

**CARLISLE AREA SCHOOL DISTRICT**  
**Carlisle, PA 17013**

**ELEMENTARY SCIENCE**

**GRADE 2**

Date of Board Approval: May 21, 2009  
Revised Date: January 19, 2012

**CARLISLE AREA SCHOOL DISTRICT  
PLANNED INSTRUCTION COVER PAGE**

Title of Course: Science Subject Area: Science Grade Level: Second

Course Length: (Semester/Year): Year Duration: \_\_\_\_\_ Frequency: \_\_\_\_\_

Prerequisites: Not Applicable Credit: Not Applicable Level: Not Applicable

**Course Description/Objectives:** The district shall provide for attainment of the academic standards per Chapter 4, Section 4.12. Each student shall demonstrate proficiency in the following areas: unifying themes; inquiry and design; biological sciences; physical science, chemistry and physics; earth sciences; technology education; science, technology and human endeavors; watersheds and wetlands, renewable and non-renewable resources; environmental health; agriculture and society; integrated pest management; ecosystems and their interactions; threatened, endangered and extinct species; humans and the environment; and, environmental always and regulations.

**Major Text(s)/Resources:**

**Curriculum Writing Committee:** Cindy Birdwell    Bonnie Mehls    Deb Them    Traci Brunner  
Michelle Nye    Heather Luckenbaugh    Yvette Reidy    Megan Baitzel    Allison Shughart  
D. Bailor    Karen Lyter    Rachel Placek    Sherry Mann    Kim Walters

Unit: Scientific Inquiry	Subject Area: Science	Grade: 2
PA Academic Standards	Performance Indicators	Assessments
3.2A Identify and use the nature of scientific and technological knowledge.	<ul style="list-style-type: none"> <li>• Distinguish between a scientific fact and an opinion.</li> <li>• Describe observations and explain results.</li> </ul>	
3.2C Recognize and use the elements of scientific inquiry to solve problems.	<ul style="list-style-type: none"> <li>• List questions before an experiment that can be explained through use of scientific investigations.</li> <li>• Understand that scientists use – Like scientific method to find answers to questions</li> </ul>	
3.2C Recognize and use the elements of scientific inquiry to solve problems.	<ul style="list-style-type: none"> <li>• Conduct a class experiment, record observations and, state conclusions, using inquiry skills.</li> </ul>	

<b>Unit: Animals</b>	<b>Subject Area: Science</b>	<b>Grade: 2</b>
<b>PA Academic Standards</b>	<b>Performance Indicators</b>	<b>Assessments</b>
3.1C Illustrate patterns that regularly occur and reoccur in nature.	<ul style="list-style-type: none"> <li>Label the observable patterns of the life cycle of butterflies and frogs.</li> </ul>	
3.1E Recognize change in natural and physical systems.	<ul style="list-style-type: none"> <li>Observe and report the metamorphosis process of the butterfly over time.</li> </ul>	
3.3A Know the similarities and differences of living things.	<ul style="list-style-type: none"> <li>Compare and contrast life processes of reptiles, amphibians (frogs) and arthropods (butterflies)</li> </ul>	
3.3A Know the similarities and differences of living things.	<ul style="list-style-type: none"> <li>Compare and contrast the different characteristics of arthropods, reptiles and amphibians. (e.g., appendages, type of covering, body segments).</li> </ul>	
3.3A Know the similarities and differences of living things.	<ul style="list-style-type: none"> <li>List the basic needs of animals.</li> </ul>	

<b>Unit: Animals</b>	<b>Subject Area: Science</b>	<b>Grade: 2</b>
<b>PA Academic Standards</b>	<b>Performance Indicators</b>	<b>Assessments</b>
4.3A Know that plants, animals and humans are dependent on air and water.	<ul style="list-style-type: none"> <li>Describe why animals need water, air, food and shelter.</li> </ul>	
4.5A Know types of pests.	<ul style="list-style-type: none"> <li>Classify insects as helpful or harmful.</li> </ul>	
4.6A Understand that living things are dependent on nonliving things in the environment for survival.	<ul style="list-style-type: none"> <li>List the basic needs of an animal and explain how its needs are met.</li> </ul>	
4.6A Understand that living things are dependent on nonliving things in the environment for survival.	<ul style="list-style-type: none"> <li>Identify animals with their habitat.</li> </ul>	

<b>Unit: Water</b>	<b>Subject Area: Science</b>	<b>Grade: 2</b>
<b>PA Academic Standards</b>	<b>Performance Indicators</b>	<b>Assessments</b>
3.5A Know basic landforms and Earth history.	<ul style="list-style-type: none"> <li>Describe erosion and what effects water has on basic landforms.</li> </ul>	
3.5D Recognize the earth's different water resources.	<ul style="list-style-type: none"> <li>Report that approximately 70-75% of the earth is covered by water.</li> <li>Classify examples of water in the form of solid, liquid and gas on or near the surface of the earth.</li> </ul>	
3.5D Recognize the earth's different water resources.	<ul style="list-style-type: none"> <li>Explain and illustrate evaporation and condensation.</li> </ul>	
4.1A Identify various types of water environments.	<ul style="list-style-type: none"> <li>Identify a creek, river or stream as moving water.</li> <li>Identify ponds, lakes and swamps as still water.</li> </ul>	
4.6B Understand the concept of cycles.	<ul style="list-style-type: none"> <li>Develop an illustration of the water cycle.</li> <li>Describe the water cycle.</li> <li>Understand the water cycle is a process in which water is constantly changing forms.</li> </ul>	

<b>Unit: Weather</b>	<b>Subject Area: Science</b>	<b>Grade: 2</b>
<b>PA Academic Standards</b>	<b>Performance Indicators</b>	<b>Assessments</b>
3.1A Know that natural and human-made objects are made up of parts.	<ul style="list-style-type: none"> <li>• Discuss how weather patterns move west to east across the United States.</li> </ul>	
3.1C Illustrate patterns that regularly occur and reoccur in nature.	<ul style="list-style-type: none"> <li>• Predict the weather pattern using observations during a given time period.</li> <li>• Understand weather patterns can be observed, measured and described.</li> </ul>	
3.1E Recognize change in natural and physical systems.	<ul style="list-style-type: none"> <li>• Describe the change to objects caused by heat, cold and light (evaporation and condensation).</li> </ul>	
3.5C Know basic weather elements.	<ul style="list-style-type: none"> <li>• Identify cloud types and create an example for each. (cumulus, cumulonimbus, stratus and cirrus).</li> </ul>	
3.5C Know basic weather elements.	<ul style="list-style-type: none"> <li>• Recognize weather patterns from data charts (including temperature, precipitation and graphs of the data.)</li> </ul>	

Unit: Weather	Subject Area: Science	Grade: 2
PA Academic Standards	Performance Indicators	Assessments
3.7B Select appropriate instruments to study materials.	<ul style="list-style-type: none"> <li>• Develop a graph to record temperature and rain.</li> <li>• Read a thermometer and rain gauge.</li> </ul>	
3.7B Select appropriate instruments to study materials.	<ul style="list-style-type: none"> <li>• Select appropriate instruments for specific weather measurements. (Thermometer, rain gauge, weather vane, anemometer and barometer)</li> </ul>	
4.1B Explain the differences between moving and still water.	<ul style="list-style-type: none"> <li>• List types of precipitation. (rain, snow, sleet, hail, drizzle, thunder and lightning)</li> <li>• List extreme weather (tornadoes, hurricanes, blizzards, floods)</li> </ul>	

<b>Unit: Environment</b>	<b>Subject Area: Science</b>	<b>Grade: 2</b>
<b>PA Academic Standards</b>	<b>Performance Indicators</b>	<b>Assessments</b>
3.2D Recognize and use the technological design process to solve problems.	<ul style="list-style-type: none"> <li>Recognize and give examples of basic pollution problems.</li> <li>List possible solutions to pollution problems.</li> </ul>	
3.2D Recognize and use the technological design process to solve problems.	<ul style="list-style-type: none"> <li>Create a solution for a pollution problem.</li> <li>Describe the solution and identify its impacts.</li> </ul>	
4.2C Know that some natural resources have limited life spans.	<ul style="list-style-type: none"> <li>List or display various means of conserving natural resources (reduce, reuse, recycle).</li> </ul>	
4.2D Identify by-products and their use of natural resources.	<ul style="list-style-type: none"> <li>Identify items that can be recycled and those that cannot.</li> <li>Give examples of reusable products.</li> </ul>	
4.3B Identify how human actions affect environmental health.	<ul style="list-style-type: none"> <li>Define pollutants.</li> <li>Identify sources of pollution.</li> <li>Identify litter and its effect on the environment.</li> </ul>	

<b>Unit: Environment</b>	<b>Subject Area: Science</b>	<b>Grade: 2</b>
<b>PA Academic Standards</b>	<b>Performance Indicators</b>	<b>Assessments</b>
4.3B Identify how human actions affect environmental health.	<ul style="list-style-type: none"> <li>Understand that pollution harms our environment and can be prevented.</li> </ul>	

Unit: Environment	Subject Area: Science	Grade: 2
PA Academic Standards	Performance Indicators	Assessments
4.3A Know that plants, animals and humans are dependent on air and water.	<ul style="list-style-type: none"> <li>Describe how people can reduce pollution.</li> </ul>	

<b>Unit: Agriculture</b>	<b>Subject Area: Science</b>	<b>Grade: 2</b>
<b>PA Academic Standards</b>	<b>Performance Indicators</b>	<b>Assessments</b>
3.1A Know that natural and human-made objects are made up of parts.	<ul style="list-style-type: none"> <li>Restate the process of how milk gets from the cow to the table.</li> </ul>	
3.6A Know that biotechnologies relate to propagating, growing, maintaining, adapting, treating and converting.	<ul style="list-style-type: none"> <li>Give examples of agricultural and industrial production processes that involve plants and animals. (milk-cow to table/ crops field-table)</li> </ul>	
4.2B Identify products derived from natural resources.	<ul style="list-style-type: none"> <li>Give examples of products made from trees.</li> <li>Classify by-products of plants and animals.</li> </ul>	
4.4A Know the importance of agriculture to humans.	<ul style="list-style-type: none"> <li>Discuss people’s basic needs.</li> <li>Define agriculture as – the science and business of cultivating soil, producing crops and raising livestock; example farming.</li> </ul>	
4.4A Know the importance of agriculture to humans.	<ul style="list-style-type: none"> <li>Compare and contrast the different uses of agriculture on food, clothing, shelter and culture from one area to another. (e.g., Amish vs. us)</li> </ul>	

<b>Unit: Agriculture</b>	<b>Subject Area: Science</b>	<b>Grade: 2</b>
<b>PA Academic Standards</b>	<b>Performance Indicators</b>	<b>Assessments</b>
4.4A Know the importance of agriculture to humans.	<ul style="list-style-type: none"> <li>• Discuss how people depend on agriculture.</li> <li>• Understand that we depend on agriculture to meet our basic needs.</li> </ul>	
4.4C Know that food and fiber originate from plants and animals.	<ul style="list-style-type: none"> <li>• Arrange the steps of the journey of a local agricultural product from production to the consumer. (milk-cow to table)</li> </ul>	
4.5A Know types of pests.	<ul style="list-style-type: none"> <li>• Discuss why certain insects are helpful or harmful to crops.</li> </ul>	

Unit: Properties of Matter	Subject Area: Science	Grade: 2
PA Academic Standards	Performance Indicators	Assessments
3.4 A Recognize basic concepts about the structure and properties of matter.	<ul style="list-style-type: none"> <li>• Give examples of properties of matter (e.g., shapes, size, color, texture, state).</li> </ul>	
3.4 A Recognize basic concepts about the structure and properties of matter.	<ul style="list-style-type: none"> <li>• Conduct a class experiment to show that matter can be mixed to form a new product.</li> <li>• Recognize that matter can be mixed with little or no change and record results.</li> </ul>	
3.4 A Recognize basic concepts about the structure and properties of matter.	<ul style="list-style-type: none"> <li>• Conduct a class experiment to show that matter can be mixed with little or no change.</li> <li>• Recognize that matter can be mixed to form a new product and record results.</li> </ul>	

## **Adaptations/Modifications for Students with I.E.P.s**

Adaptations or modifications to this planned course will allow exceptional students to earn credits toward graduation or develop skills necessary to make a transition from the school environment to community life and employment. The I.E.P. team has determined that modifications to this planned course will meet the student's I.E.P. needs.

Adaptations/Modifications may include but are not limited to:

### **INSTRUCTION CONTENT**

- Modification of instructional content and/or instructional approaches
- Modification or deletion of some of the essential elements

### **SETTING**

- Preferential seating

### **METHODS**

- Additional clarification of content
- Occasional need for one to one instruction
- Minor adjustments or pacing according to the student's rate of mastery
- Written work is difficult, use verbal/oral approaches
- Modifications of assignments/testing
- Reasonable extensions of time for task/project completion
- Assignment sheet/notebook
- Modified/adjusted mastery rates
- Modified/adjusted grading criteria
- Retesting opportunities

### **MATERIALS**

- Supplemental texts and materials
- Large print materials for visually impaired students
- Outlines and/or study sheets
- Carbonless notebook paper
- Manipulative learning materials
- Alternatives to writing (tape recorder/calculator)