



**FOSS** Full Option Science System  
(FOSS™)  
Grades K-7

Correlation With

**Pennsylvania  
Academic Standards  
for  
Science and Technology  
and  
Environment and Ecology**



# Pennsylvania

## Academic Standards for Science and Technology and Environment and Ecology

### Correlation with Full Option Science System (FOSS™)

**This correlation shows representative examples of investigations and activities from the FOSS program that address the Science Content Standards. A citation does not reflect all of the investigations or activities that might address a particular standard or benchmark.**

October 2006  
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Updated November 2008



<ul style="list-style-type: none"> <li>• Know that technologies include physical systems (e.g., construction, manufacturing, transportation), informational systems, and biochemical-related systems.</li> </ul> <p><b>B. Know models as useful simplifications of objects or processes.</b></p> <ul style="list-style-type: none"> <li>• Identify different types of models.</li> <li>• Identify and apply models as tools for prediction and insight.</li> <li>• Apply appropriate simple modeling tools and techniques.</li> </ul>	<p>Investigation 3, Part 4, pp. 22-27  <b>Balance and Motion</b>  Investigation 3, Parts 1-3, pp. 6-25  <b>Magnetism and Electricity</b>  Investigation 2, Part 3, pp. 20-25  <b>Matter and Energy</b>  Investigation 1, Part 1, pp. 50-62</p> <p><b>Wood and Paper</b>  Investigation 2, Parts 3-4, pp. 16-23  Science Stories, pp. 13-18  <b>Pebbles, Sand, and Silt</b>  Investigation 3, Parts 1-5, pp. 8-29  Science Stories, pp. 16-19  <b>Magnetism and Electricity</b>  Investigation 5, Parts 1-2, pp. 8-20  Science Stories, pp. 28-31  <b>Water</b>  Investigation 4, Part 2, pp. 14-18  Science Stories, pp. 18-19  <b>Matter and Energy</b>  Science Resources, pp. 2-3, 6-7</p> <p><b>Wood and Paper</b>  Investigation 2, Parts 3-4, pp. 16-23  Investigation 4, Part 1, pp. 8-13  <b>Pebbles, Sand, and Silt</b>  Investigation 3, Part 5, pp. 24-29  <b>Air and Weather</b>  Investigation 1, Parts 3, 6, pp. 17-20, 34-38  <b>Ideas and Inventions</b>  Investigation 1, Parts 1-2, pp. 8-17  <b>Earth Materials</b>  Investigation 1, Parts 1-3, pp. 8-29  <b>Sun, Moon and Stars</b>  Investigation 2, Part 2, pp. 89-100  Investigation 3, Part 1, pp. 114-125  <b>Matter and Energy</b>  Investigation 4, Part 2, pp. 181-192</p> <p><b>Animals Two by Two</b>  Investigation 1, Part 2, pp. 22-25  <b>Air and Weather</b>  Investigation 3, Parts 2, 4, pp. 12-16, 22-27  <b>Balance and Motion</b>  Investigation 3, Part 2, pp. 13-18  <b>Human Body</b>  Investigation 3, Parts 1-3, pp. 8-21  <b>Ideas and Inventions</b>  Investigation 2, Parts 1-2, pp. 8-19  <b>Sun, Moon and Stars</b>  Investigation 2, Part 2, pp. 89-100  <b>Matter and Energy</b>  Investigation 4, Part 2, pp. 181-192</p> <p><b>Trees</b>  Investigation 2, Part 4-5, pp. 20-25  <b>Pebbles, Sand, and Silt</b></p>
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<ul style="list-style-type: none"> <li>Identify theories that serve as models (e.g., molecules).</li> </ul> <p><b>C. Illustrate patterns that regularly occur and reoccur in nature.</b></p> <ul style="list-style-type: none"> <li>Identify observable patterns (e.g., growth patterns in plants, crystal shapes in minerals, climate, structural patterns in bird feathers).</li> <li>Use knowledge of natural patterns to predict next occurrences (e.g., seasons, leaf patterns, lunar phases).</li> </ul>	<p>Investigation 3, Parts 4-5, pp. 20-29</p> <p><b>Human Body</b> Investigation 3, Parts 1-3, pp. 8-21</p> <p><b>Physics of Sound</b> Investigation 3, Parts 1-2, pp. 8-19</p> <p><b>Ideas and Inventions</b> Investigation 2, Parts 1-2, pp. 8-19</p> <p><b>Sun, Moon and Stars</b> Investigation 2, Part 2, pp. 89-100 Investigation 3, Part 1, pp. 114-125</p> <p><b>Air and Weather</b> Investigation 1, Parts 1-6, pp. 8-38</p> <p><b>Solids and Liquids</b> Investigation 4, Parts 1-2, pp. 7-22</p> <p><b>Ideas and Inventions</b> Investigation 4, Parts 1-3, pp. 8-21 Science Stories, pp. 28-29</p> <p><b>Magnetism and Electricity</b> Investigation 2, Parts 1, 4, pp. 8-13, 26-29</p> <p><b>Physics of Sound</b> Investigation 3, Parts 1-2, pp. 8-19 Science Stories, pp. 6, 14</p> <p><b>Matter and Energy</b> Investigation 4, Part 2, pp. 181-192</p> <p><b>Animals Two by Two</b> Activity 1, Parts 1, 4, pp. 10-16, 26-29 Science Stories, pp. 4-19</p> <p><b>Air and Weather</b> Investigation 4, Parts 2-3, pp. 12-24</p> <p><b>Insects</b> Investigation 1, Parts 1-3, pp. 8-25</p> <p><b>Earth Materials</b> Investigation 3, Part 1-2, pp. 5-19</p> <p><b>Ideas and Inventions</b> Investigation 2, Parts 1-2, pp. 8-19 FOSS Web Activity: Shapes and Colors</p> <p><b>Insects and Plants</b> Investigation 2, Part 3, pp. 105-115 Investigation 3, Parts 1-3, pp. 145-151</p> <p><b>Matter and Energy</b> Investigation 2, Part 2, pp. 103-114</p> <p><b>Trees</b> Investigation 3, Parts 5, 7, pp. 22-25, 29-31 Science Stories, pp. 14-23</p> <p><b>New Plants</b> Investigation 2, Part 2, pp. 15-19</p> <p><b>Insects</b> Investigation 2, Parts 1-3, pp. 8-24</p> <p><b>Physics of Sound</b> Investigation 4, Part 1, pp. 6-15</p> <p><b>Water</b> Investigation 3, Parts 2-3, pp. 12-20</p> <p><b>Insects and Plants</b> Investigation 1, Parts 1-3, pp. 52-75</p>
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<p><b>D. Know that scale is an important attribute of natural and human-made objects, events, and phenomena.</b></p> <ul style="list-style-type: none"> <li>Identify the use of scale as it relates to the measurement of distance, volume, and mass.</li> <li>Describe scale as a ratio (e.g., pipe fittings).</li> <li>Explain the importance of scale in producing models and apply it to a model.</li> </ul> <p><b>E. Recognize change in natural and physical systems.</b></p> <ul style="list-style-type: none"> <li>Recognize change as fundamental to science and technology concepts.</li> <li>Examine and explain change by using time and measurement.</li> </ul>	<p>Investigation 5, Parts 1-3, pp. 206-225  <b>Sun, Moon and Stars</b>  Investigation 2, Parts 1-2, pp. 79-100  Science Resources, pp. 19-32  <b>Matter and Energy</b>  Investigation 2, Part 2, pp. 103-114</p> <p><b>Air and Weather</b>  Investigation 2, Part 4, pp.24-27  <b>Structures of Life</b>  Investigation 2, Part 3, pp. 18-22  <b>Measurement</b>  Investigation 1, Parts 1-3, pp.8-24,  Investigation 3, Parts 1-3, pp. 8-21  <b>Physics of Sound</b>  Science Stories, pp. 14, 17-18</p> <p><b>Measurement</b>  Science Stories, pp. 5-6  <b>Physics of Sound</b>  Science Stories, p. 30</p> <p><b>Human Body</b>  Investigation 1, Parts 1-2, pp. 8-20  Investigation 3, Parts 1-3, pp. 8-21</p> <p><b>Trees</b>  Science Stories, pp. 14-22  <b>Fabric</b>  Investigation 2, Parts 2-3, pp. 12-31  <b>New Plants</b>  Investigation 1, Parts 1-3, pp. 8-30  <b>Insects</b>  Investigation 1, Parts 1-3, pp. 8-25  <b>Insects and Plants</b>  Investigation 3, Parts 1-3, pp. 129-151  Investigation 4, Parts 1-3, pp. 166-191  <b>Animals and Plants</b>  Investigation 2, Parts 1-2, pp. 87-108  <b>Water</b>  Investigation 3, Parts 1-4, pp. 8-26  <b>Physics of Sound</b>  Investigation 2, Parts 1-3, pp. 8-24  <b>Sun, Moon and Stars</b>  Investigation 1, Parts 1-2, pp. 42-64  <b>Matter and Energy</b>  Investigation 2, Part 1, pp. 93-102  Investigation 4, Part 2, pp.181-192</p> <p><b>Trees</b>  Investigation 1, Part 7, pp. 31-34</p>
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**C. Recognize and use the elements of scientific inquiry to solve problems.**

- Generate questions about objects, organisms and/or events that can be answered through scientific investigations.
  
  
  
  
  
  
  
  
  
  
- Design an investigation.
  
  
  
  
  
  
  
  
  
  
- Conduct an experiment.

Investigation 2, Parts 1-3, pp. 8-23

**Insects and Plants**

Investigation 2, Parts 1-3, pp. 91-115

Investigation 5, Parts 1-3, pp. 206-225

**Water**

Investigation 1, Parts 1-3, pp. 8-23

**Human Body**

Investigation 1, Part 1-3, pp. 8-25

**Sun, Moon and Stars**

Investigation 2, Parts 1-2, pp. 79-100

**Matter and Energy**

Investigation 1, Parts 1-3, pp. 50-82

**Wood and Paper**

Investigation 1, Part 3, pp. 20-23

**New Plants**

Investigation 3, Parts 1-3, pp. 8-25

**Solids and Liquids**

Investigation 4, Parts 1-2, pp.7-22

**Plants and Animals**

Investigation 1, Parts 1-2, pp. 47-62

**Magnetism and Electricity**

Investigation 1, Parts 1-4, pp. 8-34

**Structures of Life**

Investigation 3, Parts 1-2, pp. 8-19

**Matter and Energy**

Investigation 3, Parts 2-3, pp. 139-160

**Fabric**

Investigation 2, Part 2, pp. 12-17

**Pebbles, Sand, and Silt**

Investigation 4, Part 3, pp. 19-25

**Solids and Liquids**

Investigation 4, Part 3, pp. 23-27

**Earth Materials**

Investigation 4, Part 2, pp. 14-18

**Ideas and Inventions**

Investigation 4, Part 3, pp.18-21

**Matter and Energy**

Investigation 3, Part 2, pp. 139-150

**Fabric**

Investigation 2, Part 2, pp. 12-17

**Pebbles, Sand and Silt**

Investigation 4, Part 3, pp. 19-29

**Solids and Liquids**

Investigation 4, Part 3, 23-27

**Plants and Animals**

Investigation 1, Parts 1-2, pp. 47-62

**Human Body**

Investigation 4, Parts 1-2, pp. 8-19

**Magnetism and Electricity**

Investigation 2, Part 3, pp. 20-25

**Water**

Investigation 4, Part 1, pp. 8-13

**Structures of Life**

Investigation 1, Part 3, pp. 8-33

**Matter and Energy**

<ul style="list-style-type: none"> <li>State a conclusion that is consistent with the information.</li> </ul> <p><b>D. Recognize and use the technological design process to solve problems.</b></p> <ul style="list-style-type: none"> <li>Recognize and explain basic problems.</li> <li>Identify possible solutions and their course of action.</li> <li>Try a solution.</li> <li>Describe the solution, identify its impacts and modify if necessary.</li> <li>Show the steps taken and the results.</li> </ul>	<p>Investigation 3, Part 2, pp. 139-150</p> <p><b>Fabric</b> Investigation 2, Part 2, pp. 12-17</p> <p><b>Solids and Liquids</b> Investigation 4, Part 3, pp. 23-27</p> <p><b>Plants and Animals</b> Investigation 1, Parts 1-2, pp. 47-62</p> <p><b>Measurement</b> Investigation 4, Parts 1-2, pp. 8-17</p> <p><b>Physics of Sound</b> Investigation 2, Parts 1-3, pp. 8-24</p> <p><b>Magnetism and Electricity</b> Investigation 4, Part 3, pp. 19-22</p> <p><b>Ideas and Inventions</b> Investigation 3, Part 2, pp. 14-17</p> <p><b>Sun, Moon and Stars</b> Investigation 1, Parts 1-2, pp. 42-64</p> <p><b>Matter and Energy</b> Investigation 3, Part 2, pp. 139-150</p> <p><b>Wood and Paper</b> Investigation 2, Parts 3-4, pp. 16-23</p> <p><b>Solids and Liquids</b> Investigation 1, Part 3, pp. 21-24</p> <p><b>Water</b> Investigation 4, Part 2, pp. 14-18</p> <p><b>Wood and Paper</b> Investigation 2, Parts 3-4, pp. 16-23</p> <p><b>Solids and Liquids</b> Investigation 1, Part 3, pp. 21-24</p> <p><b>Water</b> Investigation 4, Part 2, pp. 14-18</p> <p><b>Wood and Paper</b> Investigation 2, Parts 3-4, pp. 16-23</p> <p><b>Solids and Liquids</b> Investigation 1, Part 3, pp. 21-24</p> <p><b>Water</b> Investigation 4, Part 2, pp. 14-18</p> <p><b>Wood and Paper</b> Investigation 2, Parts 3-4, pp. 16-23</p> <p><b>Solids and Liquids</b> Investigation 1, Part 3, pp. 21-24</p> <p><b>Water</b> Investigation 4, Part 2, pp. 14-18</p>
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### 3.3.4. Biological Sciences

Standard	FOSS
<p><b>A. Know the similarities and differences of living things.</b></p> <ul style="list-style-type: none"> <li>Identify life processes of living things (e.g., growth, digestion, react to environment).</li> <li>Know that some organisms have similar external characteristics (e.g., anatomical characteristics; appendages, type of covering, body segments) and that similarities and differences are related to environmental habitat.</li> <li>Describe basic needs of plants and animals.</li> </ul>	<p><b>Animals Two by Two</b> Investigation 1, Parts 2-3, pp. 17-25 Science Stories, pp. 6, 10, 12, 18, 22</p> <p><b>New Plants</b> Investigation 1, Parts 1-3, pp. 8-30 FOSS Web, Activity: Watch it Grow</p> <p><b>Insects</b> Investigation 4, Parts 1-5, pp. 10-31</p> <p><b>Plants and Animals</b> Investigation 1, Parts 1-3, pp. 47-72 Investigation 2, Parts 1-3, pp. 87-108 Investigation 3, Parts 1-2, pp. 120-134 Investigation 4, Parts 1-2, pp. 151-163 Science Resources, pp. 4-7, 22-24, 32-33</p> <p><b>Insects and Plants</b> Investigation 1, Parts 1-3, pp. 52-75 Investigation 2, Part 3, pp. 105-115 Investigation 3, Parts 1-3, pp. 129-151 Science Resources, pp. 37-55</p> <p><b>Structures of Life</b> Investigation 2, Part 3, pp. 18-22 Science Stories, pp. 17-21</p> <p><b>Human Body</b> Science Stories, pp. 14-16, 28-29</p> <p><b>Animals Two by Two</b> Investigation 1, Part 4, pp. 26-29 Investigation 3, Part 3, pp. 17-20 Science Stories, pp. 6-7, 10-11</p> <p><b>Insects</b> Investigation 1-5 Science Stories pp. 12-15</p> <p><b>New Plants</b> Investigation 2, Part 1, pp. 8-14</p> <p><b>Plants and Animals</b> Investigation 3, Parts 1-3, pp. 120-140 Investigation 4, Part 2, pp. 157-165 Science Resources, pp. 29-30, 32-33, 38-39, 41-42, 44-45, 47-50</p> <p><b>Insects and Plants</b> Investigation 1, Parts 1-3, pp. 52-75 Investigation 3, Parts 1-3, pp. 129-151 Investigation 5, Parts 1-3, pp. 206-225 Science Resources, pp. 20-24, 30-33, 335-36</p> <p><b>Structures of Life</b> Investigation 4, Parts 1-2, pp. 8-19</p> <p><b>Human Body</b> Science Stories, p. 11</p> <p><b>Trees</b> Investigation 1, Part 2, pp. 15-19</p> <p><b>Animals Two by Two</b> Investigation 1, Part 2, pp. 17-21</p> <p><b>Insects</b></p>

<p><b>B. Know that living things are made up of parts that have specific functions.</b></p> <ul style="list-style-type: none"> <li>Identify examples of unicellular and multicellular organisms</li> <li>Determine how different parts of a living thing work together to make the organism function.</li> </ul>	<p>Investigation 3, Part 2, pp. 12-20  <b>New Plants</b>  Investigation 1, Part 2, pp. 13-22  Science Stories, pp. 3-7  <b>Plants and Animals</b>  Investigation 1, Part 1, pp. 47-57  Investigation 2, Part 1, pp. 87-95  Investigation 3, Part 1, pp. 120-127  Science Resources, pp. 3-7, 21-26  <b>Insects and Plants</b>  Investigation 1, Part 1, pp. 52-61  Investigation 2, Part 2, pp. 95-104  Investigation 3, Part 2, pp. 134-144  Investigation 4, Part 2, pp. 170-174  <b>Structures of Life</b>  Investigation, Part 2, pp. 14-17  Investigation 3, Part 2, pp. 16-19  Science Stories, pp. 17-19</p> <p><b>Animals Two by Two</b>  Investigation 1, Part 1, pp. 10-16  Investigation 3, Parts 1-3, pp. 8-20  Science Stories, pp. 4-21  <b>New Plants</b>  Investigation 4, Parts 1-2, pp. 7-19  <b>Plants and Animals</b>  Investigation 3, Parts 1-2, pp. 120-134  Science Resources, pp. 21-45  <b>Insects and Plants</b>  Investigations 1-5, all parts  Science Resources, pp. 3-10, 20-24, 26-33  <b>Structures of Life</b>  Investigation 3, Part 1, pp. 8-15  Investigation 4, Part 1, pp. 8-13  Science Stories, pp. 17-34</p> <p><b>Trees</b>  Investigation 1, Part 1-6, pp. 7-30  <b>Animals Two by Two</b>  Investigation 1, Part 1, pp. 10-16  <b>New Plants</b>  Investigation 1, Part 3, pp. 23-30  Science Stories, pp. 12-15  FOSS Web, Activity: Watch it Grow  <b>Insects</b>  Science Stories, pp. 12-33  <b>Plants and Animals</b>  Investigation 1, Parts 1-3, pp. 47-72  Investigation 3, Parts 1-3, pp. 120-140  Science Resources, pp. 3-7, 29-30, 35-36, 42, 44-45  <b>Insects and Plants</b>  Investigation 1, Parts 1-3, pp. 52-75  Investigation 3, Parts 1-3, pp. 129-151  Investigation 5, Parts 1-3, pp. 206-225  Science Resources, pp. 30-33  <b>Structures of Life</b></p>
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<p><b>C. Know that characteristics are inherited and thus offspring closely resemble their parents.</b></p> <ul style="list-style-type: none"> <li>Identify characteristics for animal and plant survival in different climates.</li> <li>Identify physical characteristics that appear in both parents and offspring and differ between families, strains or species.</li> </ul> <p><b>D. Identify changes in living things over time.</b></p> <ul style="list-style-type: none"> <li>Compare extinct life forms with living organisms.</li> </ul>	<p>Investigation 3, Part 1, pp. 8-21  <b>Human Body</b>  Investigation 3, Parts 1-3, pp. 8-21  Science Stories, pp. 14-16, 28-29</p> <p><b>New Plants</b>  Science Stories, pp. 22-39  <b>Solids and Liquids</b>  Science Stories, pp. 22-34  <b>Plants and Animals</b>  Science Resources, pp. 28, 33-36, 40-41</p> <p><b>Insects</b>  Science Stories, pp. 36-39  <b>Insects and Plants</b>  Science Resources, pp. 8-10, 20-24  <b>Ideas and Inventions</b>  Science Stories, pp. 15-16</p> <p><b>Human Body</b>  Science Stories, pp. 21-24  <b>Structures of Life</b>  Science Stories, pp. 45-48</p>
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### 3.4.4. Physical Science, Chemistry and Physics

<i>STANDARD</i>	<i>FOSS</i>
<p><b>A. Recognize basic concepts about the structure and properties of matter.</b></p> <ul style="list-style-type: none"> <li>Describe properties of matter (e.g., hardness, reactions to simple chemical tests).</li> <li>Know that combining two or more substances can make new materials with different properties.</li> </ul>	<p><b>Wood and Paper</b>  Investigation 1, Parts 1, 3, pp. 8-14, 20-23  <b>Fabric</b>  Investigation 1, Part 1, pp. 6-11  <b>Pebbles, Sand, and Silt</b>  Investigation 1, Part 1-3, pp.8-21  <b>Solids and Liquids</b>  Investigation 1, Part 1, pp. 8-16  Investigation 2, Part 2, pp. 15-20  <b>Water</b>  Investigation 1, Parts 1-3, pp. 8-28  <b>Earth Materials</b>  Investigation 1, Parts 1-3, pp. 8-29  Investigation 2, Parts 1-2, pp. 8-21  Science Stories, pp. 30-31  <b>Matter and Energy</b>  Investigation 3, Part 1, pp. 129-138  Science Resources, pp. 39-42</p> <p><b>Wood and Paper</b>  Investigation 4, Part 2, pp. 14-18  <b>Ideas and Inventions</b></p>



<ul style="list-style-type: none"> <li>• Apply knowledge of the basic electrical circuits to design and construct simple direct current circuits.</li> <li>• Classify materials as conductors and nonconductors.</li> <li>• Know and demonstrate the basic properties of heat by producing it in a variety of ways.</li> <li>• Know the characteristics of light (e.g., reflection, refraction, absorption) and use them to produce heat, color or a virtual image.</li> </ul>	<p><b>Magnetism and Electricity</b> Investigation 2, Parts 1-4, pp; 8-29 Investigation 3, Parts 1-3, pp. 10-26 Science Stories, pp. 24-25</p> <p><b>Magnetism and Electricity</b> Investigation 2, Part 3, pp. 20-25</p> <p><b>New Plants</b> Investigation 1, Part 2, pp. 17-20</p> <p><b>Solids and Liquids</b> Science Stories, pp. 14, 17</p> <p><b>Plants and Animals</b> Investigation 2, Part 2, pp. 95-104</p> <p><b>Magnetism and Electricity</b> Investigation 2, Part 1, pp 8-13 Science Stories, p. 23 FOSS Web Movie: How a Light Bulb Works</p> <p><b>Ideas and Inventions</b> Investigation 4, Parts 1-3, pp. 8-21 Science Stories, pp. 23-32</p> <p><b>Matter and Energy</b> Investigation 2, Parts 1-2, pp. 93-144 Science Resources, pp. 24-36</p>
<p><b>C. Observe and describe different types of force and motion.</b></p> <ul style="list-style-type: none"> <li>• Identify characteristics of sound (pitch, loudness, echoes).</li> <li>• Recognize forces that attract or repel other objects and demonstrate them.</li> <li>• Describe various types of motion.</li> <li>• Compare the relative movement of objects and describe types of motion that are evident.</li> </ul>	<p><b>Physics of Sound</b> Investigation 1-4, all Parts Science Stories, pp. 5-21 FOSS Web Activity: How Far Away is It</p> <p><b>Magnetism and Electricity</b> Investigation 1, Parts 1-4, pp. 8-34 Science Stories, pp. 1-11 FOSS Web, Activity: Electromagnet</p> <p><b>Animals Two by Two</b> Investigation 3, Part 2, pp. 13-16</p> <p><b>Balance and Motion</b> Investigation 2 and 3, all Parts Science Stories, pp. 10-23</p> <p><b>Air and Weather</b> Investigation 3, Parts 1-5, pp. 8-33</p> <p><b>Physics of Sound</b> Investigation 3, Part 1, pp. 8-14</p> <p><b>Human Body</b> Investigation 3, Parts 1-3, 8-21</p> <p><b>Air and Weather</b> Investigation 1, Parts 3, 6, pp. 17-20, 34-38</p> <p><b>Balance and Motion</b> Investigation 2, Parts 1-3, pp. 8-25 Science Stories, pp. 10-33</p> <p><b>Ideas and Inventions</b> Investigation 3, Part 1-2, pp. 8-17</p> <p><b>Human Body</b></p>

<ul style="list-style-type: none"> <li>Describe the position of an object by locating it relative to another object or the background (e.g., geographic direction, left, up).</li> </ul> <p><b>D. Describe the composition and structure of the universe and the earth’s place in it.</b></p> <ul style="list-style-type: none"> <li>Recognize earth’s place in the solar system.</li> <li>Explain and illustrate the causes of seasonal changes.</li> <li>Identify planets in our solar system and their general characteristics.</li> <li>Describe the solar system motions and use them to explain time (e.g., days, seasons), major lunar phases and eclipses.</li> </ul>	<p>Investigation 3, Parts 1-3, pp. 8-21</p> <p><b>Wood and Paper</b> Investigation 1, Parts 3-4, pp. 20-27</p> <p><b>Balance and Motion</b> Investigation 3, Parts 1-4, pp. 8-28</p> <p><b>Solids and Liquids</b> Investigation 1, Part 3, pp. 21-24</p> <p><b>Ideas and Inventions</b> Investigation 3, Parts 1-2, pp. 8-17</p> <p><b>Human Body</b> Investigation 1, Parts 1-3, pp. 8-20</p> <p><b>Measurement</b> FOSS Web, Activity: Travel Game</p> <p><b>Sun, Moon and Stars</b> Science Resources, pp. 16-17</p> <p><b>Sun, Moon and Stars</b> Science Resources, pp. 7-8, 10-11</p> <p><b>Sun, Moon and Stars</b> Investigation 3, Part 2, pp. 126-130 Science Resources, pp. 16-17</p> <p><b>Air and Weather</b> Activity 4, Part 3</p> <p><b>Ideas and Inventions</b> Science Stories, pp. 33-36</p> <p><b>Sun, Moon and Stars</b> Investigation 2, Part 2, pp. 89-100 Science Resources, pp. 1-8, 10-11, 20-27</p>
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### 3.5.4. Earth Sciences

<i>STANDARD</i>	<i>FOSS</i>
<p><b>A. Know basic landforms and earth history.</b></p> <ul style="list-style-type: none"> <li>Describe earth processes (e.g., rusting, weathering, erosion) that have affected selected physical features in students’ neighborhoods.</li> <li>Identify various earth structures (e.g., mountains, faults, drainage basins) through the use of models.</li> <li>Identify the composition of soil as weathered rock and decomposed organic remains.</li> </ul>	<p><b>Pebbles, Sand, and Silt</b> Science Stories, pp. 10-3</p> <p><b>Earth Materials</b> Science Stories, pp. 5-7</p> <p><b>Pebbles, Sand, and Silt</b> Science Stories, pp. 4-5</p> <p><b>Earth Materials</b> Science Stories, pp. 2-7</p> <p><b>Water</b> Science Stories, pp. 4-9 FOSS Web, Movie: Grand Canyon Rapids</p> <p><b>Pebbles, Sand, and Silt</b> Investigation 4, Parts 1-3, pp. 8-25 Science Stories, pp. 20-23</p>

<ul style="list-style-type: none"> <li>Describe fossils and the type of environment they lived in (e.g., tropical, aquatic, desert).</li> </ul> <p><b>B. Know types and uses of earth materials.</b></p> <ul style="list-style-type: none"> <li>Identify uses of various earth materials (e.g., buildings, highways, fuels, growing plants).</li> <li>Identify and sort earth materials according to a classification key (e.g., soil/rock type)</li> </ul> <p><b>C. Know basic weather elements.</b></p> <ul style="list-style-type: none"> <li>Identify cloud types</li> <li>Identify weather patterns from data charts (including temperature, wind direction and speed, precipitation) and graphs of the data.</li> <li>Explain how different seasons effect plants, animals, food availability and daily human life.</li> </ul> <p><b>D. Recognize the earth's different water resources.</b></p> <ul style="list-style-type: none"> <li>Know that approximately three-fourths of the earth is covered by water.</li> <li>Identify and describe locations of fresh and saltwater bodies.</li> <li>Identify examples of water in the form of solid, liquid, and gas on or near the surface of the earth.</li> </ul>	<p><b>Pebbles, Sand, and Silt</b> Science Stories, pp. 26-31</p> <p><b>Earth Materials</b> Science Stories, pp. 4 FOSS Web, Pictures: Fossils</p> <p><b>Structures of Life</b> Science Stories, pp. 45-48</p> <p><b>Pebbles, Sand, and Silt</b> Investigation 3, Parts 1-5, pp. 8-29 Science Stories, pp. 16-19</p> <p><b>New Plants</b> Investigation 1, Part 2, pp. 13-19</p> <p><b>Water</b> Science Stories, pp. 17-19</p> <p><b>Earth Materials</b> Science Stories, pp. 12-15, 24-29</p> <p><b>Pebbles, Sand, and Silt</b> Investigation 2, Parts 1-2, pp. 8-17</p> <p><b>Earth Materials</b> Investigation 2, Part 2, pp. 14-21</p> <p><b>Air and Weather</b> Investigation 2, Part 3, pp. 20-23</p> <p><b>Air and Weather</b> Investigation 2, Parts 1-4, pp. 8-27 Investigation 4, Parts 1-2, pp. 8-18</p> <p><b>Trees</b> Investigation 3, Parts 1-9, pp. 10-38 Science Stories, pp. 14-23</p> <p><b>New Plants</b> Science Stories, p. 21</p> <p><b>Air and Weather</b> Science Stories, pp. 18-23</p> <p><b>Water</b> Science Stories, pp. 1, 17</p> <p><b>Water</b> Science Stories pp. 1-2, 4-10</p> <p><b>Solids and Liquids</b> Science Stories, pp. 7, 16</p> <p><b>Air and Weather</b> Science Stories, pp. 8-9</p> <p><b>Water</b> Investigation 1, Part 1, pp. 8-13 Investigation 2, Part 3, pp. 19-24 Science Stories, pp. 1-16</p>
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<ul style="list-style-type: none"> <li>• Explain and illustrate evaporation and condensation.</li> <li>• Recognize other resources available from water. (e.g., energy, transportation, minerals, food).</li> </ul>	<p><b>Water</b> Investigation 3, Parts 1-4, pp. 8-26 Science Stories, pp. 13-15 FOSS Web, Activity: Evaporation</p> <p><b>Matter and Energy</b> Investigation 4, Part 2, pp. 181-192 Science Resources, pp. 54-59</p> <p><b>Water</b> Science Stories pp. 23</p>
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### 3.6.4. Technology Education

*NOTE: The following standards specifically address technology education. Those standards that are addressed in the Delta Science Programs are indicated with examples from the programs.*

STANDARD	FOSS
<p><b>A. Know that biotechnologies relate to propagating, growing, maintaining, adapting, treating and converting.</b></p> <ul style="list-style-type: none"> <li>• Identify agricultural and industrial production processes that involve plants and animals.</li> <li>• Identify waste management treatment processes.</li> <li>• Describe how knowledge of the human body influences or impacts ergonomic design.</li> <li>• Describe how biotechnology has impacted various aspects of daily life (e.g., health care, agriculture, waste treatment).</li> </ul> <p><b>B. Know that information technologies involve encoding, transmitting, receiving, storing, retrieving and decoding.</b></p> <ul style="list-style-type: none"> <li>• Identify electronic communication methods that exist in the community (e.g. digital cameras, telephone, internet, television, fiber optics).</li> <li>• Identify graphic reproduction methods.</li> <li>• Describe appropriate image generating techniques (e.g. photography, video)</li> </ul>	<p><b>Fabrics</b> Science Stories, pp. 3-11</p> <p><b>Wood and Paper</b> Science Stories, pp. 3-8, 13-18</p> <p><b>New Plants</b> Science Stories pp. 12-17</p> <p><b>Plants and Animals</b> Science Resources, pp. 9-14</p> <p><b>Water</b> Science Stories, p. 19</p> <p><b>Physics of Sound</b> Science Stories, pp. 32-35</p> <p><b>Physics of Sound</b> Science Stories, pp. 32-35</p> <p><b>Human Body</b> Science Stories, pp. 5-7</p> <p><b>Magnetism and Electricity</b> Science Stories p. 33</p>

- Demonstrate the ability to communicate an idea by applying basic sketching and drawing techniques.

**C. Know physical technologies of structural design, analysis and engineering, finance, production, marketing, research and design.**

- Identify and group a variety of construction tasks.
- Identify the major construction systems present in a specific local building.
- Identify specific construction systems that depend on each other in order to complete a project.
- Know skills used in construction.
- Identify examples of manufactured goods present in the home and school.
- Identify basic resources needed to produce a manufactured item.
- Identify basic component operations in a specific manufacturing enterprise (e.g., cutting, shaping, attaching).
- Identify waste and pollution resulting from a manufacturing enterprise.
- Explain and demonstrate the concept of manufacturing (e.g., assemble a set of papers or ball point pens sequentially, mass produce an object).
- Identify transportation technologies of propelling, structuring, suspending, guiding, controlling and supporting.
- Identify and experiment with simple machines used in transportation systems.
- Explain how improved transportation systems have changed society.

### 3.7.4. Technological Devices

*NOTE: The following standards specifically address technology education. Those standards that are addressed in the Delta Science Programs are indicated with examples from the programs.*

STANDARD	FOSS
<p><b>A. Explore the use of basic tools, simple materials and techniques to safely solve problems.</b></p> <ul style="list-style-type: none"> <li>Describe the scientific principles on which various tools are based.</li> <li>Group tools and machines by their function.</li> <li>Select and safely apply appropriate tools and materials to solve simple problems.</li> </ul> <p><b>B. Select appropriate instruments to study materials.</b></p> <ul style="list-style-type: none"> <li>Develop simple skills to measure, record, cut and fasten.</li> <li>Explain appropriate instrument selection for specific tasks.</li> </ul> <p><b>C. Identify basic computer operations and concepts.</b></p> <ul style="list-style-type: none"> <li>Identify the major parts necessary for a computer to input and output data.</li> <li>Explain and demonstrate the basic use of input and output devices (e.g., keyboard, monitor, printer, mouse).</li> </ul>	<p><b>Air and Weather</b> Investigation 2, Part 2, pp. 14-19</p> <p><b>Wood and Paper</b> Investigation 2, Parts 1, 3-4, pp. 8-11, 16-23</p> <p><b>Balance and Motion</b> Investigation 3, Parts 1-2, pp. 6-18</p> <p><b>Water</b> Investigation 4, Part 2, pp. 14-18</p> <p><b>Ideas and Inventions</b> Investigation 3, Part 2, pp. 14-17</p> <p><b>Wood and Paper</b> Investigation 2, Parts 3-4, pp. 16-23</p> <p><b>Air and Weather</b> Investigation 2, Part 2, 4, pp. 14-19, 24-27</p> <p><b>Human Body</b> Investigation 3, Parts 1-3, pp. 8-21</p> <p><b>Measurement</b> Investigation 1-4, all Parts</p> <p><b>Matter and Energy</b> Investigation 3, Parts 2-3, pp. 139-160 Investigation 4, Part 1, pp. 174-180</p> <p><b>Air and Weather</b> Investigation 2, Part 2, 4, pp. 14-19, 24-27</p> <p><b>Measurement</b> Investigation 1-4, all Parts</p> <p><b>Water</b> Investigation 3, Parts 1-3, pp. 8-20 Investigation 4, Part 1, pp. 8-13</p> <p><b>Earth Materials</b> Investigation 1, Part 1, pp. 8-15</p> <p><b>Matter and Energy</b> Investigation 3, Parts 2-3, pp. 139-160 Investigation 4, Part 1, pp. 174-180</p> <p>FOSS Web provides opportunities for developing and using computer skills</p> <p>FOSS Web provides opportunities for developing and using computer skills</p>

<ul style="list-style-type: none"> <li>• Explain and demonstrate the use of external and internal storage devices (e.g., disk drive, CD drive).</li> </ul> <p><b>D. Use basic computer software.</b></p> <ul style="list-style-type: none"> <li>• Apply operating system skills to perform basic computer tasks.</li> <li>• Apply basic word processing skills.</li> <li>• Identify and use simple graphic and presentation graphic materials generated by the computer.</li> <li>• Apply specific instructional software.</li> </ul> <p><b>E. Identify basic computer communication systems.</b></p> <ul style="list-style-type: none"> <li>• Apply a web browser.</li> <li>• Apply basic electronic mail functions.</li> <li>• Use on-line searches to answer age appropriate questions</li> </ul>	<p>FOSS Web provides opportunities for developing and using computer skills</p> <p>FOSS Web provides opportunities for developing and using computer skills</p>
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### 3.8.4. Science, Technology, and Human Endeavors

<i>STANDARD</i>	<i>FOSS</i>
<p><b>A. Know that people select, create and use science and technology and is limited by social and physical restraints.</b></p> <ul style="list-style-type: none"> <li>• Identify and describe positive and negative impacts that influence or result from new tools and techniques.</li> <li>• Identify how physical technology (e.g., construction, manufacturing, transportation), informational technology and biotechnology are used to meet human needs.</li> <li>• Describe how scientific discoveries and technological advancements are related.</li> <li>• Identify interrelationships among technology, people and their world.</li> </ul>	<p><b>Ideas and Inventions</b> Science Stories, pp. 1-3, 9-10, 17-22</p> <p><b>Physics of Sound</b> Science Stories, pp. 32-35</p> <p><b>Wood and Paper</b> Science Stories, pp. 3-8, 13-38</p> <p><b>Physics of Sound</b> Science Stories, pp. 32-35</p> <p><b>Water</b> Science Stories, pp. 18-20, 23</p> <p><b>Measurement</b> Science Stories, pp. 22-23</p> <p><b>Wood and Paper</b> Science Stories, pp. 3-8, 13-18</p> <p><b>Water</b> Science Stories, pp. 18-20, 23</p>

<ul style="list-style-type: none"> <li>Apply the technological design process to solve a simple problem.</li> </ul> <p><b>B. Know how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.</b></p> <ul style="list-style-type: none"> <li>Identify and distinguish between human needs and improving the quality of life.</li> <li>Identify and distinguish between natural and human-made resources.</li> </ul> <ul style="list-style-type: none"> <li>Describe a technological invention and the resources that were used to develop it.</li> </ul> <p><b>C. Know the pros and cons of possible solutions to scientific and technological problems in society.</b></p> <ul style="list-style-type: none"> <li>Compare the positive and negative expected and unexpected impacts of technological design.</li> <li>Identify and discuss examples of technological change in the community that have both positive and negative impacts.</li> </ul>	<p><b>Earth Materials</b> Science Stories, pp. 24-29</p> <p><b>Wood and Paper</b> Investigation 2, Parts 3-4, pp. 16-23</p> <p><b>Solids and Liquids</b> Investigation 1, Part 3, pp. 21-24</p> <p><b>Water</b> Investigation 4, Part 2, pp. 14-18</p> <p><b>Fabric</b> Science Stories, pp. 3-13</p> <p><b>New Plants</b> Science Stories, pp. 16-21</p> <p><b>Pebbles, Sand and Silt</b> Science Stories, pp. 16-19</p> <p><b>Plants and Animals</b> Science Resources, pp. 9-14</p> <p><b>Insects and Plants</b> Science Resources, p. 7</p> <p><b>Earth Materials</b> Science Stories, pp. 24-29</p> <p><b>Water</b> FOSS web, Activity: Match the Resource</p> <p><b>Matter and Energy</b> Science Resources, pp. 1-7</p> <p><b>Wood and Paper</b> Science Stories, pp. 3-8, 13-18</p> <p><b>Ideas and Inventions</b> Science Stories, pp. 1-3</p> <p><b>Magnetism and Electricity</b> Science Stories, pp. 12-13</p> <p><b>Human Body</b> Science Stories, pp. 17-20</p> <p><b>Magnetism and Electricity</b> Science Stories, pp. 20-23</p> <p><b>Water</b> Science Stories, pp. 18-20, 23</p>
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# Grade Seven

*FOSS modules are inquiry-based.  
The fundamentals of scientific inquiry are imbedded in all modules.  
Examples of activities for each standard are listed.*

## 3.1.7. Unifying Themes

STANDARD	FOSS
<p><b>A. Explain the parts of a simple system and their relationship to each other.</b></p> <ul style="list-style-type: none"> <li>• Describe a system as a group of related parts that work together to achieve a desired result (e.g., digestive system).</li>   <li>• Explain the importance of order in a system.</li>   <li>• Distinguish between system inputs, system processes and system outputs.</li>   <li>• Distinguish between open loop and closed loop systems.</li> </ul>	<p><b>Levers and Pulleys</b> Investigation 3, Parts 1-2, pp. 8-20 Science Stories, pp. 16-17 FOSS Web, Activity: Rube Goldberg Machine</p> <p><b>Food and Nutrition</b> Science Stories, pp. 6-9, 44-50</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21</p> <p><b>Living Systems</b> Investigation 1, Parts 1-2, pp. 51-65 Science Resources, pp. 2-13</p> <p><b>Electronics</b> Investigation 1, Parts 1-3, pp. 55-70</p> <p><b>Human Brain and Senses</b> Investigation 2, Parts 1-3, pp. 67-83</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21</p> <p><b>Solar Energy</b> Investigation 4, Parts 1-2, pp. 8-23</p> <p><b>Levers and Pulleys</b> Investigation 1, Parts 2-3, pp. 18-28</p> <p><b>Living Systems</b> Investigation 1, Parts 1-2, pp. 51-65 Science Resources, pp. 2-13</p> <p><b>Human Brain and Senses</b> Investigation 8. Part 2, pp. 246-252</p> <p><b>Diversity of Life</b> Investigation 2, Part 1, pp. 72-78</p> <p><b>Levers and Pulleys</b> Investigation 4, Parts 1-2, pp. 8-20</p> <p><b>Food and Nutrition</b> Science Stories, pp. 6-9</p> <p><b>Living Systems</b> Investigation 1, Parts 1-2, pp. 51-65 Science Resources, pp. 2-13</p> <p><b>Models and Designs</b> Science Stories, pp. 33-36</p> <p><b>Human Brain and Senses</b> Investigation 8, Parts 1-2, pp. 240-252</p> <p><b>Earth History</b> Investigation 4, Part 3, pp. 138-146</p> <p><b>Food and Nutrition</b> Science Stories, pp. 6-9</p> <p><b>Models and Designs</b></p>

<ul style="list-style-type: none"> <li>Apply systems analysis to solve problems.</li> </ul> <p><b>B. Describe the use of models as an application of scientific or technological concepts.</b></p> <ul style="list-style-type: none"> <li>Identify and describe different types of models and their functions</li> <li>Apply models to predict specific results and observations (e.g., population growth, effects of infectious organisms).</li> <li>Explain systems by outlining a system's relevant parts and its purpose and/or designing a model that illustrates its function.</li> </ul>	<p>Investigation 2, Parts 1-2, pp. 8-21</p> <p><b>Variables</b> Investigation 3, Part 1, pp. 8-13</p> <p><b>Living Systems</b> Investigation 1, Parts 1-2, pp. 51-65 Science Resources, pp. 2-13</p> <p><b>Electronics</b> Investigation 1, Parts 1-3, pp. 55-70</p> <p><b>Human Brain and Senses</b> Investigation 8, Parts 1-2, pp. 240-252</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21</p> <p><b>Levers and Pulleys</b> Investigation 4, Parts 1-2, pp. 8-20</p> <p><b>Variables</b> Investigation 3, Part 3, pp. 20-23</p> <p><b>Force and Motion</b> Investigation 1, Parts 1-2, pp. 47-62</p> <p><b>Electronics</b> Investigation 1, Part 3, pp. 66-70</p> <p><b>Landforms</b> Investigation 1, Parts 1-3, pp. 8-24</p> <p><b>Models and Designs</b> Investigation 4, Parts 1-2, pp. 6-15</p> <p><b>Variables</b> Investigation 4, Parts 1-2, pp. 8-17</p> <p><b>Water Planet</b> Investigation 1, Part 1, pp. 50-58 Investigation 4, Part 3, pp. 204-211 Science Resources, pp. 80-88</p> <p><b>Earth History</b> Investigation 6, Parts 1-3, pp. 205-219</p> <p><b>Weather and Water</b> Investigation 3, Part 2, pp. 97-102</p> <p><b>Models and Designs</b> Investigation 4, Parts, 1-2, pp. 6-15</p> <p><b>Landforms</b> Investigation 3, Parts 1-3, pp. 8-24</p> <p><b>Variables</b> Investigation 3, Parts 1-3, pp. 8-23</p> <p><b>Water Planet</b> Investigation 4, Part 3, pp. 204-211 Resources , pp. 80-88</p> <p><b>Planetary Science</b> Investigation 5, Parts 2-4, pp. 158-173</p> <p><b>Weather and Water</b> Investigation 5, Parts 2-3, pp. 163-174</p> <p><b>Solar Energy</b> Investigation 4, Parts 1-2, pp. 8-23</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-3, pp. 8-24</p> <p><b>Levers and Pulleys</b></p>
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<p><b>C. Identify patterns as repeated processes or recurring elements in science and technology.</b></p> <ul style="list-style-type: none"> <li>Identify different forms of patterns and use them to group and classify specific objects.</li> <li>Identify repeating structure patterns.</li> <li>Identify and describe patterns that occur in physical systems (e.g., construction, manufacturing, transportation, informational systems and biochemical-related systems).</li> </ul> <p><b>D. Explain scale as a way of relating concepts and ideas to one another by some measure.</b></p> <ul style="list-style-type: none"> <li>Apply various applications of size and dimension of scale to scientific, mathematical, and technological applications.</li> </ul>	<p>Investigation 3, Parts 1-2, pp. 8-20  <b>Human Brain and Senses</b>  Investigation 2, Parts 2-3, pp. 73-83  <b>Electronics</b>  Investigation 1, Parts 1-3, pp. 55-70  <b>Populations and Ecosystems</b>  Investigation 3, Parts 1-2, pp. 90-102</p> <p><b>Mixtures and Solutions</b>  Investigation 1 Part 1, pp. 8-15  <b>Food and Nutrition</b>  Investigation 1, Parts 1-2, pp. 8-20  Investigation 2, Parts 1-2, pp. 8-21  <b>Living Systems</b>  Investigation 2, Part 2, pp. 99-106  Science Resources, pp. 21-22  <b>Planetary Science</b>  Investigation 5, Parts 1-4, pp. 154-173  <b>Earth History</b>  Investigation 8, Part 1, pp. 254-258  <b>Chemical Interactions</b>  Investigation 2, Part 1, pp. 70-74  Resources, pp. 2-6</p> <p><b>Landforms</b>  Investigation 2, Parts 1-2, pp. 8-22  <b>Variables</b>  Investigation 3, Parts 1-3, pp. 8-23  <b>Human Brain and Senses</b>  Investigation 2, Parts 2-3, pp. 73-83  <b>Electronics</b>  Investigation 1, Part 3, pp. 66-70</p> <p><b>Variables</b>  Investigation 1, Parts 1-3, pp. 8-7  Science Stories, pp. 8-9  <b>Levers and Pulleys</b>  Science Stories, pp. 23-25  <b>Human Brain and Senses</b>  Resources, pp. 31-35  <b>Electronics</b>  Investigation 1, Parts 2-3, pp. 61-70</p> <p><b>Landforms</b>  Investigation 3, Parts 1-3, pp. 8-24  Investigation 4, Parts 1-3, pp. 8-24  <b>Models and Designs</b>  Investigation 3, Part 1, pp. 8-12  <b>Weather and Water</b>  Investigation 8, Part 4, pp. 276-279  <b>Planetary Science</b>  Investigation 5, Parts 2-4, pp. 158-173</p>
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### 3.2.7. Inquiry and Design

STANDARD	FOSS
<p><b>A. Explain and apply scientific and technological knowledge.</b></p> <ul style="list-style-type: none"> <li>Distinguish between scientific theory and belief.</li> <li>Answer “What if” questions based on observation, inference, or prior knowledge or experience.</li> <li>Explain how skepticism about an accepted scientific explanation led to a new understanding.</li> <li>Explain how new information may change existing theories and practice.</li> </ul> <p><b>B. Apply process knowledge to make and interpret observations.</b></p> <ul style="list-style-type: none"> <li>Measure materials using a variety of scales.</li> </ul>	<p>FOSS provides the opportunity to address this standard. See for example;</p> <p><b>Models and Designs</b> Science Stories, pp. 11-16</p> <p><b>Variables</b> Science Stories, pp. 4-5, 12-14</p> <p><b>Mixtures and Solutions</b> Science Stories, pp. 3-6</p> <p><b>Water Planet</b> Investigation 1, Part 2, pp. 59-66 Science Resources, pp. 16-17</p> <p><b>Earth History</b> Resources, pp. 83-84</p> <p><b>Planetary Science</b> Resources, pp. 52-53, 67-68</p> <p><b>Variables</b> Investigation 3, Part 3, pp. 20-23</p> <p><b>Solar Energy</b> Investigation 4, Part 3, pp. 24-28</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Landforms</b> Investigation 3, Part 3, pp. 20-24</p> <p><b>Earth History</b> Investigation 4, Part 3, pp. 138-146</p> <p><b>Models and Designs</b> Science Stories, pp. 5-9</p> <p><b>Variables</b> Science Stories, pp. 4-5</p> <p><b>Planetary Science</b> Resources, pp. 59-62</p> <p><b>Chemical Interactions</b> Resources, pp. 69-72</p> <p><b>Food and Nutrition</b> Science Stories, pp. 24-25</p> <p><b>Models and Designs</b> Science Stories, pp. 5-10</p> <p><b>Variables</b> Science Stories, pp. 4-5</p> <p><b>Planetary Science</b> Investigation 5, Parts 1-4, pp. 154-173</p> <p><b>Populations and Ecosystems</b> Resources pp. 46-55</p> <p><b>Levers and Pulleys</b> Investigation 1, Parts 1-3, pp. 8-28</p> <p><b>Solar Energy</b> Investigation 4, Parts 1-3, pp. 8-28</p>

<ul style="list-style-type: none"> <li>Describe relationships by making inferences and predictions.</li> <li>Communicate, use space/time relationships, define operationally, raise questions, formulate hypotheses, test and experiment.</li> <li>Design controlled experiments, recognize variables, manipulate variables.</li> <li>Interpret data, formulate models, design models, and produce solutions.</li> </ul>	<p><b>Mixtures and Solutions</b> Investigation 1, Part 2, pp. 16-20</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 2, Part 1, pp. 85-98</p> <p><b>Weather and Water</b> Investigation 5, Part 1, pp. 152-162</p> <p><b>Planetary Science</b> Investigation 8, Parts 3-4, pp. 260-270</p> <p><b>Chemical Interactions</b> Investigation 5, Part 1, 3, pp. 153-158, 165-171</p> <p><b>Environments</b> Investigation 3, Parts 1-3, pp. 8-22</p> <p><b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 8-24</p> <p><b>Variables</b> Investigation 1, Parts 1-3, pp. 8-27</p> <p><b>Water Planet</b> Investigation 2, Parts 2-3, pp. 86-100</p> <p><b>Diversity of Life</b> Investigation 6, Part 2, pp. 193-197</p> <p><b>Human Brain and Senses</b> Investigation 7, Parts 1-2, pp. 210-225</p> <p><b>Force and Motion</b> Investigation 1, Part 2, pp. 57-62</p> <p><b>Chemical Interactions</b> Investigation 9, Parts 2-4, pp. 285-312</p> <p><b>Food and Nutrition</b> Investigation 3, Parts 1-3, pp. 8-24</p> <p><b>Models and Designs</b> Investigation 3, Parts 1-3, pp. 8-23</p> <p><b>Landforms</b> Investigation 3, Part 3, pp. 20-24</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 3, Part 3, pp. 136-141</p> <p><b>Weather and Water</b> Investigation 4, Parts 1-2, pp. 121-139</p> <p><b>Planetary Science</b> Investigation 5, Parts 1-4, pp. 154-173</p> <p><b>Variables</b> Investigation 4, Part 3, pp. 18-23</p> <p><b>Solar Energy</b> Investigation 3, Parts 1-2, pp. 8-23</p> <p><b>Landforms</b> Investigation 3, Part 3, pp. 20-24</p> <p><b>Diversity of Life</b> Investigation 9, Part 2, pp. 278-285</p> <p><b>Models and Designs</b> Investigation 4, Parts 1-2, pp. 6-15</p> <p><b>Mixtures and Solutions</b> Investigation 1, Parts 1-3, pp. 8-24</p> <p><b>Solar Energy</b></p>
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<p><b>C. Identify and use the elements of scientific inquiry to solve problems.</b></p> <ul style="list-style-type: none"> <li>• Generate questions about objects, organisms and/or events that can be answered through scientific investigations.</li> <li>• Evaluate the appropriateness of questions.</li> <li>• Design an investigation with limited variables to investigate a question.</li> </ul>	<p>Investigation 3, Parts 1-3, pp. 8-28  <b>Water Planet</b>  Investigation 3, Part 1, pp. 125-135  <b>Living Systems</b>  Investigation 2, Part 1, pp. 85-98  <b>Planetary Science</b>  Investigation 2, Part 2, pp. 71-77  <b>Human Brain and Senses</b>  Investigation 3, Parts 1-3, pp. 92-110</p> <p><b>Variables</b>  Investigation 4, Part 3, pp. 18-23  <b>Solar Energy</b>  Investigation 4, Part 3, pp. 24-28  <b>Landforms</b>  Investigation 3, Part 3, pp. 20-24  <b>Water Planet</b>  Investigation 3, Part 1, pp. 125-135  <b>Living Systems</b>  Investigation 2, Part 1, pp. 85-98  <b>Diversity of Life</b>  Investigation 8, Part 2, pp. 244-252  <b>Planetary Science</b>  Investigation 5, Parts 2-3, pp. 158-167  <b>Chemical Interactions</b>  Investigation 8, Part 1, pp. 248-255</p> <p><b>Variables</b>  Investigation 4, Part 3, pp. 18-23  <b>Solar Energy</b>  Investigation 4, Part 3, pp. 24-28  <b>Landforms</b>  Investigation 3, Part 3, pp. 20-24  <b>Water Planet</b>  Investigation 2, Parts 2-3, pp. 86-100  <b>Living Systems</b>  Investigation 3, Part 3, pp. 136-141  <b>Diversity of Life</b>  Investigation 8, Part 2, pp. 244-252  <b>Planetary Science</b>  Investigation 5, Parts 2-3, pp. 158-167  <b>Chemical Interactions</b>  Investigation 5, Part 1, pp. 153-158</p> <p><b>Food and Nutrition</b>  Investigation 3, Part 2, pp. 16-20  <b>Environments</b>  Investigation 2, Part 4, pp. 26-30  <b>Water Planet</b>  Investigation 3, Part 1, pp. 125-135  <b>Living Systems</b>  Investigation 3, Part 3, pp. 136-141  <b>Variables</b>  Investigation 4, Part 3, pp. 18-23  <b>Diversity of Life</b>  Investigation 8, Part 2, pp. 244-252</p>
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<ul style="list-style-type: none"> <li>• Conduct a two-part experiment.</li> <li>• Judge the significance of experimental information in answering the questions.</li> <li>• Communicate appropriate conclusions from the experiment.</li> </ul>	<p><b>Environments</b> Investigation 5, Parts 1-3, pp. 8-22</p> <p><b>Variables</b> Investigation 2, Parts 2-3, pp. 14-23</p> <p><b>Mixtures and Solutions</b> Investigation 1, Parts 1-2, pp. 8-20</p> <p><b>Planetary Science</b> Investigation 5, Parts 1-3, pp. 154-167</p> <p><b>Food and Nutrition</b> Investigation 2, Part 2, pp. 18-21</p> <p><b>Mixtures and Solutions</b> Investigation 3, Part 3, pp. 21-24</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 3, Part 3, pp. 136-141</p> <p><b>Variables</b> Investigation 1, Parts 2-3, pp. 16-27</p> <p><b>Diversity of Life</b> Investigation 8, Part 2, pp. 244-252</p> <p><b>Electronics</b> Investigation 5, Parts 1-2, pp. 161-170</p> <p><b>Landforms</b> Investigation 3, Parts 1-2, pp. 8-19</p> <p><b>Solar Energy</b> Investigation 3, Parts 1-2, pp. 8-23</p> <p><b>Variables</b> Investigation 3, Parts 3-4, pp. 20-27</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 3, Part 3, pp. 136-141</p> <p><b>Human Brain and Senses</b> Investigation 7, Parts 1-2, pp. 210-225</p> <p><b>Weather and Water</b> Investigation 4, Part 1, pp. 121-130</p> <p><b>Chemical Interactions</b> Investigation 7, Part 2, pp. 210-214</p>
<p><b>D. Know and use the technological design process to solve problems.</b></p> <ul style="list-style-type: none"> <li>• Define different types of problems.</li> <li>• Define all aspects of the problem, necessary information and questions that must be answered.</li> <li>• Propose the best solution.</li> </ul>	<p><b>Variables</b> Investigation 4, Part 3, pp. 18-23</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21 Investigation 4, Part 2, pp. 11-15</p> <p><b>Force and Motion</b> Investigation 8, Part 2, pp. 294-301</p> <p><b>Variables</b> Investigation 4, Part 3, pp. 18-23</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21 Investigation 4, Part 2, pp. 11-15</p> <p><b>Force and Motion</b> Investigation 8, Part 2, pp. 294-301</p> <p><b>Variables</b> Investigation 4, Part 3, pp. 18-23</p>

<ul style="list-style-type: none"> <li>• Design and propose alternative methods to achieve solutions.</li>   <li>• Apply a solution.</li>   <li>• Explain the results, present improvements, identify and infer the impacts of the solution.</li> </ul>	<p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21 Investigation 4, Part 2, pp. 11-15</p> <p><b>Force and Motion</b> Investigation 8, Part 2, pp. 294-301</p> <p><b>Variables</b> Investigation 4, Part 3, pp. 18-23</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21 Investigation 4, Part 2, pp. 11-15</p> <p><b>Force and Motion</b> Investigation 8, Part 2, pp. 294-301</p> <p><b>Variables</b> Investigation 4, Part 3, pp. 18-23</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21 Investigation 4, Part 2, pp. 11-15</p> <p><b>Force and Motion</b> Investigation 8, Part 2, pp. 294-301</p> <p><b>Variables</b> Investigation 4, Part 3, pp. 18-23</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21 Investigation 4, Part 2, pp. 11-15</p> <p><b>Force and Motion</b> Investigation 8, Part 2, pp. 294-301</p>
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### 3.3.7. Biological Sciences

<i>STANDARD</i>	<i>FOSS</i>
<p><b>A. Describe the similarities and differences that characterize diverse living things.</b></p> <ul style="list-style-type: none"> <li>• Describe how the structures of living things help them function in unique ways.</li>   <li>• Explain how to use a dichotomous key to identify plants and animals.</li>   <li>• Account for adaptations among organisms that live in a particular environment.</li> </ul>	<p><b>Environments</b> Investigation 2, Part 1, pp. 16-21 Science Stories, pp. 3-6, 12-17</p> <p><b>Food and Nutrition</b> Science Stories, pp. 6-9</p> <p><b>Living Systems</b> Investigation 1, Parts 1-3, pp. 51-70 Investigation 2, Part 1, pp. 85-98 Science Resources, pp. 2-13</p> <p><b>Populations and Ecosystems</b> Investigation 8, Parts 1-2, pp. 228-233 Resources, pp. 42-45</p> <p><b>Diversity of Life</b> Investigation 8, Parts 1-3, pp. 139-159</p> <p><b>Environments</b> Investigation 4, Part 1, pp. 8-12 Science Stories, pp. 3-8, 11-17</p> <p><b>Human Brain and Senses</b></p>

<p><b>B. Describe the cell as the basic structural and functional unit of living things.</b></p> <ul style="list-style-type: none"> <li>Identify the levels of organization from cells to organisms.</li> <li>Compare life processes at the organism level with life processes and the cell level.</li> <li>Explain that cells and organisms have particular structures that underlie their function.</li> <li>Describe and distinguish among cell cycles, reproductive cycles and life cycles.</li> <li>Explain disease effects on structures or functions of organisms.</li> </ul> <p><b>C. Know that every organism has a set of genetic instructions that determines its inherited traits.</b></p> <ul style="list-style-type: none"> <li>Identify and explain inheritable characteristics.</li> <li>Identify that the gene is the basic unit of inheritance.</li> </ul>	<p>Resources, pp. 40-42</p> <p><b>Diversity of Life</b> Investigation 8, Parts 1-3, pp. 239-259</p> <p><b>Populations and Ecosystems</b> Investigation 8, Part 1, pp. 228-233 Resources, pp. 42-45 Video: Hawaii: Strangers in Paradise</p> <p><b>Living Systems</b> Investigation 1, Parts 1-3, pp. 51-70 Science Resources, pp. 2-10</p> <p><b>Human Brain and Senses</b> Resources, pp. 36-38, 63-74</p> <p><b>Diversity of Life</b> Investigation 3, Parts 1-2, pp. 102-115 Investigation 4, Parts 1-2, pp. 133-141 Resources, pp. 27-41 CD, Cells and the Ribbon of Life</p> <p><b>Food and Nutrition</b> Science Stories, pp. 41-42</p> <p><b>Diversity of Life</b> Investigation 4, Parts 1-2, pp. 133-141 Resources pp. 27-47 CD, Cells and the Ribbon of Life</p> <p><b>Human Brain and Senses</b> Investigation 2, Parts 1-3, pp. 67-83 Resources, pp. 36-38, 60-73</p> <p><b>Diversity of Life</b> Investigation 3, Parts 1-3, pp. 102-115 Investigation 4, Parts 1-2, pp. 133-141 Resources, pp. 24-30</p> <p><b>Diversity of Life</b> Investigation 7, Part 1, pp. 218-223 Resources, pp. 40-44, 53-54, 58-59</p> <p><b>Populations and Ecosystems</b> Resources, pp. 53-54</p> <p><b>Food and Nutrition</b> Science Stories, pp. 16-19, 24-25</p> <p><b>Populations and Ecosystems</b> Investigation 9, Parts 1-4, pp. 262-291 Resources, pp. 46-55</p> <p><b>Populations and Ecosystems</b> Investigation 9, Parts 2-4, pp. 267-291 Resources, pp. 49-55</p>
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<ul style="list-style-type: none"> <li>• Identify basic patterns of inheritance (e.g., dominance, recessive, co-dominance).</li> <li>• Describe how traits are inherited.</li> <li>• Distinguish how different living things reproduce (e.g., vegetative budding, sexual).</li> <li>• Recognize that mutations can alter a gene.</li> <li>• Describe how selective breeding and genetic technologies can change genetic makeup of organisms.</li> </ul> <p><b>D. Explain basic concepts of natural selection.</b></p> <ul style="list-style-type: none"> <li>• Identify adaptations that allow organisms to survive in their environment.</li> <li>• Describe how an environmental change can affect the survival of organisms and entire species.</li> <li>• Know that differences in individuals of the same species may give some advantage in surviving and reproducing.</li> <li>• Recognize that populations of organisms can increase rapidly.</li> </ul>	<p><b>Populations and Ecosystems</b> Investigation 9, Parts 2-4, pp. 267-291 Resources, pp. 49-55</p> <p><b>Populations and Ecosystems</b> Investigation 9, Parts 2-4, pp. 267-291 Resources, pp. 49-55</p> <p><b>Environments</b> Science Stories, pp. 21</p> <p><b>Diversity of Life</b> Investigation 7, Part 1, pp. 218-223 Resources, pp. 26, 40-45, 53-54, 58-59</p> <p><b>Populations and Ecosystems</b> Resources, pp. 3-5</p> <p><b>Environments</b> Science Stories, pp. 46-47</p> <p><b>Populations and Ecosystems</b> Resources, pp. 58-59</p> <p><b>Environments</b> Investigation 4, Part 1, pp. 8-12 Science Stories, pp. 3-6, 12-17</p> <p><b>Diversity of Life</b> Investigation 8, Part 1, pp. 239-243 Investigation 9, Part 2, pp. 278-285 Resources, pp. 34-35, 46-50, 51-53, 60-64</p> <p><b>Populations and Ecosystems</b> Investigation 8, Parts 1-2, pp. 228-243 Resources, pp. 42-45 CD: Octopus Color Change</p> <p><b>Environments</b> Investigation 6, Parts 1-2, pp. 8-17 Science Stories, pp. 36-37, 43-45</p> <p><b>Earth History</b> Resources, pp. 85-86</p> <p><b>Planetary Science</b> Resources, pp. 67-68</p> <p><b>Populations and Ecosystems</b> Investigation 8, Parts 1-2, pp. 228-243 Investigation 10, Parts 1-3, pp. 302-317 Resources, pp. 58-61</p> <p><b>Populations and Ecosystems</b> Investigation 10, Parts 1-3, pp. 302-317 Resources, pp. 58-61</p> <p><b>Populations and Ecosystems</b> Investigation 6, Parts 1-3, pp. 179-197 Resources, pp. 22-29</p>
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<ul style="list-style-type: none"> <li>Describe the role that fossils play in studying the past.</li> <li>Explain how biological extinction is a natural process.</li> </ul>	<p><b>Models and Designs</b> Science Stories, pp. 11-16</p> <p><b>Earth History</b> Investigation 7, Parts 1-2, pp. 234-243 Resources, pp. 83-86 CD: Time Room</p> <p><b>Earth History</b> Resources, pp. 85-86</p> <p><b>Planetary Science</b> Resources, pp. 67-68</p> <p><b>Populations and Ecosystems</b> Resources, p. 61</p>
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### 3.4.7 Physical Science, Chemistry and Physics

<i>STANDARD</i>	<i>FOSS</i>
<p><b>A. Describe concepts about the structure and properties of matter.</b></p> <ul style="list-style-type: none"> <li>Identify elements as basic building blocks of matter that cannot be broken down chemically.</li> <li>Distinguish compounds from mixtures.</li> <li>Describe and conduct experiments that identify chemical and physical properties.</li> <li>Describe reactants and products of simple chemical reactions</li> </ul> <p><b>B. Relate energy sources and transfers to heat and temperature.</b></p> <ul style="list-style-type: none"> <li>Identify and describe sound changes in moving objects.</li> </ul>	<p><b>Mixtures and Solutions</b> Science Stories, pp. 3-6, 25-28</p> <p><b>Chemical Interactions</b> Investigation 2, Parts 1-2, pp. 3-15, 104</p> <p><b>Mixtures and Solutions</b> Science Stories, pp. 1-8, 23, 26-28</p> <p><b>Chemical Interactions</b> Investigation 8, Part 1, pp. 248-255 Investigation 9, Parts 1-2, pp. 280-297 Resources, pp. 49-51, 63-67</p> <p><b>Food and Nutrition</b> Investigation 2, Parts 1-2, pp. 8-21 Investigation 3, Parts 1-3, pp. 8-25</p> <p><b>Mixtures and Solutions</b> Investigation 1, Parts 1-4, pp. 8-29 Investigation 4, Parts 1-3, pp. 8-24</p> <p><b>Chemical Interactions</b> Investigation 7, Part 2, pp. 210-214 Investigation 8, Part 1, pp. 248-255 Investigation 9, Parts 2-4, pp. 288-312 Investigation 10, Parts 1-2, pp. 323-336</p> <p><b>Food and Nutrition</b> Investigation 3, Part 1, pp. 8-15</p> <p><b>Mixtures and Solutions</b> Investigation 4, Parts 1-3, pp. 8-24 Science Stories, pp. 23, 28</p> <p><b>Chemical Interactions</b> Investigation 9, Parts 2-4, pp. 288-312 Investigation 10, Parts 1-2, pp. 323-336 Resources, pp. 64-67</p> <p><b>Planetary Science</b> Resources, p. 99</p>

<ul style="list-style-type: none"> <li>• Know that the sun is a major source of energy that emits wavelengths of visible light, infrared and ultraviolet radiation.</li> <li>• Explain the conversion of one form of energy to another by applying knowledge of each form of energy.</li> <li>• Explain the parts and functions in an electrical circuit.</li> </ul> <p><b>C. Identify and explain the principles of force and motion.</b></p> <ul style="list-style-type: none"> <li>• Describe the motion of an object based on its position, direction and speed.</li> <li>• Classify fluid power systems according to fluid used or mode of power transmission (e.g., air, oil).</li> <li>• Explain various motions using models.</li> <li>• Explain how convex and concave mirrors</li> </ul>	<p><b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 8-24 Science Stories, pp. 1-5 FOSS Web, Activity: Solar Road Race</p> <p><b>Planetary Science</b> Resources, pp. 84-85</p> <p><b>Weather and Water</b> Investigation 3, Parts 2-3, pp. 97-110</p> <p><b>Solar Energy</b> Science Stories, pp. 5, 29-31, 35-39</p> <p><b>Variables</b> Investigation 3, Part 1, pp. 8-13</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21 Investigation 3, Part 2, pp. 13-19</p> <p><b>Force and Motion</b> Investigation 1, Parts 1-2, pp. 47-62</p> <p><b>Electronics</b> Investigation 1, Parts 1-3, pp. 55-60 Resources, pp. 1-2</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-2, pp. 8-21</p> <p><b>Electronics</b> Investigation 1, Parts 1-3, pp. 55-60 Resources, pp. 1-2</p> <p><b>Models and Designs</b> Investigation 4, Parts 1-2, pp. 6-15</p> <p><b>Variables</b> Investigation 1, Parts 1-3, pp. 8-27</p> <p><b>Levers and Pulleys</b> Investigation 4, Part 2, pp. 14-20</p> <p><b>Force and Motion</b> Investigation 1, Parts 1-3, pp. 47-66 Investigation 2, Parts 1-3, pp. 78-99 Investigation 4, Parts 1-3, pp. 138-155 Resources, pp. 17-19, 27-31</p> <p><b>Levers and Pulleys</b> Science Stories, pp. 24-25</p> <p><b>Models and Designs</b> Investigation 4, Parts 1-2, pp. 6-15</p> <p><b>Variables</b> Investigation 3, Parts 1-3, pp. 8-23</p> <p><b>Levers and Pulleys</b> Investigation 3, Parts 1-2, pp. 8-20</p> <p><b>Force and Motion</b> Investigation 1, Parts 1-3, pp. 47-66 Investigation 5, Part 2, pp. 177-186</p> <p><b>Weather and Water</b> Investigation 5, Parts 2-3, pp. 163-174</p> <p><b>Human Brain and Senses</b></p>
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<p>and lens change light images.</p> <ul style="list-style-type: none"> <li>• Explain how sound and light travel in waves of differing speeds, sizes and frequencies.</li> </ul> <p><b>D. Describe essential ideas about the composition and structure of the universe and the earth's place in it.</b></p> <ul style="list-style-type: none"> <li>• Compare various planets' characteristics.</li> <li>• Describe basic star types and identify the sun as a star type.</li> <li>• Describe and differentiate comets, asteroids, and meteors.</li> <li>• Identify gravity as the force that keeps planets in orbit around the sun and governs the rest of the movement of the solar system and universe.</li> <li>• Illustrate how the positions of stars and constellations change in relation to the Earth during an evening and from month to month.</li> <li>• Identify equipment and instruments that explore the universe.</li> <li>• Identify the accomplishments and contributions provided by selected past and present scientists in the field of astronomy.</li> </ul>	<p>Investigation 3, Parts 1-3, pp. 92-110 Resources, pp. 31-35 CD: Optics Bench</p> <p><b>Planetary Science</b> Resources, p. 99</p> <p><b>Solar Energy</b> Science Stories, pp. 40-43</p> <p><b>Water Planet</b> Investigation 1, Part 1, pp. 50-58 Science Resources, pp. 1-13</p> <p><b>Planetary Science</b> Investigation 10, Parts 1-3, pp. 312-324 Resources, pp. 84-89 CD: Notebook: Solar System</p> <p><b>Planetary Science</b> Resources, pp. 84-89 CD: Notebook: Sun</p> <p><b>Water Planet</b> Investigation 1, Part 1, pp. 50-58 Science Resources, pp. 8, 12-13</p> <p><b>Planetary Science</b> Resources, pp. 89, 101-103 CD: Notebook: Solar System</p> <p><b>Models and Designs</b> Science Stories, p. 10</p> <p><b>Water Planet</b> Investigation 1, Part 2, pp. 59-66 Science Resources, pp. 16-17</p> <p><b>Solar Energy</b> Science Stories, pp. 43-44</p> <p><b>Planetary Science</b> Resources, pp. 70, 84</p> <p><b>Models and Designs</b> Science Stories, pp. 9-10</p> <p><b>Planetary Science</b> Resources, pp. 74-79, 91-96</p> <p><b>Models and Designs</b> Science Stories, pp. 5-10</p> <p><b>Water Planet</b> Science Resources, pp. 15, 18-19</p> <p><b>Planetary Science</b> Resources, pp. 59-62, 71-73,</p>
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<ul style="list-style-type: none"> <li>Identify and articulate space program efforts to investigate possibilities of living in space and on other planets.</li> </ul>	<p>102-103</p> <p><b>Planetary Science</b> Resources, pp. 90-95 CD: Notebook: Space Exploration</p> <p><b>Earth History</b> Resources, pp. 60-62</p>
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### 3.5.7. Earth Sciences

<i>STANDARD</i>	<i>FOSS</i>
<p><b>A. Describe earth features and processes.</b></p> <ul style="list-style-type: none"> <li>Describe the major layers of the earth.</li> <li>Describe the processes involved in the creation of geologic features (e.g., folding, faulting, volcanism, sedimentation) and that these processes seen today (e.g., erosion, weathering, crustal plate movement) are similar to those in the past.</li> <li>Describe the processes that formed Pennsylvania geologic structures and resources including mountains, glacial formations, water gaps and ridges.</li> <li>Explain how the rock cycle affected rock formations in the state of Pennsylvania.</li> <li>Distinguish between examples of rapid surface changes (e.g., landslides, earthquakes) and slow surface changes (e.g., weathering).</li> <li>Identify living plants and animals that are similar to fossil forms.</li> </ul> <p><b>B. Recognize earth resources and how they affect everyday life.</b></p> <ul style="list-style-type: none"> <li>Identify and locate significant earth resources (e.g., rock types, oil, gas, coal)</li> </ul>	<p><b>Landforms</b> Science Stories, pp. 22-24</p> <p><b>Earth History</b> Resources, pp. 100-103</p> <p><b>Landforms</b> Investigation 2, Parts 1-2, pp. 8-22 Science Stories, pp. 15-17, 22-29</p> <p><b>Earth History</b> Investigation 4, Parts 3-6, pp. 138-162 Resources, pp. 73-78, 100-105 CD : Earth Processes</p> <p>Local Objective</p> <p>Local Objective See : <b>Earth History</b> Investigation 4, Parts 5-6, pp. 150-162 Investigation 5, Part 3, pp. 183-187 Investigation 8, Parts 1-3, pp. 254-270 Resources, pp. 93-97</p> <p><b>Landforms</b> Investigation 2, Parts 1-2, pp. 8-22 Investigation 3, Parts 1-2, pp. 8-19 Science Stories, pp. 15-17, 22-29</p> <p><b>Earth History</b> Investigation 4, Parts 3-4, pp. 138-149 Resources, pp. 100-105 CD : Earth Processes</p> <p><b>Models and Designs</b> Science Stories, pp. 11-16</p> <p><b>Earth History</b> Investigation 7, Part 1, pp. 234-242 Resources, pp. 38-41 CD : Geology Lab</p> <p>Local Objective</p>

<p>deposits) in Pennsylvania.</p> <ul style="list-style-type: none"> <li>• Explain the processes involved in the formation of oil and coal in Pennsylvania.</li> <li>• Explain the value and uses of different earth resources ( e.g., selected minerals, ores, fuel sources, agricultural use).</li> </ul> <p>Compare the locations of human settlements as related to available resources.</p> <p><b>D. Describe basic elements of meteorology.</b></p> <ul style="list-style-type: none"> <li>• Explain weather forecasts by interpreting weather data and symbols.</li> </ul> <ul style="list-style-type: none"> <li>• Explain the ocean’s impact on local weather and the climate of a region.</li> </ul> <ul style="list-style-type: none"> <li>• Identify how cloud types, wind directions and barometric pressure changes are associated with weather patterns in different regions of the country.</li> <li>• Explain and illustrate the processes of cloud formation and precipitation.</li> </ul> <ul style="list-style-type: none"> <li>• Describe and illustrate the major layers of the earth’s atmosphere.</li> <li>• Identify different air masses and global wind patterns and how they relate to the weather patterns in different regions of the U. S.</li> </ul> <p><b>E. Explain the behavior and impact of the earth’s water systems.</b></p> <ul style="list-style-type: none"> <li>• Explain the water cycle using the processes of evaporation and</li> </ul>	<p>Local Objective</p> <p><b>Solar Energy</b> FOSS Web, Activity : Resource Identification <b>Weather and Water</b> Resources, p. 46 <b>Electronics</b> Resources, p. 13</p> <p><b>Solar Energy</b> Science Stories, pp. 26-28 <b>Water Planet</b> Investigation 4, Part 3, pp. 204-211 Science Resources, pp. 84-88 <b>Weather and Water</b> Investigation 8, Part 4, pp. 276-279 Investigation 9, Part 2, pp. 303-310</p> <p><b>Solar Energy</b> Science Stories, pp. 22-24 <b>Water Planet</b> Investigation 4, Part 2, pp. 198-203 Science Resources, pp. 73, 77, 79 <b>Weather and Water</b> Resources pp. 33, 53-55</p> <p><b>Weather and Water</b> Investigation 8, Part 2, 4, pp. 265-270, 276-279 Resources, p. 37-41</p> <p><b>Solar Energy</b> Science Stories, pp. 22-24 <b>Weather and Water</b> Investigation 6, Part 1, pp. 206-213 Resources, pp. 33, 37-41</p> <p><b>Weather and Water</b> Investigation 2, Part 2, pp. 76-80 Resources, pp. 8-11</p> <p><b>Solar Energy</b> Science Stories, pp. 22-23 <b>Weather and Water</b> Investigation 9, Part 1, pp. 296-302 Resources, pp. 33, 53-55</p> <p><b>Solar Energy</b> Science Stories, p. 22-24 <b>Water Planet</b></p>
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<p>condensation.</p> <ul style="list-style-type: none"> <li>• Describe factors that affect evaporation and condensation.</li> <li>• Distinguish salt from fresh water (e.g., density, electrical conduction).</li> <li>• Compare the effect of water type (e.g., polluted, fresh, salt water) and the life contained in them.</li> <li>• Identify ocean and shoreline features (e.g., bays, inlets, spit, tidal marshes).</li> </ul>	<p>Investigation 4, Part 1, pp. 184-197 Science Resources, pp. 26-30, 33-37, 67-70 <b>Weather and Water</b> Investigation 7, Parts 1-2, pp. 232-243 CD, Cycles : Water Cycle</p> <p><b>Water Planet</b> Science Resources, pp. 26-39 <b>Weather and Water</b> Investigation 6, Parts 1-3, pp. 190-205 Resources, p. 33</p> <p><b>Environments</b> Science Stories, pp. 27-35, <b>Weather and Water</b> Resources, pp. 45-46</p> <p><b>Environments</b> Investigation 5, Parts 1-2, pp. 8-17 Science Stories, pp. 27-36</p> <p><b>Landforms</b> Science Stories, pp. 16-17, 25-26</p>
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### 3.6.7. Technology Education

*NOTE: The following standards specifically address technology education. Those standards that are addressed in the Delta Science Programs are indicated with examples from the programs.*

STANDARD	FOSS
<p><b>A. Explain biotechnologies that relate to related technologies of propagating, growing, maintaining, adapting, treating and converting.</b></p> <ul style="list-style-type: none"> <li>• Identify the environmental, societal and economic impacts that waste has in the environment.</li> <li>• Identify and explain the impact that a specific medical advancement has had on society.</li> <li>• Explain the factors that were taken into consideration when a specific object was designed.</li> <li>• Define and describe how fuels and energy can be generated through the process of biomass conversion.</li> <li>• Identify and group basic plant and animal production processes.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 36-37</p> <p><b>Food and Nutrition</b> Science Stories, pp. 16-19 <b>Human Brain and Senses</b> Resources, p. 49 CD, Lab: MRI, EEG</p> <p><b>Models and Designs</b> Science Stories, pp. 17-20, 25-30 <b>Variables</b> Science Stories, pp. 18-20 <b>Levers and Pulleys</b> Science Stories, pp. 23-25</p> <p><b>Environments</b> Science Stories, pp. 46-48</p>

<ul style="list-style-type: none"> <li>• Explain the impact that agricultural science has had on biotechnology.</li> </ul> <p><b>B. Explain information technologies of encoding, transmitting, receiving, storing, retrieving and decoding.</b></p> <ul style="list-style-type: none"> <li>• Demonstrate the effectiveness of image generating technique to communicate a story (e.g., photography, video).</li> <li>• Analyze and evaluate the effectiveness of a graphic object designed and produced to communicate a thought or concept.</li> <li>• Apply basic technical drawing techniques to communicate an idea or solution to a problem.</li> <li>• Apply the appropriate method of communication technology to communicate a thought.</li> </ul> <p><b>C. Explain physical technologies of structural design, analysis and engineering, personnel relations, financial affairs, structural production, marketing, research and design.</b></p> <ul style="list-style-type: none"> <li>• Use knowledge of material effectiveness to solve specific construction problems (e.g., steel vs. wood bridges).</li> <li>• Differentiate among the different types of construction applications (e.g., microwave tower, power plants, aircrafts).</li> <li>• Explain basic material processes that manufactured objects undergo during production (e.g. separating, forming, combining).</li> <li>• Evaluate a construction activity by specifying task analyses and necessary resources.</li> <li>• Explain the relationships among the basic resources needed in the production process for a specific manufactured object.</li> <li>• Explain the difference between design engineering and production engineering processes.</li> <li>• Analyze manufacturing steps that affect waste and pollutants.</li> <li>• Explain transportation technologies of</li> </ul>	<p>FOSS Web and CD provide opportunities for developing and using computer skills.</p> <p><b>Models and Designs</b> Investigation 4, Part 2, pp. 11-15</p> <p><b>Variables</b> Investigation 4, Part 3, pp. 18-23 Science Stories, pp. 18-20</p> <p><b>Models and Deigns</b> Science Stories, pp. 29-36</p>
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<p>propelling, structuring, suspending, guiding, controlling and supporting.</p> <ul style="list-style-type: none"> <li>Identify and explain the workings of several mechanical power systems.</li> <li>Model and explain examples of vehicular propulsion, control, guidance, structure and suspension systems.</li> <li>Explain the limitations of land, marine, air and space transportation systems.</li> </ul>	<p><b>Models and Designs</b> Investigation 3, Parts 1-2, pp. 6-15 Science Stories, pp. 25-30 <b>Solar Energy</b> Science Stories, p. 33 <b>Variables</b> Investigation 3, Parts 1-3, pp. 8-23</p> <p><b>Models and Designs</b> Science Stories, pp. 25-30 <b>Planetary Science</b> Resources, pp. 74-77, 90-96</p>
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### 3.7.7. Technological Devices

*NOTE: The following standards specifically address technology education. Those standards that are addressed in the Delta Science Programs are indicated with examples from the programs.*

STANDARD	FOSS
<p><b>A. Describe the safe and appropriate use of tools, materials and techniques to answer questions and solve problems.</b></p> <ul style="list-style-type: none"> <li>Identify uses of tools, machines, materials, information, people, money, energy and time that meet specific design criteria.</li> <li>Describe safe procedures for using tools and materials.</li> <li>Assess materials for appropriateness of use.</li> </ul> <p><b>B. Use appropriate instruments and apparatus to study materials.</b></p> <ul style="list-style-type: none"> <li>Select appropriate instruments to measure the size, weight, shape, and temperature of living and non-living objects.</li> </ul> <ul style="list-style-type: none"> <li>Apply knowledge of different</li> </ul>	<p><b>Levers and Pulleys</b> Science Stories, pp. 1-17, 21-27</p> <p>Safety guidelines and precautions are located in the teacher manuals where appropriate for each investigation.</p> <p><b>Levers and Pulleys</b> Investigation 1, Parts 1-3, pp. 8-28 <b>Solar Energy</b> Investigation 2, Parts 1, 2, pp. 8-24 <b>Water Planet</b> Investigation 3, Part 1, pp. 125-135 <b>Living Systems</b> Investigation 2, Part 1, pp. 85-98 <b>Earth History</b> Investigation 6, Part 3, pp. 215-219 <b>Weather and Water</b> Investigation 5, Part 1, pp. 152-162 <b>Planetary Science</b> Investigation 8, Parts 3-4, pp. 260-270</p> <p><b>Variables</b></p>

<p>measurement systems to measure and record objects' properties.</p> <p><b>C. Explain and demonstrate basic computer operations and concepts.</b></p> <ul style="list-style-type: none"> <li>• Know specialized computer applications used in the community.</li> <li>• Describe the function of advanced input and output devices (e.g., scanners, video images, plotters, projectors) and demonstrate their use.</li> <li>• Demonstrate age appropriate keyboarding skills and techniques.</li> </ul> <p><b>D. Apply computer software to solve specific problems.</b></p> <ul style="list-style-type: none"> <li>• Identify computer software designed to meet specific needs (e.g., Computer Aided Drafting, design software, tutorial, financial, presentation software).</li> <li>• Identify and solve basic software problems relevant to specific software applications.</li> <li>• Identify basic multimedia applications</li> <li>• Demonstrate a basic knowledge of desktop publishing applications.</li> <li>• Apply intermediate skills in utilizing word processing, database and spreadsheet software.</li> <li>• Apply basic graphic manipulation techniques.</li> </ul> <p><b>E. Explain basic computer communication systems.</b></p> <ul style="list-style-type: none"> <li>• Describe the organization and functions of the basic parts that make up the World Wide Web.</li> </ul>	<p>Investigation 2, Parts 1-3, pp. 8-22  <b>Solar Energy</b>  Investigation 2, Parts 1-2, pp. 8-24  <b>Water Planet</b>  Investigation 3, Part 1, pp. 125-135  <b>Living Systems</b>  Investigation 2, Part 1, pp. 85-98  <b>Planetary Science</b>  Investigation 8, Parts 3-4, pp. 260-270  <b>Weather and Water</b>  Investigation 1, Part 2, pp. 48-53  Investigation 5, Part 1, pp. 152-162</p> <p>FOSS Web and CD provides opportunities for developing and using computer skills.</p> <p>FOSS Web and CD provides opportunities for developing and using computer skills.</p> <p>FOSS Web and CD provides opportunities for developing and using computer skills.</p>
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<ul style="list-style-type: none"> <li>• Apply advanced electronic mail functions.</li> <li>• Apply basic on-line research techniques to solve a specific problem.</li> </ul>	FOSS Web and CD provides opportunities for developing and using computer skills.
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### 3.8.7. Science, Technology, and Human Endeavors

*NOTE: The following standards specifically address technology education. Those standards that are addressed in the Delta Science Programs are indicated with examples from the programs.*

STANDARD	FOSS
<p><b>A. Explain how sciences and technologies are limited in their effects and influences on society.</b></p> <ul style="list-style-type: none"> <li>• Identify and describe the unavoidable constraints of technological design.</li> <li>• Identify changes in society as a result of a technological development.</li> <li>• Identify and explain improvements in transportation, health, sanitation, and communications are result of advancements in science and technology and how they effect our lives.</li> </ul> <p><b>B. Explain how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.</b></p> <ul style="list-style-type: none"> <li>• Identify interrelationships between systems and resources.</li> <li>• Identify and describe the resources necessary to solve a selected problem in a community and improve the quality of life.</li> <li>• Identify and explain specific examples of how agricultural science has met human needs and has improved the quality of life.</li> </ul> <p><b>C. Identify the pros and cons of applying</b></p>	<p><b>Models and Designs</b> Science Stories, pp. 25-27</p> <p><b>Solar Energy</b> Science Stories, pp. 29-31</p> <p><b>Planetary Science</b> Resources, pp. 74-77</p> <p><b>Models and Designs</b> Science Stories, pp. 28-36</p> <p><b>Food and Nutrition</b> Science Stories, pp. 24-25</p> <p><b>Variables</b> Science Stories, pp. 18-20</p> <p><b>Human Brain and Senses</b> Resources, p. 49</p> <p><b>Solar Energy</b> Science Stories, pp. 29-31, 35-37</p> <p><b>Models and Designs</b> Science Stories, pp. 25-27</p> <p><b>Solar Energy</b> Science Stories, pp. 29-31</p> <p><b>Environments</b> Science Stories, pp.46-48</p> <p><b>Food and Nutrition</b> Science Stories, pp. 10-13</p>

<p><b>technological and scientific solutions to address problems and the effect upon society.</b></p> <ul style="list-style-type: none"> <li>• Describe the positive and negative expected and unexpected effects of specific technology.</li> <li>• Describe ways technology extends and enhances human abilities.</li> </ul>	<p><b>Models and Designs</b> Science Stories, pp. 29-36</p> <p><b>Mixtures and Solutions</b> Science Stories, pp. 43-45</p> <p><b>Models and Designs</b> Science Stories, p. 9</p> <p><b>Human Brain and Senses</b> Resources, pp. 34-35, 49 CD: MRI, EEG</p> <p><b>Diversity of Life</b> Investigation 2, Parts 1-2, pp. 72-84</p>
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# Academic Standards for Environment and Ecology

## Grade Four

### 4.1.4 Watersheds and Wetlands

<i>Standard</i>	<i>FOSS</i>
<p>A. Identify various types of water environments.</p> <ul style="list-style-type: none"> <li>Identify the lotic system (e.g., creeks, rivers, streams).</li> <li>Identify the lentic system (e.g., ponds, lakes, swamps).</li> </ul>	<p><b>Water</b> Science Stories, pp. 4-5</p> <p><b>Water</b> Science Stories, pp. 5-7</p>
<p>B. Explain the differences between moving and still water.</p> <ul style="list-style-type: none"> <li>Explain why water moves or does not move.</li> <li>Identify types of precipitation.</li> </ul>	<p><b>Water</b> Science Stories, pp. 4-5</p> <p><b>Air and Weather</b> Investigation 2, Part 4, pp. 24-27 Science Stories, pp. 8-9</p> <p><b>Water</b> Science Stories, pp. 1-2, 14-16</p>
<p>C. Identify living things found in water environments.</p> <ul style="list-style-type: none"> <li>Identify fish, insects and amphibians that are found in fresh water.</li> <li>Identify plants found in fresh water.</li> </ul>	<p><b>Animals Two By Two</b> Investigation 1, Parts 1-4, pp. 10-29 Science Stories, pp. 4-11</p> <p><b>Insects</b> Investigation 6, Part 3, pp. 18-22</p> <p><b>New Plants</b> Science Stories, p. 37</p> <p><b>Plants and Animals</b> Science Resources, p. 43</p> <p><b>Water</b> Science Stories, pp. 5-7</p>
<p>D. Identify a wetland and the plants and animals found there.</p> <ul style="list-style-type: none"> <li>Identify different kinds of wetlands.</li> <li>Identify plants and animals found in wetlands.</li> <li>Explain wetlands as habitats for plants and animals.</li> </ul>	
<p>E. Recognize the impact of watersheds and wetlands on animals and plants.</p> <ul style="list-style-type: none"> <li>Explain the role of watersheds in everyday life.</li> <li>Identify the role of watersheds and wetlands for plants and animals.</li> </ul>	

### 4.2.4. Renewable and Nonrenewable Resources

<i>Standard</i>	<i>FOSS</i>
<p>A. Identify needs of people.</p> <ul style="list-style-type: none"> <li>Identify plants, animals, water, air, minerals and fossil fuels as natural resources.</li> </ul>	<p><b>Earth Materials</b> Science Stories, pp. 12-15</p>

<ul style="list-style-type: none"> <li>• Explain air, water and nutrient cycles.</li> <li>• Identify how the environment provides for the needs of people.</li> </ul>	<p><b>Water</b> Science Stories, pp. 17-18, 22-23 FOSS Web, Activity: Match the Resource</p> <p><b>Matter and Energy</b> Science Resources, pp. 1-7</p> <p><b>Structures of Life</b> Science Stories, pp. 4-5</p> <p><b>Water</b> Science Stories, pp. 14-16</p> <p><b>Pebbles, Sand, and Silt</b> Science Stories, pp. 16-19</p> <p><b>New Plants</b> Science Stories, pp. 16-21</p> <p><b>Plants and Animals</b> Science Resources, pp. 9-14</p> <p><b>Earth Materials</b> Science Stories, pp. 24-29</p> <p><b>Water</b> Science Stories, pp. 10-11</p> <p><b>Structures of Life</b> Science Stories, pp. 4-5, 10-11</p>
<p>B. Identify products derived from natural resources.</p> <ul style="list-style-type: none"> <li>• Identify products made from trees.</li> <li>• Identify by-products of plants and animals.</li> <li>• Identify the sources of manmade products (e.g., plastics, metal, aluminum, fabrics, paper, cardboard).</li> </ul>	<p><b>Wood and Paper</b> Science Stories, pp. 3-8, 13-18</p> <p><b>Fabrics</b> Science Stories, pp. 3-11</p> <p><b>New Plants</b> Science Stories, pp. 16-21</p> <p><b>Plants and Animals</b> Science Resources, pp. 9-14</p> <p><b>Insects and Plants</b> Science Resources, p. 7</p> <p><b>Wood and paper</b> Science Stories, pp. 3-8, 13-18</p> <p><b>Pebbles, Sand, and Silt</b> Science Stories, pp. 16-19</p> <p><b>Ideas and Inventions</b> Science Stories, p. 3</p>
<p>C. Know that some natural resources have limited life spans.</p> <ul style="list-style-type: none"> <li>• Identify renewable and nonrenewable resources used in the local community.</li> <li>• Identify various means of conserving natural resources.</li> <li>• Know that natural resources have varying life spans.</li> </ul>	<p><b>Pebbles, Sand, and Silt</b> Science Stories, pp. 16-19</p> <p><b>Water</b> Science Stories, pp. 17-18 FOSS Web, Activity: Match the Resource</p> <p><b>Wood and Paper</b> Investigation 4, Part 1, pp. 8-13 Science Stories, p. 19</p> <p><b>Water</b> Science Stories, p. 21</p>
<p>D. Identify by-products and their use of natural</p>	

<p>resources.</p> <ul style="list-style-type: none"> <li>• Understand the waste stream.</li> <li>• Identify those items that can be recycled and those that cannot.</li> <li>• Identify use of reusable products.</li> <li>• Identify the use of compost, landfills and incinerators.</li> </ul>	<p><b>Wood and Paper</b> Investigation 4, Part 1, pp. 8-13 Science Stories, p. 19</p> <p><b>Insects and Plants</b> Investigation 2, Part 3, p. 113</p> <p><b>Water</b> Science Stories, pp. 17-19</p> <p><b>Wood and Paper</b> Science Stories, p. 19</p>
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#### 4.3.4. Environmental Health

<i>Standard</i>	<i>FOSS</i>
<p>A. Know that plants, animals and humans are dependent on air and water.</p> <ul style="list-style-type: none"> <li>• Know that all living things need air and water to survive.</li> <li>• Describe potentially dangerous pest controls used in the home.</li> <li>• Identify things that cause sickness when put into the air, water or soil.</li> <li>• Identify different areas where health can be affected by air, water or land pollution.</li> <li>• Identify actions that can prevent or reduce waste pollution.</li> </ul>	<p><b>Animals Two By Two</b> Investigation 4, Part 2, pp. 17-21</p> <p><b>Insects</b> Investigation 1, Part 1, pp. 8-15</p> <p><b>Plants and Animals</b> Investigation 1, Part 1, pp. 47-57 Investigation 2, Part 1, pp. 87-95 Investigation 3, Part 1, pp. 120-127 Science Resources, pp. 3-7, 21-26</p> <p><b>Insects and Plants</b> Investigation 1, Part 1, pp. 52-61 Investigation 2, Part 2, pp. 95-104 Investigation 3, Part 2, pp. 134-144 Investigation 4, Part 2, pp. 170-174</p> <p><b>Structures of Life</b> Investigation 3, Part 2, pp. 16-19</p> <p><b>Water</b> Science Stories, p. 20</p> <p><b>Water</b> Science Stories, p. 18</p>
<p>B. Identify how human actions affect environmental health.</p> <ul style="list-style-type: none"> <li>• Identify pollutants.</li> <li>• Identify sources of pollution.</li> <li>• Identify litter and its effect on the environment.</li> </ul>	<p><b>Water</b> Science Stories, p. 20</p> <p><b>Water</b> Science Stories, p. 20</p>

<ul style="list-style-type: none"> <li>Describe how people can reduce pollution.</li> </ul>	
<p>C. Understand that the elements of natural systems are interdependent.</p> <ul style="list-style-type: none"> <li>Identify some of the organisms that live together in an ecosystem.</li> <li>Understand that the components of a system all play a part in a healthy natural system.</li> <li>Identify the effects of a healthy environment on the ecosystem.</li> </ul>	<p><b>Plants and Animals</b> Investigation 3, Parts 1-2, pp. 120-124 Science Resources, pp. 30-45</p> <p><b>Water</b> Science Stories, pp. 5-7</p> <p><b>Structures of Life</b> Science Stories, p. 22-34, 43</p> <p><b>Water</b> Science Stories, pp. 5-7</p> <p><b>Structures of Life</b> Science Stories, p. 43</p>

#### 4.4.4. Agriculture and Society

<i>Standard</i>	<i>FOSS</i>
<p>A. Know the importance of agriculture to humans.</p> <ul style="list-style-type: none"> <li>Identify people's basic needs.</li> <li>Explain the influence of agriculture on food, clothing, shelter and culture from one area to another.</li> <li>Know how people depend on agriculture.</li> </ul>	<p><b>Human Body</b> Science Stories, p. 25</p> <p><b>Structures of Life</b> Science Stories, pp. 4-5, 10-11</p> <p><b>Fabric</b> Science Stories, pp. 3-11</p> <p><b>Structures of Life</b> Science Stories, pp. 4-5, 10-11</p> <p><b>Fabric</b> Science Stories, pp. 3-11</p> <p><b>New Plants</b> Science Stories, pp. 16-21</p> <p><b>Plants and Animals</b> Science Resources, pp. 9-14</p> <p><b>Structures of Life</b> Science Stories, pp. 4-5, 10-11</p>
<p>B. Identify the role of the sciences in Pennsylvania agriculture.</p> <ul style="list-style-type: none"> <li>Identify common animals found on Pennsylvania farms.</li> <li>Identify common plants found on Pennsylvania farms.</li> <li>Identify the parts of important agricultural related plants (i.e., corn, soybeans, barley).</li> <li>Identify a fiber product from Pennsylvania farms.</li> </ul>	
<p>C. Know that food and fiber originate from plants and animals.</p> <ul style="list-style-type: none"> <li>Define and identify food and fiber.</li> </ul>	<p><b>Fabric</b> Science Stories, pp. 3-11</p> <p><b>New Plants</b></p>

<ul style="list-style-type: none"> <li>Identify what plants and animals need to grow.</li> <li>Identify agricultural products that are local and regional.</li> <li>Identify an agricultural product based on its origin.</li> <li>Describe several products and tell their origins.</li> <li>Describe the journey of a local agricultural product from production to the consumer.</li> </ul>	<p>Science Stories, pp. 3-11  <b>Plants and Animals</b>  Science Resources, pp. 9-14  <b>Structures of Life</b>  Science Stories, pp. 4-5</p> <p><b>Animals Two by Two</b>  Science Stories, pp. 17-21  <b>Insects</b>  Investigation 4, Part 2, pp. 14-18  <b>New Plants</b>  Science Stories, pp. 3-7  <b>Plants and Animals</b>  Investigation 1, Part 1, pp. 47-57  Investigation 2, Part 1, pp. 87-95  Investigation 3, Part 1, pp. 120-127  Science Resources, pp. 3-7, 21-26  <b>Insects and Plants</b>  Investigation 2, Part 2, pp. 95-104  Investigation 3, Part 2, pp. 134-144  Investigation 4, Part 2, pp. 170-174  <b>Structures of Life</b>  Investigation 2, Part 2, pp. 14-17</p> <p><b>Fabric</b>  Science Stories, pp. 3-11  <b>New Plants</b>  Science Stories, pp. 16-21  <b>Plants and Animals</b>  Science Resources, pp. 9-14</p> <p><b>Fabric</b>  Science Stories, pp. 3-11  <b>New Plants</b>  Science Stories, pp. 16-21  <b>Plants and Animals</b>  Science Resources, pp. 9-14  <b>Structures of Life</b>  Science Stories, pp. 4-5</p> <p><b>New Plants</b> Science Stories, pp. 16-21  <b>Plants and Animals</b>  Science Resources, pp. 9-14  <b>Structures of Life</b> Science Stories, pp. 4-5</p>
<p>D. Identify technology and energy use associated with agriculture.</p> <ul style="list-style-type: none"> <li>Identify the various tools and machinery necessary for farming.</li> <li>Identify the types of energy used in producing food and fiber.</li> </ul>	<p><b>New Plants</b>  Science Stories, p. 18  <b>Plants and Animals</b>  Science Resources, pp. 9, 11-12  <b>Structures of Life</b>  Science Stories, pp. 4-5</p>

<ul style="list-style-type: none"> <li>Identify tools and machinery used in the production of agricultural products.</li> </ul>	<p><b>Fabric</b> Science Stories, pp. 4-5</p> <p><b>New Plants</b> Science Stories, pp. 16-21</p> <p><b>Plants and Animals</b> Science Resources, pp. 9-14</p> <p><b>Structures of Life</b> Science Stories, pp. 4-5</p>
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#### 4.5.4. Integrated Pest Management

<i>Standard</i>	<i>FOSS</i>
<p>A. Know types of pests.</p> <ul style="list-style-type: none"> <li>Identify classifications of pests.</li> <li>Identify and categorize pests.</li> <li>Know how pests fit into a food chain.</li> </ul>	
<p>B. Explain pest control.</p> <ul style="list-style-type: none"> <li>Know reasons why people control pests.</li> <li>Identify different methods for controlling specific pests in the home, school, and community.</li> <li>Identify chemical labels (e.g., caution, poison warning).</li> </ul>	
<p>C. Understand society's need for integrated pest management.</p> <ul style="list-style-type: none"> <li>Identify integrated pest management practices in the home.</li> <li>Identify integrated pest management practices outside the home.</li> </ul>	

#### 4.6.4. Ecosystems and their Interactions

<i>Standard</i>	<i>FOSS</i>
<p>A. Understand that living things are dependent on nonliving things in the environment for survival.</p> <ul style="list-style-type: none"> <li>Identify and categorize living and nonliving things.</li> </ul> <ul style="list-style-type: none"> <li>Describe the basic needs of an organism.</li> </ul>	<p><b>Animals Two by Two</b> Investigation 1, Parts 1-2, pp. 10-21</p> <p><b>Trees</b> Investigation 1, Part 1, pp. 7-14</p> <p><b>Pebbles, Sand, and Silt</b> Investigation 2, Parts 2-3, pp. 14-29</p> <p>Investigation 4, Part 1, pp. 8-14</p> <p><b>Insects and Plants</b> Investigation 3, Part 1, pp. 129-133</p> <p><b>Animals Two by Two</b> Investigation 1, Part 2, pp. 17-21</p> <p>Science Stories, pp. 4-6</p> <p><b>Insects</b> Investigation 4, Part 2, pp. 14-18</p> <p><b>New Plants</b> Science Stories, pp. 3-7</p> <p><b>Plants and Animals</b> Investigation 1, Part 1, pp. 47-57</p> <p>Investigation 2, Part 1, pp. 87-95</p> <p>Investigation 3, Part 1, pp. 120-127</p> <p>Science Resources, pp. 3-7, 21-26</p> <p><b>Insects and Plants</b></p>

<ul style="list-style-type: none"> <li>Identify basic needs of a plant and an animal and explain how their needs are met.</li>   <li>Identify plants and animals with their habitat and food sources.</li>   <li>Identify environmental variables that affect plant growth.</li>   <li>Describe how animals interact with plants to meet their needs for shelter.</li> </ul>	<p>Investigation 2, Part 2, pp. 95-104  Investigation 3, Part 2, pp. 134-144  Investigation 4, Part 2, pp. 170-174  <b>Structures of Life</b>  Science Stories pp. 18-19</p> <p><b>Animals Two by Two</b>  Investigation 1, Part 2, pp. 17-21  Science Stories, pp. 4-6</p> <p><b>Insects</b>  Investigation 4, Part 2, pp. 14-18</p> <p><b>New Plants</b>  Science Stories pp. 3-7</p> <p><b>Plants and Animals</b>  Investigation 1, Part 1, pp. 47-57  Investigation 2, Part 1, pp. 87-95  Investigation 3, Part 1, pp. 120-127  Science Resources, pp. 3-7, 21-26</p> <p><b>Insects and Plants</b>  Investigation 2, Part 2, pp. 95-104  Investigation 3, Part 2, pp. 134-144  Investigation 4, Part 2, pp. 170-174</p> <p><b>Structures of Life</b>  Investigation 3, Part 2, pp. 16-19</p> <p><b>Insects</b>  Investigation 3, Part 2, pp. 12-20  Investigation 4, Part 2, pp. 14-18</p> <p><b>New Plants</b>  Science Stories, pp. 22-39</p> <p><b>Insects and Plants</b>  Science Resources, pp. 6, 48-53</p> <p><b>Plants and Animals</b>  Investigation 3, Parts 1-3, pp. 120-140  Science Resources, pp. 21-23, 28-45</p> <p><b>Structures of Life</b>  Investigation 3, Parts 1-2, pp. 18-19  Science Stories, pp. 17-19, 22-34</p> <p><b>New Plants</b>  Investigation 2, Part 2, pp. 15-19  Investigation 2, Science Extension p. 30</p> <p><b>Plants and Animals</b>  Investigation 1, Parts 1-2, pp. 47-62  Investigation 1, Science Extension, p. 76</p> <p><b>Structures of Life</b>  Investigation 2, Parts 1-2, pp. 8-17</p> <p><b>Animals Two by Two</b>  Investigation 1, Part 3, pp. 22-25</p> <p><b>Insects</b>  Investigation 3, Part 2, pp. 12-20</p> <p><b>New Plants</b>  Science Stories, pp. 25, 27, 30, 32, 38-39</p> <p><b>Insects and Plants</b>  Investigation 3, Part 2, pp. 124-144</p> <p><b>Plants and Animals</b>  Investigation 3, Parts 1-2, pp. 120-134  Science Resources, pp. 33, 36-38</p>
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<ul style="list-style-type: none"> <li>Describe how certain insects interact with soil for their needs.</li> <li>Understand the components of a food chain.</li> <li>Identify a local ecosystem and its living and nonliving components.</li> <li>Identify a simple ecosystem and its living and nonliving components.</li> <li>Identify common soil textures.</li> <li>Identify animals that live underground.</li> </ul>	<p><b>Structures of Life</b> Science Stories, pp. 35-36</p> <p><b>Insects</b> Investigation 6, Part 2, pp. 14-17</p> <p><b>Structures of Life</b> Science Stories, p. 43</p> <p><b>Water</b> Science Stories, pp. 5-7</p> <p><b>Water</b> Science Stories, pp. 5-7, 22-34</p> <p><b>Pebbles, Sand, and Silt</b> Investigation 2, Parts 3-4, pp. 18-29 Investigation 4, Part 1, pp. 8-14 Science Stories, pp. 20-23</p> <p><b>Animals Two by Two</b> Investigation 3, Parts 1-3, pp. 8-20 Science Stories, pp. 12-13</p> <p><b>Insects</b> Investigation 6, Part 2, pp. 14-17</p> <p><b>Pebbles, Sand, and Silt</b> Science Stories, p. 22</p>
<p>B. Understand the concept of cycles.</p> <ul style="list-style-type: none"> <li>Explain the water cycle.</li> <li>Explain the carbon dioxide/oxygen cycle (photosynthesis).</li> </ul>	<p><b>Water</b> Science Stories, pp. 14-16 FOSS Web, Pictures: Water Cycle</p>
<p>C. Identify how ecosystems change over time.</p>	

#### 4.7.4. Threatened, Endangered and Extinct Species

<i>Standard</i>	<i>FOSS</i>
<p>A. Identify differences in living things.</p> <ul style="list-style-type: none"> <li>Explain why plants and animals are different colors, shapes, and sizes and how these differences relate to their survival.</li> <li>Identify characteristics that living things inherit from their parents.</li> <li>Explain why each of the four elements in a habitat is essential for survival.</li> </ul>	<p><b>Insects</b> Science Stories, pp. 8-11</p> <p><b>New Plants</b> Science Stories, pp. 8-11, 23</p> <p><b>Insects and Plants</b> Science Resources, pp. 26-29</p> <p><b>Plants and Animals</b> Science Resources, pp. 16-19, 28, 30, 43-45, 47-50</p> <p><b>Structures of Life</b> Investigation 4, Part 2, pp. 14-19 Science Stories, pp. 22-34</p> <p><b>Structures of Life</b> Science Stories, p. 7</p> <p><b>Insects</b> Investigation 4, Part 2, pp. 14-18</p> <p><b>New Plants</b> Investigation 1, Part 2, pp. 13-22</p>

<ul style="list-style-type: none"> <li>Identify local plants or animals and describe their habitat.</li> </ul>	<p>Science Stories, pp. 3-7</p> <p><b>Plants and Animals</b>  Investigation 1, Part 1, pp. 47-57  Investigation 2, Part 1, pp. 87-95  Investigation 3, Part 1, pp. 120-127  Science Resources, pp. 3-7, 21-26</p> <p><b>Insects and Plants</b>  Investigation 1, Part 1, pp. 52-61  Investigation 2, Part 2, pp. 95-104  Investigation 3, Part 2, pp. 134-144  Investigation 4, Part 2, pp. 170-174</p> <p><b>Structures of Life</b>  Investigation 3, Part 2, pp. 16-19</p> <p><b>Animals Two by Two</b>  Investigation 3, Parts 1-3, pp. 8-20  Science Stories, pp. 12-13</p> <p><b>Insects</b>  Investigation 3, Part 2, pp. 12-20  Investigation 6, Parts 1-3, pp. 8-22</p> <p><b>Insects and Plants</b>  Investigation 3, Part 2, pp. 1314-144</p> <p><b>Water</b>  Science Stories, pp. 5-7</p> <p><b>Structures of Life</b>  Science Stories, pp. 17-34</p>
<p>B. Know that adaptations are important for survival.</p> <ul style="list-style-type: none"> <li>Explain how specific adaptations can help a living organism to survive.</li> <li>Explain what happens to a living thing when food, water, shelter or space is changed.</li> </ul>	<p><b>Animals Two by Two</b>  Investigation 1, Part 1, pp. 10-16</p> <p><b>Insects</b>  Investigation 6, Part 1, pp. 8-13  Science Stories, pp. 8-11</p> <p><b>Insects and Plants</b>  Science Resources, pp. 26-29</p> <p><b>Plants and Animals</b>  Investigation 3, Part 3, pp. 104-108  Science Resources, pp. 15-19, 28-45</p> <p><b>Structures of Life</b>  Investigation 4, Part 2, pp. 14-19  Science Stories, pp. 22-34</p> <p><b>New Plants</b>  Investigation 3, Part 3, pp. 19-25  Investigation 2, Science Extension p. 30</p> <p><b>Animals and Plants</b>  Investigation 2, Part 3, pp. 104-108</p> <p><b>Insects and Plants</b>  Investigation 2, Science Extension, p. 76</p> <p><b>Structures of Life</b>  Investigation 3, Part 3, pp. 20-23  Science Stories, pp. 35-36</p>
<p>C. Define and understand extinction.</p> <ul style="list-style-type: none"> <li>Identify plants and animals that are extinct.</li> <li>Explain why some plants and animals are extinct.</li> </ul>	<p><b>Pebbles, Sand and Silt</b>  Science Stories, pp. 26-31</p> <p><b>Structures of Life</b>  Science Stories, pp. 45-48</p> <p><b>Structures of Life</b>  Science Stories, pp. 45-48</p>

<ul style="list-style-type: none"> <li>• Know that there are local and state laws regarding plants and animals.</li> </ul>	
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#### 4.8.4. Humans and the Environment

<i>Standard</i>	<i>FOSS</i>
<p>A. Identify the biological requirements of humans.</p> <ul style="list-style-type: none"> <li>• Explain how a dynamically changing environment provides for sustainability of living systems.</li> <li>• Identify several ways that people use natural resources.</li> </ul>	<p><b>Water</b> Science Stories, pp. 17-19</p> <p><b>Fabric</b> Science Stories, pp. 3-15</p> <p><b>Wood and Paper</b> Science Stories, pp. 3-8, 13-18</p> <p><b>Pebbles, Sand, and Silt</b> Investigation 3, Parts 2, 5, pp. 12-15, 24-29 Science Stories, pp. 16-19</p> <p><b>Water</b> Science Stories, pp. 17-19, 23</p> <p><b>Matter and Energy</b> Science Resources, pp. 1-7</p> <p><b>Earth Materials</b> Science Stories, pp. 12-15, 24-29</p>
<p>B. Know that environmental conditions influence where and how people live.</p> <ul style="list-style-type: none"> <li>• Identify how regional natural resources influence what people use.</li> <li>• Explain the influence of climate on how and where people live.</li> </ul>	
<p>C. Explain how human activities may change the environment.</p> <ul style="list-style-type: none"> <li>• Identify everyday human activities and how they affect the environment.</li> <li>• Identify examples of how human activities within a community affect the natural environment.</li> </ul>	<p><b>Water</b> Science Stories, pp. 18-20</p> <p><b>Pebbles, Sand, and Silt</b> Science Stories, pp. 16-18</p> <p><b>Water</b> Science Stories, pp. 18-20, 23</p>
<p>D. Know the importance of natural resources in daily life.</p> <ul style="list-style-type: none"> <li>• Identify items used in daily life that come from natural resources.</li> <li>• Identify ways to conserve our natural resources.</li> </ul>	<p><b>Fabric</b> Science Stories, pp. 4-13</p> <p><b>Wood and Paper</b> Science Stories, pp. 3-8, 13-18</p> <p><b>Pebbles, Sand, and Silt</b> Investigation 3, Parts 2, 5, pp. 12-15, 24-29 Science Stories, pp. 16-19</p> <p><b>Matter and Energy</b> Science Resources, pp. 1-7</p> <p><b>Water</b> Science Stories, pp. 10-11, 17-18, 23 FOSS Web, Activity: Match the Resource</p> <p><b>Wood and Paper</b> Investigation 4, Part 1, pp. 8-13</p> <p><b>Trees</b> Science Stories, p. 19</p> <p><b>Water</b> Science Stories, p. 21</p>

<ul style="list-style-type: none"> <li>Identify major land uses in the community.</li> </ul>	
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#### 4.9.4. Environmental Laws and Regulations

<i>Standard</i>	<i>FOSS</i>
<p>A. Know that there are laws and regulations for the environment.</p> <ul style="list-style-type: none"> <li>Identify local and state laws and regulations regarding the environment.</li> <li>Explain how the recycling law impacts the school and home.</li> <li>Identify and describe the role of a local or state agency that deals with environmental laws and regulations.</li> </ul>	



<ul style="list-style-type: none"> <li>Describe the different functions of a wetland.</li> </ul>	
<p>E. Describe the impact of watersheds and wetlands on people.</p> <ul style="list-style-type: none"> <li>Explain the impact of watersheds and wetlands in flood control, wildlife habitats and pollution abatement.</li> <li>Explain the influence of flooding on wetlands.</li> </ul>	

#### 4.2.7. Renewable and Nonrenewable Resources

<i>Standard</i>	<i>FOSS</i>
<p>A. Know that raw materials come from natural resources.</p> <ul style="list-style-type: none"> <li>Identify resources used to provide humans with energy, food, housing and water.</li> <li>Explain how plants and animals may be classified as natural resources.</li> <li>Compare means of growing or acquiring food.</li> <li>Identify fiber and other raw materials used in clothing and shelter production.</li> <li>Identify types of minerals and fossil fuels used by humans.</li> </ul>	<p><b>Solar Energy</b> Science Stories, pp. 22-24, 29-31, 35-39 FOSS Web, Activity: Match the Resource</p> <p><b>Food and Nutrition</b> Science Stories, pp. 10-13, 22-23, 30-33</p> <p><b>Water Planet</b> Investigation 4, Part 4, pp. 212-216 Science Resources, pp. 63-66</p> <p><b>Landforms</b> Science Stories, p. 13-14</p> <p><b>Diversity of Life</b> Resources, pp. 68-69</p> <p><b>Electronics</b> Resources, pp. 12-13</p> <p><b>Environments</b> Science Stories, 47-48</p> <p><b>Food and Nutrition</b> Science Stories, pp. 10-13, 30-33</p> <p><b>Solar Energy</b> FOSS Web, Activity: Match the Resource</p> <p><b>Mixtures and Solutions</b> Science Stories, pp. 7-9, 37-41</p> <p><b>Electronics</b> Resources, p. 13</p>
<p>B. Examine the renewability of resources.</p> <ul style="list-style-type: none"> <li>Identify renewable resources and describe their uses.</li> <li>Identify nonrenewable resources and describe their uses.</li> <li>Compare finished products to their original raw materials.</li> <li>Identify the waste derived from the use of renewable and nonrenewable resources.</li> </ul>	<p><b>Solar Energy</b> FOSS Web, Activity: Match the Resource</p> <p><b>Solar Energy</b> FOSS Web, Activity: Match the Resource</p> <p><b>Mixtures and Solutions</b> Science Stories, pp. 7-9, 43-45</p> <p><b>Food and Nutrition</b> Science Stories, pp. 10-13</p>

<ul style="list-style-type: none"> <li>• Determine how consumption may impact the availability of resources.</li> <li>• Compare the time spans of renewability for fossil fuels and alternative fuels.</li> </ul>	
<p>C. Explain natural resource distribution.</p> <ul style="list-style-type: none"> <li>• Distinguish between readily available and less accessible resources.</li> <li>• Identify the locations of different concentrations of fossil fuels and mineral resources.</li> <li>• Analyze the effects of management practices on air, land and water in forestry, agriculture, fisheries, wildlife, mining and food and fiber production that is unique to different climates.</li> </ul>	
<p>D. Describe the role of recycling and waste management.</p> <ul style="list-style-type: none"> <li>• Identify materials that can be recycled in the community.</li> <li>• Explain the process of closing the loop in recycling.</li> <li>• Compare the decomposition rates of different organic materials.</li> <li>• Describe methods that could be used to reuse materials for new products.</li> <li>• Evaluate the costs and benefits of disposable products.</li> </ul>	

#### 4.3.7. Environmental Health

<i>Standard</i>	<i>FOSS</i>
<p>A. Identify environmental health issues.</p> <ul style="list-style-type: none"> <li>• Identify various examples of long-term pollution and explain their effects on environmental health.</li> <li>• Identify diseases that have been associated with poor environmental quality.</li> <li>• Describe different types of pest controls and their effects on the environment.</li> <li>• Identify alternative products that can be used in life to reduce pollution.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 36-37 Investigation 4, Language Extension p. 23</p> <p><b>Solar Energy</b> Science Stories, pp. 29-33. 35-39</p>
<p>B. Describe how human actions affect the health of the environment.</p> <ul style="list-style-type: none"> <li>• Identify land use practices and their relation to environmental health.</li> <li>• Explain how natural disasters affect environmental health.</li> <li>• Identify residential and industrial sources of pollution and their effects on environmental health.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 35-37, 43-45</p> <p><b>Environments</b> Science Stories, pp. 36-37</p>

<ul style="list-style-type: none"> <li>• Explain the difference between point and nonpoint source pollution.</li> <li>• Explain how nonpoint source pollution can affect the water supply and air quality.</li> <li>• Explain how acid deposition can affect water, soil and air quality.</li> <li>• Explain the relationship between resource use, reuse, recycling and environmental health.</li> </ul>	<p><b>Environments</b> Science Stories, p.37</p>
<p>C. Explain biological diversity.</p> <ul style="list-style-type: none"> <li>• Explain the complex, interactive relationships among members of an ecosystem.</li> <li>• Explain how diversity affects ecological integrity of the natural resources.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 38-41, 43-45 <b>Populations and Ecosystems</b> Investigation 3, Parts 1-3, pp. 90-107 Investigation 4, Parts 1-2, pp. 119-129 Investigation 5, Parts 2-4, pp. 151-169 Resources, pp. 17-29</p>

#### 4.4.7. Agriculture and Society

<i>Standard</i>	<i>FOSS</i>
<p>A. Explain society's standard of living in relation to agriculture.</p> <ul style="list-style-type: none"> <li>• Compare and contrast agricultural changes that have been made to meet society's needs.</li> <li>• Compare and contrast how animals and plants affect agricultural systems.</li> <li>• Compare several technological advancements and their effect(s) on historical growth of agriculture.</li> <li>• Compare different environmental conditions related to agricultural production, cost and quality of the product.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 46-48 <b>Food and Nutrition</b> Science Stories, p. 13</p> <p><b>Environments</b> Science Stories, pp. 46-48</p>
<p>B. Investigate how agricultural science has recognized the various soil types found in Pennsylvania.</p> <ul style="list-style-type: none"> <li>• Explain the importance of particle sizes in different soil types.</li> <li>• Determine how water has influenced the development of Pennsylvania soil types.</li> <li>• Investigate how soil types have influenced the plant types used on Pennsylvania farms.</li> </ul>	<p><b>Earth History</b> Investigation 4, Parts 2, 5-6, pp. 132-137, 150-162 Resources, p.35</p>

<ul style="list-style-type: none"> <li>Analyze how soil types and geographic regions have impacted the profitability of Pennsylvania farms.</li> </ul>	
<p>C. Explain agricultural systems' use of natural and human resources.</p> <ul style="list-style-type: none"> <li>Analyze the needs of plants and animals as they relate to climate and soil conditions.</li> <li>Identify the plants and animals that can be raised in the area and explain why.</li> <li>Identify natural resources necessary for agricultural systems.</li> <li>Compare the need for crop production to the need for animal production.</li> <li>Define issues associated with food and fiber production.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 9-17</p> <p><b>Environments</b> Science Stories, p. 46-48 <b>Food and Nutrition</b> Science Stories, p. 13</p>
<p>D. Explain the improvement of agricultural production through technology.</p> <ul style="list-style-type: none"> <li>Compare the technologies that have advanced agricultural production.</li> <li>Explain how energy sources have changed to meet agricultural technology.</li> </ul>	<p><b>Environments</b> Science Stories, p.p. 46-48</p>

#### 4.5.7. Integrated Pest Management

<i>Standard</i>	<i>FOSS</i>
<p>A. Explain benefits and harmful effects of pests.</p> <ul style="list-style-type: none"> <li>Identify different examples of pests and explain the beneficial or harmful effects of each.</li> <li>Identify several locations where pests can be found and compare the effects the pests have on each location.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 18-19, 21</p> <p><b>Environments</b> Science Stories, pp. 19, 21</p>
<p>B. Explain how pest management affects the environment.</p> <ul style="list-style-type: none"> <li>Explain issues related to integrated pest management including biological technology, resistant varieties, chemical practices, medical technology and monitoring techniques.</li> <li>Describe how integrated pest management and related technology impact human activities.</li> <li>Identify issues related to integrated pest management that affect the environment.</li> </ul>	
<p>C. Explain various integrated pest management practices used in society.</p> <ul style="list-style-type: none"> <li>Compare and contrast integrated pest management monitoring methods utilized in different community settings.</li> </ul>	

<ul style="list-style-type: none"> <li>• Compare integrated pest management to past practices.</li> <li>• Compare and analyze the long-term effects of using integrated pest management products.</li> </ul>	
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#### 4.6.7. Ecosystems and their Interactions

<i>Standard</i>	<i>FOSS</i>
<p>A. Explain the flows of energy and matter from organism to organism within an ecosystem.</p> <ul style="list-style-type: none"> <li>• Identify and explain the characteristics of biotic and abiotic.</li> <li>• Describe and explain the adaptations of plants and animals to their environment.</li> <li>• Demonstrate the dependency of living components in the ecosystem on the nonliving components.</li> <li>• Explain energy flow through a food web.</li> <li>• Explain the importance of the predator/prey relationship and how it maintains the balances within ecosystems.</li> <li>• Understand limiting factors and predict their effects on an organism.</li> <li>• Identify niches for producers, consumers, and decomposers within an ecosystem.</li> </ul>	<p><b>Diversity of Life</b> Investigation 1, Parts 1,2, pp. 43-51 Resources, pp. 21-23</p> <p><b>Populations and Ecosystems</b> Investigation 2, Parts 1-2, pp. 70-79 Investigation 3, Parts 1-3, pp. 90-107 Resources, pp. 8-13, 22-24</p> <p><b>Environments</b> Science Stories, pp. 9-17</p> <p><b>Diversity of Life</b> Investigation 8, Part 1, pp. 239-243 Resources, pp. 33-35, 46-50, 60-64</p> <p><b>Populations and Ecosystems</b> Investigation 8, Parts 1-2, pp. 228-243 Resources, pp. 42-45 CD: Octopus Color Change Video: Hawaii: Strangers in Paradise</p> <p><b>Environments</b> Investigation 5, Parts 1-2, pp. 8-18 Investigation 3, Parts 1-3, pp. 8-22 Science Stories, pp. 38-41, 43-45</p> <p><b>Populations and Ecosystems</b> Investigation 3, Parts 1-3, pp. 90-107 Investigation 7, pp. 210-215 Resources, pp. 8-13, 22-24</p> <p><b>Populations and Ecosystems</b> Investigation 4, Part 2, pp. 122-129 Investigation 5, Parts 2-4, pp. 151-169 Resources, pp. 14-21</p> <p><b>Environments</b> Science Stories, pp. 38-41, 43-45</p> <p><b>Populations and Ecosystems</b> Resources, pp. 2-24</p> <p><b>Environments</b> Investigation 6, Parts 1-2, pp. 8-17</p> <p><b>Populations and Ecosystems</b> Investigation 6, Part 1, pp. 179-186 Resources, pp. 22-24</p> <p><b>Environments</b> Science Stories, pp. 18-19, 22, 28, 40-41, 43-45</p> <p><b>Populations and Ecosystems</b> Investigation 5, Part 4, pp. 161-169 Resources, pp. 17-22</p>

<ul style="list-style-type: none"> <li>• Compare and contrast the major ecosystems of Pennsylvania.</li> <li>• Identify the major characteristics of a biome.</li> <li>• Compare and contrast different biomes and their characteristics.</li> <li>• Identify the relationship of abiotic and biotic components and explain their interaction in an ecosystem.</li> <li>• Explain how different soil types determine the characteristics of ecosystems.</li> </ul>	<p>Local Objective</p> <p><b>Environments</b> Science Stories, pp. 9-17</p> <p><b>Environments</b> Science Stories, pp. 9-17</p> <p><b>Environments</b> Science Stories, pp. 38-41, 43-45 <b>Populations and Ecosystems</b> Investigation 2, Part 1, pp. 70-76 Investigation 3, Parts 1-3, pp. 90-107</p> <p><b>Environments</b> Science Stories, pp. 9-17</p>
<p>B. Explain the concept of cycles.</p> <ul style="list-style-type: none"> <li>• Identify and explain cycles within an ecosystem.</li> <li>• Analyze the role of different cycles within an ecosystem.</li> </ul>	<p><b>Environments</b> FOSS Web, Pictures: Oxygen Cycle, Nitrogen Cycle, Carbon Cycle, Water Cycle <b>Food and Nutrition</b> Science Stories, p. 43 <b>Populations and Ecosystems</b> Resources, pp. 8-13</p> <p><b>Populations and Ecosystems</b> Resources, pp. 8-13</p>
<p>C. Explain how ecosystems change over time</p> <ul style="list-style-type: none"> <li>• Explain how ecosystems change.</li> <li>• Identify the succession stages of a given ecosystem.</li> <li>• Explain how specific organisms may change an ecosystem.</li> <li>• Explain a change in an ecosystem that relates to humans.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 43-45 <b>Landforms</b> Science Stories, pp. 13-14 <b>Populations and Ecosystems</b> Investigation 3, Part 3, pp. 103-107 Investigation 7, pp. 210-215 Resources, pp. 25-29, 31-41</p> <p><b>Landforms</b> Science Stories, pp. 13-14 <b>Environments</b> Science Stories, pp. 43-45 <b>Populations and Ecosystems</b> Resources, pp. 25-29, 39-40</p>

#### 4.7.7. Threatened, Endangered and Extinct Species

<i>Standard</i>	<i>FOSS</i>
A. Describe diversity of plants and animals in ecosystems.	

<ul style="list-style-type: none"> <li>• Select an ecosystem and describe different plants and animals that live there.</li> <li>• Identify adaptations in plants and animals.</li> <li>• Recognize that adaptations are developed over long periods of time and are passed on from one generation to the next.</li> <li>• Understand levels of ecosystem organization (e.g., individuals, populations, species).</li> </ul>	<p><b>Environments</b> Science Stories, pp. 43-45 <b>Populations and Ecosystems</b> Investigation 7, pp. 210-215 Resources, pp. 25-41</p> <p><b>Environments</b> Science Stories, pp. 9-17 <b>Diversity of Life</b> Investigation 8, Part 1, pp. 239-243 Resources, pp. 33-35, 46-50, 60-64 <b>Populations and Ecosystems</b> Investigation 8, Parts 1-2, pp. 228-243 Resources, pp. 42-45 Video: Hawaii: Strangers in Paradise</p> <p><b>Populations and Ecosystems</b> Resources, pp. 42-45, 58-61</p> <p><b>Environments</b> Science Stories, pp. 38-41 <b>Populations and Ecosystems</b> Investigation 2, Parts 1-2, pp. 70-79 Resources, pp. 6-7, 17-21 Video: Among the Wild Chimpanzees</p>
<p>B. Explain how species of living organisms adapt to their environment.</p> <ul style="list-style-type: none"> <li>• Explain the role of individual variations in natural selection.</li> <li>• Explain how an adaptation is an inherited structure or behavior that helps an organism survive and reproduce.</li> <li>• Describe how a particular trait may be selected over time and account for a species' adaptation.</li> <li>• Compare and contrast animals and plants that have very specific survival requirements with those that have more general requirements for survival.</li> <li>• Explain how living things respond to changes in their environment.</li> <li>• Explain how one species may survive an environmental change while another might not.</li> </ul>	<p><b>Populations and Ecosystems</b> Investigation 10, Parts 1-3, pp. 302-317 Resources, pp. 59-61</p> <p><b>Populations and Ecosystems</b> Investigation 10, Part 1, 3, pp. 302-310, 315-317 Resources, pp. 59-61</p> <p><b>Populations and Ecosystems</b> Investigation 10, Parts 1, 3, pp. 302-310, 315-317 Resources, pp. 59-61</p> <p><b>Environments</b> Science Stories, pp. 43-45 <b>Populations and Ecosystems</b> Resources, pp. 32-41</p> <p><b>Environments</b> Science Stories, pp. 43-45 FOSS Web, Activity: Virtual Aquarium <b>Populations and Ecosystems</b> Investigation 10, Parts 1,3, pp. 302-310, 315-317 Resources, pp. 58-61</p> <p><b>Populations and Ecosystems</b> Investigation 10, Parts 1-3, pp. 302-317 Resources, pp. 58-61</p>
<p>C. Explain natural or human actions in relation to</p>	

<p>the loss of species.</p> <ul style="list-style-type: none"> <li>Identify natural or human impacts that cause habitat loss.</li> <li>Explain how habitat loss can affect the interaction among species and the population of a species.</li> <li>Analyze and explain the changes in an animal population over time.</li> <li>Explain how a habitat management practice affects a population.</li> <li>Explain the differences among threatened, endangered, and extinct species.</li> <li>Identify Pennsylvania plants and animals that are on the threatened or endangered list.</li> <li>Describe state laws passed regarding threatened and endangered species in Pennsylvania.</li> <li>Explain why one species may be more susceptible to becoming endangered than another species.</li> </ul>	<p><b>Environments</b> Science Stories, pp. 43-45</p> <p><b>Landforms</b> Science Stories, pp. 13-14</p> <p><b>Populations and Ecosystems</b> Resources, pp. 25-29, 36, 39-40</p> <p><b>Populations and Ecosystems</b> Resources, pp. 25-29</p> <p><b>Environments</b> Science Stories, pp. 43-45</p> <p><b>Populations and Ecosystems</b> Investigation 6, Parts 2-3, pp. 187-197 Investigation 10, Part 3, pp. 315-317</p> <p><b>Environments</b> Science Stories, pp. 43-45</p> <p><b>Landforms</b> Science Stories, pp. 13-14</p> <p><b>Populations and Ecosystems</b> Resources, pp. 25-29</p> <p><b>Populations and Ecosystems</b> Resources, pp. 35, 61</p>
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#### 4.8.7. Humans and the Environment

<i>Standard</i>	<i>FOSS</i>
<p>A. Describe how the development of civilization relates to the environment.</p> <ul style="list-style-type: none"> <li>Explain how people use natural resources in their environment.</li> <li>Locate and identify natural resources in different parts of the world.</li> <li>Compare and contrast how people use natural resources throughout the world.</li> </ul>	<p><b>Solar Energy</b> Science Stories, pp. 35-39</p> <p><b>Water Planet</b> Science Resources, pp. 65-66</p> <p><b>Populations and Ecosystems</b> Resources, pp. 28-29, 33, 36, 37, 40</p> <p><b>Water Planet</b> Science Resources, pp. 63-64</p> <p><b>Solar Energy</b> Science Stories, pp. 26-27</p>
<p>B. Explain how people use natural resources.</p> <ul style="list-style-type: none"> <li>Describe how natural resources are used</li> </ul>	<p><b>Solar Energy</b></p>

<p>for survival.</p> <ul style="list-style-type: none"> <li>• Explain how natural resources and technological changes have affected the development of civilizations.</li> <li>• Explain how climate and extreme weather events (e.g., drought, flood) influence people's lives.</li> </ul>	<p>Science Stories, pp. 35-39  <b>Water Planet</b>  Science Resources, pp. 63-66</p> <p><b>Water Planet</b>  Science Resources, pp. 71, 75, 77-78  <b>Weather and Water</b>  Resources, pp. 69-76</p>
<p>C. Explain how human activities may affect local, regional and national environments.</p> <ul style="list-style-type: none"> <li>• Describe what effect consumption and related generation of wastes have on the environment.</li> <li>• Explain how a particular human activity has changed the local area over the years.</li> </ul>	<p><b>Environments</b>  Science Stories, pp. 43-45  <b>Landforms</b>  Science Stories, pp. 13-14  <b>Populations and Ecosystems</b>  Resources, pp. 25-29, 35, 37</p>
<p>D. Explain the importance of maintaining the natural resources at the local, state and national levels.</p> <ul style="list-style-type: none"> <li>• Explain how human activities and natural events have affected ecosystems.</li> <li>• Explain how conservation practices have influenced ecosystems.</li> <li>• Define the roles of Pennsylvania agencies that deal with natural resources.</li> </ul>	<p><b>Landforms</b>  Science Stories, pp. 13-14  <b>Earth History</b>  Resources, pp. 64-67  <b>Populations and Ecosystems</b>  Resources, pp. 28-29, 35, 37  <b>Populations and Ecosystems</b>  Resources, pp. 33, 35, 37-38, 40</p>

#### 4.9.7. Environmental Laws and Regulations

<i>Standard</i>	<i>FOSS</i>
<p>A. Explain the role of environmental laws and regulations.</p> <ul style="list-style-type: none"> <li>• Identify and explain environmental laws and regulations (e.g., Clean Air Act, Clean Water Act, Recycling and Waste Reduction Act, Avct26 on Agricultural Education).</li> <li>• Explain the role of local and state agencies in enforcing environmental laws and regulations (e.g., Department of Environmental Protection, Department of Agriculture, game Commission).</li> </ul>	