

## SENECA VALLEY SCHOOL DISTRICT

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### CURRICULUM

Course Title:	Science
Grade Level(s):	3
Periods Per Week:	5
Length of Period:	40 Minutes
Length of Course:	Full Year
Faculty Author(s):	Peter Tucciarone, Amanda Breindel
Date:	May 2, 2012

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#### COURSE DESCRIPTION:

Science instruction in the SVSD will be based on inquiry-based learning process in a developmentally appropriate method using a learning cycle. At the third grade level students will be actively engaged in learning related to physical, earth, and life science.

**The state has developed anchors (points of focus) in Science. The anchors specify eligible content for the content areas. The anchors include standards 1.1, 1.2, and 1.3**

**The Objectives that address anchors have been bolded.**

The following outline provides a general overview of the course content, not a chronological timetable. The weeks denoted for each area provide an idea for the overall time spent working with a given topic throughout the school year.

COURSE OUTLINE	OBJECTIVES (PA standard)			
<p><b>I. Life Science</b></p> <p><b>I. Plants</b></p> <p>A. Life Cycle</p> <ol style="list-style-type: none"> <li>1. Planting</li> <li>2. Stages of Plant growth</li> <li>3. Pollination</li> <li>4. Harvesting</li> </ol> <p>B. Structure and Function</p> <ol style="list-style-type: none"> <li>1. Seed           <ol style="list-style-type: none"> <li>a. Leaves</li> <li>b. Embryo</li> <li>c. Cotyledon</li> <li>d. Seed Coat</li> </ol> </li> <li>2. Plant           <ol style="list-style-type: none"> <li>a. Flower</li> <li>b. Bud</li> <li>c. Leaf</li> <li>d. Stem</li> <li>e. Root</li> </ol> </li> <li>3. Bees           <ol style="list-style-type: none"> <li>a. Head</li> <li>b. Thorax</li> <li>c. Abdomen</li> </ol> </li> </ol>	<p>Develop question-generating strategies through discussions, prior knowledge, and graphic organizers to answer scientific questions. <b>S4.A.2.1.3</b></p> <p>Predict and manipulate variables for growing plants. <b>S4.B.3.2.2</b></p> <p>Illustrate, label, and observe scientific phenomenon. <b>S4.A.1.1.1</b></p> <p>Observe and describe how things change through drawing, graphing, and written explanations. <b>S4.A.1.3.1</b></p> <p>Identify and compare measures of size and distance. Observe, compare, and record physical changes through experimentation. <b>S4.A.1.3.3</b></p> <p>Observe and discuss the effects to living organisms when their environment is manipulated. <b>S4.A.1.3.4</b></p> <p>Utilize various strategies to generate scientific questions. <b>S4.A.2.1.1</b></p> <p>Create and discuss an investigation to test a variable. <b>S4.A.2.1.2</b></p> <p>Describe and communicate relationships between various elements of natural phenomenon. <b>S4.A.2.1.3</b></p> <p>Organize the collected data to form a conclusion. <b>S4.A.2.1.4</b></p> <p>Select and use appropriate instruments to complete a task. <b>S4.A.2.2.1</b></p> <p>Identify and record systems as natural or human made. <b>S4.A.3.1.1</b></p> <p>Identify and describe relationships between living and nonliving. <b>S4.A.3.1.2</b></p> <p>List and describe the parts and roles of an ecosystem. <b>S4.A.3.1.3</b></p>			

	<p>Describe what different models represent. <b>S4.A.3.2.1</b>  Design and construct models to illustrate a system. <b>S4.A.3.2.3</b></p> <p>Locate, record, and explain observable patterns. <b>S4.A.3.3.1</b></p> <p>Indicate and explain life processes. <b>S4.B.1.1.1</b></p> <p>Associate similar functions of external characteristics amongst different organisms. <b>S4.B.1.1.2</b></p> <p>Record and explain the basic needs of living things. <b>S4.B.1.1.3</b></p> <p>Examine and explain how parts of living things work together to provide what an organism needs. <b>S4.B.1.1.4</b></p> <p>Illustrate, examine, and explain the life cycles of different organisms. <b>S4.B.1.1.5</b></p> <p>Distinguish characteristics that are necessary for survival in different environments. <b>S4.B.2.1.1</b></p> <p>Indicate and explain specific adaptations that help living organisms survive. <b>S4.B.2.1.2</b></p> <p>Recognize the living and nonliving components and their functions in the local ecosystem. <b>S4.B.3.1.1</b></p> <p>Distinguish between the interaction of living and nonliving components in a local ecosystem. <b>S4.B.3.1.2</b></p> <p>List and describe ways that a living thing changes when its habitat is changed. <b>S4.B.3.2.1</b></p> <p>Predict and investigate how changes in the environment affect systems. <b>S4.B.3.2.2</b>  Predict and report how seasons affect living things. <b>S4.B.3.2.3</b>  Examine and record physical properties of matter. <b>S4.C.1.1.1</b></p> <p>Classify and compare matter based on its physical properties. <b>S4.C.1.1.2</b></p>			
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COURSE OUTLINE	OBJECTIVES (PA standard)			
<p><b>II. Physical Science</b></p> <p><b>I. Magnetism</b></p> <p>A. Magnetic properties</p> <ol style="list-style-type: none"> <li>1. Attract / Repel</li> <li>2. Induced Magnetism</li> </ol> <p>B. Electricity</p> <ol style="list-style-type: none"> <li>1. Circuit <ol style="list-style-type: none"> <li>a. Parallel</li> <li>b. Series</li> </ol> </li> <li>2. Conductors/Insulators</li> <li>3. Electromagnets</li> </ol> <p><b>II. Space</b></p> <p>A. Rotation/Revolution</p>	<p>Develop question-generating strategies through discussions, prior knowledge, and graphic organizers to answer scientific questions. <b>S4.A.2.1.3</b></p> <p>Predict and manipulate variables for utilizing magnets or electrical components. <b>S4.B.3.2.2</b></p> <p>Illustrate, label, and observe scientific phenomenon. <b>S4.A.1.1.1</b></p> <p>Observe and describe how things change through drawing, graphing, and written explanations. <b>S4.A.1.3.1</b></p> <p>Utilize various strategies to generate scientific questions. <b>S4.A.2.1.1</b></p> <p>Create and discuss an investigation to test a variable. <b>S4.A.2.1.2</b></p> <p>Describe and communicate relationships between various elements of natural phenomenon. <b>S4.A.2.1.3</b></p> <p>Organize the collected data to form a conclusion. <b>S4.A.2.1.4</b></p> <p>Select and use appropriate instruments to complete a task. <b>S4.A.2.2.1</b></p> <p>Identify and record systems as natural or human made. <b>S4.A.3.1.1</b></p> <p>Describe what different models represent. <b>S4.A.3.2.1</b></p> <p>Construct and explain models to demonstrate how systems work. <b>S4.A.3.2.2</b></p> <p>Design and construct models to illustrate a system. <b>S4.A.3.2.3</b></p> <p>Use evidence from observable patterns to predict future conditions and events. <b>S4.A.3.3.2</b></p> <p>Examine and record physical properties of matter. <b>S4.C.1.1.1</b></p> <p>Classify and compare matter based on its physical properties. <b>S4.C.1.1.2</b></p>			

COURSE OUTLINE	OBJECTIVES (PA standard)			
<p>B. Sun/Earth/Moon Systems</p> <p>C. Tilt of Earth/Seasons</p>	<p>Discuss and describe various forms of energy. <b>S4.C.2.1.1</b></p> <p>Describe and construct systems that produce energy. <b>S4.C.2.1.2</b></p> <p>Describe, construct, and diagram systems that produce electrical energy. <b>S4.C.2.1.3</b></p> <p>Predict and examine changes in motion caused by force. <b>S4.C.3.1.1</b></p> <p>Describe, illustrate, and model the motions of the sun-Earth-moon system. <b>S4.D.3.1.1</b></p> <p>Explain how the motion of the sun, earth, moon system relates to time (e.g., days, months, years). <b>S4.D.3.1.2</b></p> <p>Demonstrate and examine causes of seasonal change on Earth. <b>S4.D.3.1.3</b></p>			



COURSE OUTLINE	OBJECTIVES (PA standard)			
	<p>Identify key people and events that shaped the environmental history in the USA. <b>4.5.6 C</b></p> <p>Explain how human interactions affect health of the environment. <b>4.5.7 C</b></p> <p>Identify different types of pollution and their sources<b>4.5.3.C</b></p> <p>Identify organisms that are dependent on one another in an ecosystem<b>4.5.3.D</b></p> <p>Identify the impacts of people on physical systems<b>7.4.3.B</b></p> <p>Identify changes in the environment over time <b>4.1.3.E</b></p> <p>Identify resources humans take from the environment for their survival <b>4.5.3 A</b></p> <p>Identify the impacts of people on physical systems <b>7.4.3.B</b></p> <p>Explain how different items are recycled and reused. <b>4.3.5.D</b></p> <p>Evaluate various methods of managing waste as related to economic, environmental, and technological factors. <b>4.3.10.D</b></p> <p>Describe how human activities affect the environment. <b>4.5.4 C</b></p> <p>Identify key people and events that shaped the environmental history in the USA. <b>4.5.6 C</b></p> <p>Explain how human interactions affect health of the environment. <b>4.5.7 C</b></p> <p>Identify the impacts of physical systems on people and identify the impact of people on physical systems. <b>7.4.3</b></p> <p>Identify changes in the environment over time<b>4.1.3 E</b></p>			

COURSE OUTLINE	OBJECTIVES (PA standard)			
	Identify different types of pollution and their sources <b>4.5.3 C</b>  Describe how waste is generated <b>4.3.3 D</b>			