

CARLISLE AREA SCHOOL DISTRICT
Carlisle, PA 17013

ELEMENTARY SCIENCE

GRADE 5

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: Fifth

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
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D. Bailor Karen Lyter Rachel Placek Sherry Mann Kim Walters

Unit: Scientific Method	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
3.2 A Explain and apply scientific and technological knowledge.	<ul style="list-style-type: none"> • Identify the difference between investigation and an experiment. • Understand scientists use the scientific method to prove whether an idea is right or wrong. 	
3.2 B Apply process knowledge to make and interpret observations.	<ul style="list-style-type: none"> • Understand that a balance measures mass. • Understand that a spring scale measures weight. 	
3.2 B Apply process knowledge to make and interpret observations.	<ul style="list-style-type: none"> • Identify difference between mass and weight. • Conduct “measure up” experiment to measure mass and weight. 	
3.2 C Identify and use the elements of scientific inquiry to solve problems.	<ul style="list-style-type: none"> • Understand that scientists use the scientific method to test a hypothesis. 	
3.2 D Know and use the technological design process to solve problems.	<ul style="list-style-type: none"> • Conduct “designing an airplane” investigation to test different paper airplane designs. • Conduct “build a rocket” investigation to test shape and distance traveled. 	

Unit: Matter	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
3.4 A Describe concepts about the structure and properties of matter.	<ul style="list-style-type: none"> • Explain the differences among compounds and mixtures. (PSSA) • Identify properties of matter. • Identify characteristics of compounds and mixtures. 	
3.4 A Describe concepts about the structure and properties of matter.	<ul style="list-style-type: none"> • Understand matter has both structure and properties. • Matter can be changed both physically and chemically. 	
3.4 A Describe concepts about the structure and properties of matter.	<ul style="list-style-type: none"> • Identify a physical change. • Identify a chemical change. 	
3.4 A Describe concepts about the structure and properties of matter.	<ul style="list-style-type: none"> • Use the characteristics physical or chemical properties to distinguish one substance from another including density, expansion/contraction, freezing/melting. (PSSA) 	
3.4 A Describe concepts about the structure and properties of matter.	<ul style="list-style-type: none"> • Complete an informational piece of writing comparing and contrasting compounds and mixtures. 	

Unit: Matter	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
3.4 A Describe concepts about the structure and properties of matter.	<ul style="list-style-type: none"> • Classify changes of matter as physical or chemical. • Dramatize the properties of matter through role playing 	
3.4 A Describe concepts about the structure and properties of matter.	<ul style="list-style-type: none"> • Write a set of procedure using information learned from physical and chemical changes that result in ice cream. 	

Unit: Ecosystem	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.6 A Explain the flows of energy and matter from organism within an ecosystem.	<ul style="list-style-type: none"> Classify components as living or nonliving, producer, consumer, decomposer and explain the relationships between them. 	
4.6 A Explain the flows of energy and matter from organism within an ecosystem.	<ul style="list-style-type: none"> Understand all living and non-living factors interact in an ecosystem and change over time. Identify niches of producers, consumers, decomposers. 	
4.6 A Explain the flows of energy and matter from organism within an ecosystem.	<ul style="list-style-type: none"> Identify the relationship between living and non-living components. 	
4.6 A Explain the flows of energy and matter from organism within an ecosystem.	<ul style="list-style-type: none"> Explain the flow of energy through an ecosystem including food chains. (PSSA) 	
4.6 B Explain the concepts of cycles.	<ul style="list-style-type: none"> Compare and contrast similar cycles between 2 different ecosystems. Explain relationships among organisms including producers/consumer, predators/prey in an ecosystem. (PSSA) 	

Unit: Ecosystem	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.6 B Explain the concepts of cycles.	<ul style="list-style-type: none"> Identify cycles and their roles within an ecosystem. 	
4.6 C Explain how ecosystems change over time.	<ul style="list-style-type: none"> Identify adaptations and the effects they have on plants and animals. Explain how factors within an ecosystem can be limited and identify causes. 	
4.6 C Explain how ecosystems change over time.	<ul style="list-style-type: none"> Understand ecosystems change over time. Plants and animals use adaptations to survive. 	
4.6 C Explain how ecosystems change over time.	<ul style="list-style-type: none"> Know adaptations of animals. Know adaptations of plants Understand limiting factors within an ecosystem. Identify how ecosystems change over time. 	
4.6 C Explain how ecosystems change over time.	<ul style="list-style-type: none"> Describe the response of organisms to environmental changes including hibernation, migration and coloration. (PSSA) 	

Unit: Ecosystem	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.6 C Explain how ecosystems change over time.	<ul style="list-style-type: none"> Identify limiting factors impede the ability of plants and animals to survive 	
4.6 C Explain how ecosystems change over time.	<ul style="list-style-type: none"> Observe adaptations of aquatic plants and animals. Record data concerning the number of specific animals. 	

Unit: Environmental Health	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.3 A Identify environmental health issues.	<ul style="list-style-type: none"> Use evidence to explain factors that affect changes in populations including deforestation, disease, land use and natural disasters. (PSSA) 	
4.3 A Identify environmental health issues.	<ul style="list-style-type: none"> Identify examples of long-term pollution and their effect on environmental health. 	
4.3 A Identify environmental health issues.	<ul style="list-style-type: none"> Compare and contrast examples of pollution and describe their effects on environmental health. 	
4.3 B Describe how human actions affect the health of the environment.	<ul style="list-style-type: none"> Explain how human activities may affect local, regional and global environments. 	
4.3 B Describe how human actions affect the health of the environment.	<ul style="list-style-type: none"> Construct support for the use of alternative products, and persuade, through a piece of writing, a company to use those alternative products. 	

Unit: Environmental Health	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.3 B Describe how human actions affect the health of the environment.	<ul style="list-style-type: none"> Identify the control group and identify the jar label using a pollution experiment. 	
4.3 B Describe how human actions affect the health of the environment.	<ul style="list-style-type: none"> Understand natural disasters and man-made pollution impact our environment negatively. Understand human can limit the negative impact by using certain practices and products. 	
4.3 B Describe how human actions affect the health of the environment.	<ul style="list-style-type: none"> Identify alternative products that can be used to reduce pollution. Identify land use practices and their relationships to environmental health. 	
4.3 C Explain biological diversity.	<ul style="list-style-type: none"> Use evidence to explain how diversity affects the ecological integrity of natural systems. (PSSA) Describe a natural disaster and explain how it may limit diversity and therefore, natural resources. 	
4.3 C Explain biological diversity.	<ul style="list-style-type: none"> Identify how natural disasters affect environmental health. Identify how biological diversity affects ecological integrity of natural resources. 	

Unit: Watersheds	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.1 A Explain the role of the water cycle within a watershed.	<ul style="list-style-type: none"> • Write an informational piece about a watershed which includes water cycle, boundaries, factors affecting water quality and flow. 	
4.1 A Explain the role of the water cycle within a watershed.	<ul style="list-style-type: none"> • Know how a water cycle affects a watershed. • Identify how water enters a watershed. 	
4.1 A Explain the role of the water cycle within a watershed.	<ul style="list-style-type: none"> • Understand the earth has different water systems that provide the habitat for a variety of organisms. • Identify factors that affect water quality and flow through a watershed. 	
4.1 A Explain the role of the water cycle within a watershed.	<ul style="list-style-type: none"> • Describe the water cycle and the physical processes on which it depends, including: evaporation, condensation and precipitation. (PSSA) 	
4.1 C Explain the effects of water on the life of organisms in a watershed.	<ul style="list-style-type: none"> • Classify aquatic organisms into 1 or 2 categories. Choose 1 organism from each category and compare and contrast the stages of life. (PSSA) 	

Unit: Watersheds	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.1 C Explain the effects of water on the life of organisms in a watershed.	<ul style="list-style-type: none"> ● Identify boundaries of a watershed. ● Identify the life cycle of organisms that spend all stages of life in the water. 	
4.1 D Explain and describe characteristics or a wetland.	<ul style="list-style-type: none"> ● Explain the characteristics, types and functions of a wetland. ● Understand some organisms spend at least one stage of life on land. 	
4.1 D Explain and describe characteristics or a wetland.	<ul style="list-style-type: none"> ● Identify characteristics of wetland plants and soil. ● Identify different types of wetlands. ● Identify functions of a wetland. 	
4.1 E Describe the impact of watersheds and wetlands on people.	<ul style="list-style-type: none"> ● Explain the characteristics, types and functions of a wetland. ● Create a hypothesis to determine the effect of a lack of a watershed. 	

Unit: Renewable and Non-Renewable Resources	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.2 A Know that raw materials come from natural resources.	<ul style="list-style-type: none"> • Identify finished products and describe how they are different from the raw material. • Classify natural resources. 	
4.2 A Know that raw materials come from natural resources.	<ul style="list-style-type: none"> • Explain how renewable and nonrenewable resources provide for human needs including energy, food, water, clothing and shelter. (PSSA) 	
4.2 A Know that raw materials come from natural resources.	<ul style="list-style-type: none"> • Identify how finished products are different from raw materials. • Identify ways to acquire food. 	
4.2 B Examine the renewability of resources.	<ul style="list-style-type: none"> • Explain how human activities may affect local, regional and global environments. (PSSA) • Describe the effects of consumption on the availability of resources. 	
4.2 B Examine the renewability of resources.	<ul style="list-style-type: none"> • Classify resources as renewable or nonrenewable. • Compare and contrast the decomposition rates of different organic materials. 	

Unit: Renewable and Non-Renewable Resources	Subject Area: Science	Grade: 5
PA Academic Standards	Performance Indicators	Assessments
4.2 C Describe the role of recycling and waste management.	<ul style="list-style-type: none"> ● Persuade someone to reuse and recycle through a piece of writing. Include the impact of consumption on the availability of resources. 	
4.2 C Describe the role of recycling and waste management.	<ul style="list-style-type: none"> ● Identify which materials can be recycled. ● Observe recycling practices in your building. 	
4.2 C Describe the role of recycling and waste management.	<ul style="list-style-type: none"> ● Describe how waste management affects the environment including recycling, composting and landfills. (PSSA) 	
4.2 C Describe the role of recycling and waste management.	<ul style="list-style-type: none"> ● Identify the decomposition rates of different organic materials. ● Conduct a decomposition experiment. 	

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)