



Full Option Science System

(FOSS™)

Grades K-8

Correlated with

VERMONT

**GRADE EXPECTATIONS
FOR SCIENCE**



February 2009

VERMONT

SCIENCE K-8

GRADE EXPECTATIONS

For Vermont's Framework of Standards and Learning Opportunities

Correlation With

Full Option Science System (FOSS)

The following is a correlation of the Vermont Science Grade Expectations to the Full Option Science System. This correlation shows representative examples of investigations and activities from the FOSS program that address the Grade Expectations. A citation does not include all of the investigations or activities from FOSS that might address a particular standard.

Key science vocabulary for specific grade clusters has been **boldfaced**. These are words that students should be familiar with and would be fair game for inclusion in assessment questions. Words are boldfaced at the initial grade level that is developmentally appropriate. In order to know all of the vocabulary associated with a particular GE, educators would need to review GEs in previous grade levels.

GRADE: Pre K-K

SCIENTIFIC INQUIRY (Note: Inquiry Grade Expectations are skill-based and apply to all concept areas.)

Note: FOSS is an inquiry based program and provides the opportunity to address these expectations directly or with the teacher's guidance.

GRADE EXPECTATION	FOSS
<p>SPK-K:1 Students demonstrate their understanding of SCIENTIFIC QUESTIONING by...</p> <ul style="list-style-type: none"> Developing a question by completing the prompt, "I wonder..?" Demonstrating a "questioning mind" through extended, intentional (purposeful) interactions with materials or people; Experimenting with possibilities. 	<p>FOSS provides the opportunity to address this expectation. See below: Fabric Investigation 2, Part 1, pp. 7-11 Trees Investigation 3, Part 1, pp. 10-11 Wood and Paper Investigation 3, Part 4, pp. 22-24 Animals Two by Two Investigation 4, Part 4, pp. 20-23</p> <p>FOSS provides the opportunity to address this expectation. See below: Fabric Investigation 2, Part 2, pp. 12-17 Trees Investigation 3, Part 7, pp. 29-31 Wood and Paper Investigation 1, Part 5, pp. 28-32 Animals Two by Two Investigation 1, Part 3, pp. 22-25</p>
<p>SPK-K: 2 Students demonstrate their understanding of PREDICTING AND HYPOTHESIZING by...</p> <ul style="list-style-type: none"> Stating ideas about what may happen or be observed in the future (e.g., Student thinks ahead). 	<p>FOSS provides the opportunity to address this expectation. See below: Fabric Investigation 2, Part 3, pp. 18-21 Trees Investigation 3, Part 7, pp. 29-31 Wood and Paper Investigation 3, Part 4, pp. 22-24 Animals Two by Two Investigation 5, Part 1, pp. 10-15</p>
<p>SPK-K:3 Students demonstrate their understanding of EXPERIMENTAL DESIGN by...</p> <ul style="list-style-type: none"> Explaining the process of an investigation before and during the process (e.g., "on the job" planning, investigating, and explaining can happen simultaneously). 	<p>Fabric Investigation 2, Part 2, pp. 12-17 Trees Investigation 3, Part 7, pp. 29-31 Wood and Paper</p>

<ul style="list-style-type: none"> • Using procedures that are safe and humane. 	<p>Investigation 1, Part 3, pp. 20-23 Animals Two by Two Investigation 1, Part 3, pp. 22-25</p> <p>Fabric Investigation 1, Part 6, p. 32 Trees Investigation 3, Part 2, p. 13 Wood and Paper Investigation 1, Part 2, p. 4 Animals Two by Two Investigation 4, Part 4, pp. 20-23</p>
<p>SPK-K:4 Students demonstrate their ability to CONDUCT EXPERIMENTS by...</p> <ul style="list-style-type: none"> • Using more than one of the senses to make observations. • Describing obvious features of an object or event. • Representing data in a variety of ways including words, numbers, symbols, and pictures. • Drawing scientifically: <ol style="list-style-type: none"> a. Recording shapes, prominent features with supporting details (e.g., eyelashes on eyes), and color. b. Spatially organizing and differentiating significant parts observed. c. Adding essential information to a diagram provided by the teacher. d. Using simple equipment and nonstandard measurement tools to gather data and extend the senses (e.g., balances, scales, counters, magnifiers). e. Following teacher guidance to complete steps while investigating a question. 	<p>Fabric Investigation 1, Parts 1-2, pp. 6-15 Trees Investigation 3, Parts 1-3, pp. 10-18 Wood and Paper Investigation 3, Parts 1-3, pp. 8-21 Animals Two by Two Investigation 3, Part 1, pp. 8-12</p> <p>Fabric Investigation 1, Part 4, pp. 20-22 Trees Investigation 1, Part 5, pp. 25-27 Wood and Paper Investigation 3, Part 1, pp. 8-12 Animals Two by Two Investigation 1, Part 1, pp. 10-16</p> <p>Fabric Investigation 2, Part 4, pp. 22-25 Trees Investigation 2, Parts 2-4, pp. 10-22 Wood and Paper Investigation 1, Part 5, pp. 28-32 Animals Two by Two Investigation 1, Part 1, pp. 10-16</p> <p>Trees Investigation 1, Parts 4-6, pp. 23-30 Wood and Paper Investigation 1, Part 5, pp. 28-32 Animals Two by Two Investigation 1, Part 1, pp. 10-16</p>

<p>SPK-K:5 Students demonstrate their ability to REPRESENT DATA by...</p> <ul style="list-style-type: none"> • Including a piece of data (measurement or observation) on a group representation (e.g., pictograph, bar graph, or chart). 	<p>Fabric Investigation 2, Part 4, pp. 22-25 Wood and Paper Investigation 1, Part 5, pp. 28-32 Animals Two by Two Investigation 1, Part 4, pp. 26-29</p>
<p>SPK-K:6 Students demonstrate their ability to ANALYZE DATA by...</p> <ul style="list-style-type: none"> • Sorting objects based upon current observations and justifying groupings. 	<p>Fabric Investigation 2, Part 4, pp. 22-25 Trees Investigation 2, Parts 2-3, pp. 10-19 Wood and Paper Investigation 3, Part 4, pp. 22-25 Animals Two by Two Investigation 1, Part 4, pp. 26-29</p>
<p>SPK-K:7 Students demonstrate their ability to EXPLAIN DATA by...</p> <ul style="list-style-type: none"> • Communicating observations with the support of material props, photographs, drawings, or diagrams. 	<p>Trees Investigation 2, Parts 2-6, pp. 10-28 Wood and Paper Investigation 5, Part 3, pp. 18-21 Animals Two by Two Investigation 1, Part 1, pp. 10-16</p>
<p>SPK-K:8 Students demonstrate their ability to APPLY RESULTS by...</p> <ul style="list-style-type: none"> • Identifying similarities between past experiences and current investigations. 	<p>FOSS provides the opportunity to address this expectation. See below: Fabric Investigation 2, Part 4, pp. 22-25 Trees Investigation 3, Parts 1-2, pp. 10-14 Wood and Paper Investigation 1, Part 3, pp. 20-23 Investigation 3, Part 4, pp. 22-25 Animals Two by Two Investigation 3, Parts 1-3, pp. 8-20</p>

PHYSICAL SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>SPK-K:9 Students demonstrate their understanding of the Properties of Matter by...</p> <ul style="list-style-type: none"> • Observing and sorting substances that are solids and liquids and identifying their differences. 	<p>FOSS provides the opportunity to address this expectation. See below: Fabric</p>

	Investigation 2, Part 1, pp. 7-11 Wood and Paper Investigation 1, Part 3, pp. 20-23 Investigation 3, Part 4, pp. 22-24
SPK-K:19 Students demonstrate their understanding of Motion by... • Manipulating objects and observing and describing the motion.	FOSS provides the opportunity to address this expectation. See below: Fabric Investigation 1, Parts 4-6, pp. 20-33 Wood and Paper Investigation 1, Part 4, pp. 24-27 Investigation 2, Part 1, pp. 7-11 Animals Two by Two Investigation 1, Part 3, pp. 22-25 Investigation 2, Part 2, pp. 14-17
SPK-K:23 Students demonstrate their understanding of Heat Energy by... • Identifying the sun as a source of heat energy.	FOSS provides the opportunity to address this expectation. See below: Trees Science Stories, pp. 16, 20
SPK-K:25 Students demonstrate their understanding of Magnetism by... • Observing and describing how magnets make some things move without touching.	

LIFE SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
SPK-K:30 Students demonstrate their understanding of Structure and Function-Survival Requirements by... • Observing and recording what happens when food and water are given to living and non-living things.	Trees Investigation 1, Part 8, pp. 35-37 Animals Two by Two Investigation 4, Part 4, pp. 20-23 Fabric Investigation 2, Part 1, pp. 7-11 Wood and Paper Investigation 1, Part 3, pp. 20-23
SPK-K:34 Students demonstrate their understanding of Energy Flow in an Ecosystem by... • Caring for plants and animals by identifying and providing for their needs.	Trees Investigation 1, Part 8, pp. 35-37 Science Stories, p. 21 Animals Two by Two Investigation 4, Part 4, pp. 20-23

	Science Stories, pp. 4, 6, 10, 12
<p>SPK-K:38 Students demonstrate their understanding of Classification of Organisms by...</p> <ul style="list-style-type: none"> • Sorting and identifying examples of plants and animals. 	<p>Trees Investigation 1, Parts 1, 4, pp. 7-14, 23-24 Investigation 2, Parts 1-3, pp. 6-19 Investigation 3, Part 4, pp. 19-21 Science Stories, pp. 3-12</p> <p>Animals Two by Two Investigation 1-5 Science Stories, pp. 3-24</p>

HUMAN BODY

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>SPK-K:41 Students demonstrate their understanding of Human Body Systems by...</p> <ul style="list-style-type: none"> • Identifying the five senses and using the senses to identify objects in their environment. 	<p>FOSS provides the opportunity for the teacher to address this expectation. See below:</p> <p>Trees Investigation 3, Parts 1-3, pp. 10-18</p> <p>Animals Two by Two Investigation 3, Part 1, pp. 8-12</p> <p>Fabric Investigation 1, Parts 1-2, pp. 6-15</p> <p>Wood and Paper Investigation 3, Parts 1-3, pp. 8-21</p>

EARTH/SPACE SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>SPK-K:44 Students demonstrate their understanding of Characteristics of the Solar System by...</p> <ul style="list-style-type: none"> • Observing and recording the day and night sky. 	
<p>SPK-K:46 Students demonstrate their understanding of Processes and Change over Time within Systems of the Universe by...</p> <ul style="list-style-type: none"> • Sorting and recognizing similarities and differences in a variety of rocks (from boulders to grains of sand). 	
<p>SPK-K:48 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Observing and describing weather daily throughout a school year. 	<p>Trees Tools for Observing Weather, pp. 1-23 Materials Section</p>
<p>SPK-K:49 Students demonstrate their understanding</p>	

<p>of Processes and Change within Natural Resources by...</p> <ul style="list-style-type: none"> Identifying items that students consume on a daily basis (e.g., food, fiber, paper, wool or wood). 	<p>Trees Investigation 3, Part 2, pp. 12-14 Science Stories, pp. 14-21</p> <p>Wood and Paper Investigation 1, Parts 1-2, pp. 8-19 Investigation 5, Part 1, pp. 8-11 Science Stories, pp. 3-8, 13-18</p> <p>Fabric Investigation 1, Part 2, pp. 6-15 Investigation 2, Part 4, pp. 22-25 Science Stories, pp. 2-23</p>
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GRADES: 1-2

SCIENTIFIC INQUIRY (Note: Inquiry Grade Expectations are skill-based and apply to all concept areas.)

Note: FOSS is an inquiry based program and provides the opportunity to address these expectations directly or with the teacher's guidance.

GRADE EXPECTATION	FOSS
<p>S1-2:1 Students demonstrate their understanding of SCIENTIFIC QUESTIONING by...</p> <ul style="list-style-type: none"> • Posing observational questions that compare things in terms of number, shape, texture, size, weight, color, motion, etc. (e.g., How fast does a Lady Beetle move compared to a Bess Beetle?). • Investigating and completing questions to identify a variable that can be changed (e.g., What will happen if...? or I wonder if I change...?). • Generating new questions that could be explored at the end of an investigation. 	<p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Insects Investigation 2, Parts 1-3, pp. 8-24</p> <p>Pebbles, Sand and Silt Investigation 3, Part 3, pp. 19-25</p> <p>Insects and Plants Investigation 3, Parts 1-3, pp. 129-151</p> <p>Solids and Liquids Investigation 1, Part 2, pp. 17-20</p> <p>Air and Weather Investigation 4, Part 3, pp. 19-24</p> <p>Balance and Motion Investigation 3, Parts 1-2, pp. 6-18</p> <p>New Plants Investigation 2, Part 2, pp. 15-19</p> <p>Plants and Animals Investigation 1, Part 2, pp. 58-62</p> <p>Solids and Liquids Investigation 4, Part 1, pp. 7-16</p> <p>Air and Weather Investigation 1, Part 3, pp. 17-20</p> <p>FOSS provides the opportunity to address this expectation during post investigation discussions. See below:</p> <p>New Plants Investigation 4, Part 3, pp. 19-25</p> <p>Pebbles, Sand and Silt Investigation 2, Part 3, pp. 18-23</p> <p>Balance and Motion Investigation 2, Part 3, pp. 20-25</p> <p>Solids and Liquids Investigation 4, Part 1, pp. 7-16</p> <p>Air and Weather Investigation 1, Part 6, pp. 34-38</p>
<p>S 1-2: 2 Students demonstrate their understanding of PREDICTING AND HYPOTHESIZING by...</p> <ul style="list-style-type: none"> • Predicting a logical outcome to a situation, using prior knowledge, experience and/or evidence. 	<p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Plants and Animals Investigation 4, Part 2, pp. 157-163</p>

<ul style="list-style-type: none"> • Explaining reasons for that prediction. 	<p>Pebbles, Sand and Silt Investigation 4, Part 3, pp. 19-25</p> <p>Balance and Motion Investigation 3, Part 2, pp. 13-18</p> <p>Solids and Liquids Investigation 4, Part 2, pp. 17-22</p> <p>Air and Weather Investigation 1, Part 3, pp. 17-20</p> <p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Plants and Animals Investigation 4, Part 2, pp. 157-163</p> <p>Pebbles, Sand and Silt Investigation 4, Part 3, pp. 19-25</p> <p>Balance and Motion Investigation 3, Part 2, pp. 13-18</p> <p>Solids and Liquids Investigation 4, Part 2, pp. 17-22</p> <p>Air and Weather Investigation 1, Part 3, pp. 17-20</p>
<p>S1-2:3 Students demonstrate their understanding of EXPERIMENTAL DESIGN by...</p> <ul style="list-style-type: none"> • Writing a plan related to a question that includes: <ul style="list-style-type: none"> a. What the experimenter will do. b. What will be observed, measured, and/or compared. • Recording major steps sequentially. 	<p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Plants and Animals Investigation 4, Part 1, pp. 151-156</p> <p>New Plants Investigation 4, Part 1, pp. 7-12</p> <p>Pebbles, Sand and Silt Investigation 2, Part 4, pp. 24-29</p> <p>Balance and Motion Investigation 3, Part 2, pp. 13-18</p> <p>Solids and Liquids Investigation 4, Part 1, pp. 7-16</p> <p>Air and Weather Investigation 1, Part 2, pp. 13-16</p> <p>Plants and Animals Investigation 4, Part 1, pp. 151-156</p> <p>New Plants Investigation 4, Part 1, pp. 7-12</p> <p>Pebbles, Sand and Silt Investigation 2, Part 4, pp. 24-29</p> <p>Balance and Motion Investigation 3, Part 2, pp. 13-18</p> <p>Solids and Liquids Investigation 4, Part 1, pp. 7-16</p> <p>Air and Weather Investigation 1, Part 2, pp. 13-16</p>
<p>S1-2:4 Students demonstrate their ability to CONDUCT EXPERIMENTS by...</p> <ul style="list-style-type: none"> • Referring to and following a simple plan for 	<p>Plants and Animals Investigation 1, Part 2, pp. 58-62</p>

<p>an investigation.</p> <ul style="list-style-type: none"> • Describing observations using senses rather than feelings (e.g., The snail has a hard shell with wavy, brown lines, rather than the snail is awesome). • Recording observations of similarities and differences. • Drawing scientifically: <ul style="list-style-type: none"> a. Recording relative proportion (e.g., Eyes are approximately the right size when compared to the head) including focus on finer details, and differentiating all parts observed. b. Labeling significant aspects of a scientific drawing or diagram with words provided. c. Creating a title for a scientific drawing or diagram. • Recording data (in a table provided by the teacher) generated from the use of simple science equipment, as well as nonstandard and standard measurement tools. 	<p>New Plants Investigation 2, Part 2, pp. 15-19 Pebbles, Sand and Silt Investigation 4, Part 1, pp. 8-14 Solids and Liquids Investigation 4, Part 1, pp. 7-16 Air and Weather Investigation 1, Part 3, pp. 17-20</p> <p>Plants and Animals Investigation 4, Part 1, pp. 151-156 New Plants Investigation 2, Parts 1-3, pp. 8-28 Pebbles, Sand and Silt Investigation 1, Parts 1-2, pp. 8-17 Insects Investigation 1, Parts 1-3, pp. 8-25 Solids and Liquids Investigation 1, Parts 1-2, pp. 8-20 Insects and Plants Investigation 1, Parts 1-3, pp. 71-75</p> <p>FOSS provides the opportunity to address this expectation. See below: Plants and Animals Investigation 1, Part 2, pp. 58-62 New Plants Investigation 2, Part 2, pp. 15-19 Pebbles, Sand and Silt Investigation 2, Part 2, pp. 14-17 Balance and Motion Investigation 1, Part 2, pp. 14-18 Solids and Liquids Investigation 4, Part 1, pp. 7-16</p> <p>Insects Investigation 1, Part 1, pp. 8-15 Insects and Plants Investigation 1, Part 1, pp. 52-61 Pebbles, Sand and Silt Investigation 2, Part 2, pp. 14-17 Air and Weather Investigation 4, Part 3, pp. 19-24</p> <p>Pebbles, Sand and Silt Investigation 2, Part 2, pp. 14-17 Solids and Liquids Investigation 4, Part 1, pp. 7-16 Air and Weather Investigation 2, Part 2, pp. 14-19</p>
<p>S1-2:5 Students demonstrate their ability to REPRESENT DATA by...</p> <ul style="list-style-type: none"> • Organizing a collection of data into a table or a graph template. 	<p>Solids and Liquids Investigation 4, Parts 1-2, pp. 7-22 Air and Weather</p>

<ul style="list-style-type: none"> • Creating a title for a table or graph. 	<p>Investigation 4, Part 1, pp. 8-13</p> <p>FOSS provides the opportunity to address this expectation. See above</p>
<p>S 1-2:6 Students demonstrate their ability to ANALYZE DATA by...</p> <ul style="list-style-type: none"> • Sorting and classifying objects based upon observations, prior knowledge, or experience and justifying groupings. • Identifying and describing the pattern in diagrams and charts (e.g., model, bar graph, pictograph, diagram or chart). 	<p>Plants and Animals Investigation 1, Part 2, pp. 58-62 New Plants Investigation 2, Part 2, pp. 15-19 Pebbles, Sand and Silt Investigation 1, Part 3, pp. 18-21 Insects Investigation 2, Part 3, pp. 20-24 Solids and Liquids Investigation 1, Part 2, pp. 17-20</p> <p>Insects Investigation 5, Part 3, pp. 20-24 Insects and Plants Investigation 5, Part 3, pp. 219-225 Pebbles, Sand and Silt Investigation 2, Part 2, pp. 14-17 Balance and Motion Investigation 1, Part 2, pp. 14-18 Air and Weather Investigation 4, Part 3, pp. 19-24</p>
<p>S1-2:7 Students demonstrate their ability to EXPLAIN DATA by...</p> <ul style="list-style-type: none"> • Developing a reasonable explanation based upon observations (e.g., I found out. . .). 	<p>Plants and Animals Investigation 1, Part 3, pp. 63-72 New Plants Investigation 2, Part 3, pp. 20-28 Pebbles, Sand and Silt Investigation 4, Part 3, pp. 19-25 Balance and Motion Investigation 3, Parts 1-2, pp. 6-18 Solids and Liquids Investigation 4, Parts 1-3, pp. 7-27</p>
<p>S1-2:8 Students demonstrate their ability to APPLY RESULTS by...</p> <ul style="list-style-type: none"> • Generating new questions related to discoveries during an investigation. 	<p>FOSS provides the opportunity to address this expectation during post investigation discussions. See below:</p> <p>Plants and Animals Investigation 1, Part 2, pp. 58-62 New Plants Investigation 2, Part 2, pp. 15-19 Pebbles, Sand and Silt Investigation 4, Part 3, pp. 19-25 Balance and Motion Investigation 3, Part 1, pp. 6-12</p>

<ul style="list-style-type: none"> • Relating a current investigation to a similar investigation. 	<p>Solids and Liquids Investigation 4, Part 3, pp. 17-22</p> <p>FOSS provides the opportunity to address this expectation during post investigation discussions. See below:</p> <p>Insects Investigation 5, Parts 1-3, pp. 10-24</p> <p>New Plants Investigation 3, Parts 2-3, pp. 14-25</p> <p>Pebbles, Sand and Silt Investigation 2, Part 4, pp. 24-29</p> <p>Balance and Motion Investigation 3, Part 2, pp. 13-18</p> <p>Solids and Liquids Investigation 4, Part 3, pp. 23-27</p>
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PHYSICAL SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S1-2:9 Students demonstrate their understanding of the Properties of Matter by...</p> <ul style="list-style-type: none"> • Identifying, recording, and comparing characteristics of objects made of similar and different properties. 	<p>Pebbles, Sand and Silt Investigation 1, Parts 1-4, pp. 8-25 Investigation 2, Parts 1-4, pp. 8-29 Investigation 4, Part 3, pp. 19-25</p> <p>Solids and Liquids Investigation 1, Parts 1-2, pp. 28-20 Investigation 2, Parts 2-3, pp. 15-27 Investigation 4, Parts 1-2, pp. 7-22</p>
<p>S1-2:12 Students demonstrate their understanding of the States of Matter by...</p> <ul style="list-style-type: none"> • Identifying, describing, and comparing the state of matter of solids and liquids. 	<p>Solids and Liquids Investigation 1, Parts 1-2, pp. 28-20 Investigation 2, Parts 1-3, pp. 10-27 Science Stories, pp. 4-13</p>
<p>S1-2:14 Students demonstrate their understanding of Physical Change by...</p> <ul style="list-style-type: none"> • Describing and reporting the change in properties when heat is applied to a solid or when heat leaves a liquid (e.g., water and ice). 	<p>Solids and Liquids Investigation 2, Science Extension, p. 31 Investigation 4, Science Extension, p. 29 Science Stories, pp. 14-17 FOSS Web, Activity: Evaporation</p> <p>Air and Weather Investigation 2, Science Extension, p. 32</p>
<p>S1-2:19 Students demonstrate their understanding of Motion by...</p> <ul style="list-style-type: none"> • Investigating and describing how objects move in different ways. 	<p>Balance and Motion Investigation 2, Parts 1-3, pp. 8-25 Investigation 3, Parts 1-3, pp. 6-25</p>

	<p>Science Stories, pp. 10-31</p> <p>Air and Weather</p> <p>Investigation 1, Part 6, pp. 34-38</p> <p>Investigation 3, Parts 1-5, pp. 8-33</p>
<p>S1-2:21</p> <p>Students demonstrate their understanding of Force by...</p> <ul style="list-style-type: none"> Investigating and identifying how pushing or pulling moves or does not move an object. 	<p>Balance and Motion</p> <p>Investigation 2, Parts 1-3, pp. 8-25</p> <p>Investigation 3, Parts 1-3, pp. 6-25</p> <p>Science Stories, pp. 10-21</p> <p>Air and Weather</p> <p>Investigation 1, Part 6, pp. 34-38</p> <p>Investigation 3, Parts 1-5, pp. 8-33</p>
<p>S1-2:22</p> <p>Students demonstrate their understanding of Gravitational force by...</p> <ul style="list-style-type: none"> Observing and describing that different objects fall to the earth unless something is holding them up. 	<p>Balance and Motion</p> <p>Investigation 2, Part 3, pp. 20-25</p> <p>Investigation 3, Part 3, pp. 19-25</p> <p>Science Stories, pp. 28-29</p> <p>Air and Weather</p> <p>Investigation 1, Part 3, pp. 17-20</p> <p>Investigation 3, Part 5, pp. 28-33</p>
<p>S1-2:23</p> <p>Students demonstrate their understanding of Heat Energy by...</p> <ul style="list-style-type: none"> Predicting, experimenting, and observing how heat moving from one object to another can cause temperature changes. 	<p>Solids and Liquids</p> <p>Investigation 2, Science Extension, p. 31</p> <p>Investigation 4, Science Extension, p. 29</p> <p>Science Stories, pp. 14-17</p> <p>Air and Weather</p> <p>Investigation 2, Science Extension, p. 32</p>
<p>S1-2:25</p> <p>Students demonstrate their understanding of Magnetism by...</p> <ul style="list-style-type: none"> Investigating, observing and describing how magnets can make some things move without touching (e.g., determining the distance needed for a magnet to attract an object). 	<p>Balance and Motion</p> <p>Science Stories, pp. 18-21</p> <p>Solids and Liquids</p> <p>Investigation 3, Science Extension, p. 31</p>
<p>S1-2:29</p> <p>Students demonstrate their understanding of Sound Energy by...</p> <ul style="list-style-type: none"> Experimenting with different objects and observing and describing the vibrations of those objects, as well as the sounds that are made. 	<p>Balance and Motion</p> <p>Science Stories, pp. 32-35</p>

LIFE SCIENCE

GRADE EXPECTATION	FOSS
<p>S1-2:30 Students demonstrate their understanding of Structure and Function-Survival Requirements by...</p> <ul style="list-style-type: none"> • Observing and recording the parts that make up living things (i.e., roots, stems, leaves, flowers, legs, antennae, tail, shell). 	<p>Insects Investigation 1-6, all parts Science Stories, pp. 3-38</p> <p>New Plants Investigation 1-4, all parts Science Stories, pp. 3-13, 22-43</p> <p>Insects and Plants Investigation 1-5, all parts Science Resources, pp. 3-18, 26-55</p> <p>Plants and Animals Investigation 1-4, all parts Science Resources, pp. 3-7, 16-25, 28-51</p>
<p>S1-2:31 Students demonstrate their understanding of Reproduction by ...</p> <ul style="list-style-type: none"> • Drawing and labeling the stages of development in the life of a familiar plant or animal. 	<p>Insects Investigation 1-5, all parts Science Stories, pp. 22-25, 28-51</p> <p>New Plants Investigation 1, Part 3, pp. 23-30</p> <p>Insects and Plants Investigation 1-5, all parts Science Resources, pp. 44-47</p>
<p>S1-2:34 Students demonstrate their understanding of Energy Flow in an Ecosystem by...</p> <ul style="list-style-type: none"> • Experimenting with plant growth under different conditions, including light and no light. 	<p>New Plants Investigation 2, Part 2, pp. 15-19 Investigation 2, Science Extension, p. 30</p> <p>Plants and Animals Investigation 1, Part 2, pp. 58-62</p>
<p>S1-2:35 Students demonstrate their understanding of Food Webs in an Ecosystem by...</p> <ul style="list-style-type: none"> • Acting out (dramatizing) or constructing simple diagrams, pictures or words that show what eats what. 	<p>New Plants Science Stories, pp. 22-43</p> <p>Plants and Animals Investigation 2, Part 2, pp. 128-134 Science Resources, pp. 21-23, 28-51</p>
<p>S1-2:39 Students demonstrate their understanding of Evolution/Natural Selection by...</p> <ul style="list-style-type: none"> • Identifying physical similarities and differences between living things today and things that no longer live on earth (e.g., woolly mammoth/elephant; reptiles/dinosaurs). 	<p>Pebbles, sand and Silt Science Stories, pp. 26-31</p>

HUMAN BODY

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S1-2:40 Students demonstrate their understanding of Human Heredity by...</p> <ul style="list-style-type: none"> • Observing and comparing their physical features with those of classmates and other organisms. 	FOSS provides the opportunity to address this expectation by using the information in S1-2: 30.
<p>S1-2:41 Students demonstrate their understanding of Human Body Systems by...</p> <ul style="list-style-type: none"> • Identifying the senses needed to meet survival needs for a given scenario. 	
<p>S1-2:42 Students demonstrate their understanding of the Patterns of Human Health/Disease by...</p> <ul style="list-style-type: none"> • Identifying things in the environment that could be harmful if swallowed (e.g., soaps, cleaning solutions, unknown pills). 	
<p>S1-2:43 Students demonstrate their understanding of the Patterns of Human Development by...</p> <ul style="list-style-type: none"> • Identifying activities that you can do now that you couldn't do as a baby (e.g., dress yourself, get food from refrigerator, bathe yourself). • Explaining where babies grow and develop. 	

EARTH/SPACE SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S1-2:44 Students demonstrate their understanding of Characteristics of the Solar System by...</p> <ul style="list-style-type: none"> • Observing and recording how the sky looks at different times. • Keeping a journal record of the shape of the moon each night for a month. 	<p>Air and Weather Investigation 4, Part 3, pp. 19-24</p> <p>Air and Weather Investigation 4, Part 3, pp. 19-24</p>
<p>S1-2:45 Students demonstrate their understanding of Processes and Change over Time within Systems of the Universe by...</p> <ul style="list-style-type: none"> • Drawing a picture of stars in the night sky. 	FOSS provides the opportunity to address this expectation. See below: Air and Weather Investigation 4, Part 3, pp. 19-24
<p>S1-2:46 Students demonstrate their understanding of Processes and Change over Time within Systems of the Universe by...</p>	

<ul style="list-style-type: none"> • Observing, describing and comparing color and texture of different types of rocks and soils. • Conducting tests on how different types of soils retain water. 	<p>Pebbles, Sand and Silt Investigation 1, Parts 1-2, pp. 8-17 Investigation 2, Parts 1-4, pp. 8-29 Investigation 4, Parts 1-3, pp. 8-25 Science Stories, pp. 8-9</p>
<p>S1-2:47 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Creating categories of “things that change” and keeping a record of them over the school year. 	<p>Air and Weather Investigation 2, Parts 1-4, pp. 8-27 Investigation 4, Parts 1-3, pp. 8-21</p>
<p>S1-2:48 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Observing and recording weather data through the seasons and identifying and drawing conclusions based on the patterns in the data collected. 	<p>Air and Weather Investigation 4, Part 2, pp. 12-18</p>
<p>S1-2:49 Students demonstrate their understanding of Processes and Change within Natural Resources by...</p> <ul style="list-style-type: none"> • Identifying the natural sources of the food that is consumed on a daily basis (e.g., Bread—wheat—flour; Sap—maple syrup; Pasture—meat and dairy). 	<p>New Plants Science Stories, pp. 16-21 Plants and Animals Science Resources, pp. 9-14 Insects and Plants Science Resources, p. 7 Insects Science Stories, p. 7</p>

GRADES: 3-4

SCIENTIFIC INQUIRY (Note: Inquiry Grade Expectations are skill-based and apply to all concept areas.)

Note: FOSS is an inquiry based program and provides the opportunity to address these expectations directly or with the teacher's guidance.

GRADE EXPECTATION	FOSS
<p>S3-4:1 Students demonstrate their understanding of SCIENTIFIC QUESTIONING by...</p> <ul style="list-style-type: none"> Identifying at least one variable that affects a system and using that variable to generate an experimental question that includes a cause and effect relationship 	<p>Magnetism and Electricity Investigation 4, Parts 2-3, pp. 14-22 Water Investigation 4, Part 1, pp. 8-13 Measurement Investigation 3, Part 3, pp. 18-21 Physics of Sound Investigation 2, Parts 1-3, pp. 8-24</p>
<p>S 3-4:2 Students demonstrate their understanding of PREDICTING AND HYPOTHESIZING by...</p> <ul style="list-style-type: none"> Identifying simple patterns of evidence used to develop a prediction and propose an explanation. 	<p>Sun, Mon and Stars Investigation 1, Part 2, pp. 56-64 Matter and Energy Investigation 2, Part 2, pp. 103-114 Human Body Investigation 4, Parts 1-2, pp. 8-19 Structures of Life Investigation 3, Part 4, pp. 24-30</p>
<p>S3-4:3 Students demonstrate their understanding of EXPERIMENTAL DESIGN by...</p> <ul style="list-style-type: none"> Writing a plan related to the question that includes: <ol style="list-style-type: none"> A list of materials needed. A diagram with important elements labeled that supports procedures and illustrates the setup. A procedure that lists steps sequentially (beginning, middle, and end) and describes how the experimenter will manipulate or change only one variable at a time ("Fair Test"). Appropriate timing between observations (intervals) and/or number of trials needed. 	<p>FOSS provides the opportunity to address this expectation. See below: Magnetism and Electricity Investigation 4, Part 3, pp. 19-22 Water Investigation 4, Part 1, pp. 8-13 Matter and Energy Investigation 3, Part 2, pp. 139-150 Human Body Investigation 4, Part 2, pp. 17-19</p>
<p>S3-4:4 Students demonstrate their ability to CONDUCT EXPERIMENTS by...</p> <ul style="list-style-type: none"> Referring to and following a detailed plan for an investigation. 	<p>Earth Materials Investigation 3, Part 3, pp. 14-19 Magnetism and Electricity</p>

<ul style="list-style-type: none"> • Clearly describing evidence and quantifying observations with appropriate units. • Recording data at various points during an investigation by reporting what actually happens, even when data conflicts with expectations. • Recording the sequence in which events take place. • Recording relevant details of an object and its surroundings when applicable. • Drawing scientifically: <ol style="list-style-type: none"> a. Recording varying degrees of color, shading or texture, and consistent proportion throughout. b. Labeling significant parts of a scientific drawing or diagram and including a key if necessary. 	<p>Investigation 1, Part 3, pp. 23-29 Measurement Investigation 2, Part 3, pp. 18-24 Structures of Life Investigation 1, Part 3, pp. 28-33</p> <p>Matter and Energy Investigation 3, Part 2, pp. 139-150 Water Investigation 4, Part 1, pp. 8-13 Measurement Investigation 3, Part 3, pp. 18-21 Structures of Life Investigation 1, Part 3, pp. 28-33</p> <p>Magnetism and Electricity Investigation 1, Part 3, pp. 23-29 Human Body Investigation 4, Parts 2-3, pp. 17-24 Measurement Investigation 4, Part 2, pp. 14-17 Sun, Moon and Stars Investigation 1, Part 2, pp. 56-64</p> <p>Magnetism and Electricity Investigation 3, Parts 1-2, pp. 8-19 Sun, Moon and Stars Investigation 2, Part 2, pp. 89-100 Matter and Energy Investigation 4, Part 1, pp. 174-180 Structures of Life Investigation 2, Part 3, pp. 818-22</p> <p>Earth Materials Investigation 1, Parts 2-3, pp. 16-29 Water Investigation 2, Part 2, pp. 14-18 Structures of Life Investigation 2, Part 3, pp. 18-22 Ideas and Inventions Investigation 2, Part 1, pp. 8-15</p> <p>Magnetism and Electricity Investigation 2, Parts 1-2, pp. 8-19 Earth Materials Investigation 3, Part 2, pp. 14-19 Structures of Life Investigation 2, Part 3, pp. 18-22 Ideas and Inventions Investigation 1, Part 1, pp. 8-13</p>
<p>S3-4:5 Students demonstrate their ability to REPRESENT DATA by...</p> <ul style="list-style-type: none"> • Classifying objects and phenomena into sets and subsets and justifying groupings. 	<p>Magnetism and Electricity Investigation 1, Part 1, pp. 8-17 Earth Materials</p>

<ul style="list-style-type: none"> • Displaying and labeling data for separate trials/observations. • Determining an appropriate representation (graph or table or chart or diagram) to represent their findings most accurately. • Including in tables a title, labeled rows and columns and any necessary keys. • Including in graphs a title, labels, scale, and recording data correctly. 	<p>Investigation 2, Part 2, pp. 14-21 Structures of Life Investigation 4, Part 2, pp. 14-19 Ideas and Inventions Investigation 2, Part 1, pp. 8-15</p> <p>Magnetism and Electricity Investigation 4, Part 2, pp. 14-18 Human Body Investigation 4, Part 3, pp. 20-24 Water Investigation 4, Part 1, pp. 8-13 Sun, Moon and Stars Investigation 2, Part 2, pp. 89-100</p> <p>Magnetism and Electricity Investigation 4, Part 2, pp. 14-18 Human Body Investigation 4, Part 3, pp. 20-24 Water Investigation 4, Part 1, pp. 8-13 Sun, Moon and Stars Investigation 2, Part 2, pp. 89-100</p> <p>FOSS provides the opportunity to address this expectation. See below: Magnetism and Electricity Investigation 4, Part 2, pp. 14-18 Human Body Investigation 4, Part 3, pp. 20-24 Sun, Moon and Stars Investigation 2, Part 2, pp. 89-100</p> <p>FOSS provides the opportunity to address this expectation. See below: Magnetism and Electricity Investigation 1, Part 3, pp. 23-29 Investigation 4, Part 2, pp. 14-18 Measurement Investigation 4, Part 2, pp. 14-17</p>
<p>S 3-4: 6 Students demonstrate their ability to ANALYZE DATA by...</p> <ul style="list-style-type: none"> • Interpreting patterns or trends in data. • Relating data to the original question and prediction. 	<p>Magnetism and Electricity Investigation 4, Part 2, pp. 14-18 Human Body Investigation 4, Part 3, pp. 20-24 Water Investigation 4, Part 1, pp. 8-13 Sun, Moon and Stars Investigation 2, Part 2, pp. 89-100</p> <p>Magnetism and Electricity Investigation 4, Part 2, pp. 14-18 Human Body Investigation 4, Part 3, pp. 20-24 Water</p>

	Investigation 4, Part 1, pp. 8-13 Sun, Moon and Stars Investigation 2, Part 2, pp. 89-100
<p>S3-4:7 Students demonstrate their ability to EXPLAIN DATA by...</p> <ul style="list-style-type: none"> • Providing a reasonable explanation that accurately reflects data. • Identifying differences between proposed predictions and experimental data. 	<p>Matter and Energy Investigation 3, Part 2, pp. 139-150 Measurement Investigation 2, Part 3, pp. 18-22 Physics of Sound Investigation 2, Parts 1-3, pp. 8-24 Structures of Life Investigation 1, Part 3, pp. 28-33</p> <p>FOSS provides the opportunity to address this expectation in post investigation discussions. See above for example.</p>
<p>S3-4:8 Students demonstrate their ability to APPLY RESULTS by...</p> <ul style="list-style-type: none"> • Generating a new question to obtain additional information. • Creating a plan to investigate a scientific concept further. • Connecting the investigation or model to a real world example. 	<p>FOSS provides the opportunity to address this expectation. See below: Magnetism and Electricity Investigation 4, Part 3, pp. 19-22 Ideas and Inventions Investigation 4, Part 3, pp. 18-21 Measurement Investigation 2, Part 3, pp. 18-24 Physics of Sound Investigation 3, Part 2, pp. 15-19</p> <p>FOSS provides the opportunity to address this expectation. See below: Magnetism and Electricity Investigation 4, Part 3, pp. 19-22 Ideas and Inventions Investigation 4, Part 3, pp. 18-21 Measurement Investigation 2, Part 3, pp. 18-24 Physics of Sound Investigation 3, Part 2, pp. 15-19</p> <p>FOSS provides the opportunity for teachers to address this expectation in post investigation discussions and with the use of FOSS Science Stories and Science Resources.</p>

PHYSICAL SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S3-4:9 Students demonstrate their understanding of the Properties of Matter by...</p> <ul style="list-style-type: none"> • Investigating and measuring how the total 	Matter and Energy

<p>weight of the parts of a substance, no matter how they are combined, remains the same (e.g., water and gravel mixture, or a Lego car system, or the weight of sugar plus the weight of water equals the total weight of the sugar solution) and drawing conclusions from these data.</p>	<p>Investigation 3, Part 2, pp. 139-150 Science Resources, p. 70</p>
<p>S3-4:12 Students demonstrate their understanding of the States of Matter by...</p> <ul style="list-style-type: none"> Identifying, describing, and comparing the properties of selected solids, liquids, and gases. 	<p>Magnetism and Electricity Investigation 1, Part 1, pp. 8-17 Water Investigation 1, Parts 1-3, pp. 8-23 Investigation 2, Part 4, pp. 19-24 Matter and Energy Investigation 3, Part 1, pp. 129-138 Earth Materials Investigation 1, Parts 1-3, pp. 8-29 Investigation 2, Parts 1-2, pp. 8-21</p>
<p>S3-4:13 Students demonstrate their understanding of the Properties of a Gas by...</p> <ul style="list-style-type: none"> Experimenting with gas in a closed container (such as a balloon or a bag) and describing how pressure on the container changes when the volume of the gas changes. 	<p>Matter and Energy Science Resources, p. 70</p>
<p>S3-4:14 Students demonstrate their understanding of Physical Change by...</p> <ul style="list-style-type: none"> Investigating and explaining what happens to liquids in open containers. 	<p>Water Investigation 3, Parts 1-3, pp. 8-20 FOSS Web, Activity: Evaporation Matter and Energy Investigation 4, Part 2, pp. 181- 192 Measurement Investigation 2, Science Extension, pp. 23-24</p>
<p>S3-4:21 Students demonstrate their understanding of Force by...</p> <ul style="list-style-type: none"> Investigating and describing how different amounts of force can change the position or direction of motion of an object. 	<p>Water Investigation 4, Part 2, pp. 14-18</p>
<p>S3-4:24 Students demonstrate their understanding of Electrical Energy by...</p> <ul style="list-style-type: none"> Building circuits, drawing diagrams of these electric circuits and predicting whether electricity flows or will not flow through the circuit. Using experimental data to classify different 	<p>Magnetism and Electricity Investigation 2, Parts 1-4, pp. 8-29 Investigation 3, Parts 1-3, pp. 10-26</p> <p>Magnetism and Electricity</p>

materials as conductors and insulators .	Investigation 2, Part 3, pp. 20-25
<p>S3-4:25 Students demonstrate their understanding of Magnetism by...</p> <ul style="list-style-type: none"> • Describing what happens when like and opposite poles of magnets are placed near each other. 	<p>Magnetism and Electricity Investigation 1, Part 1, pp. 8-17 Science Stories, pp. 6-8</p>
<p>S3-4:28 Students demonstrate their understanding of Light Energy by...</p> <ul style="list-style-type: none"> • Investigating with flashlights as well as other light sources and describing how light rays reflect off of objects. • Explaining what occurs when light rays are blocked (e.g., shadows). 	<p>Matter and Energy Investigation 2, Parts 1-2, pp. 93-114 Science Resources, pp. 24-32</p> <p>Ideas and Inventions Investigation 4, Parts 1-3, pp. 8-21 Science Stories, pp. 28-30</p> <p>Sun, Moon and Stars Investigation 1, Parts 1-2, pp. 42-64 Science Resources, pp. 4-11</p> <p>Ideas and Inventions Science Stories, p. 32</p>

LIFE SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S3-4:30 Students demonstrate their understanding of Structure and Function-Survival Requirements by...</p> <ul style="list-style-type: none"> • Explaining how the physical structure/characteristic of an organism allows it to survive and defend itself (e.g., The coloring of a fiddler crab allows it to camouflage itself in the sand and grasses of its environment so that it will be protected from predators. A rose is protected by its thorns). 	<p>Structures of Life Investigation 3, Part 1, pp. 8-15 Investigation 4, Parts 1-2, pp. 8-15 Science Stories, pp. 17-18, 22-34, 37-39</p> <p>Human Body Science Stories, p. 11</p>
<p>S3-4:31 Students demonstrate their understanding of Reproduction by ...</p> <ul style="list-style-type: none"> • Investigating and describing a variety of plant and animal life cycles. 	<p>Structures of Life Science Stories, pp. 20-21 FOSS Web, Activity; Life Cycles</p>
<p>S3-4:34 Students demonstrate their understanding of Energy Flow in an Ecosystem by...</p> <ul style="list-style-type: none"> • Identifying the source of energy for the survival of organisms. 	<p>Structures of Life Science Stories, p. 43</p> <p>Matter and Energy Science Resources, pp. 5, 18-19</p>
<p>S3-4:35 Students demonstrate their understanding of Food Webs in an Ecosystem by...</p>	

<ul style="list-style-type: none"> Recognizing that, in a simple food chain, all animals' food begins with plants. Researching and designing a habitat and explaining how it meets the needs of the organisms that live there. 	<p>Structures of Life Science Stories, p. 43</p> <p>Structures of Life Investigation 3, Part 2, pp. 16-19 Investigation 4, Science Extensions, p. 31</p>
<p>S3-4:36 Students demonstrate their understanding of Equilibrium in an Ecosystem by...</p> <ul style="list-style-type: none"> Explaining how one organism depends upon another organism to survive. 	<p>Structures of Life Science Stories, p. 43</p> <p>Matter and Energy Science Resources, pp.18-19</p>
<p>S3-4:38 Students demonstrate their understanding of Classification of Organisms by...</p> <ul style="list-style-type: none"> Describing and sorting plants and animals into groups based on structural similarities and differences (e.g., All pine, spruce and evergreen trees have similar leaf structures; Spiders have eight legs, and insects have six). 	<p>Structures of Life Investigation 1, Part 1, pp. 8-17 Investigation 4, Part 2, pp. 14-19 Science Stories, pp. 17, 41-42</p> <p>Human Body Science Resources, p. 11</p>
<p>S3-4:39 Students demonstrate their understanding of Evolution/Natural Selection by...</p> <ul style="list-style-type: none"> Identifying differences in characteristics of a certain type of organism (e.g., dogs with long hair or short hair; humans with blue or brown eyes). 	<p>FOSS provides an opportunity to address this expectation. See below:</p> <p>Structures of Life Investigation 3, Part 1, pp. 8-15 Investigation 4, Part 1, pp. 8-13</p>

HUMAN BODY

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S3-4:40 Students demonstrate their understanding of Human Heredity by...</p> <ul style="list-style-type: none"> Describing similarities that are inherited from a biological parent. 	
<p>S3-4:41 Students demonstrate their understanding of Human Body Systems by...</p> <ul style="list-style-type: none"> Showing connections between external and internal body structures and how they help humans survive. survival needs for a given scenario. 	<p>Human Body Investigation 1, Parts 1-2, pp. 8-20 Investigation 2, Parts 1-2, pp. 8-17 Investigation 3, Parts 1-3, pp. 8-21 Science Stories, pp. 1-3, 10, 12-16, 23-29</p>
<p>S3-4:42 Students demonstrate their understanding of the Patterns of Human Health/Disease by...</p>	

- Explaining how **tears**, **saliva**, and **skin**, can protect the body from harmful **germs**.

EARTH/SPACE SCIENCE

GRADE EXPECTATION	FOSS
<p>S3-4:44 Students demonstrate their understanding Characteristics of the Solar System by...</p> <ul style="list-style-type: none"> • Creating a model of the planets and their correct order from the sun. • Drawing or building and then explaining a model of the earth rotating on its axis in relation to the sun and moon (i.e., day and night). 	<p>This expectation is address in the grade module <u>Water Planet</u>.</p> <p>Sun, Moon and Stars Science Resources, p. 3</p>
<p>S3-4:45 Students demonstrate their understanding of Processes and Change over Time within Systems of the Universe by...</p> <ul style="list-style-type: none"> • Identifying similar star patterns or groups from night photographs of the same location at different times of the years. • Comparing similarities and differences between the sun and stars. 	<p>Sun, Moon and Stars Investigation 3, Part 1, pp. 114-125 Science Resources, pp. 36-39, 48-49</p> <p>Sun, Moon and Stars Investigation 3, Part 2, pp. 126-130 Science Resources, pp. 35-36, 47</p>
<p>S3-4:46 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Observing, identifying and comparing components of soils and rocks. • Recognizing and identifying the four basic materials of the earth (i.e., rocks, soil, water, and gases). • Observing and comparing the properties of rocks. 	<p>Earth Materials Investigation 1, Parts 1-3, pp. 8-29 Investigation 2, Parts 1-2, pp. 8-21 Investigation 3, Parts 1-2, pp. 8-19 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 30-33</p> <p>Earth Materials Investigation 1, Parts 1-3, pp. 8-29 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 34-37 FOSS Web, Activity: Rock Database</p> <p>Water Investigation 1, Part 1, pp. 8-13 Science Stories, pp. 1-2, 4-9, 17</p> <p>Earth Materials Investigation 1, Parts 1-3, pp. 8-29 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 34-37</p>
<p>S3-4:47 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p>	

<ul style="list-style-type: none"> • Investigating how local landforms are affected by wind, water or ice, and using results from the investigation to draw conclusions about how water interacts with earth materials. • Building models that simulate deposits of sediments (e.g., a stream table). • Comparing local landforms with models created in the classroom. 	<p>Earth Materials Science Stories, pp. 5-7</p> <p>Earth Materials Science Resources, pp. 5-7 This expectation is addressed in the grade 5 module <u>Landforms</u>.</p> <p>This expectation is addressed in the grade 5 module <u>Landforms</u>.</p>
<p>S3-4:48 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Observing, recording and analyzing local weather data and making predictions based on that data. • Describing water as it changes into vapor in the air and reappears as a liquid when it is cooled. • Explaining how this cycle of water relates to weather and the formation of clouds. 	<p>Water Investigation 3, Parts 1-4, pp. 8-26 Science Stories, p. 13</p> <p>Water Science Stories, pp. 14-16 This expectation is addressed in the grade 5 module <u>Water Planet</u>.</p>
<p>S3-4:49 Students demonstrate their understanding of Processes and Change within Natural Resources by...</p> <ul style="list-style-type: none"> • Observing and describing properties of living and nonliving resources. • Explaining how the properties of living and non-living resources make them suitable for use by humans. 	<p>Water Investigation 1, Part 1, pp. 8-14 Science Stories, p. 17</p> <p>Earth Materials Investigation 1, Part 1, pp. 8-21 Investigation 3, Part 1, pp. 8-13 Science Stories, pp. 12-15, 30-37</p> <p>Water Science Stories, pp. 17-21</p> <p>Earth Materials Science Stories, pp. 12-15, 24-29</p> <p>Matter and Energy Science Resources, pp. 9-13, 18-19</p>

GRADES: 5-6

SCIENTIFIC INQUIRY (Note: Inquiry Grade Expectations are skill-based and apply to all concept areas.)

Note: FOSS is an inquiry based program and provides the opportunity to address these expectations directly or with the teacher's guidance.

GRADE EXPECTATION	FOSS
<p>S5-6:1 Students demonstrate their understanding of SCIENTIFIC QUESTIONING by ...</p> <ul style="list-style-type: none"> • Distinguishing between observational, experimental, and research questions (e.g., Observational—How does a cricket chirp? Experimental—Does the amount of light affect how a cricket chirps? Research—Do all crickets chirp? Why do crickets chirp?). • Identifying multiple variables that affect a system and using the variables to generate experimental questions that include cause and effect relationships. 	<p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Solar Energy Investigation 4, Parts 1-3, pp. 8-28</p> <p>Landforms Investigation 2, Parts 1-2, pp. 8-22</p> <p>Environments Investigation 2, Parts 2-4, pp. 16-30</p> <p>Variables Investigation 3, Parts 2-3, pp. 14-23</p> <p>Human Brain and Senses Investigation 7, Parts 1-2, pp. 210-225</p> <p>Weather and Water Investigation 5, Parts 1-3, pp. 152-174</p> <p>Diversity of Life Investigation 9, Part 2, pp. 278-285</p> <p>Landforms Investigation 3, Part 3, pp. 20-24</p> <p>Environments Investigation 2, Part 4, pp. 26-30</p> <p>Variables Investigation 3, Part 3, pp. 20-23</p> <p>Planetary Science Investigation 5, Parts 2-3, pp. 158-167</p> <p>Diversity of Life Investigation 9, Part 2, pp. 278-285</p>
<p>S 5-6: 2 Students demonstrate their understanding of PREDICTING AND HYPOTHESIZING by...</p> <ul style="list-style-type: none"> • Using logical inferences derived from evidence to predict what may happen or be observed in the future. 	<p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Solar Energy Investigation 3, Parts 1-2, pp. 8-23</p> <p>Models and Designs Investigation 4, Parts 1-2, pp. 6-15</p> <p>Mixtures and Solutions Investigation 1, Parts 1-2, pp. 8-20</p> <p>Earth History Investigation 4, Part 3, pp. 138-146</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Electronics Investigation 5, Part 1, pp. 161-165</p>

<ul style="list-style-type: none"> • Providing an explanation (hypothesis) that is reasonable in terms of available evidence. 	<p>Living Systems Investigation 3, Part 3, pp. 136-141</p> <p>Models and Designs Investigation 2, Part 2, pp. 17-21</p> <p>Environments Investigation 6, Part 2, pp. 14-17</p> <p>Force and Motion Investigation 1, Parts 1-2, pp. 47-62</p> <p>Chemical Interactions Investigation 8, Part 1, pp. 248-255</p>
<p>S5-6:3 Students demonstrate their understanding of EXPERIMENTAL DESIGN by...</p> <ul style="list-style-type: none"> • Writing a plan related to the question and prediction that includes: <ul style="list-style-type: none"> a. A list of materials needed that specifies quantities (e.g., 250 ml water). b. A procedure that lists significant steps sequentially and describes which variable will be manipulated or changed and which variables will remain the same (“Fair Test”). c. An appropriate format for recording data. d. A strategy for conducting multiple trials (“Fair Test”). 	<p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Solar Energy Investigation 3, Parts 1-2, pp. 8-23</p> <p>Food and Nutrition Investigation 2, Part 3, pp. 22-25</p> <p>Environments Investigation 3, Parts 1-3, pp. 8-22</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>Planetary Science Investigation 5, Parts 2-3, pp. 158-167</p> <p>Diversity of Life Investigation 8, Part 2, pp. 244-252</p>
<p>S5-6:4 Students demonstrate their ability to CONDUCT EXPERIMENTS by...</p> <ul style="list-style-type: none"> • Choosing appropriate measurements for the task and measuring accurately. • Collecting data and recording accurate and complete data from multiple trials. 	<p>Living Systems Investigation 2, Part 1, pp. 85-98</p> <p>Mixtures and Solutions Investigation 1, Part 2, pp. 16-20</p> <p>Levers and Pulleys Investigation 1, Parts 2-3, pp. 18-28</p> <p>Force and Motion Investigation 6, Part 2, pp. 229-235</p> <p>Weather and Water Investigation 5, Part 1, pp. 152-162</p> <p>Populations and Ecosystems Investigation 5, Part 1, pp. 142-150</p> <p>Levers and Pulleys Investigation 1, Parts 2-3, pp. 18-28</p> <p>Environments Investigation 2, Parts 2-3, pp. 16-30</p> <p>Variables Investigation 3, Part 2, pp. 14-19</p> <p>Human Brain and Senses Investigation 8, Part 1, pp. 240-245</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>Planetary Science Investigation 5, Parts 2-3, pp. 158-167</p>

<ul style="list-style-type: none"> • Drawing scientifically: <ul style="list-style-type: none"> a. Selecting an appropriate perspective (e.g., cross section, top view, side view) and recording precise proportions. 	<p>Solar Energy Investigation 1, Part 2, pp. 14-21</p> <p>Landforms Investigation 1, Part 2, pp. 16-19</p> <p>Mixtures and Solutions Investigation 2, Part 4, pp. 26-28</p> <p>Human Brain and Senses Investigation 3, Part 1, pp. 92-100</p> <p>Planetary Science Investigation 6, Part 3, pp. 201-205</p> <p>Diversity of Life Investigation 2, Parts 2-3, pp. 79-91</p>
<p>S5-6:5 Students demonstrate their ability to REPRESENT DATA by...</p> <ul style="list-style-type: none"> • Determining an appropriate representation (line graph in addition to prior examples) to represent their findings accurately. • Selecting a scale that is appropriate for range of data to be plotted, labeling units, and presenting data in an objective way. • Including clearly labeled keys and symbols, when necessary. • Using correct scientific terminology to 	<p>Solar Energy Investigation 2, Parts 1-2, pp. 8-24</p> <p>Levers and Pulleys Investigation 1, Parts 2-3, pp. 18-28</p> <p>Water Planet Investigation 3, Part 1, pp. 125-135</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Chemical Interactions Investigation 7, Part 4, pp. 222-228</p> <p>Solar Energy Investigation 2, Parts 1-2, pp. 8-24</p> <p>Levers and Pulleys Investigation 1, Parts 2-3, pp. 18-28</p> <p>Water Planet Investigation 3, Part 1, pp. 125-135</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Chemical Interactions Investigation 7, Part 4, pp. 222-228</p> <p>Solar Energy Investigation 2, Parts 1-2, pp. 8-24</p> <p>Levers and Pulleys Investigation 1, Parts 2-3, pp. 18-28</p> <p>Water Planet Investigation 3, Part 1, pp. 125-135</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Chemical Interactions Investigation 7, Part 4, pp. 222-228</p> <p>Solar Energy Investigation 2, Parts 1-2, pp. 8-24</p>

<p>label representations.</p>	<p>Levers and Pulleys Investigation 1, Parts 2-3, pp. 18-28 Water Planet Investigation 3, Part 1, pp. 125-135 Force and Motion Investigation 2, Part 3, pp. 89-99 Weather and Water Investigation 4, Part 1, pp. 121-130 Chemical Interactions Investigation 7, Part 4, pp. 222-228</p>
<p>S 5-6: 6 Students demonstrate their ability to ANALYZE DATA by...</p> <ul style="list-style-type: none"> Identifying relationships of variables based upon evidence. Questioning data that might not seem accurate or does not fit into the pattern of other findings. 	<p>Solar Energy Investigation 3, Parts 1-2, pp. 8-23 Variables Investigation 3, Parts 2-3, pp. 14-23 Environments Investigation 2, Parts 2-4, pp. 16-30 Force and Motion Investigation 1, Part 2, pp. 57-62 Electronics Investigation 3, Part 2, pp. 124-127 Planetary Science Investigation 5, Parts 2-3, pp. 158-167</p> <p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Solar Energy Investigation 3, Parts 1-2, pp. 8-23 Variables Investigation 3, Parts 2-3, pp. 14-23 Environments Investigation 2, Parts 2-4, pp. 16-30 Force and Motion Investigation 1, Part 2, pp. 57-62 Electronics Investigation 3, Part 2, pp. 124-127 Planetary Science Investigation 5, Parts 2-3, pp. 158-167</p>
<p>S5-6:7 Students demonstrate their ability to EXPLAIN DATA by...</p> <ul style="list-style-type: none"> Explaining data using correct scientific terminology 	<p>Food and Nutrition Investigation 2, Part 3, pp. 22-35 Variables Investigation 3, Parts 2-3, pp. 14-23 Mixtures and Solutions Investigation 1, Part 2, pp. 16-20 Chemical Interactions Investigation 7, Part 1, pp. 222-228 Weather and Water Investigation 4, Part 1, pp. 121-130 Human Brain and Senses Investigation 7, Part 2, pp. 219-235</p>

<ul style="list-style-type: none"> • Using experimental results to support or refute original hypothesis. • Considering all data when developing an explanation/conclusion. • Identifying problems/flaws with the experimental design. • Using additional resources (e.g., books, journals, databases, interview, etc.) to strengthen an explanation. • Preparing a conclusion statement/summary. 	<p>Food and Nutrition Investigation 2, Part 3, pp. 22-35</p> <p>Variables Investigation 3, Parts 2-3, pp. 14-23</p> <p>Mixtures and Solutions Investigation 1, Part 2, pp. 16-20</p> <p>Chemical Interactions Investigation 7, Part 1, pp. 222-228</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Human Brain and Senses Investigation 7, Part 2, pp. 219-235</p> <p>Food and Nutrition Investigation 2, Part 3, pp. 22-35</p> <p>Variables Investigation 3, Parts 2-3, pp. 14-23</p> <p>Mixtures and Solutions Investigation 1, Part 2, pp. 16-20</p> <p>Chemical Interactions Investigation 7, Part 1, pp. 222-228</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Human Brain and Senses Investigation 7, Part 2, pp. 219-235</p> <p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Food and Nutrition Investigation 2, Part 3, pp. 22-35</p> <p>Variables Investigation 3, Parts 2-3, pp. 14-23</p> <p>Mixtures and Solutions Investigation 1, Part 2, pp. 16-20</p> <p>Chemical Interactions Investigation 7, Part 1, pp. 222-228</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Human Brain and Senses Investigation 7, Part 2, pp. 219-235</p> <p>FOSS provides the opportunity to address this expectation through the use of FOSS Science Stories, Science Resources and the FOSS Web.</p> <p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Food and Nutrition Investigation 2, Part 3, pp. 22-35</p> <p>Variables Investigation 3, Parts 2-3, pp. 14-23</p> <p>Mixtures and Solutions Investigation 1, Part 2, pp. 16-20</p> <p>Chemical Interactions Investigation 7, Part 1, pp. 222-228</p> <p>Weather and Water</p>
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	Investigation 4, Part 1, pp. 121-130 Human Brain and Senses Investigation 7, Part 2, pp. 219-235
<p>S5-6:8 Students demonstrate their ability to APPLY RESULTS by...</p> <ul style="list-style-type: none"> • Explaining how experimental findings can be generalized to other situations. 	<p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Landforms Investigation 3, Parts 1-2, pp. 228-19</p> <p>Variables Investigation 3, Part 2, pp. 14-19</p> <p>Solar Energy Investigation 4, Part 2, pp. 20-23</p> <p>Force and Motion Investigation 8, Part 2, pp. 294-301</p> <p>Electronics Investigation 1, Part 3, pp. 66-70</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p>

PHYSICAL SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S5-6:9 Students demonstrate their understanding of the Properties of Matter by...</p> <ul style="list-style-type: none"> • Investigating and developing conclusions that explain how the relative volume or mass of an object affects the density of the object. 	<p>Variables Science Stories, pp. 10-11</p> <p>Planetary Science Investigation 8, Parts 3-4, pp. 260-270</p> <p>Weather and Water Investigation 5, Part 1, pp. 152-162</p>
<p>S5-6:13 Students demonstrate their understanding of the Properties of a Gas by...</p> <ul style="list-style-type: none"> • Measuring the mass of a gas (e.g., air in a basketball). 	
<p>S5-6:14 Students demonstrate their understanding of Physical Change by...</p> <ul style="list-style-type: none"> • Predicting the effect of heating and cooling on the physical state and the mass of a substance. 	<p>Chemical Interactions Investigation 7, Parts 1-4, pp. 215-234 Resources, pp. 24-31</p>
<p>S5-6:15 Students demonstrate their understanding of Chemical Change by...</p> <ul style="list-style-type: none"> • Observing evidence of simple chemical change to identify that new substances are formed when a chemical reaction has occurred (e.g., rusted nail, vinegar combined with baking soda). 	<p>Mixtures and Solutions Investigation 4, Parts 1-3, pp. 8-24 Science Stories, pp. 23-24</p> <p>Chemical Interactions Investigation 9, Parts 2-4, pp. 288-312 Investigation 10, Parts 1-2, pp. 323-336</p>

	Resources, pp. 63-67
<p>S5-6:19 Students demonstrate their understanding of Motion by...</p> <ul style="list-style-type: none"> Measuring and calculating speed (the distance an object moves over a measured amount of time). 	<p>Force and Motion Investigation 2, Parts 2-3, pp. 83-99</p>
<p>S5-6:20 Students demonstrate their understanding of Motion by...</p> <ul style="list-style-type: none"> Design an investigation to collect evidence about an object's inertia and explaining their observation in terms of the object's tendency to resist a change in motion. 	<p>Variables Investigation 3, Parts 1-3, pp. 8-23 Models and Designs Investigation 3, Parts 1-3, pp. 8-23 Science Stories, pp. 37-43 Force and Motion Investigation 6, Part 2, pp. 229-235 Investigation 8, Parts 1-2, pp. 284-301 Resources, pp. 70-74</p>
<p>S5-6:21 Students demonstrate their understanding of Force by...</p> <ul style="list-style-type: none"> Investigating variables that change an object's speed, direction, or both, and identifying and describing the forces that cause the change in motion. 	<p>Force and Motion Investigation 6, Parts 1-4, pp. 218-245 Investigation 8, Parts 1-2, pp. 284-301 CD, Force Bench Video: Understanding Car Crashes</p>
<p>S5-6:22 Students demonstrate their understanding of Gravitational force by...</p> <ul style="list-style-type: none"> Predicting and explaining the effect of gravitational forces between pairs of objects (i.e., earth and objects' on the surface, earth and moon, earth and sun). 	<p>Water Planet Investigation 1, Part 2, pp. 59-66 Science Resources, pp. 16-17 Models and Designs Science Stories, pp. 40-41 Force and Motion Investigation 7, Part 1, pp. 256-261 Resources, pp. 62-69</p>
<p>S5-6:23 Students demonstrate their understanding of Heat Energy by...</p> <ul style="list-style-type: none"> Identifying real world applications where heat energy is transferred, using evidence to explain the direction that the heat energy flows. 	<p>Solar Energy Investigation 2, Parts 1-2, pp. 8-24 Investigation 3, Parts 1-2, pp. 8-23 Science Stories, pp. 1-3, 29-37 Water Planet Investigation 3, Part 1, pp. 8125-135 Science Resources, pp. 42- Weather and Water Investigation 4, Part 2, pp. 131-139 Investigation 5, Parts 2-3, pp. 163-174 Video: Conduction through Metals</p>

	<p>Chemical Interactions Investigation 4, Parts 1-3, pp. 122-141 Investigation 7, Parts 1-5, pp. 204-234 Resources, pp. 32-37</p>
<p>S5-6:24 Students demonstrate their understanding of Electrical Energy by...</p> <ul style="list-style-type: none"> • Exploring, describing and explaining the behavior of charged objects (static electricity) in terms of charges and equilibrium. 	<p>Electronics CD, Tech Manual: Static Electricity</p>
<p>S5-6:25 Students demonstrate their understanding of Magnetism by...</p> <ul style="list-style-type: none"> • Identifying real world objects that demonstrate and utilize a magnetic force field acting over a distance. • Distinguishing between objects affected by magnetic force and objects affected by other non-contact forces, using evidence to explain this principle. 	<p>Models and Designs Investigation 3, Parts 1-3, pp. 8-23 Science Stories, pp. 37-43 Force and Motion Investigation 2, Part 3, pp. 89-99 Investigation 7, Parts 1-3, pp. 256-272 Resources, pp. 66-69</p>
<p>S5-6:26 Students demonstrate their understanding of Electromagnetic Forces by...</p> <ul style="list-style-type: none"> • Exploring and explaining devices that demonstrate the magnetic effects of electricity and the electric effects of moving magnets. • Exploring and explaining the relationship between the device and the magnetic or electric effect it produces, citing evidence to support the explanation. 	
<p>S5-6:28 Students demonstrate their understanding of Light Energy by...</p> <ul style="list-style-type: none"> • Designing demonstrations that represent the characteristics of light energy transfer. 	
<p>S5-6:29 Students demonstrate their understanding of Sound Energy by...</p> <ul style="list-style-type: none"> • Generating a sound and identifying the path of vibration from the source to the ear. 	

LIFE SCIENCE

GRADE EXPECTATION	FOSS
<p>S5-6:30 Students demonstrate their understanding of Structure and Function-Survival Requirements by...</p> <ul style="list-style-type: none"> • Explaining that the cell, as the basic unit of life, has the same survival needs as the organism. • Identifying and drawing individual cells seen through a microscope and recognizing that most cells are microscopic. • Diagramming the exchange of materials through a cell membrane. 	<p>Living Systems Science Resources, p. 2 Food and Nutrition Science Stories, p. 41 Diversity of Life Investigation 3, Parts 1-3, pp. 102-122 Investigation 4, Parts 1-2, pp. 133-141 Resources, pp. 27-30</p> <p>Diversity of Life Investigation 3, Parts 1-3, pp. 102-122 Investigation 4, Part 1, pp. 133-136</p>
<p>S5-6:32 Students demonstrate their understanding of Differentiation by...</p> <ul style="list-style-type: none"> • Explaining the relationship among cells, tissues, organs and systems. • Observing plant or animal tissue and explaining how “specialized” cells help to support the specialized function of tissue (e.g., Muscle cells form muscle tissue; skin cells form skin tissue; nerve cells form brain tissue). 	<p>Living Systems Investigation 1, Parts 1-2, pp. 57-65 Science Resources, pp. 2-13 Diversity of Life Investigation 4, Parts 1-2, pp. 133-141 Investigation 5, Part 3, pp. 165-170 Investigation 6, Part 2, pp. 193-197 Investigation 7, Part 1, pp. 218-223 Resources, pp. 31-44</p> <p>Living Systems Investigation 2, Part 1, pp. 85-98 Science Resources, pp. 3-5, 16-20 Diversity of Life Investigation 5, Part 3, pp. 165-170 Investigation 6, Part 2, pp. 193-197 Investigation 7, Part 1, pp. 218-223 Resources, pp. 31-44 Human Brain and Senses Resources, pp. 63-74</p>
<p>S5-6:33 Students demonstrate their understanding of how Energy Flow Within Cells Supports an Organism’s Survival by...</p> <ul style="list-style-type: none"> • Demonstrating through drawings, stories or models that cells take in food and oxygen to produce energy and send out waste materials. 	<p>Living Systems Investigation 1, Parts 1-2, pp. 57-65 Science Resources, pp. 2-10 Diversity of Life Resources, pp. 24-27</p>

<p>S5-6:34 Students demonstrate their understanding of Energy Flow in an Ecosystem by...</p> <ul style="list-style-type: none"> • Developing a model that shows how the flow of energy from the sun is transferred to organisms as food in order to sustain life. 	<p>Living Systems Science Resources, pp. 31-36, 47-48 Food and Nutrition Science Stories, p. 43 Environments Science Stories, pp. 38-41 Diversity of Life Resources, pp. 36-37 Populations and Ecosystems Investigation 5, Parts 2-4, pp. 151-169 Resources, pp. 14-21</p>
<p>S5-6:35 Students demonstrate their understanding of Food Webs in an Ecosystem by...</p> <ul style="list-style-type: none"> • Developing a model for a food web of a local aquatic and local terrestrial environment. 	<p>Environments Science Stories, pp. 38-41 Populations and Ecosystems Investigation 4, Part 2, pp. 122-129 Investigation 5, Part 4, pp. 161-169 Resources, pp. 19-21 CD, Mono Lake Food Web</p>
<p>S5-6:36 Students demonstrate their understanding of Equilibrium in an Ecosystem by...</p> <ul style="list-style-type: none"> • Experimenting with a closed system and drawing conclusions about how an environmental change affects the system (e.g., bottle biology). 	<p>Populations and Ecosystems Resources, pp. 5-13</p>
<p>S5-6:37 Students demonstrate their understanding of Recycling in an Ecosystem by...</p> <ul style="list-style-type: none"> • Tracing the flow of energy through an ecosystem and identifying the recycling role of decomposers in a variety of situations. 	<p>Environments Science Stories, pp. 38-41 Populations and Ecosystems Investigation 5, Parts 2-4, pp. 151-169 Resources, pp. 14-21</p>
<p>S5-6:39 Students demonstrate their understanding of Evolution/Natural Selection by...</p> <ul style="list-style-type: none"> • Explaining, through engaging in simulations, how a variation in a characteristic (trait) enables an organism to survive in a changing environment. 	<p>Populations and Ecosystems Investigation 10, Parts 1-3, pp. 302-317 Resources, pp. 58-61</p>

HUMAN BODY

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S5-6:40 Students demonstrate their understanding of Human Heredity by...</p>	

<ul style="list-style-type: none"> Identifying that an offspring's traits are determined by combining the sex cells (female egg and male sperm) of the parents. 	<p>Populations and Ecosystems Investigation 9, Parts 1-4, pp. 262-292 Resources, pp. 46-54</p>
<p>S5-6:41 Students demonstrate their understanding of Human Body Systems by...</p> <ul style="list-style-type: none"> Investigating circumstances that affect more than one body system and explaining the interconnected relationship among the body systems (e.g., the effects of exercise on several interdependent body systems, such as respiratory, circulatory, digestive, nervous, skeletal systems).. 	<p>Living Systems Investigation 1, Parts 1-2, pp. 51-65 Science Resources, pp. 2-13 Food and Nutrition Science Stories, pp. 44-50</p>
<p>S5-6:42 Students demonstrate their understanding of the Patterns of Human Health/Disease by...</p> <ul style="list-style-type: none"> Explaining the specialized function of white blood cells in the circulatory system 	
<p>S5-6:43 Students demonstrate their understanding of the Patterns of Human Development by...</p> <ul style="list-style-type: none"> Drawing/diagramming/modeling the life span of humans in a timeline highlighting major points in the cycle (e.g., one cell grows into a many-celled embryo, composed of different types of cells--grows into a fetus--baby is born--grows into a toddler--grows into a child--grows into a teenager--grows into an adult). Explaining what occurs in the fertilization processes and early embryo development (e.g., sperm + egg combine to produce a new individual). 	<p>Diversity of Life Investigation 7, Part 1, pp. 218-223 Resources, p. 43</p>

EARTH/SPACE SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S5-6:44 Students demonstrate their understanding of Characteristics of the Solar System by...</p> <ul style="list-style-type: none"> Creating a diagram or model and explaining the effects of the orbit of the earth around the sun AND the moon around the earth. 	<p>Planetary Science Investigation 3, Part 2, pp. 94-98 Investigation 9, Part 2, pp. 288-292 Weather and Water Investigation 3, Part 2, pp. 97-102</p>
<p>S5-6:45 Students demonstrate their understanding of Processes and Change over Time within Systems of the Universe by...</p>	

<ul style="list-style-type: none"> • Explaining, after viewing a picture or illustration with sun/moon showing true relative size, why the sun and moon appear to be the same size when seen from the earth. • Relating this phenomenon to lunar and solar eclipses and explaining how technology has allowed scientists to extend existing ideas about the solar system. 	<p>FOSS provides the opportunity to address this expectation. See below:</p> <p>Water Planet Science Resources, p. 6</p> <p>Planetary Science Resources, p. 39</p> <p>Water Planet Science Resources, pp. 18-19</p> <p>Planetary Science Investigation 9, Part 2, pp. 288-292 Resources, pp. 74-77, 90-95</p>
<p>S5-6:46 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Using data about a rock's physical characteristics to explain the rock's history and connection to the Rock Cycle. • Creating a model of the earth's structure and explaining the nature of the layers. 	<p>Earth History Investigation 4, Parts 5-6, pp. 150-162 Investigation 5, Part 3, pp. 183-187 Investigation 8, Part 1, pp. 254-258 Resources, pp. 93-97 CD, Rock Database</p> <p>Earth History Resources, pp. 100-101</p>
<p>S5-6:47 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Identifying examples of geologic changes on the earth's surface, where possible, in the local environment (include slow and fast changes). • Plotting locations of volcanoes and earthquakes and using these data to explain the relationship between location and plate movement. • Explaining the processes that occur when rocks are changed from one form to another. • Determining the relative age of fossils within sedimentary rocks from their location in the strata (i.e. which fossils within a sequence are 	<p>Landforms Investigation 2, Parts 1-2, pp. 8-23 Investigation 3, Parts 1-3, pp. 8-24 Science Stories, pp. 15-17, 22-29</p> <p>Earth History Investigation 4, Parts 3-4, pp. 138-149 Resources, pp. 93-97, 101-105 CD, Earth Processes Video; Weathering and Erosion</p> <p>Earth History Investigation 8, Part 1, pp. 254-258 Resources, pp. 93-97 CD, Rock Database CD, Formation of Metamorphic, Sedimentary and Igneous Rocks</p> <p>Earth History Investigation 7, Part 1, pp. 234-242</p>

older).	Resources, pp. 83-86
<p>S5-6:48 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Diagramming, labeling and explaining the process of the water cycle (e.g., evaporation, precipitation, run-off). 	<p>Water Planet Investigation 4, Part 1, pp. 184-197 Resources, pp. 67-70</p> <p>Weather and Water Investigation 7, Parts 1-2, pp. 232-243 CD, Cycles: Water Cycle</p>
<p>S5-6:49 Students demonstrate their understanding of Processes and Change within Natural Resources by...</p> <ul style="list-style-type: none"> • Identifying examples of good and poor management of natural resources. • Explaining how overpopulation of living things can degrade an environment due to increased use of resources. 	<p>Landforms Science Stories, pp. 13-14</p> <p>Earth History Resources, pp. 64-67</p> <p>Populations and Ecosystems Investigation 7, pp. 210-215 Resources, pp. 28-29, 31-41</p>

GRADES: 7-8

SCIENTIFIC INQUIRY (Note: Inquiry Grade Expectations are skill-based and apply to all concept areas.)

Note: FOSS is an inquiry based program and provides the opportunity to address these expectations directly or with the teacher's guidance.

GRADE EXPECTATION	FOSS
<p>S7-8:1 Students demonstrate their understanding of SCIENTIFIC QUESTIONING by...</p> <ul style="list-style-type: none"> • Developing questions that reflect prior knowledge. • Refining and focusing broad ill-defined questions. 	<p>FOSS provides the opportunity to address this expectation. See below: Diversity of Life Investigation 8, Part 2, pp. 244-252 Planetary Science Investigation 5, Parts 2-3, pp. 158-167 Human Brain and Senses Investigation 8, Part 1, pp. 240-245 Chemical Interactions Investigation 7, Part 4, pp. 222-228</p> <p>FOSS provides the opportunity to address this expectation during class discussions.</p>
<p>S 7-8: 2 Students demonstrate their understanding of PREDICTING AND HYPOTHESIZING by...</p> <ul style="list-style-type: none"> • Predicting results (evidence) that support the hypothesis. • Proposing a hypothesis based upon a scientific concept or principle, observation, or experience that identifies the relationship among variables. 	<p>FOSS provides the opportunity to address this expectation. See below: Diversity of Life Investigation 9, Part 2, pp. 278-285 Earth History Investigation 4, Part 3, pp. 138-146 Weather and Water Investigation 4, Part 1, pp. 121-130 Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>FOSS provides the opportunity to address this expectation. See below: Diversity of Life Investigation 9, Part 2, pp. 278-285 Earth History Investigation 4, Part 3, pp. 138-146 Weather and Water Investigation 4, Part 1, pp. 121-130 Force and Motion Investigation 2, Part 3, pp. 89-99</p>
<p>S7-8:3 Students demonstrate their understanding of EXPERIMENTAL DESIGN by...</p> <ul style="list-style-type: none"> • Writing a plan related to the question and prediction that includes: 	<p>FOSS provides the opportunity to address this expectation. See below:</p>

<p>a. A diagram labeled using scientific terminology that supports procedures and illustrates the setup.</p> <p>b. A procedure that lists significant steps that identify manipulated (independent) and responding (dependent) variables.</p> <p>c. A control for comparing data when appropriate.</p> <p>d. Identification of tools and procedures for collecting data and reducing error.</p>	<p>Diversity of Life Investigation 8, Part 2, pp. 244-252</p> <p>Planetary Science Investigation 5, Parts 2-3, pp. 158-167</p> <p>Human Brain and Senses Investigation 8, Part 1, pp. 240-245</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p>
<p>S7-8:4 Students demonstrate their ability to CONDUCT EXPERIMENTS by...</p> <ul style="list-style-type: none"> • Accurately quantifying observations using appropriate measurement tools. • Using technology to collect, quantify, organize, and store observations (e.g., use of probe). • Drawing scientifically: <ul style="list-style-type: none"> a. Recording multiple perspectives to scale (e.g., magnification, cross section, top view, side view, etc.). 	<p>Populations and Ecosystems Investigation 5, Part 1, pp. 142-150</p> <p>Weather and Water Investigation 5, Part 1, pp. 152-162</p> <p>Force and Motion Investigation 6, Part 2, pp. 229-235</p> <p>Planetary Science Investigation 8, Parts 3-4, pp. 260-270</p> <p>Populations and Ecosystems Investigation 8, Part 2, pp. 234-243</p> <p>Force and Motion Investigation 5, Part 2, pp. 177-201</p> <p>Diversity of Life Investigation 2, Parts 2-3, pp. 79-91</p> <p>Planetary Science Investigation 6, Part 3, pp. 201-205</p> <p>Human Brain and Senses Investigation 3, Part 1, pp. 92-100</p>
<p>S57-8:5 Students demonstrate their ability to REPRESENT DATA by...</p> <ul style="list-style-type: none"> • Representing independent variable on the “X” axis and dependent variable on the “Y” axis. • Determining a scale for a diagram that is appropriate to the task. • Using technology to enhance a representation. 	<p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Chemical Interactions Investigation 7, Part 4, pp. 222-228</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>Weather and Water Investigation 4, Part 1, pp. 121-130</p> <p>Chemical Interactions Investigation 7, Part 4, pp. 222-228</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>FOSS provides the opportunity to address this expectation. See below: Weather and Water Investigation 4, Part 1, pp. 121-130 Chemical Interactions</p>

<ul style="list-style-type: none"> • Using color, texture, symbols and other graphic strategies to clarify trends/patterns within a representation. 	<p>Investigation 7, Part 4, pp. 222-228 Force and Motion Investigation 2, Part 3, pp. 89-99</p> <p>FOSS provides the opportunity to address this expectation. See below: Weather and Water Investigation 4, Part 1, pp. 121-130 Chemical Interactions Investigation 7, Part 4, pp. 222-228 Force and Motion Investigation 2, Part 3, pp. 89-99</p>
<p>S 7-8: 6 Students demonstrate their ability to ANALYZE DATA by...</p> <ul style="list-style-type: none"> • Identifying, considering and addressing experimental errors (e.g., errors in experimental design, errors in data collection procedures). • Identifying limitations and/or sources of error within the experimental design. 	<p>FOSS provides the opportunity to address this expectation during post investigation discussions. See below: Planetary Science Investigation 5, Parts 2-3, pp. 158-167 Diversity of Life Investigation 8, Part 2, pp. 244-252 Force and Motion Investigation 1, Part 2, pp. 57-62</p> <p>FOSS provides the opportunity to address this expectation during post investigation discussions. See below: Planetary Science Investigation 5, Parts 2-3, pp. 158-167 Diversity of Life Investigation 8, Part 2, pp. 244-252 Force and Motion Investigation 1, Part 2, pp. 57-62</p>
<p>S7-8:7 Students demonstrate their ability to EXPLAIN DATA by...</p> <ul style="list-style-type: none"> • Using scientific concepts, models, and terminology to report results, discuss relationships, and propose new explanations. • Generating alternative explanations. • Documenting and explaining changes in experimental design. • Sharing conclusion/summary with appropriate audience beyond the research group. 	<p>Weather and Water Investigation 4, Part 1, pp. 121-130 Chemical Interactions Investigation 9, Part 2, pp. 288-297 Planetary Science Investigation 5, Parts 2-4, pp. 158-173</p> <p>FOSS provides the opportunity to address this expectation during post investigation discussions.</p> <p>FOSS provides the opportunity to address this expectation.</p> <p>FOSS provides the opportunity to address this expectation. See below: Diversity of Life Investigation 8, Part 2, pp. 121-130</p>

<ul style="list-style-type: none"> Using mathematical analysis as an integral component of the conclusion. 	<p>Chemical Interactions Investigation 7, Part 4, pp. 222-228</p> <p>Weather and Water Investigation 5, Part 1, pp. 152-162</p> <p>Electronics Investigation 8, Parts 2-4, pp. 256-272</p> <p>Force and Motion Investigation 2, Part 3, pp. 89-99</p>
<p>S7-8:8 Students demonstrate their ability to APPLY RESULTS by...</p> <ul style="list-style-type: none"> Identifying additional data that would strengthen an investigation. Explaining limitations for generalizing findings. Explaining relevance of findings (e.g., So what?) to the local environment (community, school, classroom). Devising recommendations for further investigation and making decisions based on evidence for experimental results. 	<p>FOSS provides the opportunity to address this expectation through the use of FOSS Resource books and independent research.</p> <p>FOSS provides the opportunity to address this expectation during post investigation discussions.</p> <p>FOSS provides the opportunity to address this expectation during post investigation discussions.</p> <p>FOSS provides the opportunity to address this expectation during post investigation discussions.</p>

PHYSICAL SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
<p>S7-8:9 Students demonstrate their understanding of the Properties of Matter by...</p> <ul style="list-style-type: none"> Calculating the density of regularly and irregularly shaped objects. Explaining why all three states of matter can be observed in a room that has a uniform temperature. 	<p>Weather and Water Investigation 5, Part 1, pp. 152-162 Resources, pp. 27-31</p> <p>Planetary Science Investigation 8, Parts 3-4, pp. 260-270</p> <p>Chemical Interactions Investigation 7, Parts 2-5, pp. 210-234 Resources, pp. 42-48</p>
<p>S7-8:10 Students demonstrate their understanding of the Properties of Matter by...</p> <ul style="list-style-type: none"> Illustrating through words or representations the differences between atoms and molecules. Recognizing that all living and non-living things are formed from combinations of about 100 elements. 	<p>Chemical Interactions Investigation 9, Parts 1-2, pp. 280-297 Investigation 10, Part 2, pp. 330-336 Resources, pp. 63-68, 73-77, 96 Video: Atoms and Molecules</p> <p>Chemical Interactions Investigation 2, Parts 1-2, pp. 70-80 Resources, pp. 43-13, 94-96</p>

<p>S7-8:12 Students demonstrate their understanding of the States of Matter by...</p> <ul style="list-style-type: none"> Modeling (plays, models, diagrams) molecular motion of the three states of matter and explaining how that motion defines each state. 	<p>Chemical Interactions Investigation 3, Parts 1-3, pp. 92-113 Investigation 4, Parts 1-3, pp. 122-141 Investigation 7, Parts 1-4, pp. 204-228 Resources, pp. 16-27, 42-48 CD, Particles in Solid, Liquid and Gas Weather and Water Video: Molecules in Solids, Liquids and Gases</p>
<p>S7-8:13 Students demonstrate their understanding of the Properties of a Gas by...</p> <ul style="list-style-type: none"> Using real world examples (tires, balloons, soda), predict and explain the effect that a change in one variable (pressure, temperature or volume) will have on the others 	<p>Chemical Interactions Investigation 3, Parts 1-3, pp. 92-113 Investigation 4, Part 1, pp. 122-129 Resources, pp. 18-22, 44-46 Weather and Water Investigation 5, Part 3, pp. 169-174 Investigation 8, Part 1, pp. 258-264 Resources, pp. 48-52 CD, Gas in a Syringe</p>
<p>S7-8:14 Students demonstrate their understanding of Physical Change by...</p> <ul style="list-style-type: none"> Constructing their own models that represent the states of matter at the molecular level and explaining the effect of increased and decreased heat energy on the motion and arrangement of molecules. Observing the physical processes of evaporation and condensation, and accounting for the disappearance and appearance of liquid water in terms of molecular motion and conservation of mass. 	<p>Chemical Interactions Investigation 3, Parts 1-3, pp. 92-113 Investigation 4, Parts 1-3, pp. 122-141 Investigation 7, Parts 1-4, pp. 204-228 Resources, pp. 16-27, 42-48 CD, Particles in Solid, Liquid and Gas Weather and Water Video: Molecules in Solids, Liquids and Gases</p> <p>Chemical Interactions Investigation 7, Parts 5, pp. 202-234 Resources, pp. 42-48 CD, Particles in Solid, Liquid and Gas Weather and Water Investigation 6, Parts 1-3, pp. 190-205</p>
<p>S7-8:15 Students demonstrate their understanding of Chemical Change by...</p> <ul style="list-style-type: none"> Observing evidence of chemical change and offering qualitative explanations for the observed changes in substances in terms of interaction and rearrangement of the atoms, and the production of new substances with different characteristics, but the same mass as the original substance. 	<p>Chemical Interactions Investigation 9, Parts 1-4, pp. 280-312 Investigation 10, Parts 1-2, pp. 323-336 Resources, pp. 63-68, 73-77 Video: Atoms and Molecules</p>

<p>S7-8:19 Students demonstrate their understanding of Motion by...</p> <ul style="list-style-type: none"> • Designing investigations that illustrate the effect of a change in mass or velocity on an object's momentum. • Describing and explaining how the acceleration of an object is proportional to the force on the object and inversely proportional to the mass of the object. 	<p>Force and Motion Investigation 8, Parts 1-2, pp. 284-293 Resources, pp. 70-74 Video: Understanding Car Crashes</p> <p>Force and Motion Investigation 8, Part 1, pp. 284-293 Resources, pp. 70-74</p>
<p>S7-8:21 Students demonstrate their understanding of Force by...</p> <ul style="list-style-type: none"> • Diagramming or describing, after observing a moving object, the forces acting on the object before and after it is put into motion (Students include in their diagram or description, the effect of these forces on the motion of the object.) 	<p>Force and Motion Investigation 6, Parts 1-4, pp. 218-245 Resources, pp. 50-52 CD, Force Bench</p>
<p>S7-8:22 Students demonstrate their understanding of Gravitational force by...</p> <ul style="list-style-type: none"> • Describing and explaining the effects of gravitational force on objects in the Solar System, and identifying evidence that the force of gravity is relative to the mass of objects and their distance apart. 	<p>Force and Motion Investigation 7, Part 1, pp. 256-261 Resources, pp. 62-69 Planetary Science Resources, p. 70</p>
<p>S7-8:23 Students demonstrate their understanding of Heat Energy by...</p> <ul style="list-style-type: none"> • Creating a diagram, model, or analogy for a material in a warm and cool state, showing or describing the motion of the molecules. • Creating a diagram, model, or analogy to explain differences among conduction, convection, and radiation, and using their visual to explain how heat energy travels in different directions and through different materials by each method of energy transfer. 	<p>Weather and Water Resources, pp. 25-26 Video: Molecules in Solids, Liquids and Gases Chemical Interactions Investigation 7, Parts 2-5, pp. 210-234 Resources, pp. 32-37, 42-48 CD, Particles in Solid, Liquid and Gas</p> <p>Weather and Water Investigation 4, Parts 1-2, pp. 121-139 Investigation 5, Parts 2-3, pp. 163-174 Resources, pp. 22-26, 32-33 Video: Conduction through Metals CD, Heat and Energy</p>
<p>S7-8:24 Students demonstrate their understanding of Electrical Energy by...</p> <ul style="list-style-type: none"> • Building an electric circuit and explaining the transfer of electrical energy into heat, light, and sound, leaving the system, but not destroyed. 	<p>Electronics Investigation 1, Parts 1-5, pp. 55-79 Resources, pp. 1-2</p>

<ul style="list-style-type: none"> • Predicting the effect of a change in voltage in the circuit system. 	CD, Tech Manual: Circuits Electronics Investigation 3, Parts 1-4, pp. 119-135
S7-8:28 Students demonstrate their understanding of Light Energy by... <ul style="list-style-type: none"> • Designing demonstrations that represent the characteristics of light energy transfer. • Explaining that visible light is made up of colored light waves. 	

LIFE SCIENCE

<i>GRADE EXPECTATION</i>	<i>FOSS</i>
S7-8:30 Students demonstrate their understanding of Structure and Function-Survival Requirements by... <ul style="list-style-type: none"> • Conducting experiments that investigate how different concentrations of materials (inside and outside a cell) will cause water to flow into or out of cells. • Examining cells under a microscope and identifying cell wall and chloroplasts, and by comparing the function of a common cell structure, such as membrane in all cells, with the function of a unique structure, such as chloroplasts in plant cells. • Examining cells under a microscope, identifying the nucleus and explaining the relationship between genes (located in the nucleus) and traits. 	Diversity of Life Investigation 3, Parts 1-3, pp. 102-122 Investigation 4, Parts 1-2, pp. 133-141 Resources, pp. 27-30 Diversity of Life Investigation 4, Parts 1-2, pp. 133-141 Resources, pp. 27-30
S7-8:31 Students demonstrate their understanding of Reproduction by ... <ul style="list-style-type: none"> • Explaining that cells come only from other living cells and that genes duplicate in the process of cell division producing an identical copy of the original cell. • Describing the relationship between human growth and cell division. 	Populations and Ecosystems Resources, pp. 53-54 Populations and Ecosystems Resources, pp. 53-54
S7-8:33 Students demonstrate their understanding of how Energy Flow Within Cells Supports an Organism's Survival by... <ul style="list-style-type: none"> • Explaining that energy from the sun is transferred and utilized in plant and animal cells through chemical changes and then transferred into other forms such as heat (e.g., 	Populations and Ecosystems Resources, pp. 14-17 Diversity of Life Resources, pp. 36-37

<p>using a word equation rather than a chemical equation)..</p>	
<p>S7-8:34 Students demonstrate their understanding of Energy Flow in an Ecosystem by...</p> <ul style="list-style-type: none"> •Describing how light is transformed into chemical energy by producers and how this chemical energy is used by all organisms to sustain life (e.g., using a word equation rather than a chemical equation). 	<p>Populations and Ecosystems Investigation 5, Parts 2-4, pp. 151-169 Resources, pp. 14-18 Diversity of Life Resources, pp. 36-37</p>
<p>S7-8:36 Students demonstrate their understanding of Equilibrium in an Ecosystem by...</p> <ul style="list-style-type: none"> •Identifying an abiotic or biotic change in a local ecosystem, predicting the short and long-term effects of this change and drawing conclusions about the stability of the system (e.g., local river study). 	<p>Populations and Ecosystems Investigation 7, pp. 210-215 Resources, pp. 31-41</p>
<p>S7-8:37 Students demonstrate their understanding of Recycling in an Ecosystem by...</p> <ul style="list-style-type: none"> •Explaining how products of decomposition are utilized by the ecosystem to sustain life while conserving mass (e.g., worm farm, compost). 	<p>Populations and Ecosystems Resources, p. 18</p>
<p>S7-8:38 Students demonstrate their understanding of Classification of Organisms by...</p> <ul style="list-style-type: none"> •Comparing and sorting organisms with similar characteristics into groups based on internal and external structures recognized by scientists. •Recognizing that individuals that can reproduce with one another and produce fertile offspring are classified as a species. 	<p>Diversity of Life Investigation 3, Part 3, pp. 116-122 Resources, pp. 16-17</p> <p>Populations and Ecosystems Resources, p. 5</p>
<p>S7-8:39 Students demonstrate their understanding of Evolution/Natural Selection by...</p> <ul style="list-style-type: none"> •Identifying that traits occur randomly. •Explaining that advantageous traits of organisms are passed on through reproduction. •Comparing sexual with asexual reproduction. 	<p>Populations and Ecosystems Investigation 10, Parts 1-3, pp. 302-317 Resources, pp. 58-61</p> <p>Populations and Ecosystems Investigation 10, Parts 2-3, pp. 311-317 Resources, pp. 58-61</p> <p>Populations and Ecosystems Resources, pp. 53-54 Diversity of Life Investigation 7, Part 1, pp. 218-223 Resources, pp. 26, 43-44</p>

HUMAN BODY

GRADE EXPECTATION	FOSS
<p>S7-8:40 Students demonstrate their understanding of Human Heredity by...</p> <ul style="list-style-type: none"> • Explaining how traits are passed on from the instructions of one or more genes that are inherited from the parents. 	<p>Populations and Ecosystems Investigation 9, Parts 1-4, pp. 262-291 Resources, pp. 46-53</p>
<p>S7-8:41 Students demonstrate their understanding of Human Body Systems by...</p> <ul style="list-style-type: none"> • Explaining how the human body responds to environmental or biological factors to maintain internal equilibrium. • Explaining the function of the lungs in respiration. • Developing models that illustrate the human reproductive system. 	
<p>S7-8:42 Students demonstrate their understanding of the Patterns of Human Health/Disease by...</p> <ul style="list-style-type: none"> • Explaining how a variety of microbes (e.g., virus, bacteria, fungi) and toxic materials can interfere with body systems and cause harm. 	<p>Diversity of Life Resources, p. 68</p>

EARTH/SPACE SCIENCE

GRADE EXPECTATION	FOSS
<p>S7-8:45 Students demonstrate their understanding of Processes and Change over Time within Systems of the Universe by...</p> <ul style="list-style-type: none"> • Identifying and labeling the location of the sun in our solar system and its relationship to the galaxy. 	<p>Planetary Science Investigation 10, Parts 1-3, pp. 318-324 Resources, pp. 84-85, 100 CD, Notebook: Sun</p>
<p>S7-8:48 Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</p> <ul style="list-style-type: none"> • Diagramming, labeling and explaining the process of the water cycle (precipitation, evaporation, condensation, runoff, ground water, transpiration). • Identifying the major gases of earth's atmosphere. 	<p>Weather and Water Investigation 7, Parts 1-2, pp. 232-243 CD, Cycles: Water Cycle</p> <p>Weather and Water Investigation 2, Part 2, pp. 76-80 Resources, pp. 6-7</p> <p>Chemical Interactions</p>

<ul style="list-style-type: none"> • Explaining how differential heating can affect the earth's weather patterns. • Creating a model showing the tilt of the earth on its axis and explaining how the sun's energy hitting the earth surface creates the seasons. 	<p>Resources, p. 11</p> <p>Weather and Water Investigation 8, Part 2, pp. 265-270 Resources, pp. 52-53 CD, Climate Factors: Local Wind</p> <p>Weather and Water Investigation 3, Parts 2-3, pp. 97-110 Resources, pp. 17-19 CD, Cycles: Seasons</p>
<p>S7-8:49 Students demonstrate their understanding of Processes and Change within Natural Resources by...</p> <ul style="list-style-type: none"> • Investigating natural resources in the community and monitoring/managing them for responsible use. • Identifying a human activity in a local environment and determining the impact of that activity on a specific (local) natural resource. • Researching the impact of different human activities on the earth's land, waterways and atmosphere, and describing possible effects on the living organisms in those environments. 	<p>Populations and Ecosystems Investigation 7, pp. 210-215 Resources, pp. 31-41</p> <p>Earth History Resources, pp. 64-67</p> <p>Populations and Ecosystems Resources, pp. 28-29</p> <p>Earth History Resources, pp. 64-67</p> <p>Populations and Ecosystems Investigation 7, pp. 210-215 Resources, pp. 28-29, 31-41</p> <p>Earth History Resources, pp. 64-67</p>