



Delta Science Modules III Program (DSM) Grades K-8

Correlation With
Pennsylvania

Academic Standards
for
Science and Technology



Pennsylvania

Academic Standards for Science and Technology

Correlation with Delta Science Modules (DSM III)

This correlation shows representative examples of investigations and activities from the DSM program that address the Pennsylvania standards for Science and Technology. A citation does not reflect all of the investigations or activities that might address a particular benchmark.

Note: Some of the DSM grade 6-8 modules are currently under revision and for those modules correlation to the standards is entered by activity but not page number.

Note: The Ecology portion of the Environment and Ecology Standards are included with this correlation.

Unifying Themes

Grade 4

<i>STANDARD</i>	<i>DSM</i>
<p>A. Know that natural and human-made objects are made up of parts.</p> <p>Identify and describe what parts make up a system.</p> <p>Identify system parts that are natural and human –made (e.g., ball point pens, simple electrical circuits, plant anatomy).</p> <p>Describe the purpose of analyzing systems.</p> <p>Know that technologies include physical systems (e.g., construction, manufacturing, transportation), informational systems, and biochemical-related systems.</p>	<p>Observing an Aquarium Activity 2-6, pp. 23-67 Reader, pp. 2-8</p> <p>Classroom Plants Activity 6-9, pp. 55-86 Reader, pp. 6-12</p> <p>Magnets Activity 10, 11, pp. 65-76</p> <p>Solar System Activity 1, 2, pp. 13-26</p> <p>Sunshine and Shadows Activity 1-3, pp. 13-32</p> <p>Force and Motion Activity 6-7, pp. 57-72 Reader, pp. 6-9</p> <p>Classroom Plants Activity 6-9, pp. 55-86</p> <p>Electrical Circuits Activity 1, 9-10, pp. 13-17, 71-82</p> <p>Food Chains and Webs Activity 10-12, pp. 89-101</p> <p>Finding the Moon Activity 10, pp. 85-91</p> <p>Sink or Float Activity 12, pp. 97-107</p> <p>Food Chains and Webs Activity 10-12, pp. 89-101</p> <p>Water Cycle Activity 9, 13, pp. 77-83, 107-114</p> <p>Electrical Circuits Activity 6-7, pp. 51-62</p> <p>Investigating Water Activity 12, pp. 95-100</p> <p>Force and Motion Activity 12, pp. 111-117 Activity 6, Science, Technology, and Society, p. 64</p> <p>Magnets Activity 11, Science, Technology, and Society, p. 76</p>
<p>B. Know models as useful simplifications of objects or processes.</p>	

<p>Identify different types of models.</p>	<p>Finding the Moon Activity 2, 7-8, 10, pp. 21-28, 63-76, 85-91 Butterflies and Moths Activity 8, pp. 71-77 Reader, p. 8 Weather Watching Activity 9, pp. 77-86 Solar System Activity 6, 8, pp. 51-58, 65-72 Earth Movements Activity 6-11, pp. 55-103</p>
<p>Identify and apply models as tools for prediction and insight.</p>	<p>Finding the Moon Activity 2, 7, 10, pp. 21-28, 63-69, 85-91 Soil Science Activity 6, 12, pp. 51-58, 107-114 Reader, p. 3 Weather Watching Activity 9, pp. 77-86 Reader, pp. 5, 10 Food Chains and Webs Activity 11, 12, pp. 89-101 Water Cycle Activity 9, 13, pp. 77-83, 107-114</p>
<p>Apply appropriate simple modeling tools and techniques.</p>	<p>Sunshine and Shadows Activity 12, pp. 89-95 How Do We Learn Activity 6-7, 9, pp. 51-64, 73-79 Solar System Activity 5-8, 43-72 Weather Instruments Activity 9, pp. 75-80</p>
<p>Identify theories that serve as models (e.g., molecules).</p>	<p>States of Matter Activity 8-10, pp. 65-88 Reader, pp. 4-6, 8-10 Sink or Float Reader, pp. 4-6 Earth Movements Activity 5, 6, pp. 47-61 Dinosaur Classification Activity 1, Science Challenge, p. 19</p>
<p>C. Illustrate patterns that regularly occur and reoccur in nature.</p> <p>Identify observable patterns (e.g., growth patterns in plants, crystal shapes in minerals, climate, structural patterns in bird feathers).</p>	<p>From Seed to Plant Activity 3, 13, pp. 33-38, 97-103 Reader, pp. 10-11 Plant and Animal Populations Activity 5, pp. 51-57 Weather Watching Activity 9-11, pp. 77-108 Reader, pp. 4-5, 8-10</p>

<p>Use knowledge of natural patterns to predict next occurrences (e.g., seasons, leaf patterns, lunar phases).</p> <p>D. Know that scale is an important attribute of natural and human-made objects, events, and phenomena.</p> <p>Identify the use of scale as it relates to the measurement of distance, volume, and mass.</p> <p>Describe scale as a ratio (e.g., pipe fittings).</p> <p>Explain the importance of scale in producing models and apply it to a model.</p> <p>E. Recognize change in natural and physical systems.</p> <p>Recognize change as fundamental to science and technology concepts.</p>	<p>Butterflies and Moths Activity 11, pp. 97-104 Reader, pp. 3-13</p> <p>Sound Activity 9-11, pp. 73-98</p> <p>Finding the Moon Activity 3-4, 9, pp. 29-46, 77-84 Reader, pp. 6-10</p> <p>From Seed to Plant Activity 13, pp. 97-103</p> <p>Butterflies and Moths Activity 11, pp. 97-104 Reader, pp. 8-13</p> <p>Earth Movements Activity 12, pp. 105-110</p> <p>Plant and Animal Life Cycles Activity 5, 9-10, pp. 49-56, 83-96</p> <p>Finding the Moon Activity 2, pp. 21-28</p> <p>Solar System Activity 5-8, pp. 43-72</p> <p>Dinosaurs and Fossils Activity 4, 7, pp. 35-40, 55-60</p> <p>Finding the Moon Activity 2, pp. 21-28</p> <p>Solar System Activity 5, 7, 43-50, 59-64</p> <p>Dinosaur Classification Activity 4, pp. 35-40</p> <p>Finding the Moon Activity 2, pp. 21-28</p> <p>Dinosaur Classification Activity 7, pp. 55-60</p> <p>Solar System Activity 6, 8, pp. 51-58, 65-72</p> <p>Observing an Aquarium Activity 10-11, pp. 97-116 Reader, pp. 10-11</p> <p>Weather Watching Activity 3-6, pp. 29-59 Reader, pp. 2-5, 8-10</p> <p>Soil Science Activity 5-6, 12, pp. 45-58, 107-114</p> <p>Food Chains and Webs</p>
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<p>Examine and explain change by using time and measurement.</p> <p>Describe relative motion.</p> <p>Describe the change to objects caused by heat, cold, light or chemicals.</p>	<p>Activity 9, 10, pp. 73-87</p> <p>Sound Activity 7-11, pp. 59-98</p> <p>From Seed to Plant Activity 7, pp. 59-66 Reader, pp. 10-11</p> <p>States of Matter Activity 7, 11, pp. 57-63, 89-96 Reader, pp. 7-10, 12-13</p> <p>Water Cycle Activity 4-5, pp. 39-51</p> <p>Weather Instruments Activity 6, pp. 51-57</p> <p>Sunshine and Shadows Activity 4, 6, pp. 33-41, 49-56 Reader, pp. 8-9</p> <p>Force and Motion Activity 2-5, pp. 23-49 Reader, pp. 3, 14</p> <p>Earth Movements Activity 4-7, pp. 39-69</p> <p>Solar System Activity 2, pp. 21-26</p> <p>Investigating Water Activity 9, 11, pp. 71-80, 89-94 Reader, pp. 4-11</p> <p>States of Matter Activity 4-5, 11, pp. 35-50, 89-96 Reader, pp. 7-10, 12-13</p> <p>Weather Watching Activity 3, pp. 29-36</p> <p>Electrical Circuits Activity 9-10, pp. 71-82</p> <p>Water Cycle Activity 11, pp. 91-98</p>
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Inquiry and Design Grade 4

<i>STANDARD</i>	<i>DSM</i>
<p>A. Identify and use the nature of scientific and technological knowledge.</p> <p>Distinguish between a scientific fact and a belief.</p>	<p>DSM modules provide the opportunity to address this standard.</p> <p>Finding the Moon Activity 2, pp. 21-28 Reader, pp. 4-5</p> <p>Using Your Senses</p>

<p>Provide clear explanations that account for observations and results.</p> <p>Relate how new information can change existing perceptions.</p> <p>B. Describe objects in the world using the five senses.</p> <p>Recognize observational descriptors from each of the five senses (e.g., see-blue, feel-rough).</p> <p>Use observations to develop a descriptive vocabulary.</p>	<p>Activity 4, pp. 37-44 Plant and Animal Populations Activity 1, pp. 15-23 Butterflies and Moths Reader, pp. 6-9 Dinosaur Classification Activity 4, pp. 35-40 Earth Movements Activity 5-6, pp. 47-61</p> <p>Properties Activity 10, 11, pp. 75-86 Reader, pp. 4, 8 Classroom Plants Activity 5, 11, pp. 47-53, 97-104 Plant and Animal Populations Activity 9-11, pp. 85-110 Water Cycle Activity 3-5, pp. 31-51 Sound Activity 8-11, pp. 67-98</p> <p>Finding the Moon Activity 2, pp. 21-28 Reader, pp. 4-5, 15 Plant and Animal Populations Activity 1, pp. 15-23 Using Your Senses Activity 4, pp. 37-44 Dinosaur Classification Activity 1, pp. 13-19 Solar System Activity 5-8, pp. 43-72</p> <p>Properties Activity 1-6, pp. 13-52 Reader, pp. 3-4, 7 How Do We Learn Activity 1, pp. 13-22 Reader, pp. 2-6 Using Your Senses Activity 3, 6, 8, 10-11, pp. 31-36, 53-60, 67-73, 81-95 Reader, pp. 4-12 Sound Activity 7-11, pp. 59-98 Food Chains and Webs Activity 1, 10, pp. 15-22, 81-87</p> <p>Investigating Water Activity 1-11, pp. 13-94 Reader, pp. 2, 4-13</p>
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<p>C. Recognize and use the elements of scientific inquiry to solve problems.</p> <p>Generate questions about objects, organisms and/or events that can be answered through scientific investigations.</p> <p>Design an investigation.</p> <p>Conduct an experiment.</p> <p>State a conclusion that is consistent with the information.</p>	<p>Soil Science Activity 1-7, pp. 15-67 Reader, pp. 10-11</p> <p>Plant and Animal Populations Activity 3-7, pp. 35-69</p> <p>Weather Instruments Activity 1-8, pp. 13-74</p> <p>Electrical Circuits Activity 1-8, pp. 13-70</p> <p>Observing an Aquarium Activity 8, 9, pp. 79-95</p> <p>Plant and Animal Populations Activity 9-11, pp. 88-110</p> <p>Classroom Plants Activity 5, pp. 47-53</p> <p>Magnets Activity 2-4, pp. 19-34</p> <p>Food Chains and Webs Activity 2-3, pp. 23-37</p> <p>From Seed to Plant Activity 6, 11, pp. 53-58, 85-90</p> <p>Plant and Animal Populations Activity 9, pp. 85-93</p> <p>Sink or Float Activity 5, 7, 11, pp. 43-51, 61-66, 89-96</p> <p>Electrical Circuits Activity 6, 7, pp. 51-62</p> <p>Food Chains and Webs Activity 2-3, pp. 23-37</p> <p>Observing an Aquarium Activity 11, pp. 109-116</p> <p>Plant and Animal Populations Activity 9, pp. 85-93</p> <p>Soil Science Activity 10, 11, pp. 91-105</p> <p>Food Chains and Webs Activity 2-3, pp. 23-37</p> <p>Electrical Circuits Activity 6, 7, pp. 51-62</p> <p>Sunshine and Shadows Activity 7-9, pp. 57-76</p> <p>Soil Science Activity 10-11, pp. 91-105</p> <p>Classroom Plants Activity 5, pp. 47-63</p> <p>Food Chains and Webs Activity 2-3, pp. 23-37</p> <p>Earth Movements Activity 4, pp. 39-46</p>
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<p>D. Recognize and use the technological design process to solve problems.</p> <p>Recognize and explain basic problems.</p> <p>Identify possible solutions and their course of action.</p> <p>Try a solution.</p> <p>Describe the solution, identify its impacts and modify if necessary.</p> <p>Show the steps taken and the results.</p>	<p>Sunshine and Shadows Activity 12, pp. 89-95</p> <p>States of Matter Activity 5, pp. 35-40</p> <p>Force and Motion Activity 12, Science Challenge, p. 117</p> <p>Sink or Float Activity 12, pp. 97-107</p> <p>Sound Activity 12, pp. 99-105</p> <p>Sunshine and Shadows Activity 12, pp. 89-95</p> <p>States of Matter Activity 5, pp. 35-40</p> <p>Force and Motion Activity 12, Science Challenge, p. 117</p> <p>Sink or Float Activity 12, pp. 97-107</p> <p>Sound Activity 12, pp. 99-105</p> <p>Sunshine and Shadows Activity 12, pp. 89-95</p> <p>States of Matter Activity 5, pp. 35-40</p> <p>Force and Motion Activity 12, Science Challenge, p. 117</p> <p>Sink or Float Activity 12, pp. 97-107</p> <p>Sound Activity 12, pp. 99-105</p> <p>Sunshine and Shadows Activity 12, pp. 89-95</p> <p>States of Matter Activity 5, pp. 35-40</p> <p>Force and Motion Activity 12, Science Challenge, p. 117</p> <p>Sink or Float Activity 12, pp. 97-107</p> <p>Sound Activity 12, pp. 99-105</p> <p>Sunshine and Shadows Activity 12, pp. 89-95</p> <p>States of Matter Activity 5, pp. 35-40</p> <p>Force and Motion Activity 12, Science Challenge, p. 117</p> <p>Sink or Float Activity 12, pp. 97-107</p>
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	Sound Activity 12, pp. 99-105
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Biological Sciences Grade 4

<i>STANDARD</i>	<i>DSM</i>
<p>A. Know the similarities and differences of living things.</p> <p>Identify life processes of living things (e.g., growth, digestion, react to environment).</p> <p>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.</p> <p>Describe basic needs of plants and animals.</p>	<p>From Seed to Plant Activity 4-9, 11, pp. 39-78, 85-90 Reader, pp. 4-11</p> <p>Classroom Plants Activity 6-9, pp. 55-86 Reader, pp. 2, 5, 9</p> <p>Butterflies and Moths Activity 1, 6, 9, pp. 15-21, 53-59, 79-87 Reader, pp. 8-13</p> <p>Food Chains and Webs Activity 8-9, 67-87, Reader, pp. 4-5</p> <p>Plant and Animal Life Cycles Activity 1-6, 8-10, pp. 15-63, 75-96 Reader, pp. 2-13</p> <p>Observing an Aquarium Activity 5, pp. 47-55 Reader, pp. 4-5</p> <p>Butterflies and Moths Activity 12, pp. 105-109 Reader, pp. 4-7</p> <p>Plant and Animal Populations Activity 4-7, pp. 43-76 Reader, pp. 4-7</p> <p>Dinosaurs and Fossils Activity 8, 10, pp. 61-66, 75-82</p> <p>Observing an Aquarium Activity 2, pp. 23-30 Reader, pp. 8-9, 12</p> <p>From Seed to Plant Activity 14, pp. 105-109 Reader, p. 12</p> <p>Classroom Plants Activity 5, pp. 47-53 Reader, pp. 2-3, 7, 9</p> <p>Food Chains and Webs Activity 3, 8-12, pp. 31-37, 67-101 Reader, pp. 6-9</p>
<p>B. Know that living things are made up of parts that have specific functions.</p>	

<p>Identify examples of unicellular and multicellular organisms.</p> <p>Determine how different parts of a living thing work together to make the organism function.</p> <p>C. Know that characteristics are inherited and thus offspring closely resemble their parents.</p> <p>Identify characteristics for animal and plant survival in different climates.</p> <p>Identify physical characteristics that appear in both parents and offspring and differ between families, strains or species.</p> <p>D. Identify changes in living things over time.</p> <p>Compare extinct life forms with living organisms.</p>	<p>Observing an Aquarium Activity 3-6, pp. 31-67 Reader, pp. 4-7, 10-11</p> <p>Plant and Animal Populations Activity 1, 4-7, pp. 15-23, 43-76 Reader, pp. 4-7, 10-13</p> <p>Butterflies and Moths Reader, pp. 2-9</p> <p>Food Chains and Webs Activity 4-6, pp. 39-58 Reader, pp. 4-9</p> <p>From Seed to Plant Activity 9-10, pp. 73-84 Reader, pp. 6-9</p> <p>Butterflies and Moths Activity 2, pp. 23-30 Reader, pp. 4-5</p> <p>Classroom Plants Activity 6-9, pp. 55-86 Reader, pp. 6-12</p> <p>Food Chains and webs Activity 4-6, pp. 39-58</p> <p>Plant and Animal Life Cycles Activity 3, 8, pp. 33-41, 75-82 Reader, pp. 3-6</p> <p>Classroom Plants Activity 11, pp. 97-104 Activity 5, Science Challenge, p. 53</p> <p>Plant and Animal Populations Reader 4-7, 4-7, 10-11</p> <p>Plant and Animal Life Cycles Reader, p. 15</p> <p>Food Chains and Webs Reader, p. 15</p> <p>Butterflies and Moths Reader, pp. 4-7</p> <p>Plant and Animal Life Cycles Activity 5, pp. 49-56</p> <p>Dinosaur Classification Activity 1, 6, 7, pp. 13-19, 47-60, 75-82 Reader, pp. 4-15</p>
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<p>Identify environmental variables that affect plant growth.</p> <p>Describe how certain animals interact with plants to meet their needs for shelter.</p> <p>Describe how certain insects interact with soil for their needs.</p> <p>Understand the components of a food chain.</p> <p>Identify a local ecosystem and its living and nonliving components.</p> <p>Identify a simple ecosystem and its living and nonliving components.</p> <p>Identify common soil textures.</p>	<p>Reader, pp. 2-13 Food Chains and Webs Activity 8-10, pp. 67-87 Reader, pp. 7-9</p> <p>From Seed to Plant Activity 8, 11, pp. 67-72, 85-90 Classroom Plants Activity 3-5, pp. 29-53 Food Chains and Webs Activity 2-3, pp. 23-37</p> <p>Plant and Animal Populations Activity 6, pp. 59-67 Reader, p. 11 Classroom Plants Reader, p. 3 Food Chains and Webs Activity 4-5, pp. 39-52 Reader, p. 5</p> <p>Plant and Animal Populations Activity 4, pp. 43-50</p> <p>Observing an Aquarium Activity 7, pp. 60-78 Reader, p. 12 Plant and Animal Populations Activity 12, pp. 111-117 Reader, pp. 12-13 Food Chains and Webs Activity 11,12, pp. 89-101 Reader, pp. 6-9</p> <p>Observing an Aquarium Activity 12, pp. 117-125 Reader, pp. 14-15 Plant and Animal Populations Activity 3, pp. 35-41 Reader, pp. 8-9, 13</p> <p>Observing an Aquarium Activity 12, pp. 117-125 Reader, pp. 2-9 Plant and Animal Populations Activity 3, 11, pp. 35-41, 103-110 Reader, pp. 8-9 Food Chains and Webs Activity 1-9, pp. 15-79 Reader, pp. 7-9</p> <p>Soil Science Activity 1, 3, 4, 7, pp. 15-20, 29-44, 59-67 Food Chains and Webs Activity 1, pp. 15-22</p>
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<p>Identify animals that live underground.</p> <p>B. Understand the concept of cycles.</p> <p>Explain the water cycle.</p> <p>Explain the carbon dioxide/oxygen cycle (photosynthesis)</p> <p>C. Identify how ecosystems change overtime.</p>	<p>Plant and Animal Populations Activity 4, pp. 43-50 Soil Science Reader, pp. 14-15 Food Chains and Webs Activity 6, 9, pp. 53-58, 73-79</p> <p>Investigating Water Activity 9-11, pp. 71-94 Weather Watching Reader, pp. 4-5 Water Cycle Activity 9, 13, pp. 77-83, 107-114 Reader, pp. 10-11 Weather Instruments Reader, pp. 6</p> <p>Observing an Aquarium Activity 3, pp. 31-38 Reader, p.9 Classroom Plants Activity 8, Science Challenge, p. 79 Reader, p. 9</p> <p>Plant and Animal Populations Activity 8, 9, 12, pp. 77-93, 111-117 Reader, p. 15 Food Chains and Webs Activity 1-9. 11-12, pp. 15-79, 89-101 Reader, p. 10</p>
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Physical Science, Chemistry and Physics Grade 4

<i>STANDARD</i>	<i>DSM</i>
<p>A. Recognize basic concepts about the structure and properties of matter.</p> <p>Describe properties of matter (e.g., hardness, reactions to simple chemical tests).</p>	<p>Investigating Water Activity 1-3, pp. 13-34 Reader, pp. 4-13 Properties Activity 1-11, pp. 13-86 Reader, pp. 3-13 Soil Science Activity 7, pp. 59-67 Reader, pp. 7-8 Electrical Circuits Activity 6-7, pp. 51-62</p>

<p>Know that combining two or more substances can make new materials with different properties.</p> <p>Know different material characteristics (e.g., texture, state of matter, solubility).</p> <p>B. Know basic energy types, sources and conversions.</p> <p>Identify energy forms and examples (e.g., sunlight, heat, stored, motion).</p> <p>Know the concept of the flow of energy by measuring flow through an object or system.</p> <p>Describe static electricity in terms of</p>	<p>Reader, p. 3</p> <p>Magnets Activity 2, pp. 14-23 Reader, p. 2</p> <p>Earth Movements Activity 10, pp. 81-96</p> <p>Properties Activity 7-9, pp. 53-73 Reader, pp. 3-13</p> <p>Investigating Water Activity 1-3, pp. 13-34 Reader, pp. 4-11</p> <p>Soil Science Reader, pp. 7-8</p> <p>Electrical Circuits Activity 6-7. pp. 51-62</p> <p>Magnets Activity 2, pp. 19-23</p> <p>Sunshine and Shadows Activity 1, pp. 13-18 Reader, p. 2</p> <p>Classroom Plants Activity 5, pp. 47-53 Reader, p. 9</p> <p>States of Matter Activity 5, 7, pp. 41-50, 57-63 Reader, pp. 7-10, 12-13</p> <p>Magnets Activity 2, 3, 11, pp. 19-28, 71-76 Reader, pp. 2-5</p> <p>Electrical Circuits Activity 1- 4, pp. 13-43 Reader, pp. 2-5</p> <p>Sound Activity 2, pp. 21-28 Reader, pp. 2-3</p> <p>Weather Watching Activity 3, pp. 29-36</p> <p>States of Matter Activity 7, pp. 57-63</p> <p>Water Cycle Activity 13, pp. 107-114 Reader, pp. 10-11</p> <p>Electrical Circuits Activity 1-4, pp. 13-43 Reader, pp. 4-6</p> <p>Electrical Circuits</p>
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<p>attraction, repulsion and sparks.</p> <p>Apply knowledge of the basic electrical circuits to design and construct simple direct current circuits.</p> <p>Classify materials as conductors and nonconductors.</p> <p>Know and demonstrate the basic properties of heat by producing it in a variety of ways.</p> <p>Know the characteristics of light (e.g., reflection, refraction, absorption) and use them to produce heat, color or a virtual image.</p>	<p>Activity 2, Science Extension, p. 25 Reader, p. 2</p> <p>Electrical Circuits Activity 1-5, pp. 13-50 Reader, pp. 4-7</p> <p>Electrical Circuits Activity 6, 7, pp. 51-62 Reader, p. 3</p> <p>States of Matter Reader, pp. 12-13 Activity 9</p> <p>Electrical Circuits Activity 8, 10-11, pp. 63-70, 77-88 Reader, p.3</p> <p>Water Cycle Activity 12, pp. 99-106</p> <p>Sunshine and Shadows Activity 3, pp. 27-37 Reader, pp. 3-7</p> <p>Water Cycle Activity 10, p. 77-83</p>
<p>C. Observe and describe different types of force and motion.</p> <p>Identify characteristics of sound (pitch, loudness, echoes).</p> <p>Recognize forces that attract or repel other objects and demonstrate them.</p> <p>Describe various types of motion.</p>	<p>Using You Senses Activity 5-7, pp. 45-66 Reader, p. 7</p> <p>Sound Activity 1-12, pp. 13-105 Reader, pp. 2-8</p> <p>Properties Activity 11, pp. 81-86 Reader, p. 8</p> <p>Magnets Activity 1-4, 11, pp. 13-39, 71-78 Reader, pp. 2-10</p> <p>Electrical Circuits Activity 2, Science Extension, p. 25 Reader, pp. 8-10</p> <p>Investigating Water Activity 5-6, 8, pp. 41-54, 63-49</p> <p>Sunshine and Shadows Activity 6-7, pp. 9-63 Reader, pp. 8-9</p> <p>Force and Motion Activity 5, 7, 8, 11, pp. 49-55, 65-82, 101-109 Reader, pp. 3-8</p> <p>Sound</p>

<p>Compare the relative movement of objects and describe types of motion that are evident.</p> <p>Describe the position of an object by locating it relative to another object or the background (e.g., geographic direction, left, up).</p> <p>D. Describe the composition and structure of the universe and the earth's place in it.</p> <p>Recognize earth's place in the solar system.</p> <p>Explain and illustrate the causes of seasonal changes.</p> <p>Identify planets in our solar system and their general characteristics.</p> <p>Describe the solar system motions and use them to explain time (e.g., days, seasons), major lunar phases and eclipses.</p>	<p>Activity 2, 3, pp. 21-35 Reader, pp. 21-35 Weather Instruments Activity 4, 5, pp. 37-50</p> <p>Sunshine and Shadows Activity 6-10, pp. 49-87 Reader, pp. 8-9 Force and Motion Activity 7, 8, pp. 65-82 Weather instruments Activity 4-5, pp. 37-50 Earth Movements Activity 5-9, pp. 47-84 Solar System Reader, pp. 3, 6-7</p> <p>Finding the Moon Activity 23-4, 10, pp. 29-46, 85-91 Force and Motion Activity 3, 8, 9, pp. 31-39, 73-90 Reader, pp. 2-9 Soil Science Activity 2, pp. 21-27 Reader, pp. 2-3, 14-15 Solar System Activity 1, 8-9, pp. 13-20, 65-73 Reader, pp. 3, 6-7 Earth Movements Activity 6, 7, 12, pp. 55-69, 105-110</p> <p>Solar System Activity 1-2, 6, 8, pp. 13-26, 51-58, 65-72 Reader, pp. 2-12</p> <p>Solar System Activity 9, Science Challenge, p. 81 Reader, p. 3</p> <p>Solar System Activity 1,6, 8, pp. 13-20, 51-58, 65-72</p> <p>Finding the Moon Activity 3-4, 9-10, pp. 29-46, 77-91 Reader, pp. 6-10 Solar System Activity 9, pp. 73-81 Reader, pp. 3, 6-7</p>
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Earth Sciences

Grade 4

<i>STANDARD</i>	<i>DSM</i>
<p>A. Know basic landforms and earth history.</p> <p>Describe earth processes (e.g., rusting, weathering, erosion) that have affected selected physical features in students' neighborhoods.</p> <p>Identify various earth structures (e.g., mountains, faults, drainage basins) through the use of models.</p> <p>Identify the composition of soil as weathered rock and decomposed organic remains.</p> <p>Describe fossils and the type of environment they lived in (e.g., tropical, aquatic, desert).</p> <p>B. Know types and uses of earth materials</p> <p>Identify uses of various earth materials (e.g., buildings, highways, fuels, growing plants).</p> <p>Identify and sort earth materials according to a classification key (e.g., soil/rock type)</p>	<p>Soil Science Activity 5, 6, 8, pp. 45-58, 91-97 Reader, pp. 9-11</p> <p>Earth Movements Reader, pp. 12-13</p> <p>Water Cycle Activity 13, Science and Social Studies, p. 114</p> <p>Soil Science Activity 12, pp. 107-114</p> <p>Earth Movements Activity 8-10, pp. 71-96</p> <p>Food Chains and Webs Activity 1, pp. 15-22</p> <p>Soil Science Activity 1-4, pp. 15-44 Reader, pp. 2-4</p> <p>Dinosaur Classification Activity 1-3, 8, pp. 13-31, 61-66 Reader, pp. -5, 13-15</p> <p>Earth Movements Activity 3, pp. 29-37</p> <p>From Seed to Plant Activity 2, pp. 21-31 Reader, pp. 4-5</p> <p>Observing an Aquarium Activity 1-2, pp. 15-30 Reader, pp. 2-3</p> <p>Soil Science Activity 7, pp. 59-67 Reader, pp. 10-12</p> <p>Earth Movements Activity 3, pp. 29-37</p> <p>Soil Science Activity 7, pp. 59-67 Reader, pp. 7-8</p>

<p>C. Know basic weather elements.</p> <p>Identify cloud types</p> <p>Identify weather patterns from data charts (including temperature, wind direction and speed, precipitation) and graphs of the data.</p> <p>Explain how different seasons effect plants, animals, food availability and daily human life.</p>	<p>Weather Watching Activity 6, pp. 51-59</p> <p>Weather Instruments Activity 10, pp. 81-87 Reader, p. 13</p> <p>Weather Watching Activity 3-7, 12, pp. 29-68, 109-116</p> <p>Weather Instruments Activity 3, 4, 10, 12, pp. 31-42, 81-87, 97-101</p> <p>Weather Watching Reader, pp. 8-10</p>
<p>D. Recognize the earth's different water resources.</p> <p>Know that approximately three-fourths of the earth is covered by water.</p> <p>Identify and describe types of fresh and salt-water bodies.</p> <p>Identify examples of water in the form of solid, liquid, and gas on or near the surface of the earth.</p> <p>Explain and illustrate evaporation and condensation.</p>	<p>Observing an Aquarium Activity 1, pp. 15-21</p> <p>Water Cycle Activity 1, pp. 13-21 Reader, p. 2</p> <p>Observing an Aquarium Activity 1, pp. 15-21</p> <p>Water Cycle Activity 1, pp. 13-21 Reader, pp. 2-3</p> <p>Investigating Water Activity 1-2, 9-11, pp. 13-26, 71-94 Reader, pp. 4-11</p> <p>States of Matter Activity 4, 5, 8, pp. 35-50, 65-72 Reader, pp. 2-6</p> <p>Water Cycle Activity 1-3, 9, pp. 13-37, 77-83 Reader, pp. 2-11</p> <p>Weather Instruments Reader, p. 6</p> <p>Investigating Water Activity 10-11, pp. 81-94 Reader, pp. 10-11</p> <p>States of Matter Activity 8-9, pp. 65-79 Reader, pp. 8-10</p> <p>Water Cycle Activity 8-9, 12, pp. 69-83, 99-106 Reader, pp. 8-11</p> <p>Weather Instruments Activity 9, pp. 75-80 Reader, p. 6</p>

<p>Recognize other resources available from water. (e.g., energy, transportation, minerals, food).</p>	<p>Classroom Plants Activity 5, pp. 47-53 Reader, p. 15</p> <p>Sink or Float Reader, pp. 12-13</p> <p>Force and Motion Reader, p. 14</p> <p>Water Cycle Reader, pp. 14-15</p>
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Technology Education Grade 4

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	DSM
<p>A. Know that biotechnologies relate to propagating, growing, maintaining, adapting, treating and converting.</p> <p>Identify agricultural and industrial production processes that involve plants and animals.</p> <p>Identify waste management treatment processes.</p> <p>Describe how knowledge of the human body influences or impacts ergonomic design.</p> <p>Describe how biotechnology has impacted various aspects of daily life (e.g., health care, agriculture, waste management).</p> <p>B. Know that information technologies involve encoding, transmitting, receiving, storing, retrieving and decoding.</p> <p>Identify electronic communication methods that exist in the community (e.g. digital cameras, telephone, internet, television, fiber optics).</p> <p>Identify graphic reproduction methods.</p>	<p>Investigating Water Activity 12, Science, Technology and Society, p. 100</p> <p>Using Your Senses Activity 1, Science and Social Studies, p. 21 Activity 5, Science and Social Studies, p. 52</p> <p>Sound Activity 4, Science, Technology, and Society, p. 43</p> <p>Using Your Senses Activity 1, Science and Social Studies, p. 21</p>

Describe appropriate image generating techniques (e.g. photography, video).

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.

Technological Devices Grade 4

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	DSM
<p>A. Explore the use of basic tools, simple materials and techniques to safely solve problems.</p> <p>Describe the scientific principles on which various tools are based.</p> <p>Group tools and machines by their function</p> <p>Select and safely apply appropriate tools and materials to solve simple problems.</p>	<p>Force and Motion Activity 12, pp. 111-117 Reader, pp. 5-14</p> <p>Force and Motion Activity 9-11, pp. 83-109</p>
<p>B. Select appropriate instruments to study materials.</p> <p>Develop simple skills to measure, record, cut and fasten.</p> <p>Explain appropriate instrument selection for specific tasks.</p>	<p>How Do We Learn Activity 6-12, pp. 51-101 Reader, pp. 13, 15-16</p> <p>Properties Activity 6, pp. 47-52</p> <p>States of Matter Activity 6-7, pp. 51-63</p> <p>How Do We Learn Activity 9-12, pp. 73-101 Reader, pp. 12-13</p> <p>Properties Activity 6, pp. 47-52</p> <p>States of Matter Activity 6-7, pp. 51-63</p>
<p>C. Identify basic computer operations and concepts.</p> <p>Identify the major parts necessary for a computer to input and output data.</p> <p>Explain and demonstrate the basic use of input and output devices (e.g., keyboard, monitor, printer, mouse).</p> <p>Explain and demonstrate the use of external and internal storage devices</p>	

<p>(e.g., disk drive, CD drive).</p> <p>D. Use basic computer software.</p> <p>Apply operating system skills to perform basic computer tasks.</p> <p>Apply basic word processing skills.</p> <p>Identify and use simple graphic and presentation graphic materials generated by the computer.</p> <p>Apply specific instructional software.</p> <p>E. Identify basic computer communication systems.</p> <p>Apply a web browser.</p> <p>Apply basic electronic mail functions.</p> <p>Use on-line searches to answer age appropriate questions.</p>	
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Science, Technology, and Human Endeavors Grade 4

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	DSM
<p>A. Know that people select, create and use science and technology and are limited by social and physical restraints.</p> <p>Identify and describe positive and negative impacts that influence or result from new tools and techniques.</p> <p>Identify how physical technology (e.g., construction, manufacturing, transportation), informational technology and biotechnology are used to meet human needs.</p> <p>Describe how scientific discoveries and technological advancements are related.</p>	<p>Sink or Float Activity 11, Science, Technology, and Society, p. 96</p> <p>Force and Motion Reader, p. 14</p> <p>Water Cycle Reader, pp. 14-15</p> <p>Electrical Circuits Activity 8, Science, Technology, and Society, p. 70</p> <p>Sink or Float</p>

<p>Identify interrelationships among technology, people and their world.</p> <p>Apply the technological design process to solve a simple problem.</p> <p>B. Know how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.</p> <p>Identify and distinguish between human needs and improving the quality of life.</p> <p>Identify and distinguish between natural and man-made resources.</p> <p>Describe a technological invention and the resources that were used to develop it.</p> <p>C. Know the pros and cons of possible solutions to scientific and technological problems in society.</p> <p>Compare the positive and negative expected and unexpected impacts of technological design.</p> <p>Identify and discuss examples of technological change in the community that have both positive and negative impacts.</p>	<p>Activity 11, Science, Technology, and Society, p. 96</p> <p>Magnets Reader, p. 15</p> <p>Sink or Float Activity 10, Science, Technology, and Society, p. 88</p> <p>Water Cycle Reader, pp. 14-15</p> <p>Sunshine and Shadows Activity 12, pp. 89-95</p> <p>States of Matter Activity 5, pp. 41-50</p> <p>Sink or Float Activity 12, pp. 97-107</p> <p>Sound Activity 12, pp. 99-105</p> <p>Sink or Float Activity 11, Science, Technology, and Society, p. 96 Activity 11, Science and Social Studies, p. 96</p> <p>Electrical Circuits Activity 2, Science and Health, p. 25</p>
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<p>Apply systems analysis to solve problems.</p> <p>B. Describe the use of models as an application of scientific or technological concepts.</p> <p>Identify and describe different types of models and their functions</p> <p>Apply models to predict specific results and observations (e.g., population growth, effects of infectious organisms).</p> <p>Explain systems by outlining a system's relevant parts and its purpose and/or designing a model that illustrates its function.</p> <p>C. Identify patterns as repeated processes or recurring elements in science and technology.</p> <p>Identify different forms of patterns and use them to group and classify specific objects.</p> <p>Identify repeating structure patterns.</p>	<p>Activity 2-3</p> <p>Flight and Rocketry Activity 10, pp. 99-109</p> <p>Electrical Connections Activity 3, 8-9</p> <p>DNA—From Genes to Protein Activity 10</p> <p>You and Your Body Activity 2, 4, 6, pp. 19-25, 33-39, 49-54</p> <p>Flight and Rocketry Activity 8-9, 12, pp. 81-97, 121-130</p> <p>Earth Processes Activity 5, 9, pp. 47-54, 81-87</p> <p>Earth, Moon and Sun Activity 3-4, 9-12, pp. 29-44, 81-119</p> <p>Erosion Activity 5-6, pp. 43-57</p> <p>Earth, Moon, and Sun Activity 10-12, pp. 93-119</p> <p>Newton's Toy Box Activity 8-9, pp. 55-65</p> <p>You and Your Body Activity 2, 4, 6, pp. 19-25, 33-39, 45-54</p> <p>Simple Machines Activity 8-9, pp. 65-76</p> <p>DNA—From Genes to Proteins Activity 3, 4</p> <p>Earth, Moon and Sun Activity 9-12, pp. 81-119</p> <p>Oceans Activity 11, pp. 125-134</p> <p>You and Your Body Activity 9-11, pp. 67-84</p> <p>Matter and Change Activity 10, pp. 85-92</p> <p>Earth Processes Activity 10, pp. 89-95</p> <p>Rocks and Minerals Activity 7, 8, pp. 55-67</p> <p>DNA—From Genes to Proteins Activity 6</p>
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<p>Identify and describe patterns that occur in physical systems (e.g., construction, manufacturing, transportation, informational systems and biochemical-related systems).</p> <p>D. Explain scale as a way of relating concepts and ideas to one another by some measure.</p> <p>Apply various applications of size and dimension of scale to scientific, mathematical, and technological applications.</p> <p>Describe scale as a form of ratio and apply to a life situation.</p> <p>E. Identify change as a variable in describing natural and physical systems.</p> <p>Describe fundamental science and technology concepts that could solve practical problems.</p> <p>Explain how ratio is used to describe change.</p> <p>Describe the effect of making a change in one part of a system on the system as a</p>	<p>Plants in Our World Activity 4 Matter and Change Activity 4, pp. 37-44</p> <p>Electromagnetism Activity 6, pp. 43-48 Flight and Rocketry Activity 5, 7, pp. 55-64, 73-80 Electrical Connections Activity 9-10</p> <p>Erosion Activity 11, 12, pp. 91-104 Newton's Toy Box Activity 8, 9, pp. 55-65 Earth, Moon and Sun Activity 4-5, pp. 37-51</p> <p>Simple Machines Activity 7, pp. 57-63 Earth, Moon, and Sun Activity 4, 5, pp. 37-51</p> <p>Simple Machines Activity 7-11, pp. 57-89 Reader, pp. 4-12 Electromagnetism Activity 1, 2, pp. 13-22 Reader, p. 15 Pollution Reader, pp. 8, 15 Newton's Toy Box Reader, pp. 15-21</p> <p>Simple Machines Activity 2, 7, pp. 19-24, 57-63 Electrical Connections Activity 8 Earth Processes Activity 9, pp. 81-87 Newton's Toy Box Activity 8-9, pp. 55-65</p> <p>Flight and Rocketry Activity 10, pp. 99-109</p>
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whole.	Electromagnetism Activity 6, pp. 43-48 Newton’s Toy Box Activity 8, pp. 55-59 Electrical Connections Activity 8-10 Matter and Change Activity 2, pp. 21-27
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Inquiry and Design Grade 7

STANDARD	DSM
<p>A. Explain and apply scientific and technological knowledge.</p> <p>Distinguish between scientific theory and belief.</p> <p>Answer “What if” questions based on observation, inference, or prior knowledge or experience.</p> <p>Explain how skepticism about an accepted scientific explanation led to a new understanding.</p> <p>Explain how new information may change existing theories and practice.</p> <p>B. Apply process knowledge to make and interpret observations.</p>	<p>DSM provides the opportunity to address this standard.</p> <p>Earth, Moon, and Sun Activity 9-11, pp. 81-109 Reader, p. 20</p> <p>DNA—From Genes to Proteins Activity 1 Science Challenge</p> <p>Matter and Change Reader, p. 22</p> <p>Earth Processes Activity 1, 14, pp. 13-21, 121-129</p> <p>Electromagnetism Activity 6, pp. 43-48</p> <p>Flight and Rocketry Activity 8, pp. 81-89</p> <p>Plants in Our World Activity 3, 4</p> <p>Matter and Change Activity 2, pp. 21-27</p> <p>Newton’s Toy Box Activity 8, pp. 55-59</p> <p>Astronomy Activity 6, Science Extension</p> <p>Earth, Moon and Sun Reader, p. 20</p> <p>Earth, Moon, and Sun Activity 3, Science and Social Studies, p. 35</p> <p>Matter and Change Reader, p. 22</p>

<p>Measure materials using a variety of scales.</p>	<p>Simple Machines Activity 1-3, pp. 13-38 You and Your Body Activity 5, pp. 41-48 Weather Forecasting Activity 3, 5, pp. 25-32, 41-48 Newton's Toy Box Activity 7-9, pp. 49-65 Matter and Change Activity 1-2, pp. 13-27</p>
<p>Describe relationships by making inferences and predictions.</p>	<p>Simple Machines Activity 7-9, pp. 57-76 Erosion Activity 5-8, pp. 43-73 Color and Light Activity 2, pp. 19-27 Pollution Activity 10, pp. 71-76 Electrical Connections Activity 5 Matter and Change Activity 12, pp. 99-104</p>
<p>Communicate, use space/time relationships, define operationally, raise questions, formulate hypotheses, test and experiment.</p>	<p>You and Your Body Activity 3, 5, pp. 27-31, 41-48 Flight and Rocketry Activity 8, pp. 81-89 Plants in Our World Activity 4-6 Matter and Change Activity 2, 12, pp. 21-27, 99-104 Electrical Connections Activity 8-9</p>
<p>Design controlled experiments, recognize variables, manipulate variables.</p>	<p>Electromagnetism Activity 6, pp. 43-48 Pollution Activity 10, pp. 71-76 Erosion Activity 5, 7, pp. 43-49, 59-66 Plants in Our World Activity 3 Matter and Change Activity 12, pp. 99-104</p>
<p>Interpret data, formulate models, design models, and produce solutions.</p>	<p>Erosion Activity 10-12, pp. 83-104 Oceans Activity 4, pp. 43-54 Electromagnetism Activity 5-6, pp. 37-48 Newton's Toy Box Activity 7-9, pp. 49-65</p>

<p>C. Identify and use the elements of scientific inquiry to solve problems.</p> <p>Generate questions about objects, organisms and/or events that can be answered through scientific investigations.</p> <p>Evaluate the appropriateness of questions.</p> <p>Design an investigation with limited variables to investigate a question.</p> <p>Conduct a two-part experiment.</p> <p>Judge the significance of experimental information in answering the questions.</p> <p>Communicate appropriate conclusions from the experiment.</p>	<p>Matter and Change Activity 1-3, pp. 13-35</p> <p>Pollution Activity 10, pp. 71-76</p> <p>Electromagnetism Activity 6, pp. 43-48</p> <p>Newton's Toy Box Activity 4, 12, pp. 33-38, 79-83</p> <p>Matter and Change Activity 12, pp. 99-104</p> <p>Plants in Our World Activity 3</p> <p>Pollution Activity 10, pp. 71-76</p> <p>Electromagnetism Activity 6, pp. 43-48</p> <p>Newton's Toy Box Activity 4, 12, pp. 33-38, 79-83</p> <p>Plants in Our World Activity 3</p> <p>Matter and Change Activity 12, pp. 99-104</p> <p>Electromagnetism Activity 6, pp. 43-48</p> <p>Erosion Activity 5, 7, pp. 43-49, 59-66</p> <p>Pollution Activity 10, pp. 71-76</p> <p>Matter and Change Activity 12, pp. 99-104</p> <p>Plants in Our World Activity 3</p> <p>Pollution Activity 10, pp. 71-76</p> <p>Electromagnetism Activity 6, pp. 43-48</p> <p>Plants in Our World Activity 3</p> <p>Matter and Change Activity 2, 12, pp. 21-27, 99-104</p> <p>Electrical Connections Activity 9-10</p> <p>Pollution Activity 10, pp. 71-76</p> <p>You and You Body Activity 5, pp. 41-48</p>
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<p>D. Know and use the technological design process to solve problems.</p> <p>Define different types of problems.</p> <p>Define all aspects of the problem, necessary information and questions that must be answered.</p> <p>Propose the best solution.</p> <p>Design and propose alternative methods to achieve solutions.</p> <p>Apply a solution.</p>	<p>Plants in Our World Activity 3</p> <p>Electrical Connections Activity 9-10</p> <p>Matter and Change Activity 11-12, pp. 293-104</p> <p>Newton's Toy Box Activity 7-8, pp. 49-59</p> <p>Simple Machines Activity 12, Science Challenge, p. 95</p> <p>Flight and Rocketry Activity 5, Reinforcement, p. 63</p> <p>Oceans Activity 10, Science Challenge, p. 124</p> <p>Newton's Toy Box Activity 10, Science Challenge, p. 72</p> <p>Simple Machines Activity 12, Science Challenge, p. 95</p> <p>Flight and Rocketry Activity 5, Reinforcement, p. 63</p> <p>Oceans Activity 10, Science Challenge, p. 124</p> <p>Newton's Toy Box Activity 10, Science Challenge, p. 72</p> <p>Simple Machines Activity 12, Science Challenge, p. 95</p> <p>Flight and Rocketry Activity 5, Reinforcement, p. 63</p> <p>Oceans Activity 10, Science Challenge, p. 124</p> <p>Newton's Toy Box Activity 10, Science Challenge, p. 72</p> <p>Simple Machines Activity 12, Science Challenge, p. 95</p> <p>Flight and Rocketry Activity 5, Reinforcement, p. 63</p> <p>Oceans Activity 10, Science Challenge, p. 124</p> <p>Newton's Toy Box Activity 10, Science Challenge, p. 72</p> <p>Simple Machines Activity 12, Science Challenge, p. 95</p> <p>Flight and Rocketry Activity 5, Reinforcement, p. 63</p> <p>Oceans Activity 10, Science Challenge, p. 124</p> <p>Newton's Toy Box Activity 10, Science Challenge, p. 72</p>
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<p>Explain the results, present improvements, identify and infer the impacts of the solution.</p>	<p>Simple Machines Activity 12, Science Challenge, p. 95 Flight and Rocketry Activity 5, Reinforcement, p. 63 Oceans Activity 10, Science Challenge, p. 124 Newton's Toy Box Activity 10, Science Challenge, p. 72</p>
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Biological Sciences Grade 7

<i>STANDARD</i>	<i>DSM</i>
<p>A. Describe the similarities and differences that characterize diverse living things.</p> <p>Describe how the structures of living things help them function in unique ways.</p> <p>Explain how to use a dichotomous key.</p> <p>Account for adaptations among organisms that live in a particular environment.</p> <p>B. Describe the cell as the basic structural and functional unit of living things.</p> <p>Identify the levels of organization from cells to organisms.</p> <p>Compare life processes at the cell level.</p> <p>Explain that cells and organisms have particular structures that underlie their function.</p>	<p>You and Your Body Activity 1-8, pp. 13-66, Reader, pp. 1-11 Plants in Our World Activity 2, 4, 7</p> <p>You and Your Body Reader, pp. 1-11 Plants in Our World Activity 1, 2, 4, 8 DNA—From Genes to Proteins Activity 3-5</p> <p>You and Your Body Reader, p. 2 Plants in Our World Activity 1 DNA—From Genes to Proteins Activity 3, 4</p> <p>You and Your Body Activity 1-2, pp. 13-25 Reader, pp. 1-11</p>

<p>Describe and distinguish among cell cycles, reproductive cycles and life cycles.</p> <p>Explain disease effects on structures or functions of an organism.</p> <p>C. Know that every organism has a set of genetic instructions that determines its inherited traits.</p> <p>Identify and explain inheritable characteristics.</p> <p>Identify that the gene is the basic unit of inheritance.</p> <p>Identify basic patterns of inheritance (e.g., dominance, recessive, co-dominance).</p> <p>Describe how traits are inherited.</p> <p>Distinguish how different living things reproduce (e.g., vegetative budding, sexual).</p> <p>Recognize that mutations can alter a gene</p> <p>Describe how selective breeding and genetic technologies can change genetic makeup of organisms.</p> <p>D. Explain basic concepts of natural selection.</p> <p>Identify adaptations that allow organisms to survive in their environment.</p> <p>Describe how an environmental change can affect the survival of organisms and entire species.</p>	<p>Plants in Our World Activity 2, 4 DNA—From Genes to Proteins Activity 3-7</p> <p>DNA—From Genes to Proteins Activity 5, Science Extension</p> <p>You and Your Body Activity 5, Science and Health, p. 48 Activity 10, Science and Health p. 77</p> <p>DNA—From Genes to Proteins Activity 1</p> <p>DNA—From Genes to Proteins Activity 5-9</p> <p>DNA—From Genes to Protein Activity 3, Science Challenge Activity 3, Science Extension</p> <p>DNA—From Genes to Protein Activity 3, Science Challenge Activity 3, Science Extension</p> <p>DNA—From Genes to Proteins Activity 11 Science and Math</p> <p>DNA—From Genes to Protein Activity 10</p> <p>Plants in Our World Activity 12, Science, Technology, and Society DNA—From Genes to Proteins Activity 12</p> <p>Pollution Activity 9, Science, Technology and Society, p. 70 Activity 10, Science, Technology and Society, p. 76</p>
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<p>Describe the role that fossils play in studying the past.</p> <p>Explain how biological extinction is a natural process.</p>	<p>Reader, pp. 11, 14</p> <p>Earth Processes Activity 4, pp. 39-46 Reader, p. 22</p>
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Ecosystems and Their Interactions Grade 7

NOTE: Ecosystems and their Interactions is a topic that is typically listed with the Biological Science standards but found in the Pennsylvania standards for Environment and Ecology.

STANDARD	DSM
<p>A. Explain the flows of energy and matter from organism to organism within an ecosystem.</p> <p>Identify and explain the characteristics of biotic and abiotic.</p> <p>Describe and explain the adaptations of plants and animals to their environment.</p> <p>Demonstrate the dependency of living things components in the ecosystem on the nonliving components.</p> <p>Explain energy flow through a food web.</p> <p>Explain the importance of the predator/prey relationship and how it maintains the balances within ecosystems.</p> <p>Understand limiting factors and predict their effects on an organism.</p> <p>Identify niches for producers, consumers, and decomposers within an ecosystem.</p> <p>Compare and contrast the major ecosystems of Pennsylvania.</p> <p>Identify the major characteristics of a biome.</p> <p>Compare and contrast different biomes and their characteristics.</p>	<p>Plants in Our World Activity 10, Science and Social Studies</p> <p>Pollution Activity 10, pp. 71-76 Reader, pp. 10-12</p> <p>Plants in Our World Activity 3</p>

<p>Identify the relationship of abiotic and biotic components and explain their interaction in an ecosystem.</p> <p>Explain how different soil types determine the characteristics of ecosystems.</p> <p>B. Explain the concepts of cycles</p> <p>Identify and explain cycles within an ecosystem.</p> <p>Analyze the role of different cycles within an ecosystem.</p> <p>C. Explain how ecosystems change over time.</p> <p>Explain how ecosystems change.</p> <p>Identify the succession stages of a given ecosystem.</p> <p>Explain how specific organisms may change an ecosystem.</p> <p>Explain a change in an ecosystem that relates to humans.</p>	<p>Plants in Our World Activity 9-10</p> <p>Pollution Activity 10, Science and Social Studies, p. 76 Reader, pp. 10-12</p> <p>Pollution Activity 10, Science, Technology and Society, p. 76 Reader, pp. 4, 7-9 Plants in Our World Activity 10, Science Extension</p>
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Physical Science, Chemistry and Physics Grade 7

<i>STANDARD</i>	<i>DSM</i>
<p>A. Describe concepts about the structure and properties of matter.</p> <p>Identify elements as basic building blocks of matter that cannot be broken down chemically.</p> <p>Distinguish compounds from mixtures.</p>	<p>Matter and Change Activity 5, pp. 45-51 Reader, pp. 4-5</p> <p>Matter and Change Activity 3, 5-6, pp. 29-35, 45-61 Reader, pp. 6-8, 15-18</p>

<p>Describe and conduct experiments that identify chemical and physical properties.</p> <p>Describe reactants and products of simple chemical reactions</p> <p>B. Relate energy sources and transfers to heat and temperature.</p> <p>Identify and describe sound changes in moving objects.</p> <p>Know that the sun is a major source of energy that emits wavelengths of visible light, infrared and ultraviolet radiation.</p> <p>Explain the conversion of one form of energy to another by applying knowledge of each form of energy.</p> <p>Explain the parts and functions in an electrical circuit.</p>	<p>Matter and Change Activity 1, 3, 10, pp. 13-19, 29-35, 85-92</p> <p>Matter and Change Activity 7, 11-13, pp. 63-68, 93-109</p> <p>Color and Light Activity 1, pp. 13-18</p> <p>Earth, Moon and Sun Activity 1, Science Challenge, p. 19 Reader, pp. 6-7</p> <p>Electromagnetism Activity 6-10, pp. 43-76 Reader, pp. 4-5, 8-9</p> <p>Flight and Rocketry Activity 8-9, 12, pp. 81-97, 121-130 Reader, pp. 10-13</p> <p>Newton's Toy Box Activity 8-11, pp. 55-77</p> <p>Electrical Connections Activity 2-3</p> <p>Electromagnetism Activity 6, 8-9, pp. 43-48, 57-68 Reader, pp. 4-5</p> <p>Electrical Connections Activity 2-3</p>
<p>C. Identify and explain the principles of force and motion.</p> <p>Describe the motion of an object based on its position, direction and speed.</p> <p>Classify fluid power systems according to fluid used or mode of power transmission (e.g., air, oil).</p>	<p>Flight and Rocketry Activity 8-9, 12, pp. 81-97, 121-130 Reader, pp. 9-13</p> <p>Erosion Activity 7, pp. 59-66</p> <p>Simple Machines Activity 6-8, pp. 49-69 Reader, p. 8</p> <p>Newton's Toy Box Activity 8-10, pp. 49-72 Reader, pp. 2-3, 10-13</p>

<p>Explain various motions using models.</p>	<p>Flight and Rocketry Activity 11-12, pp. 111-130 Earth, Moon and Sun Activity 8-10, pp. 71-101 Astronomy Activity 1-5 Newton's Toy Box Activity 8-13, pp. 55-90</p>
<p>Explain how convex and concave mirrors and lens change light images.</p> <p>Explain how sound and light travel in waves of differing speeds, sizes and frequencies.</p>	<p>Color and Light Activity 1, pp. 13-18 Reader, pp. 2-3, 8-9</p>
<p>D. Describe essential ideas about the composition and structure of the universe and the earth's place in it.</p> <p>Compare various planets' characteristics.</p>	<p>Earth Moon, and Sun Activity 3, 4, pp. 29-44 Reader, pp. 21-23 Astronomy Activity 6</p>
<p>Describe basic star types and identify the sun as a star type.</p>	<p>Earth, Moon and Sun Reader, p. 4 Astronomy Activity 1</p>
<p>Describe and differentiate comets, asteroids, and meteors.</p>	<p>Earth, Moon and Sun Reader, p. 3</p>
<p>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.</p>	<p>Earth, Moon, and Sun Activity 12, pp. 111-119 Reader, p. 5 Newton's Toy Box Reader, p. 23</p>
<p>Illustrate how the positions of stars and constellations change in relation to the Earth during an evening and from month to month.</p>	<p>Earth, Moon and Sun Activity 13, pp. 121-129 Activity 8, Science Challenge, p. 79 Astronomy Activity 1-4</p>
<p>Identify equipment and instruments that explore the universe.</p>	<p>Earth Moon, and Sun Activity 13, Science, Technology, and Society, p. 129 Astronomy Activity 9</p>
<p>Identify the accomplishments and contributions provided by selected past</p>	<p>Earth Moon, and Sun Activity 3, Science Challenge, p. 35</p>

<p>and present scientists in the field of astronomy.</p> <p>Identify and articulate space program efforts to investigate possibilities of living in space and on other planets.</p>	<p>Reader, p. 20 Astronomy Activity 9, Science and Language Arts</p>
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Earth Sciences Grade 7

STANDARD	DSM
<p>A. Describe earth features and processes.</p> <p>Describe the major layers of the earth.</p> <p>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.</p> <p>Describe the processes that formed Pennsylvania geologic structures and resources including mountains, glacial formations, water gaps and ridges.</p> <p>Explain how the rock cycle affected rock formations in the state of Pennsylvania.</p> <p>Distinguish between examples of rapid surface changes (e.g., landslides, earthquakes) and slow surface changes (e.g., weathering).</p> <p>Identify living plants and animals that are similar to fossil forms.</p>	<p>Erosion Activity 1, Science and the Arts, p. 19 Reader, p.2</p> <p>Earth Processes Activity 2, pp. 23-28 Reader, pp. 2-3</p> <p>Erosion Activity 1, 2, 4-6, 10-12, pp. 13-27, 37-57, 83-104 Reader, pp. 3-13</p> <p>Earth Processes Activity 3-8, 14, pp. 29-79, 121-129 Reader, pp. 6-15</p> <p>Local Objective. See resources above</p> <p>Rocks and Minerals Activity 2, 10, pp. 21-28, 77-84 Reader, pp. 9-13</p> <p>Earth Processes Activity 4-6, pp. 39-62 Reader, pp. 16-18</p> <p>Erosion Activity 1-12, pp. 13-104 Reader, pp. 3-13</p> <p>Earth Processes Activity 3-8, pp. 29-79 Reader, pp. 6-15</p> <p>Earth Processes Activity 4, pp. 39-46 Activity 4, Science Challenge, p. 46</p>

<p>B. Recognize earth resources and how they affect everyday life.</p> <p>Identify and locate significant earth resources (e.g., rock types, oil, gas, coal deposits) in Pennsylvania.</p> <p>Explain the processes involved in the formation of oil and coal in Pennsylvania.</p> <p>Explain the value and uses of different earth resources (e.g., selected minerals, ores, fuel sources, agricultural use).</p> <p>Compare the locations of human settlements as related to available resources.</p> <p>B. Describe basic elements of meteorology.</p> <p>Explain weather forecasts by interpreting weather data and symbols.</p> <p>Explain the ocean's impact on local weather and the climate of a region.</p> <p>Identify how cloud types, wind directions and barometric pressure changes are associated with weather patterns in different regions of the country.</p> <p>Explain and illustrate the processes of cloud formation and precipitation.</p>	<p>Activity 4, Science Extension, p. 46</p> <p>Local objective. See: Rocks and Minerals Reader, p. 11 Earth Processes Reader, pp. 17-18</p> <p>Local objective. See: Rocks and Minerals Reader, p. 11 Earth Processes Reader, pp. 17-18</p> <p>Erosion Activity 8, Science, Technology, and Society, p. 78 Rocks and Minerals Activity 11, pp. 85-92 Reader, pp. 7-8, 11 Earth Processes Activity 14, Science, Technology, and Society, p. 129 Reader, pp. 19-20</p> <p>Weather Forecasting Activity 1-8, pp. 13-68 Reader, p. 6</p> <p>Oceans Activity 1, Science Challenge, p. 22 Reader, p. 10 Weather Forecasting Activity 6, Science Challenge, p. 54</p> <p>Weather Forecasting Activity 3, 5, 10, pp. 25-32, 41-48, 75-80 Reader, pp. 3, 6-7</p> <p>Weather Forecasting Activity 9, pp. 69-74</p>
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<p>Describe and illustrate the major layers of the earth's atmosphere.</p> <p>Identify different air masses and global wind patterns and how they relate to the weather patterns in different regions of the U. S.</p> <p>C. Explain the behavior and impact of the earth's water systems.</p> <p>Explain the water cycle using the processes of evaporation and condensation.</p> <p>Describe factors that affect evaporation and condensation.</p> <p>Distinguish salt from fresh water (e.g., density, electrical conduction).</p> <p>Compare the effect of water type (e.g., polluted, fresh, salt water) and the life contained in them.</p> <p>Identify ocean and shoreline features (e.g., bays, inlets, spit, tidal marshes).</p>	<p>Reader, p. 4</p> <p>Weather Forecasting Reader, p. 2</p> <p>Weather Forecasting Activity 4, Science Extension, p. 40 Activity 6, Science Challenge, p. 54 Reader, p. 15</p> <p>Oceans Activity 5, pp. 55-63 Weather Forecasting Activity 9, pp. 69-74 Reader, p. 4</p> <p>Oceans Activity 1-3, pp. 13-41 Reader, pp. 2-3</p> <p>Oceans Activity 10-12, pp. 113-142 Reader, pp. 12-13</p> <p>Erosion Activity 10, pp. 83-89 Reader, pp. 9-10</p> <p>Oceans Activity 6, Science, Technology, and Society, p. 73 Reader, p. 6</p>
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Technology Education Grade 7

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	DSM
<p>A. Explain biotechnologies that relate to related technologies of propagating, growing, maintaining, adapting, treating and converting.</p> <p>Identify the environmental, societal and economic impacts that waste has in the environment.</p>	<p>Pollution Activity 1, pp. 13-17 Reader, p. 3</p>

<p>Identify and explain the impact that a specific medical advancement has had on society.</p> <p>Explain the factors that were taken into consideration when a specific object was designed.</p> <p>Define and describe how fuels and energy can be generated through the process of biomass conversion.</p> <p>Identify and group basic plant and animal production processes.</p> <p>Explain the impact that agricultural science has had on biotechnology.</p> <p>B. Explain information technologies of encoding, transmitting, receiving, storing, retrieving and decoding.</p> <p>Demonstrate the effectiveness of image generating technique to communicate a story. (e.g., photography, video)</p> <p>Analyze and evaluate the effectiveness of a graphic object designed and produced to communicate a thought or concept.</p> <p>Apply basic technical drawing techniques to communicate an idea or solution to a problem.</p> <p>Apply the appropriate method of communications technology to communicate a thought.</p> <p>C. Explain physical technologies of structural design, analysis and engineering, personnel relations, financial affairs, structural production, marketing, research and design.</p> <p>Use knowledge of material effectiveness to solve specific construction problems (e.g., steel vs. wood bridges).</p>	<p>Activity 2, Science, Technology, and Society, p. 24</p> <p>You and Your Body Activity 1, Science, Technology and Society, p. 18 Activity 4, Science, Technology and Society, p. 39 Reader, p. 12</p> <p>DNA—From Genes to Protein Activity 13, Science, Technology, and Society</p>
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<p>Differentiate among the different types of construction applications (e.g., microwave power, power plants, aircrafts).</p> <p>Explain basic material processes that manufactured objects undergo during production (e.g., separating, forming, combining).</p> <p>Evaluate a construction activity by specifying task analysis and necessary resources.</p> <p>Explain the relationships among the basic resources needed in the production process for a specific manufactured object.</p> <p>Explain the difference between design engineering and production engineering processes.</p> <p>Analyze manufacturing steps that affect waste and pollutants.</p> <p>Explain transportation technologies of propelling, structuring, suspending, guiding, controlling and supporting.</p> <p>Identify and explain the workings of several mechanical power systems.</p> <p>Model and explain examples of vehicular propulsion, control, guidance, structure and suspension systems.</p> <p>Explain the limitations of land, marine, air and space transportation systems.</p>	<p>Flight and Rocketry Activity 8-10, 12, pp. 81-109, 121-130 Reader, p. 10-13</p> <p>Flight and Rocketry Activity 9, Science and Health, p. 97</p>
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Technological Devices Grade 7

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	DSM
<p>A. Describe the safe and appropriate use of tools, materials and techniques to answer questions and solve problems.</p> <p>Identify uses of tools, machines, materials, information, people, money, energy, and time that meet specific design criteria.</p> <p>Describe safe procedures for using tools and materials.</p> <p>Assess materials for appropriateness of use.</p> <p>B. Use appropriate instruments and apparatus to study materials.</p> <p>Select appropriate instruments to measure the size, weight, shape, and temperature of living and non-living objects.</p> <p>Apply knowledge of different measurement systems to measure and record objects' properties.</p> <p>C. Explain and demonstrate basic computer operations and concepts.</p> <p>Know specialized computer applications used in the community.</p> <p>Describe the function of advanced input and output devices (e.g., scanners, video images, plotters, projectors) and demonstrate their use.</p>	<p>Safety guidelines and precautions are found in the teacher manuals. There are general safety guidelines and guidelines specific to activities.</p> <p>You and Your Body Activity 5, pp. 41-48</p> <p>Weather Forecasting Activity 3, pp. 25-32</p> <p>Simple Machines Activity 1-2, pp. 13-29</p> <p>Matter and Energy Activity 1-2, pp. 13-27</p> <p>You and Your Body Activity 5, pp. 41-48</p> <p>Newton's Toy Box Activity 7-9, pp. 49-65</p> <p>Matter and Energy Activity 1-2, pp. 13-27</p>

<p>Demonstrate age appropriate keyboarding skills and techniques.</p> <p>D. Apply computer software to solve specific problems.</p> <p>Identify computer software designed to meet specific needs (e.g., Computer Aided Drafting, design software, tutorial, financial, presentation software).</p> <p>Identify and solve basic software problems relevant to specific software applications.</p> <p>Identify basic multimedia applications</p> <p>Demonstrate a basic knowledge of desktop publishing applications.</p> <p>Apply intermediate skills in utilizing word processing, database and spreadsheet software.</p> <p>Apply basic graphic manipulation techniques.</p> <p>E. Explain basic computer communication systems.</p> <p>Describe the organization and functions of the basic parts that make up the World Wide Web.</p> <p>Apply advanced electronic mail functions.</p> <p>Apply basic on-line research techniques to solve a specific problem.</p>	
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Science, Technology, and Human Endeavors Grade 7

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	DSM
<p>A. Explain how sciences and technologies are limited in their effects and influences on society.</p> <p>Identify and describe the unavoidable constraints of technological design.</p>	<p>Flight and Rocketry Activity 12, pp. 121-130 Reader, p. 13</p>

<p>Describe ways technology extends and enhances human abilities.</p>	<p>Activity 4, Science and Health</p> <p>You and Your Body Activity 14, Science, Technology, and Society, p. 102 Reader, p. 12</p> <p>DNA—From Genes to Proteins Activity 13, Science, Technology, and Society</p>
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