opportunities for student reflection and self-assessment			
Provide data to inform and adjust instruction to better meet the varying needs of learners			

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Curriculum Design Template	
Content Area:	
Course Title:	Grade Level:
Unit Plan 1	Pacing Guide
Unit Plan 1	Pacing Guide
Unit Plan 3	Pacing Guide
Unit Plan 4	Pacing Guide
Unit Plan 5	Pacing Guide
Unit Plan 6	Pacing Guide
Date Created:	
Board Approved on:	

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