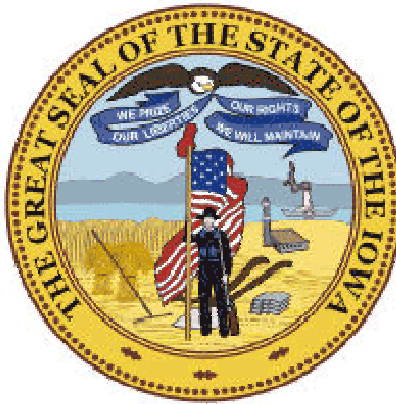




**FOSS Full Option Science System
(FOSS™)
K-8**

Correlation With

**Iowa
Science Core Curriculum**



Iowa Science Core Curriculum

Correlation

To

Full Option Science System

The following is a correlation of the grades K-8 portions of the Iowa Science Core Curriculum to Full Option Science System (FOSS).

This document is intended to show how FOSS can be used to meet the Science as Inquiry, Earth, Life and Physical science standards of the Iowa Science Core Curriculum. Because FOSS focuses on teaching fewer topics in greater depth and because the investigations are grounded in children's everyday experiences, FOSS lends itself particularly well to the Quadrant D illustrations for rigor and relevance.

Citations from FOSS include the original K-6 FOSS modules, the FOSS Middle School modules designed for grades 6-8, and the newest additions to the FOSS program (publication date of 2009).

FOSS modules are developed based on research on typical patterns of human brain development and are grouped in the following clusters: Kindergarten; Grades 1-2; Grades 3-4; Grades 5-6 and Grades 6-8. For the purposes of this correlation, citations for the primary elementary grades will be mostly from kits designed for Grades K-2. Citations for Intermediate elementary grades will be from kits designed for Grades 3-6. Citations for Middle School will be from kits originally designed for Grades 5-6 self-contained classrooms and from FOSS Middle School kits, which were designed for multiple class use. School districts may want to consider which modules fit their curriculum needs based on content priorities AND module design, especially at Grade 6.

This correlation shows *representative* examples of investigations and activities from the FOSS program. A citation does *not* reflect all of the investigations or activities from FOSS that might address a particular concept or skill set.

September 2008

Primary Elementary Grades

Curricular Area: Science as Inquiry

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
<i>Students will:</i>		
Ask questions about objects, organisms, and events in the environment.	<p>This standard is addressed in ALL FOSS modules. See for example:</p> <p><u>Trees</u> Investigation 1, Parts 1-8</p> <p><u>Animals Two by Two</u> Investigation 4, Parts 1-3</p> <p><u>Wood and Paper</u> Investigation 2, Parts 1-4 <u>Wood and Paper FOSS Science Stories</u></p> <p><u>Pebbles, Sand and Silt</u> Investigation 1, Parts 1-5</p> <p><u>Air and Weather</u> Investigation 2, Parts 1-4</p> <p><u>Plants and Animals</u> Investigation 3, Parts 1-3</p> <p><u>Insects</u> Investigation 5, Parts 1-3</p>	<p>Pages 7-37</p> <p>Pages 8-23</p> <p>Pages 8-23 Pages 9-12 “Are You a Scientist?”</p> <p>Pages 8-29</p> <p>Pages 8-27</p> <p>Pages 122-140</p> <p>Pages 10-24</p>
Plan and conduct simple investigations.	<p>This standard is addressed in ALL FOSS modules. See for example:</p> <p><u>Wood and Paper</u> Investigation 1, Parts 3-5</p> <p><u>Fabric</u> Investigation 2, Parts 1-4</p> <p><u>Balance and Motion</u> Investigation 3, Parts 1-3</p> <p><u>New Plants</u> Investigation 2, Parts 1-3</p> <p><u>Solids and Liquids</u> Investigation 4, Parts 1-3</p> <p><u>Pebbles, Sand and Silt</u> Investigation 3, Parts 1-5</p> <p><u>Insects and Plants</u> Investigation 2, Parts 1-3</p>	<p>Pages 20-32</p> <p>Pages 7-25</p> <p>Pages 6-25</p> <p>Pages 8-28</p> <p>Pages 7-27</p> <p>Pages 8-29</p> <p>Pages 93-117</p>
Use tools to gather data and extend the senses.	<p>This standard is addressed throughout the FOSS modules. See for example:</p> <p><u>Fabric</u> Investigation 1, Parts 1-6</p> <p><u>Wood and Paper</u> Investigation 4, Parts 1-2</p> <p><u>Solids and Liquids</u> Investigation 3, Parts 1-4</p> <p><u>Pebbles, Sand and Silt</u> Investigation 2, Parts 1-4</p>	<p>Pages 6-33</p> <p>Pages 8-18</p> <p>Pages 8-27</p> <p>Pages 8-29</p>

	<p><u>Air and Weather</u> Investigation 2, Parts 1-4</p> <p><u>Insects</u> Investigation 1, Parts 1-3</p> <p><u>Insects and Plants</u> Investigation 3, Parts 1-3</p>	<p>Pages 8-27</p> <p>Pages 8-25</p> <p>Pages 132-155</p>
Use mathematics in scientific inquiry.	<p>Mathematics is used throughout the FOSS investigations as students collect data and share it as a class. It is also reinforced at grades 1-2 through Math Problems of the Week, which feature math problems related to the concept being studied.</p> <p><u>Wood and Paper</u> Investigation 1, Parts 4-5</p> <p><u>Trees</u> Investigation 2, Parts 2-3 Home/School Connection 1</p> <p><u>Pebbles, Sand and Silt</u> Investigation 2, Parts 1-3 and Math Extensions A and B for Investigations 1-4</p> <p><u>Insects and Plants</u> Investigation 3, Parts 1-3 and extensions Math Extensions A and B for Investigations 1-5</p> <p><u>Air and Weather</u> Investigation 2, Parts 1-4</p>	<p>Pages 24-32</p> <p>Pages 10-19 Duplication Master Page 33</p> <p>Pages 8-23 Duplication Masters Pages 14-20</p> <p>Pages 132-155</p> <p>Duplication Masters Pages 256 - 265</p> <p>Pages 8-27</p>
Use data to construct reasonable explanations.	<p>This standard is addressed throughout the FOSS modules. See for example:</p> <p><u>Wood and Paper</u> Investigation 1, Parts 1-5</p> <p><u>Animals Two by Two</u> Investigation 2, Parts 1-4</p> <p><u>New Plants</u> Investigation 2, Parts 1-3</p> <p><u>Balance and Motion</u> Investigation 1, Parts 1-4</p> <p><u>Solids and Liquids</u> Investigation 4, Parts 1-3</p> <p><u>Insects and Plants</u> Investigation 1, Parts 1-3</p>	<p>Pages 8-32</p> <p>Pages 9-24</p> <p>Pages 8-28</p> <p>Pages 8-28</p> <p>Pages 7-27</p> <p>Pages 57-76</p>
Communicate investigations and explanations orally, in writing or through drawings.	<p>This standard is addressed in all FOSS modules as students communicate within small groups and with the whole class, and as they record information in their science journals/lab notebooks. See for example:</p> <p><u>Trees</u></p>	

	<p>Investigation 1, Parts 1-8 <u>Fabric</u> Investigation 2, Parts 1-4 <u>Balance and Motion</u> Investigation 1, Parts 1-3 <u>Air and Weather</u> Investigation 1, Parts 1-6 <u>Plants and Animals</u> Investigation 1, Parts 1-3</p>	<p>Pages 7-37 Pages 7-25 Pages 8-23 Pages 8-38 Pages 52-74</p>
<p>Follow appropriate safety procedures when conducting investigations.</p>	<p>Safety is a top priority in FOSS. General and specific safety instructions are included in the teacher background and lesson plans, and a safety poster is included in each kit. See for example: <u>Trees</u> Overview Investigation 3, Parts 2-9 <u>Animals Two by Two</u> Investigation 3, Parts 1-3 <u>Insects and Plants</u> Overview Investigation 1, Parts 1-3 <u>Air and Weather</u> Investigation 1, Parts 4-6 <u>Balance and Motion</u> Investigation 1, Part 4</p>	<p>Page 15 Pages 12-38 Pages 8-20 Page 23 Pages 57-76 Pages 21-38 Pages 24-28</p>

Primary Elementary Grades

Curricular Area: Earth and Space Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Apply and understand properties of earth materials.	<p><u>Wood and Paper</u> Investigation 1, Parts 4-5</p> <p><u>Animals Two by Two</u> Investigation 3, Parts 1-3</p> <p><u>Pebbles, Sand and Silt</u> throughout, such as Investigation 1, Parts 1-5 Investigation 4, Parts 1-3</p> <p><u>Pebbles, Sand and Silt FOSS Science Stories</u></p> <p><u>Air and Weather</u> Investigation 2, Part 4</p> <p><u>FOSS Web Site</u></p>	<p>Pages 24-32 (water)</p> <p>Pages 8-20 (soil)</p> <p>Pages 8-29 Pages 8-25</p> <p>Pages 3-31</p> <p>Pages 24-27 www.fossweb.com</p>
Apply and understand observable information about daily and seasonal weather conditions.	<p><u>Trees</u> Weather observation folio and tools Investigation 3, Parts 1-9</p> <p><u>Trees FOSS Science Stories</u></p> <p><u>Fabric FOSS Science Stories</u></p> <p><u>Air and Weather</u> ALL, such as Investigation 2, Parts 1-4 Investigation 4, Parts 1-2</p> <p><u>Air and Weather FOSS Science Stories</u></p> <p><u>FOSS Web Site: Air and Weather</u></p>	<p>Pages 1-24 Pages 10-38 “Trees Through the Seasons” Pages 14-23 Pages 16-24</p> <p>Pages 8-27 Pages 8-18</p> <p>Pages 3-23 www.fossweb.com</p>
Apply and understand events around us that have repeating patterns including the seasons of the year, day and night.	<p><u>Trees</u> Investigation 3, Parts 1-9 <u>Trees FOSS Science Stories</u></p> <p><u>Air and Weather</u> Investigation 4, Parts 1-3</p> <p><u>New Plants</u> Investigation 1, Parts 1-3 <u>New Plants FOSS Science Stories</u></p> <p><u>Insects</u> Investigation 3, Parts 1-3</p> <p><u>Insects FOSS Science Stories</u></p> <p><u>Insects and Plants Resources</u></p> <p><u>FOSS Web Site</u></p>	<p>Pages 10-38 Pages 14-23</p> <p>Pages 8-24</p> <p>Pages 8-30 (repeating patterns in life cycles) Pages 12-15</p> <p>Pages 8-26 (repeating patterns in life cycles) Pages 16-33</p> <p>Pages 15-19,37-56 www.fossweb.com</p>

Primary Elementary Grades

Curricular Area: Life Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Apply and understand the characteristics of living things and how living things are both similar to and different from each other and from non-living things.	<p>Trees Investigation 1, Parts 1-8 <u>Trees FOSS Science Stories</u></p> <p>Animals Two by Two ALL, such as Investigation 2, Parts 1-4 Investigation 5, Parts 1-3 <u>Animals Two by Two FOSS Science Stories</u></p> <p>Insects ALL, such as Investigation 3, Parts 1-3 <u>Insects FOSS Science Stories</u></p> <p>New Plants ALL, such as Investigation 2, Parts 1-3 <u>New Plants FOSS Science Stories</u></p> <p>Insects and Plants ALL, such as Investigation 4, parts 1-5 <u>Insects and Plants Resources</u></p> <p>Plants and Animals ALL, such as Investigation 1, Parts 1-3 <u>Plants and Animals Resources</u></p> <p>FOSS Web Site</p>	<p>Pages 7-37 Pages 3-13</p> <p>Pages 9-24 Pages 10-27</p> <p>Pages 4-24</p> <p>Pages 8-26 Pages 3-46</p> <p>Pages 8-28</p> <p>Pages 3-39</p> <p>Pages 168-192 Pages 3-56</p> <p>Pages 52-74 Pages 3-46 www.fossweb.com</p>
Apply and understand life cycles of plants and animals.	<p>Animals Two by Two Investigation 5, Parts 1-3 <u>Animals Two by Two FOSS Science Stories</u></p> <p>Insects ALL, such as Investigation 2, Parts 1-3 <u>Insects FOSS Science Stories</u></p> <p>New Plants Investigation 1, Parts 1-3 <u>New Plants FOSS Science Stories</u></p> <p>Insects and Plants ALL, such as Investigation 1, Parts 1-3 <u>Insects and Plants Resources</u></p> <p>FOSS Web Site</p>	<p>Pages 10-27</p> <p>Pages 20-24</p> <p>Pages 8-24 Pages 8-26</p> <p>Pages 8-30</p> <p>Pages 12-15</p> <p>Pages 57-76 Pages 15-19, 37-56 www.fossweb.com</p>
Apply and understand the basic needs of plants and animals and how they interact with each other and their	<p>Animals Two by Two throughout, such as Investigation 1, Parts 2-3 Investigation 5, Parts 1-3</p>	<p>Pages 17-25 Pages 10-27</p>

<p>physical environment.</p>	<p><u>Animals Two by Two FOSS Science Stories</u> <u>Insects</u> throughout, such as Investigation 3, Parts 1-3 <u>Insects FOSS Science Stories</u> <u>New Plants</u>, throughout, such as Investigation 1, Parts 1-3 <u>New Plants FOSS Science Stories</u> <u>Insects and Plants</u> throughout, such as Investigation 1, Parts 1-3 <u>Insects and Plants Resources</u> <u>Plants and Animals</u> throughout, such as Investigation 3, Parts 1-3 And Video <u>Plants and Animals Resources</u></p>	<p>Pages 4-23 Pages 8-26 Pages 3-7, 22-41 Pages 8-30 Pages 3-7, 22-39 Pages 57-76 Pages 3-14, 44-56 Pages 122-140 Video: "How Plants Live in Different Places" Pages 3-8, 21-27, 28-46</p>
<p>Apply and understand ways to help take care for the environment.</p>	<p>Care for the environment and other creatures with whom humans share the Earth is addressed in lessons, but also in a consistent approach of using only what is needed, and recycling/re-using materials whenever possible. Even commonly discarded items such as paper plates and plastic cups are re-used as long as possible, to model conservation and careful use of resources. See for example. <u>Trees</u> Investigation 1, Parts 1, 2, 7, 8 <u>Trees FOSS Science Stories</u> <u>Wood and Paper</u> Investigation 4, Parts 1-2 <u>Wood and Paper FOSS Science Stories</u> <u>New Plants</u> throughout, such as Investigation 1, Part 3 <u>New Plants FOSS Science Stories</u> <u>Plants and Animals</u> Investigation 2, Parts 1-3 <u>Plants and Animals Resources</u></p>	<p>Pages 7-19, 31-37 Pages 3-13 Pages 8-18 Pages 19-24 "Land, Air and Water" Pages 23-30 Pages 3-7 Pages 90-108 Pages 3-15, 21-27</p>
<p>Apply and understand fundamental human body parts and their functions.</p>	<p>FOSS does address human body parts and their functions in some K-2 lessons. However, FOSS is science program, not a health</p>	

	<p>program; human body systems and related health education are not the focus of the FOSS program.</p> <p><u>Animals Two by Two</u> Investigation 4, Parts 1-4</p> <p><u>Insects</u> Investigation 2, Parts 1-3</p> <p><u>New Plants</u> Investigation 4, Part 2 <u>New Plants FOSS Science Stories</u></p> <p><u>Plants and Animals</u> Investigation 4, Part 2 <u>Plants and Animals Resources</u></p>	<p>Pages 8-23 (legs)</p> <p>Pages 8-24 (eyes)</p> <p>Pages 13-19 (teeth)</p> <p>Pages 40-43</p> <p>Pages 160-166 Pages 9-15, 47-51</p>
<p>Apply and understand good health habits.</p>	<p>FOSS does address human body parts and their functions in some K-2 lessons. However, FOSS is science program, not a health program; human body systems and related health education are not the focus of the FOSS program.</p> <p><u>Trees</u> Investigation 3, Parts 1-2</p> <p><u>Insects</u> Investigation 3, Part 2</p> <p><u>New Plants</u> Investigation 2, Part 3 Investigation 4, Part 2</p> <p><u>Plants and Animals</u> Investigation 4, Part 2</p> <p><u>Plants and Animals Resources</u></p>	<p>Pages 10-14 (healthy food choices)</p> <p>Pages 12-10 (living things' needs)</p> <p>Pages 20-28 (healthy food)</p> <p>Pages 13-19 (teeth, healthy snacks)</p> <p>Pages 160-166 (teeth, healthy snacks)</p> <p>Pages 9-15, 47-51</p>

Primary Elementary Grades

Curricular Area: Physical Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Understand and apply observable and measurable properties of objects.	<p>Wood and Paper throughout, such as Investigation 1, Parts 1-5</p> <p>Fabric throughout, such as Investigation 2, Parts 1-4 <u>Fabric FOSS Science Stories</u></p> <p>Solids and Liquids ALL, such as Investigation 2, Parts 1-3 <u>Solids and Liquids FOSS Science Stories</u></p> <p>Balance and Motion Investigation 3, Parts 1-3 <u>Balance and Motion FOSS Science Stories</u></p> <p>Air and Weather Investigation 3, Parts 1-5 FOSS Web Site</p>	<p>Pages 8-32</p> <p>Pages 7-25 Pages 16-24</p> <p>Pages 10-27</p> <p>Pages 8-13</p> <p>Pages 6-25</p> <p>Pages 18-35</p> <p>Pages 8-33 <i>www.fossweb.com</i></p>
Understand and apply characteristics of liquids and solids.	<p>Wood and Paper throughout, such as Investigation 1, Parts 1-5</p> <p>Fabric throughout, such as Investigation 2, Parts 1-4</p> <p>Solids and Liquids ALL, such as Investigation 1, Parts 1-3 Investigation 2, Parts 1-3 <u>Solids and Liquids FOSS Science Stories</u></p> <p>Air and Weather Investigation 1, Parts 1-2 FOSS Web Site</p>	<p>Pages 8-32</p> <p>Pages 7-25</p> <p>Pages 8-24 Pages 10-27</p> <p>Pages 3-23</p> <p>Pages 8-16 <i>www.fossweb.com</i></p>
Understand and apply the positions and motions of objects.	<p>Balance and Motion, ALL: Investigation 1, Parts 1-3 Investigation 2, Parts 1-3 Investigation 3, Parts 1-3 <u>Balance and Motion FOSS Science Stories</u></p> <p>Air and Weather Investigation 3, Parts 1-5 FOSS Web Site</p>	<p>Pages 8-23 Pages 8-25 Pages 6-25</p> <p>Pages 3-35</p> <p>Pages 8-33 (objects moved by wind) <i>www.fossweb.com</i></p>

Intermediate Elementary Grades

Curricular Area: Science as Inquiry

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Generate questions that can be answered through scientific investigations.	<p>This standard is addressed throughout ALL FOSS modules and in the end of module projects suggested for all Grades 3-6 modules. See for example:</p> <p><u>Water</u> Investigation 1, Parts 1-3</p> <p><u>Physics of Sound</u> Investigation 2, Parts 1-3 Investigation 4, Parts 1-2</p> <p><u>Measurement</u> Investigation 3, Part 3</p> <p><u>Matter and Energy</u> Investigation 4, Parts 2-3</p> <p><u>Human Body</u> Investigation 1, Parts 1-3</p> <p><u>Variables</u> Investigation 3, Parts 1-4</p> <p><u>Water Planet</u> Investigation 4, Parts 1-4</p>	<p>Pages 8-23</p> <p>Pages 8-24 Pages 6-20</p> <p>Pages 18-21</p> <p>Pages 181-203</p> <p>Pages 8-25</p> <p>Pages 8-27</p> <p>Pages 184-216</p>
Recognize that scientists perform different kinds of investigations.	<p>This standard is addressed in FOSS investigations and also in readings (in the FOSS Science Stories and Resources), end of module projects and the FOSS web site. See for example:</p> <p><u>Structures of Life</u> Investigation 3, Parts 1-4</p> <p><u>Sun, Moon, And Stars</u> Investigation 2, Parts 1-2</p> <p><u>Ideas and Inventions</u> Investigation 4, Parts 1-4 <u>Ideas and Inventions FOSS Science Stories</u></p> <p><u>Human Body FOSS Science Stories</u></p> <p><u>Living Systems</u> Investigation 2, Parts 1-2</p> <p><u>Environments</u> Investigation 5, Parts 1-3</p> <p><i>FOSS Web Site: Ask a Scientist (for all modules)</i></p>	<p>Pages 8-30</p> <p>Pages 82-100</p> <p>Pages 8-25</p> <p>Pages 1-3, 9-22, 28-31, 38-40</p> <p>Pages 5-7, 17-24</p> <p>Pages 101-108</p> <p>Pages 8-22</p> <p>www.fossweb.com</p>
Plan and conduct scientific investigations.	This standard is addressed throughout ALL FOSS	

	<p>modules and in the end of module projects suggested for the Grades 3-6 modules. See for example:</p> <p><u>Water</u> Investigation 4, Parts 1-4</p> <p><u>Measurement</u> Investigation 3, Parts 1-3 Investigation 4, Part 3 <u>Measurement FOSS Science Stories</u></p> <p><u>Physics of Sound</u> Investigation 4, Parts 1-2</p> <p><u>Magnetism and Electricity</u> Investigation 1, Parts 1-4</p> <p><u>Human Body</u> Investigation 3, Parts 1-3</p> <p><u>Water Planet</u> Investigation 3, Parts 1-3 and extensions</p> <p><u>Food and Nutrition</u> Investigation 2, Parts 1-3</p> <p><u>Levers and Pulleys</u> Investigation 3, Parts 1-3 <u>Levers and Pulleys FOSS Science Stories</u></p>	<p>Pages 8-28</p> <p>Pages 8-21 Pages 18-21</p> <p>Pages 16-20</p> <p>Pages 6-20</p> <p>Pages 8-34</p> <p>Pages 8-21</p> <p>Pages 125-161</p> <p>Pages 8-25</p> <p>Pages 8-24</p> <p>Pages 28-32</p>
Use appropriate tools and techniques to gather, process, and analyze data.	<p>This standard is addressed throughout ALL FOSS modules and in the end of module projects suggested for the Grades 3-6 modules. See for example:</p> <p><u>Measurement</u> ALL, such as Investigation 2, Parts 1-3</p> <p><u>Matter and Energy</u> Investigation 3, Parts 1-3</p> <p><u>Ideas and Inventions</u> Investigation 3, Parts 1-3</p> <p><u>Earth Materials</u> Investigation 1, Parts 1-3 Investigation 4, Part 2</p> <p><u>Living Systems</u> Investigation 3, Parts 1-3</p> <p><u>Variables</u> Investigation 2, Parts 1-3 Investigation 4, Part 4</p> <p><u>Solar Energy</u> Investigation 3, Parts 1-2</p> <p><u>Landforms</u> Investigation 4, Parts 1-3 Investigation 5, Parts 1-4</p>	<p>Pages 8-21</p> <p>Pages 129-160</p> <p>Pages 8-21</p> <p>Pages 8-29 Pages 14-18</p> <p>Pages 120-141</p> <p>Pages 8-23 Pages 24-28</p> <p>Pages 8-23</p> <p>Pages 8-24 Pages 8-31</p>
Incorporate mathematics in science inquiries.	<p>Mathematics is used throughout the FOSS investigations as students collect data and share it as a class. It is also reinforced at</p>	

	<p>through Math Problems of the Week, which feature math problems related to the concept being studied. See for example:</p> <p><u>Structures of Life</u> Investigation 1, Parts 1-3 Math Problems of the Week</p> <p><u>Magnetism and Electricity</u> Investigation 1, Part 3 Investigation 4, Parts 1-3</p> <p><u>Water</u> Investigation 3, Parts 1-3</p> <p><u>Measurement</u>, ALL, such as Investigation 4, Parts 1-3</p> <p><u>Matter and Energy</u> Investigation 3, Parts 1-3</p> <p><u>Ideas and Inventions</u> Investigation 2, Part 1</p> <p><u>Environments</u> Investigation 5, Parts 1-3</p> <p><u>Water Planet</u>, ALL, such as Investigation 2, Parts 2-3</p> <p><u>Solar Energy</u> Investigation 3, Parts 1-2</p> <p><u>Mixtures and Solutions</u> Investigation 2, Parts 1-4</p> <p><u>Levers and Pulleys</u> ALL, such as Investigation 4, Parts 1-3</p>	<p>Pages 8-33 Duplication Master Pp. 24-27</p> <p>Pages 23-29 Pages 8-22</p> <p>Pages 8-20</p> <p>Pages 8-21</p> <p>Pages 129-160</p> <p>Pages 8-15</p> <p>Pages 8-22</p> <p>Pages 86-100</p> <p>Pages 8-23</p> <p>Pages 8-28</p> <p>Pages 8-25</p>
Use evidence to develop reasonable explanations.	<p>This standard is addressed throughout ALL FOSS modules. See for example:</p> <p><u>Measurement</u> Investigation 3, Part 3</p> <p><u>Earth Materials</u> Investigation 2, Parts 1-3</p> <p><u>Physics of Sound</u> Investigation 2, Parts 1-3</p> <p><u>Human Body</u> Investigation 1, Parts 1-3</p> <p><u>Sun, Moon and Stars</u> Investigation 1, Parts 1-2</p> <p><u>Mixtures and Solutions</u> Investigation 3, Parts 1-3</p> <p><u>Environments</u> Investigation 5, Parts 1-3</p> <p><u>Water Planet</u> Investigation 4, Parts 1-4</p>	<p>Pages 8-21</p> <p>Pages 8-21</p> <p>Pages 8-24</p> <p>Pages 8-25</p> <p>Pages 47-67</p> <p>Pages 8-24</p> <p>Pages 8-22</p> <p>Pages 184-216</p>
Communicate scientific procedures and explanations.	<p>This standard is addressed in all FOSS modules as students communicate within small groups and with the whole class, and as they record information in their</p>	

	<p>science journals/lab notebooks. It is also addressed in end of module projects. See for example:</p> <p><u>Water</u> Investigation 4, Parts 1-4</p> <p><u>Ideas and Inventions</u> Investigation 2, Parts 1-3</p> <p><u>Matter and Energy</u> Investigation 3, Parts 1-3</p> <p><u>Magnetism and Electricity</u> Investigation 5, Parts 1-3</p> <p><u>Physics of Sound</u> Investigation 1, Parts 1-3</p> <p><u>Variables</u> Investigation 2, Parts 1-3 Investigation 4, Parts 1-4</p> <p><u>Living Systems</u> Investigation 2, Parts 1-2</p>	<p>Pages 8-28</p> <p>Pages 8-22</p> <p>Pages 129-160</p> <p>Pages 8-25</p> <p>Pages 8-25</p> <p>Pages 8-29</p> <p>Pages 8-23 Pages 8-28</p> <p>Pages 88-108</p>
<p>Follow appropriate safety procedures when conducting investigations.</p>	<p>Safety is a top priority in FOSS. General and specific safety instructions are included in the overview folio, teacher background and lesson plans. A safety poster is included in each kit. See for example:</p> <p><u>Structures of Life</u> Overview folio Investigation 1, Part 1 Investigation 3, Parts 1-4</p> <p><u>Earth Materials</u> Investigation 1, Parts 1-2</p> <p><u>Matter and Energy</u> Investigation 4, Parts 1-3</p> <p><u>Mixtures and Solutions</u> Overview folio Investigation 4, Parts 1-4</p> <p><u>Solar Energy</u> Investigation 1, Parts 1-2 <u>Solar Energy FOSS Science Stories</u></p> <p><u>Food and Nutrition</u> Investigation 2, Parts 1-3</p>	<p>Page 17 Pages 8-17 Pages 8-30</p> <p>Pages 8-23</p> <p>Pages 174-203</p> <p>Page 17 Pages 8-28</p> <p>Pages 8-21</p> <p>Pages 12-15</p> <p>Pages 8-25</p>

Intermediate Elementary Grades

Curricular Area: Earth and Space Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Understand and demonstrate knowledge of properties and uses of earth materials	<p>Earth Materials ALL, such as Investigation 2, Parts 1-2 Investigation 3, Parts 1-3 <u>Earth Materials FOSS Science Stories</u></p> <p>Water, throughout, such as Investigation 1, Parts 1-3 <u>Water FOSS Science Stories</u></p> <p>Landforms, throughout, such as Investigation 2, Parts 1-2</p> <p>Solar Energy, ALL, such as Investigation 2, Parts 1-2</p> <p>Water Planet throughout, such as Investigation 4, Part 1 <u>Water Planet Resources</u></p> <p>FOSS Web Site</p>	<p>Pages 8-21 Pages 8-19</p> <p>Pages 1-15, 24-37</p> <p>Pages 8-23 Pages 1-23</p> <p>Pages 8-22</p> <p>Pages 8-24</p> <p>Pages 125-135 Pages 26-45 www.fossweb.com</p>
Understand and demonstrate knowledge of processes and changes on or in the earth's land, oceans, and atmosphere	<p>Water, throughout, such as Investigation 2, Parts 1-3 Investigation 3, Parts 1-3 <u>Water FOSS Science Stories</u></p> <p>Water Planet throughout, such as Investigation 4, Parts 1-4 <u>Water Planet Resources</u></p> <p>Landforms, throughout, such as Investigation 2, Parts 1-2 <u>Landforms FOSS Science Stories</u></p> <p>Solar Energy, ALL, such as Investigation 2, Parts 1-2 <u>Solar Energy FOSS Science Stories</u></p> <p>FOSS Web Site</p>	<p>Pages 8-24 Pages 8-26 Pages 1-16</p> <p>Pages 184-216 Pages 26-92</p> <p>Pages 8-22</p> <p>Pages 15-32</p> <p>Pages 8-24</p> <p>Pages 16-32 www.fossweb.com</p>
Understand and demonstrate knowledge of fossils and the evidence they provide of past life on earth	<p>Structures of Life FOSS <u>Science Stories</u></p> <p>Earth Materials FOSS <u>Science Stories</u></p> <p>Human Body FOSS <u>Science Stories</u></p> <p>Matter and Energy Resources</p> <p>Models and Designs FOSS <u>Science Stories</u></p>	<p>Pages 45-48</p> <p>Pages 1-4, 35</p> <p>Pages 21-24</p> <p>Page 9</p> <p>Pages 11-16</p>

	<p><i>Note that there is a very large section on fossils incorporating hands-on investigations, readings and computer graphics in Earth History, designed for Grades 6-8. Images on the database from this module are available to all grade levels on the FOSS web site.</i></p>	<p>www.fossweb.com</p>
Understand and demonstrate knowledge of knowledge of weather and weather patterns	<p>Water Investigation 3, Parts 1-4 <u>Water FOSS Science Stories</u> Solar Energy FOSS Science Stories Water Planet Investigation 4, Parts 1-4 <u>Water Planet Resources</u> <i>FOSS Web site</i></p>	<p>8-26 Pages 10-16 Pages 16-21,31-32 Pages 184-216 Pages 26-98 www.fossweb.com</p>
Understand and demonstrate knowledge of the properties, movements, and locations of objects in our solar system	<p>Sun, Moon and Stars, ALL such as Investigation 2, Parts 1-2 <u>Sun, Moon and Stars Resources</u> Ideas and Inventions FOSS Science Stories Solar Energy Investigation 1, Parts 1-2 <u>Solar Energy FOSS Science Stories</u> Water Planet Investigation 1, Parts 1-2 <u>Water Planet Resources</u></p>	<p>Pages 82-100 Pages 1-54 Pages 33-38 Pages 8-21 Pages 1-5 Pages 50-66 Pages 1-25</p>

Intermediate Elementary Grades

Curricular Area: Life Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Understand and demonstrate knowledge of structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats.	<p>Structures of Life ALL, such as Investigation 1, Parts 1-3 Investigation 3, Parts 1-4 <u>Structures of Life FOSS Science Stories</u></p> <p>Human Body throughout, such as Investigation 2, Parts 1-4 <u>Human Body FOSS Science Stories</u></p> <p>Environments ALL, such as Investigation 5, Parts 1-3 <u>Environments FOSS Science Stories</u></p> <p>Living Systems Investigation 1, Parts 1-3 <u>Living Systems Resources</u></p> <p>Food and Nutrition Investigation 4, Parts 1-2 <u>Food and Nutrition FOSS Science Stories</u></p> <p>FOSS Web Site</p>	<p>Pages 8-33 Pages 8-30</p> <p>Pages 1-9,17-19,37-42,45-48</p> <p>Pages 8-25</p> <p>Pages 1-29</p> <p>Pages 8-22</p> <p>Pages 1-55</p> <p>Pages 54-70 Pages 1-32</p> <p>Pages 8-23</p> <p>Pages 15-25,41-50</p> <p>www.fossweb.com</p>
Understand and demonstrate knowledge of how individual organisms are influenced by internal and external factors	<p>Structures of Life, throughout, such as Investigation 2, Parts 1-3 Investigation 5, Parts 1-3 <u>Structures of Life FOSS Science Stories</u></p> <p>Water FOSS Science Stories</p> <p>Environments ALL, such as Investigation 2, Parts 1-4 <u>Environments FOSS Science Stories</u></p> <p>Food and Nutrition Investigation 4, Parts 1-2 <u>Food and Nutrition FOSS Science Stories</u></p> <p>Living Systems Investigation 1, Parts 1-3 <u>Living Systems Resources</u></p> <p>FOSS Web Site</p>	<p>Pages 8-22 Pages 8-24</p> <p>Pages 1-48 Pages 5-7,12,18-29</p> <p>Pages 10-30</p> <p>Pages 1-55</p> <p>Pages 8-23</p> <p>Pages 15-25,41-50</p> <p>Pages 54-70 Pages 1-49</p> <p>www.fossweb.com</p>
Understand and demonstrate knowledge of the relationships among living and non-living	<p>Structures of Life, throughout, such as Investigation 3, Parts 1-4</p>	<p>Pages 8-30</p>

	<u>Stories</u> Structures of Life Investigation 1, Part 1 <u>Structures of Life FOSS</u> <u>Science Stories</u> Food and Nutrition ALL, such as Investigation 1, Parts 1-2 Investigation 4, Parts 1-2 <u>Food and Nutrition FOSS</u> <u>Science Stories</u> Living Systems Investigation 3, Parts 2-3 <u>Living Systems Resources</u>	Pages 25-27 Pages 8-17 Pages 4-5 Pages 8-23 Pages 8-23 Pages 1-40 Pages 129-141 Pages 36-46
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Intermediate Elementary Grades

Curricular Area: Physical Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Understand and demonstrate knowledge of how to describe and identify substances based on characteristic properties	<p><u>Matter and Energy</u> Investigation 3, Parts 1-3 Investigation 4, Parts 1-3 <u>Matter and Energy Resources</u> <u>Earth Materials</u> ALL, such as Investigation 2, Parts 1-2 Investigation 3, Parts 1-2 <u>Earth Materials FOSS Science Stories</u> <u>Water</u>, throughout, such as Investigation 1, Parts 1-3 <u>Water FOSS Science Stories</u> <u>Magnetism and Electricity</u> throughout, such as Investigation 1, Parts 1-2 Investigation 2, Part 3 <u>Mixtures and Solutions</u> throughout, such as Investigation 1, Parts 1-4 Investigation 4, Parts 1-4 <u>Mixtures and Solutions FOSS Science Stories</u> <u>Food and Nutrition</u> Investigation 3, Parts 1-3</p>	<p>Pages 129-160 Pages 174-203 Pages 39-67</p> <p>Pages 8-21 Pages 8-19</p> <p>Pages 12-15, 30-33</p> <p>Pages 8-23 Pages 1-3, 13</p> <p>Pages 8-22 Pages 20-25</p> <p>Pages 8-29 Pages 8-28</p> <p>Pages 1-45</p> <p>Pages 8-25</p>
Understand and demonstrate knowledge of states of matter and changes in states of matter	<p><u>Matter and Energy</u> Investigation 4, Parts 1-2 <u>Matter and Energy Resources</u> <u>Water</u>, throughout, such as Investigation 3, Parts 1-4 <u>Water FOSS Science Stories</u> <u>Physics of Sound</u> Investigation 3, Parts 1-2 <u>Measurement FOSS Science Stories</u> <u>Mixtures and Solutions</u> throughout, such as Investigation 1, Parts 1-4 Investigation 2, Parts 1-4 <u>Solar Energy</u> Investigation 3, Parts 1-2 <u>Water Planet</u> Throughout, such as Investigation 2, Parts 1-4 <u>Water Planet Resources</u></p>	<p>Pages 174-192 Pages 39-42</p> <p>Pages 8-26 Pages 8-16</p> <p>Pages 8-19</p> <p>Pages 32-33</p> <p>Pages 8-29 Pages 8-28</p> <p>Pages 8-23</p> <p>Pages 80-109 Pages 26-70</p>
Understand and demonstrate knowledge of knowledge of	<p><u>Matter and Energy</u> Investigation 4, Parts 1-3</p>	<p>Pages 174-203</p>

<p>the concept of conservation of mass/matter</p>	<p><u>Matter and Energy Resources</u> Mixtures and Solutions throughout, such as Investigation 2, Parts 1-4</p>	<p>Pages 39-56 Pages 8-28</p>
<p>Understand and demonstrate knowledge of the characteristic properties of sound, light, electricity, magnetism and heat</p>	<p>Physics of Sound ALL, such as Investigation 2, Parts 1-3 Investigation 3, Parts 1-2 <u>Physics of Sound FOSS</u> <u>Science Stories</u> Magnetism and Electricity, ALL, such as Investigation 1, Parts 1-4 Investigation 2, Parts 1-3 Investigation 4, Parts 1-3 <u>Magnetism and Electricity FOSS</u> <u>Science Stories</u> Ideas and Inventions Investigation 4, Parts 2-3 <u>Ideas and Inventions FOSS</u> <u>Science Stories</u> Matter and Energy Investigation 1, Parts 1-3 Investigation 2, Parts 1-2 Investigation 4, Parts 1-2 <u>Matter and Energy Resources</u> Solar Energy throughout, such as Investigation 1, Parts 1-2 Investigation 2, Parts 1-2 Investigation 4, Parts 1-4 Water Planet Investigation 3, Parts 1-2 <u>Water Planet Resources</u></p>	<p>Pages 8-24 (sound) Pages 8-19 Pages 19-20 Pages 8-34 (magnetism) Pages 8-29 (electricity) Pages 8-22 Pages 1-15, 24-33 Pages 14-21 (light) Pages 23-32 Pages 50-82 (energy) Pages 93-114 (light) Pages 174-192 (heat) Pages 1-37 Pages 8-21 (light/shadows) Pages 8-24 (light/heat) Pages 8-33 (heat) Pages 125-144 Pages 28-30, 42-45</p>
<p>Understand and demonstrate knowledge of how forces are related to an object's motion</p>	<p>Water Investigation 4, Part 2 Models and Designs Investigation 3, Parts 1-3 Investigation 4, Parts 1-2 Variables Investigation 3, Parts 1-4 Investigation 4, Parts 1-3 Levers and Pulleys ALL, such as Investigation 3, Parts 1-3 <u>Levers and Pulleys FOSS</u> <u>Science Stories</u> <i>This standard is also addressed in great depth in Force and Motion, designed for Grades 6-8.</i></p>	<p>Pages 14-18 Pages 8-23 Pages 6-15 Pages 8-27 Pages 8-23 Pages 8-24 Pages 16-32</p>

Middle School

Curricular Area: Science as Inquiry

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Generate questions that can be answered through scientific investigations	<p>This skill set is addressed in hands-on investigations and extensions in ALL FOSS modules, and in end of module projects suggested for Grades 5-6 modules. See for example:</p> <p><u>Solar Energy</u> Investigation 4, Parts 1-4</p> <p><u>Water Planet</u> Investigation 3, Parts 1-2</p> <p><u>Chemical Interactions</u> Investigation 3, Parts 1-3</p> <p><u>Force and Motion</u> Investigation 8, Parts 1-2</p> <p><u>Populations and Ecosystems</u> Investigation 5, Parts 1-4</p> <p><u>Electronics</u> Investigation 2, Parts 1-4</p> <p><u>Planetary Science</u> Investigation 5, Parts 1-3</p>	<p>Pages 8-33</p> <p>Pages 125-144</p> <p>Pages 95-113</p> <p>Pages 284-301</p> <p>Pages 142-169</p> <p>Pages 89-108</p> <p>Pages 154-167</p>
Design and conduct different kinds of scientific investigations	<p>This skill set is addressed in hands-on investigations and extensions in ALL FOSS modules, and in projects suggested for Grades 5-6 modules. See for example:</p> <p><u>Models and Designs</u> Investigation 4, Parts 1-3</p> <p><u>Landforms</u> Investigation 3, Parts 1-3</p> <p><u>Living Systems</u> Investigation 2, Part 1</p> <p><u>Diversity of Life</u> Investigation 6, Parts 1-2</p> <p><u>Electronics</u> Investigation 4, Part 1</p> <p><u>Earth History</u> Investigation 5, Parts 1-4</p> <p><u>Weather and Water</u> Investigation 5, Parts 1-3</p> <p><u>Human Brain and Senses</u> Investigation 2, Parts 1-3</p>	<p>Pages 6-20</p> <p>Pages 8-24</p> <p>Pages 88-98</p> <p>Pages 186-197</p> <p>Pages 142-148</p> <p>Pages 175-194</p> <p>Pages 152-175</p> <p>Pages 67-83</p>

<p>Understand that different kinds of questions suggest different kinds of scientific investigations</p>	<p>This understanding is addressed throughout the FOSS modules. See for example: <u>Environments</u> Investigation 2, Parts 1-3 Investigation 5, Parts 1-3 <u>Variables</u> Investigation 3, Parts 1-7 <u>Weather and Water</u> Investigation 4, Parts 1-2 <u>Planetary Science</u> Investigation 4, Parts 1-3 Investigation 5, Parts 1-3 <u>Planetary Science Resources</u> <u>Planetary Science CD-ROM/</u> <u>FOSS Web Site</u> <u>Earth History</u> Investigation 2, Parts 1-4 <u>Populations and</u> <u>Ecosystems</u> Investigation 2, Parts 1-2</p>	<p>Pages 10-25 Pages 8-22 Pages 8-27 Pages 121-140 Pages 120-135 Pages 154-167 Pages 52-53, 59-62 Pages 60-75 Pages 70-79</p>
<p>Select and use appropriate tools and techniques to gather, analyze and interpret data</p>	<p>This skill set is addressed in hands-on investigations and extensions in ALL FOSS modules, and in end of module projects suggested for all Grades 5-6 modules. See for example: <u>Levers and Pulleys</u> Investigation 2, Parts 1-4 <u>Solar Energy</u> Investigation 4, Parts 1-4 <u>Models and Designs</u> Investigation 3, Parts 1-3 <u>Chemical Interactions</u> Investigation 2, Parts 1-2 <u>Human Brain and Senses</u> Investigation 3, Parts 1-3 <u>Force and Motion</u> Investigation 1, Parts 1-3 <u>Weather and Water</u> Investigation 8, Parts 1-4 <u>Diversity of Life</u> Investigation 9, Parts 1-3</p>	<p>Pages 8-24 Pages 8-33 Pages 8-23 Pages 72-81 Pages 92-110 Pages 47-66 Pages 258-280 Pages 273-290</p>
<p>Incorporate mathematics in scientific inquiry</p>	<p>Mathematics is part of the hands-on investigations in <u>nearly every FOSS lesson</u> for Grades 5-8, and it is a big part of class discussion and data analysis. Grades 5-6 modules also have a separate Math Problem of the Week associated each investigation. See for example: <u>Levers and Pulleys</u></p>	

	<p>Investigation 4, Parts 1-3 Math Problems of the Week <u>Solar Energy</u> Investigation 3, Parts 1-2 Math Problems of the Week <u>Force and Motion</u> Investigation 1, Parts 1-3 <u>Populations and Ecosystems</u> Investigation 6, Parts 1-3 <u>Electronics</u> Investigation 2, Parts 1-4 <u>Weather and Water</u> Investigation 5, Parts 1-3</p>	<p>Pages 8-25 Duplication Masters 28-31</p> <p>Pages 8-23 Duplication Masters 33-38</p> <p>Pages 47-66</p> <p>Pages 179-197</p> <p>Pages 89-108</p> <p>Pages 152-175</p>
Use evidence to develop descriptions, explanations, predictions and models	<p>This skill set is developed throughout ALL of the FOSS modules. See for example: <u>Models and Designs</u> ALL, such as Investigation 2, Parts 1-3 <u>Models and Designs</u> FOSS <u>Science Stories</u> <u>Chemical Interactions</u> Investigation 3, Parts 1-3 <u>Planetary Science</u> Investigation 5, Parts 1-3 Planetary Science Resources Planetary Science CD-ROM/ FOSS Web Site <u>Earth History</u> Investigation 3, Parts 1-4 <u>Weather and Water</u> Investigation 7, Parts 1-2 <u>Human Brain and Senses</u> Investigation 7, Parts 1-3</p>	<p>Pages 8-24</p> <p>Pages 1-16</p> <p>Pages 95-113</p> <p>Pages 154-167 Pages 52-53, 59-62</p> <p>Pages 88-111</p> <p>Pages 232-244</p> <p>Pages 205-225</p>
Think critically and logically to make the relationships between evidence and explanations	<p>This skill set is developed throughout ALL of the FOSS modules. See for example: <u>Models and Designs</u> Investigation 1, Parts 1-3 <u>Planetary Science</u> Investigation 5, Parts 1-3 <u>Planetary Science Resources</u> <i>Planetary Science CD-ROM/ FOSS Web Site</i> <u>Earth History</u> Investigation 3, Parts 1-4 <u>Diversity of Life</u> Investigation 6, Parts 1-3 <u>Populations and Ecosystems</u> Investigation 5, Parts 1-4 Investigation 8, Part 2 <i>Populations and Ecosystems CD-ROM/FOSS Web Site</i></p>	<p>Pages 8-25</p> <p>Pages 154-167 Pages 52-53, 59-62</p> <p><i>www.fossweb.com</i></p> <p>Pages 88-111</p> <p>Pages 186-203</p> <p>Pages 142-169 Pages 234-243</p> <p><i>www.fossweb.com</i></p>

<p>Recognize and analyze alternative explanations and predictions</p>	<p>This skill set is developed throughout the FOSS modules. See for example: <u>Models and Designs</u> Investigation 1, Parts 1-3 Investigation 2, Parts 1-3 <u>Planetary Science</u> Investigation 5, Parts 1-3 <u>Planetary Science Resources</u> <i>Planetary Science CD-ROM/ FOSS Web Site</i> <u>Earth History</u> Investigation 1, Parts 1-2 Investigation 2, Parts 1-4 <u>Populations and Ecosystems</u> Investigation 7 <i>Populations and Ecosystems CD-ROM/FOSS Web Site</i> <u>Weather and Water</u> Investigation 8, Parts 1-4 <i>Weather and Water CD-ROM/ FOSS Web Site</i></p>	<p>Pages 8-25 Pages 8-24 Pages 154-167 Pages 52-53, 59-62 <i>www.fossweb.com</i> Pages 39-49 Pages 60-75 Pages 210-218 Pages 258-280 <i>www.fossweb.com</i></p>
<p>Communicate and defend procedures and explanations</p>	<p>This skill set is addressed in hands-on investigations and extensions in ALL FOSS modules, and in end of module projects suggested for all Grades 5-6 modules. See for example: <u>Landforms</u> Investigation 3, Parts 1-3 <u>Solar Energy</u> Investigation 4, Parts 1-4 <u>Models and Designs</u> Investigation 3, Parts 1-3 <u>Diversity of Life</u> Investigation 6, Parts 1-2 <u>Planetary Science</u> Investigation 5, Parts 1-3 <u>Planetary Science Resources</u> <i>Planetary Science CD-ROM/ FOSS Web Site</i> <u>Force and Motion</u> Investigation 8, Parts 1-2 <u>Weather and Water</u> Investigation 6, Parts 1-5 <u>Human Brain and Senses</u> Investigation 1, Parts 1-2</p>	<p>Pages 8-24 Pages 8-33 Pages 8-23 Pages 186-197 Pages 154-167 Pages 52-53, 59-62 Pages 284-301 Pages 190-222 Pages 37-47</p>
<p>Use appropriate safety procedures when conducting investigations</p>	<p>Safety is a top priority in FOSS. General and specific safety instructions are included in the teacher overview folio, background, and specific lesson plans</p>	

	<p>(denoted in the margin with a safety goggle icon). A safety poster is included in each kit, and some kits have a safety contract. See for example:</p> <p><u>Food and Nutrition</u> Overview Investigation 2, Parts 1-3</p> <p><u>Earth History</u> Overview Investigation 5, Parts 1-4</p> <p><u>Chemical Interactions</u> Overview Safety Contract Investigation 9, Parts 1-4</p> <p><u>Electronics</u> Investigation 1, Parts 1-4</p> <p><u>Electronics Resources</u> <i>Electronics CD-ROM/ FOSS</i> <i>Web Site</i></p>	<p>Page 17 Pages 8-25</p> <p>Page 19 Pages 175-193</p> <p>Page 15 Page 374 Pages 282-312</p> <p>Pages 55-75 Pages 12-14 "Electricity Sources and Safety"</p>
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Middle School

Curricular Area: Earth and Space Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Understand and demonstrate knowledge of the structure of the earth system and the processes that change the earth and its surface	<p>Landforms. ALL, such as Investigation 2, Parts 1-2 Investigation 4, Parts 1-3 <u>Landforms FOSS Science Stories</u></p> <p>Water Planet Investigation 4, Parts 1-2 <u>Water Planet Resources</u></p> <p>Solar Energy FOSS Science Stories</p> <p>Earth History ALL, such as Investigation 4, Parts 1-4 <u>Earth History Resources</u> <i>Earth History CD-ROM/ FOSS Web Site</i></p> <p>Weather and Water Investigation 9, Parts 1-4 <u>Weather and Water Resources</u></p> <p>Planetary Science Investigation 5, Part 6 <u>Planetary Science Resources</u> <i>Planetary Science CD-ROM/ FOSS Web Site</i></p>	<p>Pages 8-22 Pages 8-24</p> <p>Pages 13-32</p> <p>Pages 184-203 Pages 64-79</p> <p>Pages 1-5, 16-21</p> <p>Pages 127-149 Pages 3-46, 55-97 ,100-105</p> <p><i>www.fossweb.com</i></p> <p>Pages 296-320</p> <p>Pages 8-11,45-47, 63-76</p> <p>Pages 176-179 Pages 27-29, 59-68</p> <p><i>www.fossweb.com</i></p>
Understand and demonstrate knowledge of the water cycle, including consideration of events that impact groundwater quality.	<p>Water Planet Investigation 4, Part 1 <u>Water Planet Resources</u></p> <p>Solar Energy FOSS Science Stories</p> <p>Landforms Investigation 2, Parts 1-3 Investigation 3, Parts 1-2</p> <p>Weather and Water ALL, such as Investigation 7, Parts 1-2 Investigation 9, Parts 3-4 <u>Weather and Water Resources</u> <i>Weather and Water CD-ROM/ FOSS Web Site</i></p>	<p>Pages 184-197 Pages 67-70</p> <p>Pages 18-19</p> <p>Pages 8-22 Pages 8-24</p> <p>Pages 232-244 Pages 311-320</p> <p>Pages 45-47, 69-76</p> <p><i>www.fossweb.com</i></p>
Understand and demonstrate knowledge of our earth's history based on physical evidence	<p>Landforms throughout, such as Investigation 2, Parts 1-2 Investigation 4, Parts 1-3 <u>Landforms FOSS Science Stories</u></p>	<p>Pages 8-22 Pages 8-24</p> <p>Pages 9-32, 37-44</p>

	<p>Earth History ALL, such as Investigation 3, Parts 1-4 Investigation 6, parts 2-4 Earth History Resources <i>Earth History CD-ROM/ FOSS Web Site</i></p> <p>Weather and Water ALL, such as Investigation 9, Parts 3-4 <i>Weather and Water CD-ROM/ FOSS Web Site</i></p>	<p>Pages 88-111 Pages 209-225 Pages 68-97</p> <p>www.fossweb.com</p> <p>Pages 311-320</p> <p>www.fossweb.com</p>
Understand and demonstrate knowledge of the earth's atmospheric properties and how they influence weather and climate	<p>Solar Energy <u>FOSS Science Stories</u> Water Planet Investigation 4, Parts 1-4 <u>Water Planet Resources</u> Weather and Water ALL, such as Investigation 2, Parts 1-2 Investigation 3, Parts 1-3 Investigation 9, Parts 1-4 <u>Weather and Water Resources</u> <i>Weather and Water CD-ROM/ FOSS Web Site</i> Planetary Science Resources</p>	<p>Pages 1-3, 16-24, 31-32</p> <p>Pages 184-216 Pages 33-92</p> <p>Pages 69-82 Pages 93-112 Pages 296-320 Pages 6-11, 22-26, 37-47, 63-66</p> <p>www.fossweb.com Page 86</p>
Understand and demonstrate knowledge of the components and predictable patterns of our solar system	<p>Solar Energy Investigation 1, Parts 1-2 <u>Solar Energy FOSS Science Stories</u> Water Planet Investigation 1, Parts 1-2 <u>Water Planet Resources</u> Planetary Science ALL, such as Investigation 3, Parts 1-3 Investigation 9, Parts 1-4 Investigation 10, Parts 2-3 <u>Planetary Science Resources</u> <i>Planetary Science CD-ROM/ FOSS Web Site</i> Weather and Water Investigation 3, Parts 1-3 <u>Weather and Water Resources</u> Earth History Resources <i>Earth History CD-ROM/ FOSS Web Site</i></p>	<p>Pages 8-21</p> <p>Pages 1-8, 40-44</p> <p>Pages 50-66 Pages 1-25</p> <p>Pages 89-103 Pages 283-301 Pages 318-324 Pages 35, 39, 80-89</p> <p>www.fossweb.com</p> <p>Pages 93-112</p> <p>Pages 17-19 Pages 60-63</p>

Middle School

Curricular Area: Life Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Understand and demonstrate knowledge of the basic components and functions of cells, tissues, organs and organ systems	<u>Living Systems</u> Investigation 1, Parts 1-3 <u>Living Systems Resources</u> <u>Food and Nutrition FOSS</u> <u>Science Stories</u> <u>Diversity of Life</u> Investigation 3, Parts 1-3 Investigation 4, Parts 1-2 <u>Diversity of Life Resources</u> <i>Diversity of Life CD-ROM/</i> <i>FOSS Web Site</i> <u>Human Brain and Senses</u> Investigation 8, Parts 1-2 <u>Human Brain and Senses</u> <u>Resources</u> <i>Human Brain and Senses CD-</i> <i>ROM/ FOSS Web Site</i>	Pages 54-70 Pages 1-25 Pages 6-9, 41-50 Pages 102-124 Pages 133-141 Pages 8-9, 24-38 <i>www.fossweb.com</i> Pages 240-252 Pages 29-30,43-46, 59-62 <i>www.fossweb.com</i>
Understand and demonstrate knowledge of how different organisms pass on traits	This standard is addressed in ALL FOSS Middle School modules. See for example: <u>Populations and Ecosystems</u> Investigation 9, Parts 1-3 Investigation 10, Parts 1-3 <u>Populations and Ecosystems</u> <u>Resources</u> <u>Diversity of Life</u> Investigation 10, Parts 1-2 <u>Diversity of Life Resources</u>	Pages 262-291 Pages 302-217 Pages 46-61 Pages 302-316 Pages 22-26, 40-66
Understand and demonstrate knowledge of the complementary nature of structure and function and the commonalities among diverse organisms	<u>Living Systems</u> Investigation 1, Parts 1-3 Investigation 3, Parts 1-2 <u>Living Systems Resources</u> <u>Food and Nutrition</u> Investigation 2, Parts 1-3 <u>Food and Nutrition FOSS</u> <u>Science Stories</u> <u>Diversity of Life ALL</u> , such as Investigation 1, Parts 1-2 Investigation 4, Parts 1-3 <u>Diversity of Life Resources</u> <i>Diversity of Life CD-ROM/</i> <i>FOSS Web Site</i> <u>Populations and Ecosystems</u> <u>Resources</u>	Pages 54-70 Pages 120-135 Pages 1-25, 35-36 Pages 8-25 Pages 6-9, 41-50 Pages 43-64 Pages 133-141 Pages 21-64 <i>www.fossweb.com</i> Pages 14-23
Understand and demonstrate	<u>Environments</u> ALL, such as	

<p>knowledge of the interdependency of organisms, changes in environmental conditions, and survival of individuals and species</p>	<p>Investigation 4, Parts 1-3 Investigation 5, Parts 1-3 <u>Environments FOSS Science Stories</u> <u>Populations and Ecosystems</u> throughout, such as Investigation 4, Parts 1-2 Investigation 7 <u>Populations and Ecosystems Resources</u> <i>Populations and Ecosystems CD-ROM/ FOSS Web site</i> <u>Diversity of Life Resources</u></p>	<p>Pages 8-22 Pages 8-22 Pages 1-55 Pages 119-129 Pages 210-218 Pages 8-13, 25-45, 58-63 <i>www.fossweb.com</i> Pages 51-70</p>
<p>Understand and demonstrate knowledge of the cycling of matter and energy through ecosystems</p>	<p><u>Environments</u> Investigation 4, Parts 1-3 <u>Environments FOSS Science Stories</u> <u>Living Systems</u> Investigation 3, Parts 1-2 <u>Living Systems Resources</u> <u>Populations and Ecosystems</u> throughout, such as Investigation 5, Parts 1-4 Investigation 6, Parts 2-3 <u>Populations and Ecosystems Resources</u> <i>Populations and Ecosystems CD-ROM/ FOSS Web site</i></p>	<p>Pages 8-22 Pages 38-41 Pages 120-135 Pages 27-36 Pages 142-169 Pages 187-197 Pages 8-13, 14-29</p>
<p>Understand and demonstrate knowledge of the social and personal implications of environmental issues</p>	<p>FOSS is careful not to promote an agenda; rather, EVERY FOSS module teaches accurately the science behind the issues. It is hoped that this will allow students to think carefully about various environmental issues and make responsible decisions based on accurate understanding. The following are a few examples of lessons with clear real-life applications. <u>Environments</u> throughout, such as Investigation 6, Parts 1-3 <u>Environments FOSS Science Stories</u> <u>Landforms FOSS Science Stories</u> <u>Populations and Ecosystems</u> throughout, such as Investigation 4, Parts 1-2 Investigation 7 <u>Populations and Ecosystems Resources</u> <u>Weather and Water</u></p>	<p>Pages 8-22 Pages 1-8, 30, 33-37 Pages 37-44 Pages 119-129 Pages 210-218 Pages 8-13, 25-41</p>

	<p>Investigation 7, Parts 1-2 Investigation 9, Part 4 <u>Weather and Water Resources</u> <i>Weather and Water CD-ROM/ FOSS Web site</i></p>	<p>Pages 232-244 Pages 315-210 Pages 45-47, 63-66 www.fossweb.com</p>
<p>Understand and demonstrate knowledge of the functions and interconnections of the major human body systems including the breakdown in structure or function that disease causes</p>	<p><u>Food and Nutrition</u> Investigation 2, Parts 1-3 <u>Food and Nutrition FOSS Science Stories</u> <i>FOSS Web Site: Food and Nutrition</i> <u>Living Systems</u> Investigation 1, Parts 1-3 <u>Living Systems Resources</u> <u>Diversity of Life ALL</u>, such as Investigation 1, Parts 1-2 Investigation 4, Parts 1-3 <u>Diversity of Life Resources</u> <i>Diversity of Life CD-ROM/ FOSS Web Site</i> <u>Human Brain and Senses</u> throughout, such as Investigation 2, Parts 1-2 Investigation 3, Parts 1-3 Investigation 5, Parts 1-4 <u>Human Brain and Senses Resources</u> <i>Human Brain and Senses CD-ROM/FOSS Web Site: Optical Bench</i></p>	<p>Pages 8-25 Pages 13-26, 34-40 www.fossweb.com Pages 54-70 Pages 2-14, 43-46 Pages 43-64 Pages 133-141 Pages 65-70 www.fossweb.com Pages 67-76 Pages 92-105 Pages 152-175 Pages 23-28, 34-38, 47-49, 79 www.fossweb.com</p>

Middle School

Curricular Area: Physical Science

ESSENTIAL CONCEPT OR SKILL SET	FOSS INVESTIGATION	PAGE NUMBER (S)
Students will:		
Understand and demonstrate knowledge of elements, compounds, mixtures, and solutions based on the nature of their physical and chemical properties	<p><u>Mixtures and Solutions</u> ALL, such as Investigation 1, Parts 1-4 Investigation 3, Parts 1-3 <u>Mixtures and Solutions FOSS Science Stories</u> <i>FOSS Web Site: Mixtures and Solutions</i></p> <p><u>Chemical Interactions</u> ALL, such as Investigation 2, Parts 1-2 Investigation 9, Parts 1-4 <u>Chemical Interactions Resources</u> <i>Chemical Interactions CD-ROM/ FOSS Web site</i></p> <p><u>Earth History</u> Investigation 5, Parts 1-2 <u>Earth History Resources</u> <i>Earth History CD-ROM/ FOSS Web site</i></p>	<p>Pages 8-29 Pages 8-24</p> <p>Pages 1-12, 16-17, 23-28, 32-42 <i>www.fossweb.com</i></p> <p>Pages 72-81 Pages 282-213</p> <p>Pages 3-77 <i>www.fossweb.com</i></p> <p>Pages 175-182 Pages 68-72, 88-92 <i>www.fossweb.com</i></p>
Understand and demonstrate knowledge of physical and chemical changes and their relationship to the conservation of matter and energy	<p><u>Mixtures and Solutions</u> throughout, such as Investigation 2, Parts 1-3 Investigation 4, Parts 1-4 <u>Mixtures and Solutions FOSS Science Stories</u> <i>FOSS Web Site: Mixtures and Solutions</i></p> <p><u>Chemical Interactions</u> throughout, such as Investigation 4, Parts 1-3 Investigation 6 Investigation 10, Parts 1-2 <u>Chemical Interactions Resources</u> <i>Chemical Interactions CD-ROM/ FOSS Web site</i></p> <p><u>Earth History</u> Investigation 5, Parts 1-2 <u>Earth History Resources</u> <i>Earth History CD-ROM/ FOSS Web site</i></p>	<p>Pages 8-28 Pages 8-28</p> <p>Pages 23-45 <i>www.fossweb.com</i></p> <p>Pages 125-142 Pages 181-187 Pages 325-336</p> <p>Pages 23-53, 63-71 <i>www.fossweb.com</i></p> <p>Pages 175-182 Pages 68-72, 88-92 <i>www.fossweb.com</i></p>

<p>Understand and demonstrate knowledge of forms of energy and energy transfer</p>	<p><u>Solar Energy</u> Investigation 2, Parts 1-2 Investigation 4, Parts 1-4 <u>Solar Energy FOSS Science Stories</u> <i>FOSS Web Site: Solar Energy</i> <u>Water Planet</u> Investigation 3, Parts 1-2 <u>Water Planet Resources</u> <u>Weather and Water</u> Investigation 4, Parts 1-2 Investigation 5, Parts 1-3 <u>Weather and Water Resources</u> <i>Weather and Water CD-ROM/ FOSS Web site</i> <u>Chemical Interactions</u> Investigation 4, Parts 1-3 Investigation 5, Parts 1-3 Investigation 6 <u>Chemical Interactions Resources</u> <i>Chemical Interactions CD-ROM/ FOSS Web Site</i> <u>Populations and Ecosystems</u> Investigation 5, Parts 1-2 <u>Populations and Ecosystems Resources</u> <i>Populations and Ecosystems CD-ROM/ FOSS Web site</i> <u>Electronics</u> Investigation 1, Parts 1-2 <u>Electronics Resources</u> <i>Electronics CD-ROM/ FOSS Web Site</i></p>	<p>Pages 8-24 Pages 8-33 Pages 1-4, 16-17, 22-32 <i>www.fossweb.com</i> Pages 125-144 Pages 29-30, 42-51 Pages 121-140 Pages 152-175 Pages 22-26, 63-66 <i>www.fossweb.com</i> Pages 125-142 Kinetic Energy Pages 155-171 Energy Transfer Pages 181-187 Heat of Fusion Pages 16-48 <i>www.fossweb.com</i> Pages 142-155 Pages 14-16 <i>www.fossweb.com</i> Pages 55-65 Pages <i>www.fossweb.com</i></p>
<p>Understand and demonstrate knowledge of motions and forces</p>	<p><u>Models and Designs</u> Investigation 3, Parts 1-3 Investigation 4, Parts 1-3 <u>Levers and Pulleys</u> Investigation 4, Parts 1-3 <u>Levers and Pulleys FOSS Science Stories</u> <i>FOSS Web Site: Levers and Pulleys</i> <u>Force and Motion</u> ALL, such as Investigation 4, Parts 1-3 Investigation 5, Parts 1-4 Investigation 6, Parts 1-4 <u>Force and Motion Resources</u> <i>Force and Motion CD-ROM/ FOSS Web Site</i> <u>Chemical Interactions</u></p>	<p>Pages 8-23 Pages 6-20 Pages 8-25 Pages 16-20, 23-25 <i>www.fossweb.com</i> Pages 138-155 Pages 169-201 Pages 218-245 Pages 17-74 <i>www.fossweb.com</i> Pages 102-113</p>

	Investigation 3, Parts 2-3 Investigation 4, Parts 1-2 <u>Chemical Interactions</u> <u>Resources</u> <i>Chemical Interactions CD- ROM/ FOSS Web Site</i>	Pages 133-142 Pages 18-37 <i>www.fossweb.com</i>
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