



**FOSS Full Option Science System  
(FOSS™)**

**CORRELATION TO**

**IDAHO  
SCIENCE CONTENT STANDARDS**



# Idaho

## Science Content Standards

Correlation  
to

## Full Option Science System (FOSS™)

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

*Updated May, 2007*  
*Updated July 2008*  
*Updated October 2008*

# IDAHO SCIENCE CONTENT STANDARDS KINDERGARTEN

***Standard 1: Nature of Science***

Students explore the process of scientific investigation through observations and collection of data over time. Students follow instructions and work with others.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p style="padding-left: 40px;">K.S.1.2.1 Make observations and collect data. <a href="#">(528.01.a)</a></p> <p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p style="padding-left: 40px;">K.S.1.3.1 Measure in non-standard units. <a href="#">(528.02.b)</a></p> <p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p style="padding-left: 40px;">K.S.1.4.1 Apply the concepts of yesterday, today, and tomorrow. <a href="#">(528.03.a)</a></p>	<p>This objective is addressed in <b>all</b> Kindergarten FOSS modules. See for example:  <b>Animals Two by Two</b>            Investigation 1, Parts 1-4, pp. 10-32            Science Stories, pp. 2-24  <b>Wood and Paper</b>            Investigation 3, Parts 1-4, pp. 8-25            Science Stories, pp. 9-12  <b>Trees</b>            Investigation 1, Part 7, pp. 31-34</p> <p><b>Wood and Paper</b>            Investigation 1, Parts 4-5, pp. 24-32  <b>Trees</b>            Investigation 1, Part 7, pp. 31-34            Investigation 3, Part 9, pp. 35-38</p> <p><b>Animals Two by Two</b>            Investigation 3, Part 3, pp. 17-20            Investigation 4, Part 4, pp. 20-23            Investigation 5, Parts 1-2, pp. 10-19  <b>Trees</b>            Investigation 3, Parts 1-9, pp. 10-38            Science Stories, pp. 14-23</p>

<p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p>K.S.1.6.1      Make observations. (529.01.a)</p> <p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p>K.S.1.7.1      Use cooperation and interaction skills. (538.01.a)</p> <p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p>K.S.1.8.1      Follow instructions. (538.02.a)</p>	<p><b>Wood and Paper</b> Science stories, pp. 3-8</p> <p>This objective is addressed in <b>all</b> Kindergarten FOSS modules. See for example: <b>Wood and Paper</b> Investigation 3, Parts 1-4, pp. 8-25 <b>Fabric</b> Investigation 2, Parts 1-4, pp. 7-25 <b>Trees</b> Investigation 2, Parts 1-6, pp. 6-28</p> <p>This objective is a focus of <b>all</b> Kindergarten FOSS modules as students work in small groups at centers. See for example: <b>Animals Two by Two</b> Investigation 1, Parts 1-4, pp. 10-29 <b>Wood and Paper</b> Investigation 3, Parts 1-4, pp. 8-25</p> <p>This objective is addressed in <b>all</b> Kindergarten FOSS modules. See for example: <b>Trees</b> Investigation 2, Parts 1-6, pp. 6-28 <b>Wood and Paper</b> Investigation 2, Parts 1-4, pp. 7-25 <b>Animals Two by Two</b> Investigation 3, Part 1, pp. 8-12</p>
--	--

Standard 2: Physical Science

Students use their senses to investigate the organizational patterns in the world around them and describe a variety of objects.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p>K.S.2.1.1      Use senses to describe</p>	<p>This objective is a focus of <b>all</b> Kindergarten</p>

<p>matter. <a href="#">(530.01.a)</a></p> <p><b>Goal 2.2: Understand Concepts of Motion and Forces</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.4: Understand the Structure of Atoms</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.5: Understand Chemical Reactions</b></p> <p>No objectives at this grade level.</p>	<p>FOSS modules. See for example:</p> <p><b>Animals Two by Two</b> Investigation 3, Part 1, pp. 8-12</p> <p><b>Fabric</b> Investigation 1, Parts 5-6, pp. 23-33</p> <p><b>Trees</b> Investigation 1, Parts 1-8, pp. 7-37</p> <p><b>Wood and Paper</b> Investigation 1, Parts 4-5, pp. 24-32</p>
--	---

Standard 3: Biology

Students observe plants and animals and describe their characteristics.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 3.1: Understand the Theory of Biological Evolution</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p style="padding-left: 40px;">K.S.3.1.1     Observe and describe the characteristics of plants and animals. <a href="#">(532.01.a)</a></p> <p><b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p style="padding-left: 40px;">K.S.3.2.1     Describe the difference between living and non-living</p>	<p><b>Animals Two by Two</b> Investigations 1-5, all parts Science Stories, pp. 3-24</p> <p><b>Trees</b> Investigation 1, Parts 1-8, pp. 7-37 Science Stories, pp. 14-24</p> <p><b>Animals Two by Two</b> Investigation 3, Parts 1-3, pp. 8-20 Science Stories, pp. 3-24</p> <p><b>Trees</b></p>

<p>things. (533.01.a)</p> <p><b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b></p> <p>No objectives at this grade level.</p>	<p>Investigation 3, Parts 1-5, pp. 10-25  Science Stories, pp. 3-24  <b>Wood and Paper</b>  Investigation 1, Parts 1-3, pp. 8-23  Science Stories, pp. 1-8, 13-18</p>
---	---

***Standard 4: Earth and Space Systems***

Students make and describe observations of seasonal changes.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p>K.S.4.1.1 Name the four seasons. (534.01.a)</p> <p>K.S.4.1.2 Place the four seasons in order. (534.01.a)</p> <p><b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b></p> <p>No objectives at this grade level.</p>	<p><b>Trees</b>  Investigation 3, Parts 1-9, pp. 10-38  Science Stories, pp. 14-23</p> <p><b>Trees</b>  Investigation 3, Parts 1-9, pp. 10-38  Science Stories, pp. 14-23</p>

***Standard 5: Personal and Social Perspectives; Technology***

Students describe local environments.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b></p> <p><b>Objective(s): By the end of Kindergarten, the student will be able to:</b></p> <p>K.S.5.1.1 Describe characteristics of a man-made environment (home, school...). (536.01.a)</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p>	<p><b>Animals Two by Two</b>  Investigation 2, Part 2, pp. 17-21  Investigation 4, Part 4, pp. 20-23  Investigation 5, Parts 1-2, pp. 10-19</p> <p><b>Trees</b>  Science Stories, pp. 12-13</p>

<p>No objectives at this grade level.</p> <p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p>No objectives at this grade level.</p>	
---	--

# IDAHO SCIENCE CONTENT STANDARDS GRADE ONE

Standard 1: Nature of Science

Students explore the process of scientific investigation through observations and data collection, using standard and non-standard units of measurement. Students follow multi-step instructions and work with others.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p>No objectives at this grade level.</p>	
<p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.1.2.1     Make observations, collect data, and use data. <a href="#">(543.01.a)</a></p>	<p>This objective is addressed in <b>all</b> Grades 1-2 FOSS modules. See for example:</p> <p><b>New Plants</b> Investigation 2, Parts 1-3, pp. 8-28</p> <p><b>Air and Weather</b> Investigation 2, Parts 1-4, pp. 8-27 Investigation 4, Parts –13, pp 8-24</p> <p><b>Solids and Liquids</b> Investigation 3, Parts 1-3, pp. 7-27</p> <p><b>Plants and Animals</b> Investigation 1, Parts 1-3, pp. 47-72</p>
<p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.1.3.1     Measure in both standard and non-standard units. <a href="#">(543.02.b)</a></p>	<p><b>Air and Weather</b> Investigation 2, Parts 2, 4, pp. 14-19, 24-27</p> <p><b>New Plants</b> Investigation 2, Part 3, pp. 20-28</p> <p><b>Solids and Liquids</b> Investigation 1, Math Extension, p. 27</p> <p><b>Plants and Animals</b> Investigation 1, Part 3, pp. 63-72</p>
<p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.1.4.1     Explain the concepts of past, present, and future. <a href="#">(543.03.a)</a></p>	<p>FOSS investigations provide the opportunity to teach this standard. See for example:</p> <p><b>Air and Weather</b> Investigation 2, Part 1, pp. 8-13</p>

<p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.1.6.1 Make and record observations. <a href="#">(544.01.a)</a></p> <p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.1.7.1 Demonstrate cooperation and interaction skills. <a href="#">(553.01.a)</a></p> <p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.1.8.1 Follow multi-step instructions. <a href="#">(553.02.a)</a></p>	<p>Investigation 4, Parts 1-3, pp. 8-24  <b>Insects</b>  Investigation 1, Parts 1-3, pp. 8-25  Science Stories, pp. 16-23  <b>New Plants</b>  Investigation 3, Parts 1-3, pp. 8-25  Science Stories, pp. 16-21  <b>Insects and Plants</b>  Investigation 2, Parts 2-3, pp. 95-115  <b>Plants and Animals</b>  Investigation 2, Parts 1-2, pp. 47-62</p> <p>This objective is addressed in <b>all</b> Grades 1-2 FOSS modules. See for example:  <b>Insects</b>  Investigation 1, Parts 1-3, pp. 8-25  <b>Pebbles, Sand and Silt</b>  Investigation 2, Parts 1-4, pp. 8-29  <b>Air and Weather</b>  Investigation 1, Parts 1-6, pp. 8-38  <b>Plants and Animals</b>  Investigation 2, Parts 1-3, pp. 87-108  <b>Insects and Plants</b>  Investigation 3, Parts 1-3, pp. 129-151</p> <p>This objective is addressed in <b>all</b> Grades 1-2 FOSS modules as students work in pairs and small groups. See for example:  <b>Insects</b>  Investigation 3, Parts 1-3, pp. 8-26  <b>Solids and Liquids</b>  Investigation 3, Parts 1-4, pp. 8-27  <b>Balance and Motion</b>  Investigation 3, Parts 1-3, pp. 6-25  <b>Insects and Plants</b>  Investigation 5, Parts 1-3, pp. 206-225</p> <p>This objective is addressed in <b>all</b> Grades 1-2 FOSS modules. See for example:</p>
--	---

	<b>Air and Weather</b> Investigation 1, Parts 1-4, pp. 21-38 <b>Insects</b> Investigation 1, Parts 1-3, pp. 8-25 <b>Solids and Liquids</b> Investigation 3, Parts 1-4, pp. 8-27 <b>Insects and Plants</b> Investigation 1, Parts 1-3, pp. 52-75
--	--

***Standard 2: Physical Science***

Students describe properties of common objects and how movement is a change of position.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.2.1.1 Describe properties of objects. (545.01.a)</p>	<p><b>Solids and Liquids</b>  Investigation 1, Parts –12, pp. 8-20  Investigation 2, Parts 1-2, pp. 10-20  Investigation 3, Parts 1-3, pp. 8-23  Investigation 4, Parts 1-3, pp. 7-27</p> <p><b>Air and Weather</b>  Investigation 1, Parts 1-6, pp. 8-38</p> <p><b>Pebbles, Sand and Silt</b>  Investigation 1, Pats 1-2, pp. 8-17  Investigation 2, Parts 1-4, pp. 8-29</p>
<p><b>Goal 2.2: Understand Concepts of Motion and Forces</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.2.2.1 Describe the position and motion of objects. (ex. revolve, rotate, at rest, float, and fall) (545.02.a)</p>	<p><b>Air and Weather</b>  Investigation 1, Parts 1-6, pp. 8-38  Investigation 3, Parts 1-5, pp. 8-33</p> <p><b>Balance and Motion</b>  Investigation 2, Parts 1-3, pp. 8-25  Investigation 3, Parts 1-3, pp. 6-25  Science Stories, pp. 3-31</p>
<p><b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b></p> <p>No objectives at this grade level.</p>	
<p><b>Goal 2.4: Understand the Structure of Atoms</b></p> <p>No objectives at this grade level.</p>	
<p><b>Goal 2.5: Understand Chemical Reactions</b></p> <p>No objectives at this grade level.</p>	

**Standard 3: Biology**

Students describe the life cycles of living things and how they survive in their environment.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 3.1: Understand the Theory of Biological Evolution</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.3.1.1 Describe the life cycle of a plant (seed, growth, reproduction, death). (547.01.a)</p> <p>1.S.3.1.2 Describe the life cycle of an animal (birth, development, reproduction, death). (547.01.a)</p> <p><b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.3.2.1 State that living things need food to survive. (548.01.a)</p> <p><b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b></p>	<p><b>New Plants</b> Investigation 1, Parts 2-3, pp. 13-30 Science Stories, pp. 12-15</p> <p><b>Insects and Plants</b> Investigation 2, Parts 2-3, pp. 95-115 Science Resources, pp. 9-12</p> <p><b>Insects</b> Investigations 1-5, all parts Science Stories, pp. 16-33</p> <p><b>Insects and Plants</b> Investigation 1, 3-5, all parts Science Resources, pp. 37-55</p> <p><b>Insects</b> Investigation 1, Part 1, pp. 8-15 Investigation 2, Part 1, pp. 8-13 Investigation 3, Part 2, pp. 12-20 Investigation 4, Part 2, pp. 14-18 Investigation 5, Part 1, pp. 10-15</p> <p><b>New Plants</b> Investigation 1, Part 2, pp. 13-22 Investigation 2, Part 1, pp. 8-14 Science Stories, pp. 3-7</p> <p><b>Insects and Plants</b> Investigation 1, Part 1, pp. 52-61 Investigation 2, Part 1, pp. 91-94 Investigation 3, Part 2, pp. 134-144 Investigation 4, Part 2, pp. 170-174 Investigation 5, Part 1, pp. 206-211</p> <p><b>Plants and Animals</b> Investigation 3, Parts 1-2, pp. 120-134 Science Resources, pp. 3-7, 21-26 Video: How Plants Get Food</p>

No objectives at this grade level.	
------------------------------------	--

***Standard 4: Earth and Space Systems***

Students describe characteristics for each season and the cycle of the seasons.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.4.1.1 Identify the four seasons and their characteristics for a local region. (549.01.a)</p> <p><b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b></p> <p>No objectives at this grade level.</p>	<p><b>Air and Weather</b> Investigation 4, Parts 1-2, pp. 8-18 Science Stories, pp. 18-23</p>

***Standard 5: Personal and Social Perspectives; Technology***

Students describe characteristics of the local environment.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b></p> <p><b>Objective(s): By the end of Grade 1, the student will be able to:</b></p> <p>1.S.5.1.1 Identify the characteristics of local natural environments. (playground, backyard). (551.01.a)</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p>No objectives at this grade level.</p>	<p><b>Air and Weather</b> Investigation 2, Parts 1-4, pp. 8-27 Investigation 3, Parts 1-5, pp. 8-33 Science Stories, pp. 22-23 <b>Pebbles, Sand and Silt</b> Investigation 3, Part 3, pp. 19-24 Science Stories, pp. 20-23</p>

# IDAHO SCIENCE CONTENT STANDARDS GRADE TWO

Students are expected to know content and apply skills from previous grades.

***Standard 1: Nature of Science***

Students identify questions that can be answered through observation, collection, recording, and analysis of data. Students explain that the shape of an item is determined by its function.

Students follow multi-step instructions, work cooperatively and use communication skills.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p>No objectives at this grade level.</p>	
<p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.1.2.1     Make observations, record and interpret data. (558.01.a)</p>	<p>This objective is addressed in <b>all</b> Grades 1-2 FOSS modules. See for example:</p> <p><b>Pebbles, Sand and Silt</b> Investigation 3, Parts 1-3, pp. 7-27</p> <p><b>Air and Weather</b> Investigation 2, Parts 1-4, pp. 8-27 Investigation 4, Parts 1-3, pp. 8-24</p> <p><b>New Plants</b> Investigation 2, Parts 1-3, pp. 8-28</p> <p><b>Plants and Animals</b> Investigation 1, Parts 1-3, pp. 47-72</p>
<p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.1.3.1     Measure in standard and non-standard units. (558.01.b)</p>	<p><b>Air and Weather</b> Investigation 2, Parts 2, 4, pp. 14-19, 24-27</p> <p><b>New Plants</b> Investigation 2, Part 3, pp. 20-28</p> <p><b>Solids and Liquids</b> Investigation 1, Math Extension, p. 27</p> <p><b>Plants and Animals</b> Investigation 1, Part 3, pp. 63-72</p>
<p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p>	

<p>2.S.1.4.1 Apply the concepts of past, present, and future. <a href="#">(558.03.a)</a></p>	<p>FOSS investigations provide the opportunity to teach this standard. See for example:  <b>Air and Weather</b>  Investigation 2, Part 1, pp. 8-13  Investigation 4, Parts 1-3, pp. 8-24  <b>Insects</b>  Investigation 1, Parts 1-3, pp. 8-25  Science Stories, pp. 16-23  <b>New Plants</b>  Investigation 3, Parts 1-3, pp. 8-25  Science Stories, pp. 16-21  <b>Plants and Animals</b>  Investigation 4, Parts 1-2, pp. 151-163  Science Resources, pp. 9-14  <b>Insects and Plants</b>  Investigation 1, Parts 1-3, pp. 52-75  Science Resources, pp. 37-42</p>
<p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.1.5.1 Identify shape and use of objects. <a href="#">(558.04.a)</a></p>	<p><b>Balance and Motion</b>  Investigation 1, Parts 1-4, pp. 8-28  Investigation 2, Parts 1-3, pp. 8-25  <b>Solids and Liquids</b>  Investigation 3, Part 4, pp. 24-27  <b>Air and Weather</b>  Investigation 1, Parts 3-6, pp. 17-38  Investigation 3, Part 3, pp. 17-21</p>
<p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.1.6.1 Identify questions to be investigated. <a href="#">(559.01.a)</a></p> <p>2.S.1.6.2 Make observations. <a href="#">(559.01.b)</a></p>	<p>These objectives are addressed in <b>all</b> FOSS modules. See for example:  <b>Pebbles, Sand and Silt</b>  Investigation 2, Parts 1-4, pp. 8-29  <b>New Plants</b>  Investigation 3, Parts 1-3, pp. 8-25  <b>Solids and Liquids</b>  Investigation 4, Parts 1-3, pp. 7-27  <b>Plants and Animals</b>  Investigation 1, Parts 1-2, pp. 47-62</p> <p><b>Air and Weather</b>  Investigation 1, Parts 1-6, pp. 8-38  <b>Pebbles, Sand and Silt</b>  Investigation 2, Parts 1-4, pp. 8-29  <b>New Plants</b>  Investigation 3, Parts 1-3, pp. 8-25  <b>Plants and Animals</b></p>

<p>2.S.1.6.3 Analyze information and evidence. (559.01.d)</p> <p>2.S.1.6.4 Communicate observations. (559.01.f)</p>	<p>Investigation 3, Parts 1-2, pp. 120-134  <b>Insects and Plants</b>  Investigation 2, Part 3, pp. 105-115</p> <p><b>Air and Weather</b>  Investigation 1, Parts 1-6, pp. 8-38  <b>Pebbles, Sand and Silt</b>  Investigation 2, Parts 1-4, pp. 8-29  <b>New Plants</b>  Investigation 3, Parts 1-3, pp. 8-25  <b>Plants and Animals</b>  Investigation 1, Part 2, pp. 58-62</p> <p><b>Pebbles, Sand and Silt</b>  Investigation 2, Parts 1-4, pp. 8-29  <b>New Plants</b>  Investigation 3, Parts 1-3, pp. 8-25  <b>Solids and Liquids</b>  Investigation 4, Parts 1-3, pp. 7-27  <b>Plants and Animals</b>  Investigation 2, Parts 1-3, pp. 87-108  <b>Insects and Plants</b>  Investigation 3, Parts 1-3, pp. 129-151</p>
<p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.1.7.1 Practice cooperation and interaction skills. (568.01.a)</p>	<p>This objective is addressed in <b>all</b> FOSS modules as students work in groups. See for example:</p> <p><b>Pebbles, Sand and Silt</b>  Investigation 2, Parts 1-2, pp. 8-17  <b>Balance and Motion</b>  Investigation 3, Parts 1-3, pp. 6-25  <b>Insects</b>  Investigation 1, Parts 1-3, pp. 8-25  <b>Insects and Plants</b>  Investigation 5, Parts 1-3, pp. 206-225</p>
<p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.1.8.1 Follow multi-step instructions. (568.02.a)</p>	<p>This objective is addressed in <b>all</b> FOSS modules. See for example:</p> <p><b>New Plants</b>  Investigation 1, Parts 1-3, pp. 8-30  <b>Insects</b>  Investigation 3, Parts 1-3, pp. 8-26  <b>Solids and Liquids</b>  Investigation 1, Parts 1-3, pp. 8-24  <b>Insects and Plants</b></p>

	Investigation 3, Parts 1-3, pp. 129-151 <b>Plants and Animals</b> Investigation 3, Parts 1-2, pp. 120-134
--	---

**Standard 2: Physical Science**

Students describe objects by their properties and explain the affect motion has on an object.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.2.1.1 List properties of an object. (560.01.a)</p>	<p><b>Pebbles, Sand and Silt</b> Investigation 1, Parts 1-2, pp. 8-17 Investigation 2, Parts 1-4, pp. 8-29</p> <p><b>Solids and Liquids</b> Investigation 1, Parts 1-2, pp. 17-24 Investigation 2, Parts 1-3, pp. 10-27</p> <p><b>Air and Weather</b> Investigation 1, Parts 1-6, pp. 8-38</p>
<p><b>Goal 2.2: Understand Concepts of Motion and Forces</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.2.2.1 Explain how force affects the position and motion of objects. (560.01.a)</p>	<p><b>Balance and Motion</b> Investigation 1, Parts 1-4, pp. 8-28 Investigation 2, Parts 1-3, pp. 8-25 Investigation 3, Parts 1-3, pp. 6-25</p> <p><b>Air and Weather</b> Investigation 3, Parts 1-5, pp. 8-33</p>
<p><b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b></p> <p>No objectives at this grade level.</p>	
<p><b>Goal 2.4: Understand the Structure of Atoms</b></p> <p>No objectives at this grade level.</p>	
<p><b>Goal 2.5: Understand Chemical Reactions</b></p> <p>No objectives at this grade level.</p>	

**Standard 3: Biology**

Students list the basic needs of animals.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 3.1: Understand the Theory of Biological Evolution</b></p>	

<p>No objectives at this grade level.</p> <p><b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b></p> <p>2.S.3.2.1 Identify four basic needs of all living things (food, shelter, water, space). (563.01.a)</p> <p>2.S.3.2.2 Discuss how animals are suited to live in different habitats. (547.01.b)</p> <p><b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b></p> <p>No objectives at this grade level.</p>	<p><b>Insects</b>  Investigation 1, Part 1, pp. 8-15  Investigation 2, Part 1, PP. 8-13  Investigation 3, Part 2, pp. 12-20  Investigation 4, Part 2, pp. 14-18</p> <p><b>New Plants</b>  Investigation 1, Part 2, pp. 13-22  Investigation 2, Part 1, pp. 8-14  Science Stories, pp. 3-7</p> <p><b>Insects and Plants</b>  Investigation 1, Part 1, pp. 52-61  Investigation 2, Part 1, pp.91-94  Investigation 3, Part 2, pp. 134-144  Investigation 4, Part 2, pp. 170-174  Investigation 5, Part 1, pp. 206-211  Plants and Animals  Investigation 3, Parts 1-2, pp. 120-134  Science Resources, pp. 3-7, 21-26  Video: How Plants Get Food</p> <p><b>New Plants</b>  Science Stories, pp. 22-43</p> <p><b>Insects</b>  Investigations 1-6, all parts  Science Stories, pp. 2-35</p> <p><b>Insects and Plants</b>  Investigations 1, 3-5, pp. all parts  Science Resources, pp. 2-8, 26-33, 48-55</p> <p><b>Plants and Animals</b>  Investigation 3, Parts 2-3, pp. 128-140  Science Resources, pp. 21-24, 29-30, 32-33, 35-36, 38-39, 41-45, 47-50</p>
---	---

***Standard 4: Earth and Space Systems***

Students describe weather conditions.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth</b></p>	

<p style="text-align: center;"><b>Systems</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b>  2.S.4.1.1 Describe the characteristics of different weather conditions. (564.01.b)</p> <p><b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b></p> <p>No objectives at this grade level.</p>	<p><b>Air and Weather</b>  Investigation 2. Parts 1-4, pp. 8-27  Investigation 3, Part 2, 4, pp. 12-16, 22-27  Investigation 4, Part 1, pp. 8-11  Science Stories, pp. 7-17</p>
---	---

**Standard 5: Personal and Social Perspectives; Technology**

Students compare man-made and natural environments. Students identify scientific tools.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b>  2.S.5.1.1 Compare and contrast man-made and natural environments. (566.01.a)</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p><b>Objective(s): By the end of Grade 2, the student will be able to:</b>  2.S.5.2.1 Identify tools people have invented for everyday life and for scientific investigations. (565.01.b)</p>	<p><b>Pebbles, Sand and Silt</b>  Investigation 4, Parts 1-3, pp. 8-25  Science Stories, pp. 3-7, 10-18, 20-23</p> <p><b>Insects</b>  Investigation 3, Part 2, pp. 12-20  Investigation 5, Parts 1-3, pp. 10-24  Investigation 6, Parts 1-3, pp. 8-22  FOSS Web, Activity: Insect Hunt</p> <p><b>New Plants</b>  Science Stories, pp. 3-7, 16-21, 22-39</p> <p><b>Insects and Plants</b>  Investigation 3, Part 2, pp. 124-144  Investigation 5, Parts 1-3, pp. 206-225  Science Resources, pp. 48-53</p> <p><b>Plants and Animals</b>  Investigation 3, Parts 1-2, pp. 120-134  Science Resources, pp. 9-12, 28-45</p> <p><b>Pebbles, Sand and Silt</b>  Investigation 2, Part 1, pp. 8-13  Science Stories, pp. 16-20</p> <p><b>Air and Weather</b>  Investigation 2, Parts 2, 4, pp. 14-19, 24-27  Investigation 3, Parts, 2, 4, pp. 12-16, 22-27  Science Stories, pp. 14-15</p> <p><b>Solids and Liquids</b></p>

<p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p>No objectives at this grade level.</p>	<p>Investigation 3, Part 4, pp. 24-27</p>
---	---

# IDAHO SCIENCE CONTENT STANDARDS GRADE THREE

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students apply scientific methods to conduct experiments. Students read and give multi-step instructions.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.1.1.1 Label the parts of a system. (573.01.a)</p>	<p><b>Human Body</b> Investigation 1, Parts 1-2, pp. 8-20 Investigation 3, Parts 1-3, pp. 8-21 Science Stories, pp. 12-15, 28-29 FOSS Web, Activity: Mr. Bones</p> <p><b>Water</b> Investigation 2, Part 1, pp. 8-13 Investigation 4, Part 2, pp. 14-18 Science Stories, pp. 5-7, 14-15, 18-19</p> <p><b>Magnetism and Electricity</b> Investigation 2, Parts 1-2, pp. 8-19 Investigation 3, Parts 1-2, pp. 10-21 Science Stories, pp. 28-33</p>
<p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.1.2.1 Make observations, collect data and evaluate it. (573.02.a)</p> <p>3.S.1.2.2 Replicate and/or use models. (573.02.b)</p>	<p>These objectives are addressed in <b>all</b> FOSS modules. See for example:</p> <p><b>Measurement</b> Investigation 1, Parts 2-3, pp. 16-24 Investigation 2, Part 3, pp. 18-24</p> <p><b>Magnetism and Electricity</b> Investigation 1, Part 3, pp. 22-30 Investigation 4, Parts 2-3, pp. 14-22</p> <p><b>Earth Materials</b> Investigation 2, Parts 1-2, pp. 8-21</p> <p><b>Sun, Moon and Stars</b> Investigation 1, Parts 1-2, pp. 42-64</p> <p><b>Matter and Energy</b> Investigation 3, Parts 2-3, pp. 139-160</p> <p><b>Human Body</b> Investigation 1, Parts 1-2, pp. 8-20 Investigation 3, Parts 1-3, pp. 8-21 Science Stories, pp. 12-13, 28-29 FOSS Web, Activity: Mr. Bones</p> <p><b>Water</b> Investigation 2, Part 1, pp. 8-13</p>

<p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.1.3.1     Measure changes that occur. (573.03.b)</p> <p>3.S.1.3.2     Measure in both U.S. Customary and International System of Measurement (metric system) units. (573.03.c)</p> <p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.5: Understand Concepts of Form and Function</b></p>	<p>Investigation 4, Part 2, pp. 14-18  <b>Magnetism and Electricity</b>  Investigation 4, Part 1, pp. 8-13  <b>Sun, Moon and Stars</b>  Investigation 2, Part 2, pp. 89-100  Investigation 3, Part 1, pp. 114-125  <b>Matter and Energy</b>  Investigation 4, Part 2, pp. 181- 192  Science Resources, pp. 57-59</p> <p>These objectives are addressed in <b>all</b> FOSS modules. See for example:</p> <p><b>Water</b>  Investigation 4, Part 1, pp. 8-24  <b>Measurement</b>  Investigation 2, Part 3, pp. 18-24  Investigation 4, Part 2, pp. 14-17  <b>Magnetism and Electricity</b>  Investigation 4, parts 2-3, pp. 14-22  <b>Human Body</b>  Investigation 4, Part 2, pp. 17-19  <b>Matter and Energy</b>  Investigation 3, Parts 2-3, pp. 139-160</p> <p><b>Measurement</b>  Investigation 1, Parts 2-3, pp. 16-24  Investigation 2, Parts 2-3, pp. 14-24  Investigation 3, Parts 2-3, pp. 14-21  Investigation 4, Parts 1-3, pp. 8-21  <b>Water</b>  Investigation 4, Part 1, pp. 8-13  <b>Earth Materials</b>  Investigation 1, Part 1, pp. 8-15  <b>Structures of Life</b>  Investigation 2, Part 3, pp. 18-22  <b>Matter and Energy</b>  Investigation 3, Parts 2-3, pp. 139-160  Investigation 4, Part 1, pp. 174-180</p>
---	--

<p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.1.5.1 Describe the relationship between shape and use. (573.05.a)</p>	<p><b>Human Body</b>  Investigation 1, Parts 1-3, pp. 8-25  Investigation 2, Parts 1-4, pp. 8-25  Investigation 3, Parts 1-3, pp. 8-21  Science Stories, pp. 1-3, 10-13, 28-29</p> <p><b>Physics of Sound</b>  Science Stories, pp. 9-10</p> <p><b>Structures of Life</b>  Investigation 1, Part 1, pp. 8-17  Investigation 2, Part 3, pp. 18-22  Investigation 3, Part 1, pp. 8-15  Science Stories, pp. 17-18, 41-42</p> <p><b>Matter and Energy</b>  Investigation 4, Part 1, pp. 174-180</p>
<p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p>	
<p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p>	<p>These objectives are addressed in <b>all</b> FOSS Grades 3-4 modules. See for example:</p>
<p>3.S.1.6.1 Identify questions that can be answered by conducting scientific tests. (574.01.a)</p>	<p><b>Measurement</b>  Investigation 2, Part 3, pp. 18-24  Investigation 3, Part 3, pp. 18-21</p> <p><b>Water</b>  Investigation 4, Parts 1-2, pp. 8-18</p> <p><b>Earth Materials</b>  Investigation 2, Part 2, pp. 14-21</p> <p><b>Sun, Moon and Stars</b>  Investigation 1, Parts 1-2, pp. 42-64</p> <p><b>Matter and Energy</b>  Investigation 3, Parts 2-3, pp. 139-160</p>
<p>3.S.1.6.2 Conduct scientific tests (574.01.b)</p>	<p><b>Water</b>  Investigation 4, Part 1, pp. 8-13</p> <p><b>Measurement</b>  Investigation 3, Part 3, pp. 18-21  Investigation 4, Part 2, pp. 14-18</p> <p><b>Magnetism and Electricity</b>  Investigation 4, Part 3, pp. 19-22</p> <p><b>Matter and Energy</b>  Investigation 3, Parts 2-3, pp. 139-160</p>
<p>3.S.1.6.3 Use appropriate tools and techniques to gather and display data. (574.01.c)</p>	<p><b>Magnetism and Electricity</b>  Investigation 1, Part 3, pp. 23-29  Investigation 4, Part 2, pp. 14-18</p> <p><b>Measurement</b>  Investigation 4, Part 2, pp. 14-17</p> <p><b>Water</b>  Investigation 4, Part 1, pp. 8-13</p> <p><b>Matter and Energy</b>  Investigation 3, Parts 2-3, pp. 139-160</p>
<p>3.S.1.6.4 Use data to construct a</p>	<p><b>Magnetism and Electricity</b>  Investigation 1, Part 3, pp. 23-29</p>

<p>reasonable explanation. (574.01.d)</p> <p>3.S.1.6.5 Make simple predictions based on data. (574.01.e)</p> <p>3.S.1.6.6 Identify logical alternative explanations. (574.01.f)</p> <p>3.S.1.6.7 Communicate the results of tests to others. (574.01.g)</p>	<p>Investigation 4, Part 2, pp. 14-18  <b>Measurement</b>  Investigation 2, Part 3, pp. 18-24  Investigation 4, Part 2, pp. 14-18  <b>Water</b>  Investigation 4, Part 1, pp. 8-13  <b>Sun, Moon and Stars</b>  Investigation 1, Parts 1-2, pp. 42-64  <b>Matter and Energy</b>  Investigation 3, Part 2, pp. 139-150</p> <p><b>Magnetism and Electricity</b>  Investigation 1, Part 1, pp. 8-17  Investigation 4, Part 3, pp. 19-22  <b>Physics of Sound</b>  Investigation 2, Parts 2-3, pp. 13-24  <b>Human Body</b>  Investigation 4, Part 2, pp. 17-19  <b>Matter and Energy</b>  Investigation 3, Part 2, pp. 139-150</p> <p><b>Water</b>  Investigation 3, Parts 2-3, pp. 12-20  <b>Human Body</b>  Investigation 4, Part 1, pp. 8-16  <b>Physics of Sound</b>  Investigation 4, Part 1, pp. 6-15  <b>Matter and Energy</b>  Investigation 4, Part 2, pp. 181-192</p> <p><b>Magnetism and Electricity</b>  Investigation 1, Part 3, pp. 23-29  Investigation 4, Part 2, pp. 14-18  <b>Measurement</b>  Investigation 4, Part 2, pp. 14-17  <b>Water</b>  Investigation 4, Part 1, pp. 8-13  <b>Sun, Moon and Stars</b>  Investigation 1, Parts 1-2, pp. 42-64  <b>Matter and Energy</b>  Investigation 2, Parts 1-2, pp. 93-114</p>
<p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p>	
<p>No objectives at this grade level.</p>	
<p><b>Goal 1.8: Understand Technical Communication</b></p>	
<p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p>	
<p>3.S.1.8.1 Read and give multi-step instructions. (583.02.a)</p>	<p><b>Physics of Sound</b>  Investigation 2, Parts 2-3, pp. 13-24  <b>Measurement</b>  Investigation 2, Part 3, pp. 18-24</p>

	<b>Magnetism and Electricity</b> Investigation 1, Part 4, pp. 30-34 <b>Ideas and Inventions</b> Investigation 2, Part 2, pp. 16-19
--	---

***Standard 2: Physical Science***

Students use scientific instruments to describe the physical properties of the three states of matter.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.2.1.1      Use instruments to measure properties. (575.01.a)</p> <p>3.S.2.1.2      Identify the physical properties of solids, liquids, and gases. (575.01.b)</p> <p>3.S.2.1.3      Explain that heating and cooling can cause changes of state in common materials. (575.01.c)</p>	<p><b>Water</b>  Investigation 4, Part 1, pp. 8-13</p> <p><b>Measurement</b>  Investigation 1, Part 3, pp. 20-24  Investigation 3, Part 3, pp. 18-21  Investigation 4, Part 2, pp. 8-13</p> <p><b>Earth Materials</b>  Investigation 1, Part 1, pp. 8-15</p> <p><b>Matter and Energy</b>  Investigation 3, Part 2, pp. 139-150  Investigation 4, Part 1, pp. 174-180</p> <p><b>Water</b>  Investigation 1, Parts 1-3, pp. 8-23  Investigation 2, Part 3, pp. 19-24  Investigation 4, Part 1, pp. 8-13  Science Stories, pp. 1-3</p> <p><b>Physics of Sound</b>  Investigation 1, Part 1, pp. 8-15</p> <p><b>Magnetism and Electricity</b>  Investigation 1, Part 1, pp. 8-17</p> <p><b>Matter and Energy</b>  Investigation 3, Part 1, pp. 129-138  Science Resources, pp. 39-42</p> <p><b>Water</b>  Investigation 2, Part 3, pp. 19-24  Investigation 3, Parts 1-4, pp. 8-16  Science Stories, pp. 13-15  FOSS Web Activity: Evaporation</p> <p><b>Measurement</b>  Science Stories, pp. 32-33</p> <p><b>Matter and Energy</b>  Investigation 4, Part 2, pp. 181-192  Science Resources, pp. 54-59</p>
<p><b>Goal 2.2: Understand Concepts of Motion and Forces</b></p>	

<p>No objectives at this grade level.</p> <p><b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b></p> <p>3.S.2.3.1 Identify potential and kinetic energy. (590.03.a)</p> <p><b>Goal 2.4: Understand the Structure of Atoms</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.5: Understand Chemical Reactions</b></p> <p>No objectives at this grade level.</p>	
--	--

Standard 3: Biology

Students explore the diversity of plants and animals in their environments. Students demonstrate an understanding of food webs.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 3.1: Understand the Theory of Biological Evolution</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.3.1.1 Describe the adaptations of plants and animals to their environment. (577.01.a)</p> <p><b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.3.2.1 Describe the energy needed for living systems to survive. (578.01.a)</p> <p>3.S.3.2.2 Compare and contrast the energy requirements of</p>	<p><b>Structures of Life</b> Investigation 2, Part 3, pp. 18-22 Investigation 3, Part 1, pp. 8-15 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 1-3, 17-18, 22-34, 39</p> <p><b>Human Body</b> Science Stories, pp. 9-11</p> <p><b>Structures of Life</b> Investigation 2, Part 2, pp. 14-17 Investigation 3, Part 2, pp. 16-19 Investigation 4, Part 1, pp. 8-14 Science Stories, pp. 18, 43</p> <p><b>Human Body</b> Science Stories, pp. 25, 28</p> <p><b>Physics of Sound</b> Science Stories, pp. 22-25</p> <p><b>Matter and Energy</b> Science Resources, pp. 4-5, 19</p> <p><b>Structures of Life</b> Investigation 2, Part 2, pp. 14-17</p>

<p>plants and animals. (593.01.a)</p> <p>3.S.3.2.3 Label a food chain that shows how organisms cooperate and compete in an ecosystem. (578.01.b)</p> <p>3.S.3.2.4 Diagram the food web and explain how organisms both cooperate and compete in ecosystems. (593.01.b)</p> <p><b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b></p> <p>No objectives at this grade level.</p>	<p>Investigation 3, Part 2, pp. 16-19 Investigation 4, Part 1, pp. 8-14 Science Stories, pp. 18, 42 <b>Human Body</b> Science Stories, p. 9 <b>Physics of Sound</b> Science Stories, pp. 22-25 <b>Matter and Energy</b> Science Resources, pp. 4-5</p> <p><b>Structures of Life</b> Science Stories, p.43</p>
---	---

***Standard 4: Earth and Space Systems***

Students explore the relationship between the sun and Earth.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.4.1.1 Explain the reasons for length of a day, the seasons, and the year on Earth. (594.01.a)</p> <p><b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b></p> <p>No objectives at this grade level.</p>	<p><b>Sun, Moon and Stars</b> Science Resources, pp. 3-8</p>

***Standard 5: Personal and Social Perspectives; Technology***

Students identify local environmental issues. Students identify the relationship of tools to scientific investigation.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues,</b></p>	

<p style="text-align: center;"><b>Both Natural and Human Induced</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.5.1.1 Identify local environmental issues. (581.01.a)</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.5.2.1 Describe how technology helps develop tools. (580.01.a)</p> <p>3.S.5.2.2 Describe the development of tools over time. (580.01.b)</p> <p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p><b>Objective(s): By the end of Grade 3, the student will be able to:</b></p> <p>3.S.5.3.1 Explain the concept of recycling. (581.03.a)</p>	<p><b>Water</b> Investigation 4, Part 3, pp. 19-23 Science Stories, pp. 17-23</p> <p><b>Measurement</b> Science Stories, pp. 16-17</p> <p><b>Measurement</b> Science Stories, pp. 21-23</p> <p><b>Ideas and Inventions</b> Science Stories, pp. 17, 20, 22</p> <p><b>Magnetism and Electricity</b> Science Stories, pp. 34-36</p> <p><b>Physics of Sound</b> Science Stories, pp. 32-35</p> <p><b>Sun, Moon and Stars</b> Science Resources, pp. 40-43</p> <p><b>Measurement</b> Science Stories, pp. 11-13, 21-23</p> <p><b>Ideas and Inventions</b> Science Stories, pp. 14, 17, 19-20, 22</p> <p><b>Magnetism and Electricity</b> Science Stories, pp. 12-13, 34-36</p> <p><b>Sun, Moon and Stars</b> Science Resources, pp. 40-43</p> <p>FOSS investigations provide the opportunity to teach this objective. See for example:</p> <p><b>Water</b> Investigation 1, Parts 1-3 pp. 8-23 Science Stories, pp. 18-21</p> <p><b>Measurement</b> Science Stories, pp. 16-17</p>
--	--

# IDAHO SCIENCE CONTENT STANDARDS GRADE FOUR

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students apply scientific methods to conduct experiments, analyze alternative explanations and communicate results of tests. Students analyze and follow multi-step instructions.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.1.1.1 Explain that a system consists of an organized group of related objects that form a whole. (588.01.a)</p>	<p><b>Magnetism and Electricity</b> Investigation 2, Parts 1-4, pp. 8-29 Investigation 3, Parts 1-3, pp. 10-26 Science Stories, pp. 28-33</p> <p><b>Ideas and Inventions</b> Investigation 4, Part 2, pp. 14-17</p> <p><b>Human Body</b> Investigation 1, Parts 1-2, pp. 8-20 Investigation 3, Parts 1-3, pp. 8-21 Science Stories, pp. 12-15, 28-29 FOSS Web, Activity: Mr. Bones</p> <p><b>Matter and Energy</b> Investigation 4, Part 1, pp. 174-180</p>
<p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.1.2.1 Make and record observations then analyze and communicate the collected data. (588.02.a)</p> <p>4.S.1.2.2 Define observations and inferences. (588.02.b)</p>	<p>These objectives are addressed in <b>all</b> FOSS Grades 3-4 modules. See for example:</p> <p><b>Earth Materials</b> Investigation 2, Parts 1-2, pp. 8-21</p> <p><b>Measurement</b> Investigation 1, Parts 2-3, pp. 16-24 Investigation 3, Part 3, pp. 18-21</p> <p><b>Magnetism and Electricity</b> Investigation 1, Part 3, pp. 22-30 Investigation 4, Parts 2-3, pp. 14-22</p> <p><b>Matter and Energy</b> Investigation 3, Part 2, pp. 139-150</p> <p><b>All</b> FOSS investigations provide the opportunity to differentiate these two terms. For example:</p> <p><b>Magnetism and Electricity</b> Investigation 1, Parts 1-4, pp. 8-34</p> <p><b>Water</b> Investigation 3, Parts 1-4, pp. 8-26</p> <p><b>Human Body</b> Investigation 4, Parts 1-2, pp. 8-19</p>

<p>4.S.1.2.3      Make, describe and/or use models. <a href="#">(588.02.c)</a></p> <p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.1.3.1      Describe how changes occur and can be measured. <a href="#">(588.03.b)</a></p> <p>4.S.1.3.2      Measure in both U.S. Customary and International System of Measurement (metric system) units. <a href="#">(588.03.c)</a></p> <p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p>	<p><b>Matter and Energy</b> Investigation 2, Part 1, pp. 93-102</p> <p><b>Human Body</b> Investigation 1, Parts 1-2, pp. 8-20 Investigation 3, Parts 1-3, pp. 8-21</p> <p><b>Magnetism and Electricity</b> Investigation 4, Part 1, pp. 8-15</p> <p><b>Earth Materials</b> Investigation 1, Parts 1-3, pp. 8-19</p> <p><b>Water</b> Investigation 4, Part 2, pp. 14-18</p> <p><b>Sun, Moon and Stars</b> Investigation 2, Part 2, pp. 89-100 Investigation 3, Part 1, pp. 114-125</p> <p><b>Matter and Energy</b> Investigation 4, Part 2, pp. 181-192 Science Resources, pp. 57-59</p> <p><b>Magnetism and Electricity</b> Investigation 1, Part 3, pp. 23-29 Investigation 4, Part 2, pp. 14-18</p> <p><b>Structures of Life</b> Investigation 1, Part 3, pp. 28-33</p> <p><b>Measurement</b> Investigation 4, Part 2, pp. 14-17</p> <p><b>Water</b> Investigation 4, Part 1, pp. 8-13</p> <p><b>Matter and Energy</b> Investigation 3, Part 2, pp. 139-150</p> <p><b>Measurement</b> Investigation 1, Parts 2-3, pp. 16-24 Investigation 2, Parts 2-3, pp. 14-24 Investigation 3, Parts 2-3, pp. 14-21 Investigation 4, Parts 1-3, pp. 8-21</p> <p><b>Water</b> Investigation 4, Part 1, pp. 8-13</p> <p><b>Earth Materials</b> Investigation 1, Part 1, pp. 8-15</p> <p><b>Structures of Life</b> Investigation 2, Part 3, pp. 18-22</p> <p><b>Matter and Energy</b> Investigation 3, Parts 2-3, pp. 139-160 Investigation 4, Part 1, pp. 174-180</p>
---	---

<p>No objectives at this grade level.</p> <p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.1.5.1 Explain the relationship between shape and use. (588.05.a)</p> <p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.1.6.1 Write questions that can be answered by conducting scientific tests. (589.01.a)</p> <p>4.S.1.6.2 Conduct scientific tests. (589.01.b)</p> <p>4.S.1.6.3 Use appropriate tools and techniques to gather and display data. (589.01.c)</p>	<p><b>Human Body</b>  Investigation 1, Parts 1-3, pp. 8-25  Investigation 2, Parts 1-4, pp. 8-25  Investigation 3, Parts 1-3, pp. 8-21  Science Stories, pp. 1-3, 10-13, 28-29</p> <p><b>Structures of Life</b>  Investigation 1, Part 1, pp. 8-17  Investigation 2, Part 3, pp. 18-22  Investigation 3, Part 1, pp. 8-15</p> <p><b>Physics of Sound</b>  Science Stories, pp. 9-10</p> <p>These objectives are addressed in <b>all</b> FOSS Grades 3-4 modules. See for example:</p> <p><b>Measurement</b>  Investigation 2, Part 3, pp. 18-24  Investigation 3, Part 3, pp. 18-21</p> <p><b>Water</b>  Investigation 4, Parts 1-2, pp. 8-18</p> <p><b>Earth Materials</b>  Investigation 2, Part 2, pp. 14-21</p> <p><b>Matter and Energy</b>  Investigation 3, Part 2, pp. 139-150</p> <p><b>Water</b>  Investigation 4, Part 1, pp. 8-13</p> <p><b>Measurement</b>  Investigation 3, Part 3, pp. 18-21  Investigation 4, Part 2, pp. 14-18</p> <p><b>Magnetism and Electricity</b>  Investigation 4, Part 3, pp. 19-22</p> <p><b>Sun, Moon and Stars</b>  Investigation 1, Parts 1-2, pp. 42-64</p> <p><b>Matter and Energy</b>  Investigation 3, Parts 2-3, pp. 139-160</p> <p><b>Magnetism and Electricity</b>  Investigation 1, Part 3, pp. 23-29  Investigation 4, Part 2, pp. 14-18</p> <p><b>Measurement</b>  Investigation 4, Part 2, pp. 14-17</p> <p><b>Water</b>  Investigation 4, Part 1, pp. 8-13</p> <p><b>Matter and Energy</b></p>
---	---

<p>4.S.1.6.4 Use data to construct a reasonable explanation. (589.01.d)</p> <p>4.S.1.6.5 Make predictions based on data. (589.01.e)</p> <p>4.S.1.6.6 Analyze alternative explanations. (589.01.f)</p> <p>4.S.1.6.7 Communicate the results of tests to others in multiple formats. (589.01.g)</p>	<p>Investigation 3, Parts 2-3, pp. 139-160</p> <p><b>Magnetism and Electricity</b> Investigation 1, Part 3, pp. 23-29 Investigation 4, Part 2, pp. 14-18</p> <p><b>Measurement</b> Investigation 2, Part 3, pp. 18-24 Investigation 4, Part 2, pp. 14-18</p> <p><b>Water</b> Investigation 4, Part 1, pp. 8-13</p> <p><b>Sun, Moon and Stars</b> Investigation 1, Parts 1-2, pp. 42-64</p> <p><b>Matter and Energy</b> Investigation 3, Parts 2-3, pp. 139-160</p> <p><b>Magnetism and Electricity</b> Investigation 1, Part 1, pp. 8-17 Investigation 4, Part 3, pp. 19-22</p> <p><b>Physics of Sound</b> Investigation 2, Parts 2-3, pp. 13-24</p> <p><b>Human Body</b> Investigation 4, Part 2, pp. 17-19</p> <p><b>Matter and Energy</b> Investigation 3, Parts 2-3, pp. 139-160</p> <p><b>Water</b> Investigation 3, Parts 2-3, pp. 12-20</p> <p><b>Human Body</b> Investigation 4, Part 1, pp. 8-16</p> <p><b>Physics of Sound</b> Investigation 4, Part 1, pp. 6-15</p> <p><b>Matter and Energy</b> Investigation 4, Part 2, pp. 181-192</p> <p><b>Magnetism and Electricity</b> Investigation 1, Part 3, pp. 23-29 Investigation 4, Part 2, pp. 14-18</p> <p><b>Measurement</b> Investigation 4, Part 2, pp. 14-17</p> <p><b>Water</b> Investigation 4, Part 1, pp. 8-13</p> <p><b>Matter and Energy</b> Investigation 3, Parts 2-3, pp. 139-160</p>
<p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p>	

4.S.1.8.1	Analyze and follow multi-step instructions. (598.02.a)	<b>Physics of Sound</b> Investigation 2, Parts 2-3, pp. 13-24 <b>Measurement</b> Investigation 2, Part 3, pp. 18-24 <b>Magnetism and Electricity</b> Investigation 1, Part 4, pp. 30-34 <b>Ideas and Inventions</b> Investigation 2, Part 2, pp. 16-19
-----------	--	---

**Standard 2: Physical Science**

Students use scientific instruments to describe and measure the properties of the three states of matter.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.2.1.1 Use instruments to measure properties (590.01.a)</p> <p>4.S.2.1.2 Describe the physical properties of solids, liquids, and gases. (590.01.b)</p> <p>4.S.2.1.3 Explain the changes caused by heating and cooling materials. (590.01.c)</p> <p><b>Goal 2.2: Understand Concepts of Motion</b></p>	<p><b>Earth Materials</b>  Investigation 1, Part 1, pp. 8-15</p> <p><b>Measurement</b>  Investigation 1, Part 3, pp. 20-24  Investigation 3, Part 3, pp. 18-21  Investigation 4, Part 1, pp. 8-13</p> <p><b>Water</b>  Investigation 4, Part 1, pp. 8-13</p> <p><b>Matter and Energy</b>  Investigation 3, Parts 2-3, pp. 139-160  Investigation 4, Part 1, pp. 174-180</p> <p><b>Water</b>  Investigation 1, Parts 1-3, pp. 8-23  Investigation 2, Part 3, pp. 19-24  Investigation 4, Part 1, pp. 8-13</p> <p><b>Earth Materials</b>  Investigation 1, Part 1, pp. 8-15</p> <p><b>Magnetism and Electricity</b>  Investigation 1, Part 1, pp. 8-17</p> <p><b>Matter and Energy</b>  Investigation 3, Part 1, pp. 129-138  Science Resources, pp. 39-42</p> <p><b>Water</b>  Investigation 2, Part 3, pp. 19-24  Investigation 3, Parts 1-4, pp. 8-26  Science Stories, pp. 13-15  FOSS Web, Activity: Evaporation</p> <p><b>Measurement</b>  Science Stories, pp. 32-33</p> <p><b>Matter and Energy</b>  Investigation 4, Part 2, pp. 181-192  Science Resources, pp. 54-59</p>

<p style="text-align: center;"><b>and Forces</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.4: Understand the Structure of Atoms</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.5: Understand Chemical Reactions</b></p> <p>No objectives at this grade level.</p>	
--	--

**Standard 3: Biology**

Students analyze how plants and animals adapt to their environments. Students classify vertebrates.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 3.1: Understand the Theory of Biological Evolution</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.3.1.1 Analyze and communicate the adaptations of plants and animals to their environment. <a href="#">(592.01.a)</a></p> <p>4.S.3.1.2 Describe the difference between vertebrate and invertebrate animals. <a href="#">(592.01.c)</a></p> <p>4.S.3.1.3 Classify the five groups of vertebrates (mammal, reptiles, amphibians, birds, and fish) based on characteristics. <a href="#">(592.01.c)</a></p> <p><b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living</b></p>	<p><b>Structures of Life</b> Investigation 2, Part 3, pp. 18-22 Investigation 3, Part 1, pp. 8-15 Investigation 4, Part 1, pp. 8-13 Science Stories, pp. 1-3, 17-18, 22-34, 39</p> <p><b>Human Body</b> Science Stories, pp.9-11</p> <p><b>Human Body</b> Science Stories, p. 11</p> <p><b>Structures of Life</b> Science Stories pp. 41-42</p>

<b>Things</b>	
No objectives at this grade level.	

***Standard 4: Earth and Space Systems***

Students investigate the basic contents of our solar system.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.4.1.1 Compare and contrast the basic components of our solar system (planets, sun, moon, asteroids, comets, meteors). (594.01.b)</p> <p>4.S.4.1.2 Explain the effect of gravity on orbits and objects. (594.01.c)</p> <p>4.S.4.1.3 Explain the effect of moon's gravity on Earth's tides. (594.01.c)</p> <p><b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b></p> <p>No objectives at this grade level.</p>	<p><b>Ideas and Inventions</b> Science Stories, pp. 33-37</p> <p><b>Sun, Moon and Stars</b> Science Resources, pp. 15-17</p>

***Standard 5: Personal and Social Perspectives; Technology***

Students explain how people have invented tools to meet a need or do a job.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p><b>Objective(s): By the end of Grade 4, the student will be able to:</b></p> <p>4.S.5.2.1 Identify tools used for space exploration and for scientific investigations. (595.01.b)</p>	<p><b>Ideas and Inventions</b> Science Stories, pp. 19-20, 38</p> <p><b>Measurement</b> Investigations 1-4, all parts Science Stories, pp. 21-23</p>

<p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p>No objectives at this grade level.</p>	<p><b>Sun, Moon and Stars</b> Investigation 3, Part 2, pp. 126-130 Science Resources, pp. 40-43</p>
---	---

# IDAHO SCIENCE CONTENT STANDARDS GRADE FIVE

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students identify the components of a system and explain their relationship to the whole.  
Students read, execute, and give technical instructions.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.1.1.1 Compare and contrast different systems. (603.01.a)</p>	<p><b>Levers and Pulleys</b> Investigation 2, Parts 1-2, pp. 8-17 Investigation 3, Parts 1-2, pp. 8-20 Science Stories, pp. 10-13, 16-17</p> <p><b>Food and Nutrition</b> Science Stories, pp. 6-8, 44-50</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-3, pp. 8-24</p> <p><b>Variables</b> Investigation 2, Parts 1-3, pp. 8-23 Investigation 3, Parts 2-3, pp. 14-23</p> <p><b>Water Planet</b> Investigation 1, Part 1, pp. 50-58</p>
<p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.1.2.1 Use observations and data as evidence on which to base scientific explanations and predictions. (603.02a)</p>	<p>This objective is addressed in <b>all</b> FOSS Grades 5-6 modules. See for example:</p> <p><b>Variables</b> Investigation 1, Parts 1-3, pp. 8-27</p> <p><b>Environments</b> Investigation 2, Parts 2-4, pp. 16-30</p> <p><b>Mixtures and Solutions</b> Investigation 4, Parts 1-3, pp. 8-24</p> <p><b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 8-24</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 3, Part 3, pp. 136-141</p>
<p>5.S.1.2.2 Explain the difference between observation and inference. (603.02.b)</p>	<p>FOSS investigations provide the opportunity to address this objective. See for example:</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-3, pp. 8-24</p> <p><b>Landforms</b> Investigation 3, Parts 1-2, pp. 8-19</p>

<p>5.S.1.2.3 Use models to explain or demonstrate a concept. (603.02.c)</p> <p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.1.3.1 Analyze changes that occur in and among systems. (603.03.b)</p> <p>5.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system. (603.03.c)</p>	<p><b>Mixtures and Solutions</b> Investigation 4, Parts 1-3, pp. 8-24</p> <p><b>Solar Energy</b> Investigation 3, Parts 1-2, pp. 8-23</p> <p><b>Water Planet</b> Investigation 2, Part 2, pp. 86-92</p> <p><b>Living Systems</b> Investigation 2, Part 1, pp. 85-98</p> <p><b>Models and Design</b> Investigation 2, Parts 1-3, pp. 8-24 Investigation 3, Parts 1-3, pp. 8-23</p> <p><b>Variables</b> Investigation 4, Parts 1-3, pp. 8-23</p> <p><b>Landforms</b> Investigation 1, Parts 1-3, pp. 8-24 Investigation 2, Parts 1-2, pp. 8-22</p> <p><b>Solar Energy</b> Investigation 4, Parts 1-3, pp. 8-28</p> <p><b>Water Planet</b> Investigation 1, Part 1, pp. 50-58</p> <p><b>Variables</b> Investigation 3, Parts 1-3, pp. 8-23</p> <p><b>Models and Designs</b> Investigation 4, Parts 1-2, pp. 6-15</p> <p><b>Levers and Pulleys</b> Investigation 1, Parts 2-3, pp. 18-28 Investigation 3, Parts 1-2, pp. 8-20</p> <p><b>Solar Energy</b> Investigation 3, Parts 1-2, pp. 8-23</p> <p><b>Landforms</b> Investigation 2, Parts 1-2, pp. 8-22</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 2, Part 1, pp. 85-98</p> <p>FOSS investigations use the metric system for measurement. See for example;</p> <p><b>Levers and Pulleys</b> Investigation 1, Parts 2-3, pp. 18-28 Investigation 3, Parts 1-2, pp. 8-20</p> <p><b>Food and Nutrition</b> Investigation 1, Part 1, pp. 8-15</p> <p><b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 8-24</p> <p><b>Environments</b> Investigation 3, Parts 2-3, pp. 14-22</p> <p><b>Mixtures and Solutions</b> Investigation 1, Parts 1-3, pp. 8-24</p> <p><b>Water Planet</b></p>
--	--

<p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.1.5.1 Explain how the shape or form of an object or system is frequently related to its use or function. (603.05.a)</p> <p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. (604.01.a)</p> <p>5.S.1.6.2 Conduct scientific investigations using a control and a variable. (604.01.b)</p>	<p>Investigation 3, Part 1, pp. 125-135  <b>Living Systems</b>  Investigation 2, Part 1, pp. 85-98</p> <p><b>Levers and Pulleys</b>  Investigation 2, Parts 1-4, pp. 8-25  Investigation 3, Parts 1-2, pp. 8-20  Science Stories, pp. 10-13, 16-17</p> <p><b>Variables</b>  Investigation 2, Parts 1-3, pp. 8-22  Investigation 4, Parts 1-3, pp. 8-23  Science Stories, pp. 15-17</p> <p><b>Models and Designs</b>  Investigation 3, Parts 1-3, pp. 8-23  Investigation 4, Parts 1-2, pp. 8-15  Science Stories, pp. 23-24, 37-39, 52-53</p> <p><b>Living Systems</b>  Investigation 1, Part 3, pp. 66-70</p> <p>These objectives are addressed in <b>all</b> FOSS Grades 5-6 modules. See for example:</p> <p><b>Mixtures and Solutions</b>  Investigation 2, Parts 1-3, pp. 8-25</p> <p><b>Environments</b>  Investigation 5, Parts 1-3, pp. 8-22</p> <p><b>Food and Nutrition</b>  Investigation 2, Parts 2-3, pp. 18-25</p> <p><b>Variables</b>  Investigation 3, Parts 2-3, pp. 14-23  Investigation 4, Parts 2-3, pp. 12-23</p> <p><b>Water Planet</b>  Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b>  Investigation 3, Part 3, pp. 136-141</p> <p><b>Variables</b>  Investigation 2, Parts 1-3, pp. 8-23  Investigation 3, Parts 1-4, pp. 8-27</p>
--	--

	<p>Investigation 4, Parts 1-3, pp. 8-23</p> <p><b>Environments</b> Investigation 2, Parts 2-4, pp. 16-30 Investigation 3, Parts 1-3, pp. 8-22</p> <p><b>Landforms</b> Investigation 3, Parts 1-3, pp. 8-24</p> <p><b>Water Planet</b> Investigation 2, Parts 2-3, pp. 86-100</p>
<p>5.S.1.6.3      Select and use appropriate tools and techniques to gather and display data. (604.01.c)</p>	<p><b>Levers and Pulleys</b> Investigation 1, Parts 2-3, pp. 18-28</p> <p><b>Variables</b> Investigation 1, Parts 1-3, pp. 8-27</p> <p><b>Environments</b> Investigation 3, Parts 1-3, pp. 8-22</p> <p><b>Solar Energy</b> Investigation 2, Part 2, pp. 16-24</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 2, Part 1, pp. 85-98</p>
<p>5.S.1.6.4      Use evidence to analyze descriptions, explanations, predictions, and models. (604.01.d)</p>	<p><b>Landforms</b> Investigation 3, Parts 1-3, pp. 8-24</p> <p><b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 8-24</p> <p><b>Mixtures and Solutions</b> Investigation 4, Parts 1-3, pp. 8-24</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-3, pp. 8-24</p> <p><b>Water Planet</b> Investigation 3, Parts 2-3, pp. 136-157</p> <p><b>Living Systems</b> Investigation 2, Part 1, pp. 85-98</p>
<p>5.S.1.6.5      State a hypothesis based on observations. (604.01.e)</p>	<p>FOSS investigations provide the opportunity to address this objective. See below:</p> <p><b>Landforms</b> Investigation 3, Parts 1-3, pp. 8-24</p> <p><b>Solar Energy</b> Investigation 4, Part 3, pp. 24-28</p> <p><b>Environments</b> Investigation 2, Part 4, pp. 26-30</p> <p><b>Variables</b> Investigation 3, Part 3, pp. 20-23</p> <p><b>Water Planet</b> Investigation 2, Part 2, pp. 86-92</p> <p><b>Living Systems</b> Investigation 2, Part 1, pp. 85-98</p>
<p>5.S.1.6.6      Compare alternative explanations and predictions. (604.01.f)</p>	<p><b>Models and Designs</b> Investigation 2, Parts 1-3, pp. 8-24</p> <p><b>Landforms</b> Investigation 3, Parts 1-3, pp. 8-24</p> <p><b>Mixtures and Solutions</b> Investigation 4, Parts 1-3, pp. 8-24</p>

<p>5.S.1.6.7 Communicate scientific procedures and explanations. (604.01.g)</p> <p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.1.8.1 Read and follow technical instructions. (613.02.a)</p>	<p><b>Variables</b> Investigation 1, Parts 1-3, pp. 8-27</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Levers and Pulleys</b> Investigation 1, Parts 2-3, pp. 18-28</p> <p><b>Variables</b> Investigation 3, Parts 1-4, pp. 8-27</p> <p><b>Food and Nutrition</b> Investigation 2, Part 1-3, pp. 8-25</p> <p><b>Solar Energy</b> Investigation 3, Parts 1-2, pp. 8-23</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 3, Part 3, pp. 136-141</p> <p><b>Mixtures and Solutions</b> Investigation 1, Parts 1-2, pp. 8-20 Investigation 2, Part 1, pp. 8-15</p> <p><b>Environments</b> Investigation 2, Part 1, pp. 10-15</p> <p><b>Variables</b> Investigation 3, Part 1, pp. 8-13</p> <p><b>Landforms</b> Investigation 2, Part 1, pp. 8-15</p>
--	--

Standard 2: Physical Science

Students explain the difference between an element, a mixture, and a compound.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.2.1.1 Describe the differences among elements, compounds, and mixtures. (605.01.a)</p> <p>5.S.2.1.2 Compare the physical differences among solids, liquids, and gases. (605.01.c)</p>	<p><b>Mixtures and Solutions</b> Investigation 1, Parts 1-4, pp. 8-29 Science Stories, pp. 6, 25-28, 32-36</p>

<p>5.S.2.1.3 Explain the nature of physical change and how it relates to physical properties. (605.01.d)</p> <p><b>Goal 2.2: Understand Concepts of Motion and Forces</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.4: Understand the Structure of Atoms</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.5: Understand Chemical Reactions</b></p> <p>No objectives at this grade level.</p>	<p><b>Mixtures and Solutions</b> Investigation 1, Parts 1-4, pp. 8-29 Investigation 2, Parts 1-4, pp. 8-28 FOSS Web, Movie: Physical vs Chemical Change</p>
---	---

Standard 3: Biology

Students explain the differences between plant and animal cells. Students understand that plants convert energy. Students know that traits are passed from parents to offspring.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 3.1: Understand the Theory of Biological Evolution</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.3.2.1 Communicate how plants convert energy from the sun through photosynthesis. (608.01.a)</p> <p><b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.3.3.1 Compare and contrast the</p>	<p><b>Food and Nutrition</b> Science Stories, p. 43 <b>Environments</b> Science Stories, p. 39 <b>Living Systems</b> Investigation 3, Part 1, pp. 118-125 Science Resources, pp. 31-34, 47-48</p> <p>This topic as addressed in the grades 6-8</p>

<p>structural differences between plant and animal cells. (606.01.b)</p> <p>5.S.3.3.2 Explain the concept that traits are passed from parents to offspring. (606.01.c)</p>	<p>module <u>Diversity of Life</u>.</p> <p>This topic as addressed in the grades 6-8 module <u>Populations and Ecosystems</u>.</p>
--	--

***Standard 4: Earth and Space Systems***

Students describe the dynamic changes that occur on Earth.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.4.1.1 Describe the interactions among the solid earth, oceans and atmosphere (erosion, climate, tectonics and continental drift). (609.01.a)</p> <p><b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.4.2.1 Explain the rock cycle and identify the three classifications of rocks. (609.02.a)</p>	<p><b>Landforms</b> Investigation 2, Parts 1-2, pp. 8-22 Investigation 3, Parts 1-3, pp. 8-24 Science Stories, pp. 15-29</p> <p><b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 15-29</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135 Investigation 4, Part 1, pp. 184-187 Science Resources, pp. 42-51, 67-79</p> <p>This objective is addressed in the Grades 3-4 module <u>Earth Materials</u> and the Grades 6-8 module <u>Earth History</u>.</p>

***Standard 5: Personal and Social Perspectives; Technology***

Students use the scientific method to identify environmental issues.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.5.1.1 Identify issues for environmental studies. (611.01.a)</p>	<p><b>Landforms</b> Science Stories, pp. 13-14, 43-44</p> <p><b>Environments</b> Science Stories, pp. 36-37, 43-45</p> <p><b>Solar Energy</b> Science Stories, pp. 35-39</p>

<p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.5.2.1 Describe how science and technology are part of a student's life. (610.01.a)</p> <p>5.S.5.2.2 List examples of science and technology. (610.01.b)</p> <p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p><b>Objective(s): By the end of Grade 5, the student will be able to:</b></p> <p>5.S.5.3.1 Identify the differences between renewable and nonrenewable resources. (611.03.a)</p>	<p><b>Mixtures and Solutions</b> Science Stories, p. 21</p> <p><b>Water Planet</b> Science Resources, pp. 64-66</p> <p><b>Levers and Pulleys</b> Science Stories, p. 6-14, 16-7, 23-25, 28-31</p> <p><b>Food and Nutrition</b> Science Stories, pp. 27-33</p> <p><b>Mixtures and Solutions</b> Science Stories, pp. 43-45</p> <p><b>Models and Designs</b> Science Stories, pp. 23-24, 33-36, 44-47, 54-55</p> <p><b>Levers and Pulleys</b> Science Stories, p. 6-14, 16-7, 23-25, 28-31</p> <p><b>Food and Nutrition</b> Science Stories, pp. 27-33</p> <p><b>Mixtures and Solutions</b> Science Stories, pp. 43-45</p> <p><b>Models and Designs</b> Science Stories, pp. 23-24, 33-36, 44-47, 54-55</p> <p><b>Water Planet</b> Science Resources, pp. 18-19</p> <p><b>Solar Energy</b> FOSS Web, Activity: Resources Identification</p>
--	---

# IDAHO SCIENCE CONTENT STANDARDS GRADE SIX

Students are expected to know content and apply skills from previous grades.

*Note that the Grade Six Goals/Objectives are addressed by modules from the K-6 FOSS program and also by modules from the FOSS Middle School program, designed for Grades 6-8. The Grades 5-6 kit titles are listed first, followed by FOSS Middle School kits.*

Standard 1: Nature of Science

Students gather evidence to differentiate between predictions, observations, and inferences. Students read, give, and execute technical instructions.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.1.1.1 Analyze different systems. (618.01.a)</p>	<p>This standard is addressed <b>throughout</b> the FOSS program. See for example:</p> <p><b>Levers and Pulleys</b> Investigation 2, Parts 1-2, pp 8-17</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-3, pp. 8-24</p> <p><b>Variables</b> Investigation 3, Parts 2-3, pp. 14-23</p> <p><b>Water Planet</b> Investigation 1, Part 1, pp. 50-58</p> <p><b>Living Systems</b> Investigation 1, Parts 1-2, pp. 51-65</p> <p><b>Force and Motion</b> Investigation 2, Part 3, pp. 89-99</p> <p><b>Electronics</b> Investigation 1, Part 2, pp. 61-65</p> <p><b>Chemical Interactions</b> Investigation 10, Part 2, pp. 331-335</p>
<p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.1.2.1 Explain how observations and data are used as evidence on which to base scientific explanations and predictions. (618.02.a)</p>	<p>This standard is addressed <b>throughout</b> the FOSS program. See for example:</p> <p><b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 8-24</p> <p><b>Mixtures and Solutions</b> Investigation 4, Parts 1-3, pp. 8-24</p> <p><b>Environments</b> Investigation 2, Parts 2-4, pp. 16-30</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b> Investigation 2, Part 1, pp. 85-98</p> <p><b>Diversity of Life</b> Investigation 6, Part 1, pp. 186-192</p> <p><b>Planetary Science</b></p>

<p>6.S.1.2.2 Use observations to make inferences. (618.02.b)</p> <p>6.S.1.2.3 Use models to explain or demonstrate a concept. (618.02.c)</p> <p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.1.3.1 Analyze changes that occur in and among systems. (618.03.b)</p> <p>6.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system. (618.03.c)</p>	<p>Investigation 5, Part 2, pp. 158-163</p> <p><b>Landforms</b> Investigation 3, Parts 1-2, pp. 8-19 <b>Solar Energy</b> Investigation 3, Parts 1-2, pp. 8-23 <b>Mixtures and Solutions</b> Investigation 4, Parts 1-3, pp. 8-24 <b>Water Planet</b> Investigation 3, Part 2, pp. 136-144 <b>Weather and Water</b> Investigation 5, Part 2, pp. 163-166 <b>Planetary Science</b> Investigation 5, Part 3, pp. 161-167</p> <p><b>Models and Designs</b> Investigation 2, Parts 1-3, pp. 8-24 <b>Landforms</b> Investigation 3, Parts 1-3, pp. 8-24 <b>Solar Energy</b> Investigation 4, Parts 1-3, pp. 8-28 <b>Water Planet</b> Investigation 3, Part 2, pp. 136-144 <b>Weather and Water</b> Investigation 3, Part 2, pp. 97-102 <b>Planetary Science</b> Investigation 3, Part 2, pp. 94-98</p> <p><b>Levers and Pulleys</b> Investigation 1, Parts 2-3, pp. 18-28 <b>Environments</b> Investigation 3, Part 2-3, pp. 14-22 <b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 8-24 <b>Water Planet</b> Investigation 3, Part 3, pp. 145-157 <b>Living Systems</b> Investigation 2, Part 1, pp. 85-98 <b>Weather and Water</b> Investigation 3, Part 2, pp. 97-102 <b>Electronics</b> Investigation 3, Part 2, pp. 124-127</p> <p><b>All FOSS Grades 3-8 modules use the metric system for measurement. See for example;</b> <b>Levers and Pulleys</b> Investigation 1, Parts 2-3, pp. 18-28 <b>Solar Energy</b> Investigation 3, Parts 1-2, pp. 8-23 <b>Water Planet</b> Investigation 3, Part 1, pp. 125-135 <b>Living Systems</b></p>
---	--

<p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.1.5.1 Analyze how the shape or form of an object or system is frequently related to its use and/or function. (618.05.a)</p> <p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. (619.02.a)</p>	<p>Investigation 2, Part 1, pp. 85-98</p> <p><b>Enviroments</b></p> <p>Investigation 3, Parts 2-3, pp. 14-22</p> <p><b>Planetary Science</b></p> <p>Investigation 5, Parts 3-4, pp. 260-270</p> <p><b>Weather and Water</b></p> <p>Investigation 5, Part 1, pp. 152-162</p> <p><b>Levers and Pulleys</b></p> <p>Investigation 2, Parts 1-4, pp. 8-25</p> <p>Science Stories, pp. 10-13, 16-17</p> <p><b>Models and Designs</b></p> <p>Investigation 3, Parts 1-3, pp. 8-23</p> <p>Science Stories, pp. 23-24, 37-39, 52-53</p> <p><b>Living Systems</b></p> <p>Investigation 1, Part 3, pp. 66-70</p> <p>Science Resources, pp. 3-10</p> <p><b>Variables</b></p> <p>Investigation 2, Parts 1-3, pp. 8-23</p> <p>Investigation 4, Parts 1-3, pp. 8-23</p> <p><b>Human Brain and Senses</b></p> <p>Investigation 2, Parts 2-3, pp. 73-83</p> <p><b>Diversity of Life</b></p> <p>Investigation 7, Part 1, pp. 218-223</p> <p>FOSS investigations provide the opportunity to address these objectives. See for example:</p> <p><b>Mixtures and Solutions</b></p> <p>Investigation 3, Parts 1-3, pp. 8-25</p> <p><b>Food and Nutrition</b></p> <p>Investigation 2, Parts 2-3, pp. 18-25</p> <p><b>Variables</b></p> <p>Investigation 3, Parts 2-3, pp. 14-23</p> <p><b>Water Planet</b></p> <p>Investigation 3, Part 1, pp. 125-135</p> <p><b>Living Systems</b></p> <p>Investigation 4, Part 3, pp. 136-141</p> <p><b>Weather and Water</b></p>
--	---

<p>6.S.1.6.2      Conduct scientific investigations using a control and variables. Repeat same experiment using alternate variables. (619.02.b)</p>	<p>Investigation 4, Part 1, pp. 121-130  <b>Diversity of Life</b>  Investigation 6, Part 1, pp. 186-192</p> <p>This standard is addressed throughout <b>all</b> FOSS Grades 5-8 modules. See for example:  <b>Variables</b>  Investigation 3, Parts 2-3, pp. 14-23  Investigation 4, Parts 2-3, pp. 12-23  <b>Landforms</b>  Investigation 3, Parts 1-3, pp. 8-24  <b>Water Planet</b>  Investigation 2, Parts 2-3, pp. 86-100  <b>Planetary Science</b>  Investigation 5, Parts 2-3, pp. 158-167  <b>Diversity of Life</b>  Investigation 9, Part 2, pp. 278-285</p>
<p>6.S.1.6.3      Select and use appropriate tools and techniques to gather and display data. (619.02.c)</p>	<p>This standard is addressed throughout <b>all</b> FOSS investigations in data sheets, lab notebooks, and class charts. See for example;  <b>Levers and Pulleys</b>  Investigation 1, Parts 2-3, pp. 18-28  <b>Solar Energy</b>  Investigation 2, Part 2, pp. 16-24  <b>Water Planet</b>  Investigation 3, Part 1, pp. 125-135  <b>Living Systems</b>  Investigation 2, Part 1, pp. 85-98  <b>Variables</b>  Investigation 1, Parts 1-3, pp. 8-27  <b>Weather and Water</b>  Investigation 4, Part 1, p. 121-130</p>
<p>6.S.1.6.4      Use evidence to analyze data in order to develop descriptions, explanations, predictions, and models. (619.2.d)</p>	<p><b>Landforms</b>  Investigation 3, Parts 1-3, pp. 8-24  <b>Models and Designs</b>  Investigation 2, Parts 1-3, pp. 8-24  <b>Mixtures and Solutions</b>  Investigation 4, Parts 1-3, pp. 8-24  <b>Water Planet</b>  Investigation 2, Parts 2-3, pp. 86-100  <b>Living Systems</b>  Investigation 2, Part 1, pp. 85-98  <b>Planetary Science</b>  Investigation 5, Part 4, pp. 168-173  <b>Weather and Water</b>  Investigation 5, Parts 2-3, pp. 163-174</p>
<p>6.S.1.6.5      Test a hypothesis based on observations. (619.02.e)</p>	<p><b>Landforms</b>  Investigation 3, Parts 1-3, pp. 8-24  <b>Solar Energy</b>  Investigation 4, Part 3, pp. 24-28  <b>Environments</b>  Investigation 2, Part 4, pp. 26-30  <b>Water Planet</b></p>

<p>6.S.1.6.6 Communicate scientific procedures and explanations. (619.02.g)</p> <p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.1.8.1 Read, give, and execute technical instructions. (628.01a)</p>	<p>Investigation 3, Part 1, pp. 125-135  <b>Planetary Science</b>  Investigation 5, Parts 2-3, pp. 163-174  <b>Diversity of Life</b>  Investigation 9, Part 2, pp. 278-285</p> <p>This standard is addressed throughout <b>all</b> FOSS investigations in data sheets, lab notebooks, and class discussion. See for example:  <b>Food and Nutrition</b>  Investigation 2, Parts 1-3, pp. 8-25  <b>Variables</b>  Investigation 3, Parts 1-4, pp. 8-27  <b>Water Planet</b>  Investigation 2, Parts 2-3, pp. 86-100  <b>Living Systems</b>  Investigation 4, Part 3, pp. 136-141  <b>Levers and Pulleys</b>  Investigation 1, Parts 2-3, pp. 18-28  <b>Human Brain and Senses</b>  Investigation 7, Part 2, pp. 219-225  <b>Diversity of Life</b>  Investigation 8, Part 2, pp. 244-252</p> <p>This standard is addressed throughout <b>all</b> FOSS investigations. See for example:  <b>Mixtures and Solutions</b>  Investigation 1, Parts 1-2, pp. 8-20  <b>Environments</b>  Investigation 2, Part 1, pp. 10-15  <b>Variables</b>  Investigation 3, Part 1, pp. 8-13  <b>Force and Motion</b>  Investigation 1, Parts 1-3, pp. 47-66</p>
---	---

Standard 2: Physical Science

Students compare and contrast elements, compounds and mixtures. Students explore the effects of force and energy on objects.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b></p> <p><b>Objective(s): By the end of Grade 6, the</b></p>	

<p><b>student will be able to:</b></p> <p>6.S.2.1.1 Compare and contrast the differences among elements, compounds and mixtures. (620.01.a)</p> <p>6.S.2.1.2 Define the properties of matter. (620.01.b)</p> <p>6.S.2.1.3 Compare densities of equal volumes of a solid, a liquid, or a gas. (619.01.c)</p> <p>6.S.2.1.4 Describe the effect of temperature on density. (620.01.c)</p> <p>6.S.2.1.5 Explain the nature of physical change and how it relates to physical properties (the distance between molecules as water changes from ice to liquid water, and to water vapor). (620.01.d)</p>	<p><b>Mixtures and Solutions</b>, throughout, such as Investigation 1, Parts 1-4, pp. 8-29  Science Stories, pp. 1-6, 25-28, 32-36  <b>Chemical Interactions</b>, throughout, such as Investigation 1, Parts 1-2, pp. 44-58  Investigation 2, Parts 1-2, pp. 72-80 “Elements”  Investigation 8, Part 1, pp. 251-255 “Mixtures”  Investigation 9, Part 1, pp. 282-287  Resources, pp. 3-15, 51-53, 63-77, 96  Chemical Interactions CD-ROM/FOSS web site</p> <p><b>Variables</b>  Science Stories, pp. 10-11  <b>Weather and Water</b>  Investigation 5, Part 1, pp. 152-162  Resources, pp. 27-31  <b>Planetary Science</b>  Investigation 8, Parts 3-4, pp. 260-270  <b>Chemical Interactions</b> throughout, such as Investigation 3, Parts 1-3, pp. 95-113  Investigation 4, Parts 1-3, pp. 125-142  Resources pp. 14-54, 97-101  Chemical Interactions CD-ROM/FOSS web site</p> <p><b>Weather and Water</b>  Investigation 5, Part 1, pp. 152-162  Resources, pp. 27-31</p> <p><b>Mixtures and Solutions</b>  Investigation 1, Parts 1-4, pp. 8-29  Investigation 2, Parts 1-4, pp. 8-28  FOSS Web, Movie: Physical and Chemical Change  <b>Chemical Interactions</b>  Investigation 6, pp. 181-187</p> <p><b>Chemical Interactions</b>  Investigation 4, Parts 1-3, pp. 125-142  Investigation 5, Parts 1-3, pp. 155-171  Investigation 6, pp. 181-187  Investigation 7, Parts 1-4, pp. 206-234  Investigation 8, Parts 1-3, pp. 251-268  Resources, pp. 16-62  Chemical Interactions CD-ROM/FOSS web site</p>
<p><b>Goal 2.2: Understand Concepts of Motion and Forces</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.2.2.1 Describe the effects of different forces (gravity and friction) on the movement, speed, and direction of an</p>	<p><b>Variables</b>  Investigation 1, Parts 1-3, pp. 8-27  Investigation 3, Parts 1-4, pp. 8-27  Science Stories, pp. 15-17</p>

<p>object. (620.03.d)</p> <p><b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.4: Understand the Structure of Atoms</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 2.5: Understand Chemical Reactions</b></p> <p>No objectives at this grade level.</p>	<p><b>Levers and Pulleys</b>  Investigation 1, Parts 2-3, pp. 18-28  Investigation 3, Parts 1-2, pp. 8-20  Science Stories, pp. 1-17</p> <p><b>Water Planet</b>  Investigation 1, Part 2, pp. 59-66  Science Resources, pp. 16-17</p> <p><b>Models and Designs</b>  Investigation 3, Parts 1-3, pp. 8-23  Investigation 4, Parts 1-2, pp. 6-15  Science Stories, pp. 37-43, 48-53</p> <p><b>Force and Motion</b>, throughout, such as  Investigation 6, Parts 1-4, pp. 218-245  Investigation 7, Parts 1-3, pp. 256-272  Resources, pp. 62-69, 75  Force and Motion CD-ROM/FOSS web site</p>
---	--

Standard 3: Biology

Students understand the building blocks of organisms.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 3.1: Understand the Theory of Biological Evolution</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.3.3.1 Identify the different structural levels of which an organism is comprised (cells, tissues,</p>	<p><b>Living Systems</b>  Investigation 1, Parts 1-2, pp. 51-65  Investigation 2, Part 1, pp. 85-98</p>

	organs, organ systems, and organisms). (621.01.a)	Science Resources, pp. 2-10, 16-20 <b>Diversity of Life</b> Investigation 4, Part 2, pp. 137-141 Resources, pp. 27-30, 35-39, 57-58 Diversity of Life CD-ROM: "Ribbon of Life" and database
6.S.3.3.2	Analyze the structural differences between plant and animal cells. (621.01.b)	<b>Diversity of Life</b> Investigation 3, Parts 1-2, pp. 102-115 Investigation 4, Part 1, pp. 133-136 Investigation 5, Part 3, pp. 151-156 Resources, pp. 27-30 Diversity of Life CD-ROM/FOSS web site
6.S.3.3.3	Describe how traits are passed from parents to offspring. (621.01.c)	<b>Populations and Ecosystems</b> Investigation 9, Parts 1-4, pp. 252-291 Resources, pp. 46-55 Populations and Ecosystems CD-ROM/ FOSS web site

***Standard 4: Earth and Space Systems***

Students understand and explain the relationship among the systems on Earth, such as solid earth, oceans, atmosphere, and organisms

<b>GOALS/OBJECTIVES</b>		<b>FOSS</b>
<p><b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p>		
6.S.4.1.1	Explain the interactions among the solid earth, oceans, atmosphere, and organisms. (624.01.a)	<p><b>Landforms</b> Investigation 2, Parts 1-2, pp. 8-22 Investigation 3, Parts 1-3, pp. 8-24 Science Stories, pp. 15-29</p> <p><b>Solar Energy</b> Investigation 2, Parts 1-2, pp. 8-24 Science Stories, pp. 1-3, 18-20, 22-25</p> <p><b>Water Planet</b> Investigation 3, Part 1, pp. 125-135 Investigation 4, Part 1, pp. 184-187 Science Resources, pp. 42-51, 67-79</p> <p><b>Weather and Water</b> Investigation 6, Parts 1-4, pp. 190-213 Resources, pp. 53-55 Weather and Water CD-ROM/FOSS Web Site</p> <p><b>Earth History</b> Investigation 4, Parts 1-6, pp. 127-163 Resources, pp. 73-75, 93-97, 100-105 Earth History CD-ROM/FOSS Web site</p>
6.S.4.1.2	Explain the water cycle and its relationship to weather and climate. (624.01.b)	<p><b>Solar Energy</b> Science Stories, pp. 22-24</p> <p><b>Water Planet</b> Investigation 4, Part 1, pp. 184-197</p>

<p>6.S.4.1.3 Identify cumulus, cirrus, and stratus clouds and how they relate to weather changes. (624.01.c)</p> <p><b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b></p> <p>No objectives at this grade level.</p>	<p>Science Resources, pp. 42-51, 67-70  <b>Weather and Water</b>  Investigation 7, Parts 1-2, pp. 232-243  Weather and Water CD-ROM: Cycles, Water Cycle</p> <p><b>Weather and Water</b>  Resources, pp. 37-42</p>
--	--

***Standard 5: Personal and Social Perspectives; Technology***

Students identify issues for environmental studies and understand the difference between renewable and nonrenewable resources.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.5.1.1 Identify issues for environmental studies. (626.01.a)</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.5.2.1 Describe how science and technology are part of our society. (625.01.a)</p>	<p><b>Landforms</b>  Science Stories, pp. 13-14, 43-44</p> <p><b>Solar Energy</b>  Science Stories, pp. 35-39</p> <p><b>Environments</b>  Science Stories, pp. 36-37, 43-45</p> <p><b>Water Planet</b>  Science Resources, pp. 64-67</p> <p><b>Populations and Ecosystems</b>  Investigation 7, pp. 210-218  Resources, pp. 8-13, 25-41  Populations and Ecosystems CD-ROM/FOSS Web Site</p> <p><b>Weather and Water</b>  Investigation 9, Part 4, pp. 265-318  Resources, pp. 63-66  Weather and Water CD-ROM/FOSS Web Site</p> <p><b>Levers and Pulleys</b>  Science Stories, pp. 6-14, 16-17, 23-25, 28-31</p> <p><b>Models and Designs</b>  Science Stories, pp. 23-24, 33-36, 44-47, 54-55</p>

<p>6.S.5.2.2 Describe how science and technology are interrelated. (625.01.b)</p> <p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p><b>Objective(s): By the end of Grade 6, the student will be able to:</b></p> <p>6.S.5.3.1 Explain the difference between renewable and nonrenewable resources. (626.03.a)</p>	<p><b>Food and Nutrition</b> Science Stories, pp. 27-33</p> <p><b>Water Planet</b> Science Resources, pp. 64-67</p> <p><b>Variables</b> Science Stories, pp. 15-17, 34-37</p> <p><b>Electronics</b> Investigation 4, Parts 1-2, pp. 142-152 Resources, pp. 1-2, 18-21, 34-36</p> <p><b>Levers and Pulleys</b> Science Stories, pp. 6-14, 16-17, 23-25, 28-31</p> <p><b>Models and Designs</b> Science Stories, pp. 23-24, 33-36, 44-47, 54-55</p> <p><b>Food and Nutrition</b> Science Stories, pp. 27-33</p> <p><b>Variables</b> Science Stories, pp. 15-17, 34-37</p> <p><b>Electronics</b> Investigation 4, Parts 1-2, pp. 142-152 Resources, pp. 1-2, 18-21, 34-36 Electronics CD-ROM/FOSS Web Site</p> <p><b>Solar Energy</b> FOSS Science Stories, pp. 29-39 FOSS Web, Activity: Resource Identification</p> <p><b>Electronics</b> Resources, pp. 12-13, 18-21</p> <p><b>Weather and Water</b> Investigation 7, Parts 1-2, pp. 232-244 “The Water Planet” Resources, pp. 45-47, 63-66</p>
--	---

# IDAHO SCIENCE CONTENT STANDARDS GRADE SEVEN

Students are expected to know content and apply skills from previous grades.

***Standard 1: Nature of Science***

Students carry out investigations over time using appropriate tools and equipment. Students make inferences based upon data they collect. Students accurately communicate the results of their investigations and observations. Students support or revise their conclusions by critically analyzing alternate explanations. Students carry out investigations following written lab procedures. Students follow safety protocols in carrying out investigations.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p><b>Objective(s): By the end of Grade 7 the student will be able to:</b></p> <p>7.S.1.1.1 Define small systems as a part of a whole system. (633.01.a)</p> <p>7.S.1.1.2 Determine how small systems contribute to the function of the whole. (633.01.a)</p> <p>7.S.1.1.3 Identify the different structural levels of an organism (cells, tissues, organs, and organ systems). (633.01.b)</p> <p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation</b></p> <p><b>Objective(s): By the end of Grade 7, the student will be able to:</b></p> <p>7.S.1.2.1 Describe how observations and data are evidence on which to base scientific</p>	<p><b>Human Brain and Senses</b> Investigation 2, Parts 2-3, pp. 73-83 Resources pp. 63-74</p> <p><b>Diversity of Life</b> Investigation 4, Parts 1-2, pp. 133-141 Resources, pp. 53-59</p> <p><b>Weather and Water</b> Investigation 3, Part 2, pp. 93-96 Resources, pp. 53-55</p> <p><b>Planetary Science</b> Investigation 9, Parts 1-3, pp. 283-297</p> <p><b>Weather and Water</b> Investigation 3, Part 2, pp. 93-96 Resources, pp. 53-55</p> <p><b>Human Brain and Senses</b> Investigation 2, Parts 2-3, pp. 73-83 Resources pp. 63-74</p> <p><b>Diversity of Life</b> Investigation 4, Parts 1-2, pp. 133-141 Resources, pp. 53-59</p> <p><b>Diversity of Life</b> Investigation 4, Part 2, pp. 137-141 Resources, pp. 27-30, 35-39, 57-58 Diversity of Life CD-ROM/FOSS Web site: "Ribbon of Life"</p> <p>FOSS investigations provide the opportunity to address these objectives. See examples below:</p>

<p>explanations and predictions. (633.02.a)</p> <p>7.S.1.2.2 Use observations to make defensible inferences. (633.02.b)</p> <p>7.S.1.2.3 Use models to explain or demonstrate a concept. (633.02.c)</p>	<p><b>Diversity of Life</b> Investigation 6, Part 1, pp. 186-191 <b>Planetary Science</b> Investigation 5, Part 2, pp. 158-163 <b>Weather and Water</b> Investigation 1, Part 2, pp. 48-56</p> <p><b>Diversity of Life</b> Investigation 9, Parts 1-3, pp. 273-290 <b>Planetary Science</b> Investigation 3, Parts 1-3, pp. 89-103 <b>Weather and Water</b> Investigation 8, Parts 1-4, pp. 258-280 <b>Earth History</b> Investigation 1, Parts 1-2, pp. 39-49 <b>Human Brain and Senses</b> Investigation 7, Part 2, pp. 219-225</p> <p><b>Diversity of Life</b> Investigation 6, Part 3, p. 203 <b>Planetary Science</b> Investigation 7, Parts 1-5, pp. 218-237 <b>Populations and Ecosystems</b> Investigation 3, Parts 1-3, pp. 90-107 <b>Human Brain and Senses</b> Investigation 3, Parts 1-3, pp. 92-100</p>
<p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p>	
<p><b>Objective(s): By the end of Grade 7, the student will be able to:</b></p>	<p>FOSS investigations provide the opportunity to address these objectives. See examples below:</p>
<p>7.S.1.3.1 Identify concepts of science that have been stable over time. (633.03.a)</p>	<p><b>Earth History</b> Resources, p. 74 <b>Planetary Science</b> Resources, pp. 69-70 <b>Diversity of Life</b> Investigation 3, Parts 1-3, pp. 102-124</p>
<p>7.S.1.3.2 Recognize changes that occur within systems. (633.03.b)</p>	<p><b>Populations and Ecosystems</b> Investigation 1, Parts 1-3, pp. 41-59 Investigation 3, Parts 1-3, pp. 90-107 Resources, pp. 8-13, 25-30 <b>Earth History</b> Investigation 7, Parts 1-2, pp. 234-243 Resources, pp. 73-75, 76-79, 80-97, 100-105 <b>Weather and Water</b> Investigation 9, Parts 3-4, pp. 311-320 Resources, pp. 63-66 Weather and Water CD-ROM/FOSS Web site</p>
<p>7.S.1.3.3 Make metric measurements using appropriate tools. (633.03.c)</p>	<p>FOSS investigations use the metric system for measurement. See for example: <b>Weather and Water</b> Investigation 5, Part 1, pp. 152-162</p>

<p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p>Reference to objective 7.S.3.2.1</p> <p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Grade 7, the student will be able to:</b></p> <p>7.S.1.6.1 Identify controls and variables used in scientific investigations. (634.01.b)</p> <p>7.S.1.6.2 Use appropriate tools and techniques to gather and display data. (634.01c)</p> <p>7.S.1.6.3 Evaluate data in order to form conclusions. (634.01.d)</p> <p>7.S.1.6.4 Use evidence and critical thinking to accept or reject a</p>	<p><b>Planetary Science</b> Investigation 8, Parts 3-4, pp. 360-370</p> <p><b>All FOSS investigations provide the opportunity to understand scientific inquiry, and develop critical thinking skills. See representative examples below:</b></p> <p><b>Diversity of Life</b> Investigation 6, Parts 1-3, pp. 186-203 Investigation 8, Parts 1-3, pp. 239-250</p> <p><b>Planetary Science</b> Investigation 5, Parts 2-3, pp. 158-167</p> <p><b>Weather and Water</b> Investigation 4, Part 1, pp. 121-130</p> <p><b>Weather and Water</b> Investigation 1, Part 2, pp. 48-56</p> <p><b>Diversity of Life</b> Investigation 6, Parts 1-3, pp. 186-203</p> <p><b>Populations and Ecosystems</b> Investigation 5, Parts 1-2, pp. 142-155 Populations and Ecosystems CD-ROM/FOSS Web Site</p> <p><b>Planetary Science</b> Investigation 8, Parts 3-4, pp. 360-370</p> <p><b>Planetary Science</b> Investigation 10, Parts 2-3, pp. 318-324</p> <p><b>Earth History</b> Investigation 3, Parts 1-4, pp. 88-111 Investigation 8, Parts 3-4, pp. 266-275</p> <p><b>Weather and Water</b> Investigation 5, Parts 1-3, pp. 152-175</p> <p><b>Diversity of Life</b> Investigation 6, Parts 1-2, pp. 186-197</p> <p><b>Diversity of Life</b> Investigation 6, Parts 1-3, pp. 186-203 Investigation 8, Parts 1-3, pp. 239-260</p>
---	---

<p>hypothesis. (634.01.e)</p> <p>7.S.1.6.5 Evaluate alternative explanations or predictions. (634.01.f)</p> <p>7.S.1.6.6 Communicate and defend scientific procedures and explanations. (634.01.g)</p> <p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Grade 7, the student will be able to:</b></p> <p>7.S.1.8.1 Read and evaluate technical instructions. (643.02.a)</p>	<p><b>Weather and Water</b> Investigation 9, Parts 1-4, pp. 296-320</p> <p><b>Planetary Science</b> Investigation 5, Parts 1-3, pp. 154-163 Resources, pp. 59-62</p> <p><b>Planetary Science</b> Investigation 5, Parts 1-4, 154-173 Resources, pp. 59-62</p> <p><b>Weather and Water</b> Investigation 7, Parts 1-2, pp. 232-244</p> <p><b>Diversity of Life</b> Investigation 6, Parts 1-3, pp. 186-203</p> <p><b>Diversity of Life</b> Investigation 8, Part 2, pp. 244-252</p> <p><b>Human Brain and Senses</b> Investigation 7, Part 2, pp. 219-225</p> <p><b>Weather and Water</b> Investigation 5, Parts 1-3, pp. 152-175</p> <p><b>Planetary Science</b> Investigation 10, Parts 2-3, pp. 318-324</p> <p>This objective is addressed in <b>all</b> FOSS modules in Lab Notebooks and the CD-ROMS/FOSS Web Site. See for example:</p> <p><b>Weather and Water</b> Investigation 1, Part 2, pp. 48-56 and Lab Notebook Weather and Water CD-ROM/FOSS Web Site</p> <p><b>Human Brain and Senses</b> Investigation 4, Parts 1-3, pp. 120-143 and Lab Notebook Human Brain and Senses CD-ROM/FOSS Web Site</p> <p><b>Populations and Ecosystems</b> Investigation 1, Parts 1-3, pp. 41-59 Populations and Ecosystems CD-ROM/FOSS Web Site</p>
---	--

**Standard 2: Physical Science**

No goals or objectives at this grade level.

**Standard 3: Biology**

Students state the levels of cellular organization and list cell parts and their respective functions. Students explain how traits are passed from one generation to another. Students differentiate between plant and animals cells by identifying the characteristic parts of each. Students explain

how organisms are adapted to their environment and interact with the biotic and abiotic components of the environment.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 3.1: Understand the Theory of Biological Evolution</b></p> <p><b>Objective(s): By the end of Grade 7, the student will be able to:</b></p> <p>7.S.3.1.1 Describe how natural selection explains species change over time. (637.01.a)</p> <p><b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b></p> <p><b>Objective(s): By the end of Grade 7, the student will be able to:</b></p> <p>7.S.3.2.1 Describe how energy stored in food is primarily derived from the sun through photosynthesis. (638.01.a)</p> <p>7.S.3.2.2 Describe how the availability of resources (matter and energy) limits the distribution and abundance of organisms. (638.01.b)</p> <p>7.S.3.2.3 Illustrate how atoms and molecules cycle among the living and nonliving components of the biosphere. (638.01.c)</p> <p>7.S.3.2.4 Identify how energy flows through ecosystems in one direction, from photosynthetic organisms to herbivores, carnivore, and decomposers. (638.01.d)</p>	<p><b>Populations and Ecosystems</b> Investigation 10, Parts 1-3, pp. 302-317 Resources, pp. 58-63 Video: Voyage to the Galapagos</p> <p><b>Populations and Ecosystems</b> Investigation 5, Parts 1-4, pp. 142-169 Resources, pp. 14-16 <b>Diversity of Life</b> Resources, p. 36</p> <p><b>Populations and Ecosystems</b> Investigation 6, Parts 1-3, pp. 179-197 Resources, pp. 22-24, 25-29</p> <p><b>Populations and Ecosystems</b> Investigation 6, Parts 1-3, pp. 179-197 Resources, pp. 22-24, 25-29</p> <p><b>Populations and Ecosystems</b> Investigation 5, Parts 1-4, pp. 142-169 Investigation 7, pp. 210-218 Resources, pp. 14-16, 17-21 Populations and Ecosystems CD-ROM/FOSS Web Site</p>
<p><b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b></p> <p><b>Objective(s): By the end of Grade 7, the student will be able to:</b></p> <p>7.S.3.3.1 Explain the relationships among specialized cells, tissues, organs, organ systems, and organisms. (636.01.a)</p>	<p><b>Diversity of Life</b> Investigation 4, Part 2, pp. 137-141 Resources, pp. 27-30, 35-39, 57-58 Diversity of Life CD-ROM/FOSS Web Site: "Ribbon of Life"</p> <p><b>Human Brain and Senses</b> Resources, pp. 63-74</p>

7.S.3.3.2	Identify the parts of specialized plant and animal cells. (636.01.b)	<b>Diversity of Life</b> Investigation 6, Part 2, pp. 193-197 Resources, pp. 31-41 Diversity of Life CD-ROM/FOSS Web Site
7.S.3.3.3	Identify the functions of cell structures. (636.01.b)	<b>Diversity of Life</b> Investigation 3, Parts 1-2, pp. 102-107 Investigation 4, Part 1, pp. 133-136 Investigation 5, Part 3, pp. 168-171 Resources, pp. 27-30 Diversity of Life CD-ROM/FOSS Web Site
7.S.3.3.4	Describe cell functions that involve chemical reactions. (630.01.c)	<b>Populations and Ecosystems</b> Resources, pp. 14-16 <b>Diversity of Life</b> Resources, p. 36 Diversity of Life CD-ROM/FOSS Web Site
7.S.3.3.5	Describe how dominant and recessive traits are inherited. (636.01.e)	<b>Populations and Ecosystems</b> Investigation 9, Parts 1-4, pp. 252-291 Resources, pp. 46-55 Populations and Ecosystems CD-ROM/FOSS Web Site

**Standard 4: Earth and Space Systems**

No goals or objectives at this grade level.

**Standard 5: Personal and Social Perspectives; Technology**

Students understand that science and technology interact and impact both individuals and society.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b></p> <p>No objectives at this grade level.</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p><b>Objective(s): By the end of Grade 7, the student will be able to:</b></p> <p>7.S.5.2.1 Explain how science and technology are interrelated. (640.01.a)</p>	<p><b>Weather and Water</b> Investigation 1, Parts 1-2, pp. 43-46 Resources, pp. 5, 20-22, 43-44</p> <p><b>Populations and Ecosystems</b> Investigation 4, Parts 1-2, pp. 119-129 Resources, pp. 8-13</p> <p><b>Diversity of Life</b> Investigation 2, Parts 1-3, pp. 72-92 Diversity of Life CD-ROM/FOSS Web Site</p>
<p>7.S.5.2.2 Explain how science advances technology.</p>	<p><b>Planetary Science</b> Resources, pp. 74-77, 90-95</p>

(640.01.b)

**Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them**

**Objective(s):** By the end of Grade 7, the student will be able to:

**7.S.5.3.1 Identify alternative sources of energy. (641.03.a)**

**Diversity of Life**

Investigation 2, Parts 1-3, pp. 72-91

**Human Brain and Senses**

Investigation 5, Parts 1-4, pp. 152-175

Resources, pp. 3-8,16,19-20

**Weather and Water**

Resources, p. 66

**Populations and Ecosystems**

Investigation 7, pp. 210-218

Resources, pp. 8-13

**Electronics**

Investigation 4, Parts 1-2, pp. 143-151

Resources, pp. 12-13, 34-36

# IDAHO CONTENT STANDARDS GRADE EIGHT/NINE PHYSICAL SCIENCE

Students are expected to know content and apply skills from previous grades.

**Standard 1: Nature of Science**

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p><b>Objective(s): By the end of Physical Science, the student will be able to:</b></p> <p>8-9.PS.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)</p> <p>8-9.PS.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)</p>	<p>FOSS investigations provide the opportunity to address these objectives. See for example:</p> <p><b>Chemical Interactions</b> Investigation 2, Parts 1-2, pp. 72-81 Investigation 4, Part 2, pp. 131-138 Investigation 10, Part 2, pp. 331-335 Resources, pp. 3-7, 90-91 Chemical Interactions CD-ROM/FOSS web site</p> <p><b>Force and Motion</b> Investigation 2, Part 3, pp. 89-99 Investigation 6, Parts 1-4, pp. 218-245 Force and Motion CD-ROM/FOSS Web Site</p> <p><b>Electronics</b> Investigation 1, Part 2, pp. 61-65</p>
<p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation</b></p> <p><b>Objective(s): By the end of Physical Science, the student will be able to:</b></p> <p>8-9.PS.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)</p> <p>8-9.PS.1.2.2 Develop models to explain concepts or systems. (648.02b)</p>	<p>FOSS investigations provide the opportunity to address these objectives. See <u>representative</u> examples below:</p> <p><b>Electronics</b> Investigation 2, Parts 1-3, pp. 89-103 Electronics CD-ROM/FOSS Web site</p> <p><b>Chemical Interactions</b> Investigation 1, Parts 1-2, pp. 44-58 Investigation 6, pp. 181-187 Chemical Interactions CD-ROM/FOSS web site</p> <p><b>Force and Motion</b> Investigation 1, Parts 1-2, pp. 47-62 Force and Motion CD-ROM/ FOSS web site</p> <p><b>Electronics</b> Investigation 9, Part 2, pp. 290-298 Electronics CD-ROM/ FOSS web site</p> <p><b>Force and Motion</b></p>

<p>8-9.PS.1.2.3      Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)</p> <p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Physical Science, the student will be able to:</b></p> <p>8-9.PS.1.3.1      Measure changes that can occur in and among systems. (648.03b)</p> <p>8-9.PS.1.3.2      Analyze changes that can occur in and among systems. (648.03b)</p> <p>8-9.PS.1.3.3      Measure and calculate using the metric system. (648.03c)</p> <p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p>No objectives in Physical Science.</p> <p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p>No objectives in Physical Science.</p> <p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Physical</b></p>	<p>Investigation 5, Parts 1-4, pp. 169-201 Investigation 8, Part 2, pp. 294-301 Force and Motion CD-ROM/FOSS Web Site <b>Chemical Interactions</b> Investigation 4, Part 2, pp. 131-138</p> <p><b>Chemical Interactions</b> Investigation 1, Parts 1-2, pp. 44-58 Investigation 4, Parts 1-3, pp. 125-142 <b>Electronics</b> Investigation 2, Parts 1-3, pp. 89-103 <b>Force and Motion</b> Investigation 3, Parts 1-2, pp. 111-123 Investigation 4, Part 2, pp. 146-151 Investigation 5, Parts 1-4, pp. 169-201 Force and Motion CD-ROM/FOSS web site</p> <p>Students in FOSS middle school courses use the metric system to measure and analyze changes throughout the inquiry-based investigations. See for example:</p> <p><b>Force and Motion</b> Investigation 5, Parts 1-4, pp. 169-201 Investigation 6, Parts 229-235 Force and Motion CD-ROM/FOSS Web site <b>Chemical Interactions</b> Investigation 6, pp. 181-187 Investigation 7, Parts 1-5, pp. 206-234 Chemical Interactions CD-ROM/FOSS web site <b>Electronics</b> Investigation 2, Parts 1-4, pp. 89-107 Investigation 8, Parts 1-4, pp. 250-273 Electronics CD-ROM/FOSS web site</p> <p><b>All</b> FOSS Middle School physical science modules provide the opportunity to address these objectives through inquiry-based investigations followed by individual, group and class analysis, lab notebooks, and discussion. One example per objective will be cited, but <u>all</u></p>
--	---

<p><b>Science, the student will be able to:</b></p> <p>8-9.PS.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)</p> <p>8-9.PS.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)</p> <p>8-9.PS.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)</p> <p>8-9.PS.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)</p> <p>8-9.PS.1.6.5 Analyze alternative explanations and models. (649.01e)</p> <p>8-9.PS.1.6.6 Communicate and defend a scientific argument. (649.01f)</p> <p>8-9.PS.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)</p>	<p><u>3 modules</u> have investigations that address each objective. See for example:</p> <p><b>Chemical Interactions</b> Investigation 4, Parts 1-3, pp. 125-142 Chemical Interactions CD-ROM/FOSS web site</p> <p><b>Electronics</b> Investigation 2, Parts 3-4, pp. 99-107 Investigation 3, Part 1, pp. 119-123 Electronics CD-ROM/FOSS web site</p> <p><b>Force and Motion</b> Investigation 2, Part 3, pp. 89-99 Investigation 5, Parts 1-3, pp. 169-201 Force and Motion CD-Rom/FOSS web site</p> <p><b>Electronics</b> Investigation 6, Parts 1-4, pp. 186-209 Electronics CD-ROM/FOSS web site</p> <p><b>Chemical Interactions</b> Investigation 7, Parts 1-5, pp. 206-234 Chemical Interactions CD-ROM/FOSS web site</p> <p><b>Force and Motion</b> Investigation 1, Parts 1-2, pp. 47-62</p> <p><b>Electronics</b> Investigation 8, Parts 1-4, pp. 250-273 Resources p. 33 <b>Force and Motion</b> Investigation 7, Parts 1-3, pp. 256-272 Resources, pp. 50-52,62-29</p>
<p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p> <p>No objectives in Physical Science.</p>	
<p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Physical Science, the student will be able to:</b></p> <p>8-9.PS.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)</p>	<p>This standard is addressed <b>throughout</b> the FOSS middle school courses in the Resources books, CD-ROMS and lab notebooks. See for example:</p> <p><b>Force and Motion</b> Investigation 4, Parts 1-3, pp. 138-155 Resources, pp. 27-30, 36-40</p> <p><b>Electronics</b> Investigation 3, Part 2, pp. 124-127 Investigation 6, Part 3, pp. 195-200</p>

***Standard 2: Physical Science***

Students explain the structure and properties of atoms, including isotopes. Students explain how chemical reactions, while requiring or releasing energy, can neither destroy nor create energy or matter. Students explain the differences between fission and fusion. Students explain the interactions of force and mass in describing motion using Newton's Laws. Students explain how energy can be transformed from one form to another while the total amount of energy remains constant. Students classify energy as potential and/or kinetic, and as energy contained in a field.

<b>GOALS/OBJECTIVES</b>	<b>FOSS</b>
<p><b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b></p> <p>No objectives in Physical Science.</p> <p><b>Goal 2.2: Understand Concepts of Motion and Forces</b></p> <p><b>Objective(s): By the end of Physical Science, the student will be able to:</b></p> <p>8-9.PS.2.2.1 Explain motion using Newton's Laws of Motion. (650.04b)</p> <p><b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b></p> <p><b>Objectives): By the end of Physical Science, the student will be able to:</b></p> <p>8-9.PS.2.3.1 Explain that energy can be transformed but cannot be created nor destroyed. (650.05a)</p> <p>8-9.PS.2.3.2 Classify energy as potential and/or kinetic and as energy contained in a field. (650.05b)</p> <p><b>Goal 2.4: Understand the Structure of Atoms</b></p> <p><b>Objective(s): By the end of Physical Science, the student will be able to:</b></p> <p>8-9.PS.2.4.1 Describe the properties,</p>	<p><b>Force and Motion</b> Investigation 1, Parts 1-2, pp. 47-62 Investigation 6, Parts 1-4, pp. 218-245 Investigation 8, Parts 1-2, pp. 284-301 Resources, pp. 50-52 Force and Motion CD-ROM/FOSS web site</p> <p>FOSS provides the opportunity to address this objective. See below: <b>Electronics</b> Investigation 1, Parts 1-3, pp. 55-70 Resources, pp. 1-2, 12-13</p> <p>FOSS provides the opportunity to address this objective. See below: <b>Force and Motion</b> Investigation 1, Parts 1-2, pp. 47-60 Investigation 2, Part 3, pp. 89-99 <b>Chemical Interactions</b> Investigation 4 Parts 1-3, pp. 125-142, "Kinetic Energy" Resources, pp. 32-41, 73-75 <b>Electronics</b> Resources, pp. 12-13</p> <p>FOSS provides the opportunity to address this objective. See below: <b>Chemical Interactions</b></p>

	function, and location of protons, neutrons, and electrons. (650.01a)	Investigation 9, Part 1, pp. 274-287 Resources, pp. 80-81, 90-91,104 Chemical Interactions CD-ROM/FOSS web site
8-9.PS.2.4.2	Explain the processes of fission and fusion. (650.01b)	FOSS provides the opportunity to address this objective. See below: <b>Chemical Interactions</b> Investigation 2, Part 1, pp. 72-74 Resources, pp. 80-83 Chemical Interactions CD-ROM/FOSS web site
8-9.PS.2.4.3	Describe the characteristics of isotopes. (650.01c)	
8-9.PS.2.4.4	State the basic electrical properties of matter. (650.01d)	<b>Electronics</b> Resources, pp. 4, 6-8 CD-ROM/FOSS web site: Tech Manual: Atoms and Charge <b>Chemical Interactions</b> Investigation 9, Part 1, pp. 274-287 Resources, pp. 80-81,104 Chemical Interactions CD-ROM/FOSS web site
8-9.PS.2.4.5	Describe the relationships between magnetism and electricity.	
<b>Goal 2.5: Understand Chemical Reactions</b>		
<b>Objective(s): By the end of Physical Science, the student will be able to:</b>		
8-9.PS.2.5.1	Explain how chemical reactions may release or consume energy while the quantity of matter remains constant. (650.03a)	<b>Electronics</b> CD-ROM/FOSS web site: Tech Manual: Atoms and Charge <b>Chemical Interactions</b> Investigation 3, Parts 1-3, pp. 95-113 Investigation 4, Parts 1-3, pp. 125-142 Investigation 5, Parts 1-3, pp. 155-171 Resources, pp. 16-48 Chemical Interactions CD-ROM/FOSS web site

**Standard 3: Biology**

No goals or objectives in Physical Science.

**Standard 4: Earth and Space Systems**

No goals or objectives in Physical Science.

**Standard 5: Personal and Social Perspectives; Technology**

Students understand that science and technology interact and impact both society and the environment.

GOALS/OBJECTIVES	FOSS
Goal 5.1: Understand Common Environmental Quality Issues,	

<p style="text-align: center;"><b>Both Natural and Human Induced</b></p> <p>No objectives in Physical Science.</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p><b>Objective(s): By the end of Physical Science, the student will be able to:</b></p> <p>8-9.PS.5.2.1 Explain how science advances technology. <a href="#">(655.01a)</a></p> <p>8-9.PS.5.2.2 Explain how technology advances science. <a href="#">(655.01a)</a></p> <p>8-9.PS.5.2.3 Explain how science and technology are pursued for different purposes. <a href="#">(656.01b)</a></p> <p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p>No objectives in Physical Science.</p>	<p>FOSS investigations provide the opportunity to address these objectives. See representative examples below:</p> <p><b>Electronics</b> Investigation 4, Parts 1-2, pp. 143-151 Resources, pp. 34-36 Electronics CD-ROM/FOSS Web Site</p> <p><b>Force and Motion</b> Investigation 8, Parts 1-2, pp. 284-301 Resources, pp. 3-9, 73-74 Force and Motion CD-ROM/FOSS Web Site</p> <p><b>Electronics</b> Investigation 2, Parts 3-4, pp. 99-107 Electronics CD-ROM/FOSS Web Site</p> <p><b>Force and Motion</b> Investigation 5, Parts 1-4, pp. 169-201 Resources, pp. 41-49 Force and Motion CD-ROM/FOSS Web Site</p> <p><b>Chemical Interactions</b> Resources, pp. 80-83</p> <p><b>Electronics</b> Investigation 2, Parts 3-4, pp. 99-107</p> <p><b>Chemical Interactions</b> Resources, pp. 60-61, 80-83, 84-85</p> <p><b>Force and Motion</b> Investigation 8, Parts 1-2, pp. 284-301 Resources, pp. 1-9, 50-52, 73-74 Force and Motion CD-ROM/FOSS Web Site</p>
---	--

# GRADE EIGHT/NINE EARTH SCIENCE

Students are expected to know content and apply skills from previous grades.

***Standard 1: Nature of Science***

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 1.1: Understand Systems, Order, and Organization</b></p> <p><b>Objective(s): By the end of Earth Science, the student will be able to:</b></p> <p>8-9.ES.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)</p> <p>8-9.ES.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)</p> <p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation</b></p> <p><b>Objective(s): By the end of Earth Science, the student will be able to:</b></p> <p>8-9.ES.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)</p> <p>8-9.ES.1.2.2 Develop models to explain concepts or systems. (648.02b)</p>	<p><b>All</b> of the FOSS Middle School earth science modules provide the opportunity to address these objectives. See for example:</p> <p><b>Weather and Water</b> Investigation 7, Parts 1-2, pp. 232-244 Investigation 8, Parts 1-4, pp. 258-280 Investigation 9, Parts 1-4, pp. 296-320 Weather and Water CD-ROM/FOSS web site</p> <p><b>Planetary Science</b> Investigation 3, Parts 1-2, pp. 89-98 Investigation 9, Parts 1-4, pp. 283-301 Investigation 10, Parts 2-3, pp. 318-324 Planetary Science CD-ROM/FOSS web site</p> <p><b>Earth History</b> Investigation 3, Parts 1-4, pp. 88-111 Investigation 4, Part 3, pp. 138-146 Resources, pp. 78-80,100-105</p> <p><b>All</b> of the FOSS Middle School earth science modules provide the opportunity to address these objectives. See for example:</p> <p><b>Planetary Science</b> Investigation 5, Parts 1-3, pp. 154-167</p> <p><b>Weather and Water</b> Investigation 1, Part 2, pp. 48-56</p> <p><b>Earth History</b> Investigation 1, Parts 1-2, pp. 39-49 Investigation 3, Parts 1-4, pp. 88-111</p> <p><b>Planetary Science</b> Investigation 7, Parts 1-5, pp. 218-237</p> <p><b>Earth History</b> Investigation 4, Part 3, pp. 138-146</p> <p><b>Weather and Water</b> Investigation 3, Parts 1-3, pp. 93-112</p>

<p>8-9.ES.1.2.3      Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)</p> <p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p> <p><b>Objective(s): By the end of Earth Science, the student will be able to:</b></p> <p>8-9.ES.1.3.1      Measure changes that can occur in and among systems. (648.03b)</p> <p>8-9.ES.1.3.2      Analyze changes that can occur in and among systems. (648.03b)</p> <p>8-9.ES.1.3.3      Measure and calculate using the metric system. (648.03c)</p> <p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p> <p>No objectives in Earth Science.</p> <p><b>Goal 1.5: Understand Concepts of Form and Function</b></p> <p>No objectives in Earth Science.</p> <p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p> <p><b>Objective(s): By the end of Earth Science, the student will:</b></p> <p>8-9.ES.1.6.1      Identify questions and concepts that guide scientific investigations. (649.01a)</p> <p>8-9.ES.1.6.2      Utilize the components of</p>	<p><b>Planetary Science</b> Investigation 5, Parts 2-3, pp. 158-167 <b>Weather and Water</b> Investigation 5, Parts 1-3, pp. 152-175 <b>Earth History</b> Investigation 3, Parts 1-4, pp. 88-111 Investigation 7, Parts 1-2, pp. 234-244</p> <p>Students in FOSS middle school courses use the metric system to measure and analyze changes in and among systems <u>throughout</u> the inquiry-based investigations. See for example: <b>Weather and Water</b> Investigation 4, Parts 1-2, pp. 121-140 Investigation 5, Part 1, pp. 152-162 <b>Planetary Science</b> Investigation 5, Parts 2-3, pp. 158-167 Investigation 8, Parts 3-4, pp. 360-370 <b>Earth History</b> Investigation 4, Parts 3-6, pp. 138-163 Investigation 5, Parts 1-4, pp. 175-19</p> <p><b>Earth History</b> Resources, pp. 83-88</p> <p><b>All</b> FOSS Middle School earth science modules address these objectives through inquiry-based investigations. See <u>representative examples</u> below:</p> <p><b>Planetary Science</b> Investigation 5, Parts 2-3, pp. 158-167 <b>Earth History</b> Investigation 2, Parts 3-4, pp. 68-75 Investigation 3, Parts 1-4, pp. 88-111 <b>Weather and Water</b> Investigation 3, Parts 1-3, pp. 93-112</p> <p><b>Weather and Water</b></p>
---	---

	<p>scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)</p>	<p>Investigation 5, Parts 1-2, pp. 152-168  <b>Planetary Science</b>  Investigation 5, Parts 2-3, pp. 158-167  <b>Earth History</b>  Investigation 4, Parts 1-6, pp. 127-163</p>
<p>8-9.ES.1.6.3</p>	<p>Use appropriate technology and mathematics to make investigations. (649.01c)</p>	<p><b>Planetary Science</b>  Investigation 8, Parts 3-4, pp. 255-264  Planetary Science CD-ROM/FOSS web site  <b>Weather and Water</b>  Investigation 5, Parts 1-3, pp. 152-174  Investigation 6, Part 1, pp. 190-193  Weather and Water CD-ROM/FOSS web site  <b>Earth History</b>  Investigation 4, Parts 1-4, pp. 127-149  Earth History CD-ROM/FOSS web site</p>
<p>8-9.ES.1.6.4</p>	<p>Formulate scientific explanations and models using logic and evidence. (649.01d)</p>	<p><b>Planetary Science</b>  Investigation 5, Parts 1-4, pp. 154-173  Investigation 7, Parts 1-5, pp. 218-237  <b>Earth History</b>  Investigation 7, Parts 1-2, pp. 234-244  Resources, pp. 37-41, 76-88  <b>Weather and Water</b>  Investigation 7, Parts 1-2, pp. 232-244</p>
<p>8-9.ES.1.6.5</p>	<p>Analyze alternative explanations and models. (649.01e)</p>	<p><b>Planetary Science</b>  Investigation 2, Parts 1-2, pp. 64-77  Investigation 5, Parts 1-4, pp. 154-173  Resources, pp. 47-53, 59-62  <b>Weather and Water</b>  Investigation 9, Parts 3-4, pp. 315-320  Weather and Water CD-ROM/FOSS web site</p>
<p>8-9.ES.1.6.6</p>	<p>Communicate and defend a scientific argument. (649.01f)</p>	<p><b>Planetary Science</b>  Investigation 10, Parts 2-3, pp. 318-324  <b>Earth History</b>  Investigation 6, Parts 1-4, pp. 205-225  <b>Weather and Water</b>  Investigation 5, Parts 1-3, pp. 152-175</p>
<p>8-9.ES.1.6.7</p>	<p>Explain the differences among observations, hypotheses, and theories. (649.01g)</p>	<p>FOSS investigations provide the opportunity to address this objective through their inquiry-orientated investigations. See for example:  <b>Earth History</b>  Investigation 7, Parts 1-2, pp. 234-244  Resources, pp. 37-41, 76-88  <b>Planetary Science</b>  Investigation 2, Parts 1-2, pp. 64-77  Investigation 5, Parts 1-4, pp. 154-173  Resources, pp. 47-53, 59-62  <b>Weather and Water</b>  Investigation 9, Parts 3-4, pp. 315-320  Weather and Water CD-ROM/FOSS web site</p>
<p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p>		<p>Investigation 2, Parts 1-2, pp. 64-77  Investigation 5, Parts 1-4, pp. 154-173  Resources, pp. 47-53, 59-62  <b>Weather and Water</b>  Investigation 9, Parts 3-4, pp. 315-320  Weather and Water CD-ROM/FOSS web site</p>

<p>No objectives in Earth Science.</p> <p><b>Goal 1.8: Understand Technical Communication</b></p> <p><b>Objective(s): By the end of Earth Science, the student will be able to:</b></p> <p>8-9.ES.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)</p>	<p>This standard is addressed throughout <b>all</b> of the FOSS Middle School earth science modules in class work, lab notebooks, work with the Resources books, and the CD-ROMs/FOSS web site. See for example:</p> <p><b>Weather and Water</b> Investigation 4, Part 1, pp. 121-130 Resources, pp. 12-16, 19, 29, 34-35, 56, 70 Weather and Water CD-ROM/FOSS web site</p> <p><b>Planetary Science</b> Investigation 5, Parts 2-3, pp. 158-167 Resources, pp. 35-43 Planetary Science CD-ROM/FOSS web site</p> <p><b>Earth History</b> Investigation 6, Parts 1-4, pp. 205-225 Resources, pp. 31-46 Earth History <b>Earth History</b> Investigation 6, Parts 1-4, pp. 205-225</p>
--	--

Standard 2: Physical Science

No goals or objectives in Earth Science.

Standard 3: Biology

No goals or objectives in Earth Science.

Standard 4: Earth and Space Systems

Students describe the current theory explaining the formation of the solar system. Students explain earth processes, events (erosion, uplifting, earthquakes, volcanic eruptions, etc.), and geological time. Students explain Earth's heat sources.

GOALS/OBJECTIVES	FOSS
<p><b>Standard 4: Earth and Space Systems</b></p> <p><b>Students describe the current theory explaining the formation of the solar system. Students explain earth processes, events (erosion, uplifting, earthquakes, volcanic eruptions, etc.), and geological time. Students explain Earth's heat sources.</b></p> <p><b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b></p> <p><b>Objective(s): By the end of Earth Science, the student will be able to:</b></p> <p>8-9.ES.4.1.1 Explain the current scientific theory that suggests that the solar system formed from a</p>	<p><b>Planetary Science</b> Resources, p. 84</p>

<p>nebular cloud of dust and gas. (654.01a)</p> <p>8-9.ES.4.1.2 Identify methods used to estimate geologic time. (654.01b)</p> <p>8-9.ES.4.1.3 Show how interactions among the solid earth, oceans, atmosphere, and organisms have changed the earth system over time. (654.01c)</p> <p><b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b></p> <p><b>Objectives): By the end of Earth Science, the student will be able to:</b></p> <p>8-9.ES.4.2.1 Explain the internal and external energy sources of the earth (654.02a)</p>	<p><b>Earth History</b> Investigation 7, Part 1, pp. 234-242 Resources, pp. 76-79, 84-88</p> <p><b>Earth History</b> Investigation 5, Part 4, pp. 188-193 Investigation 8, Part 1, pp. 254-258 Resources, pp. 73-75, 93-97, 100-105</p> <p><b>Weather and Water</b> Resources, pp. 63-76</p> <p><b>Planetary Science</b> Resources, pp. 67-68</p> <p><b>Earth History</b> Resources, pp.100-102 Earth History CD-ROM/FOSS web site</p> <p><b>Weather and Water</b> Investigation 3, Part 3, pp. 103-110 Investigation 9, Parts 3-4, pp. 311-320 Resources, pp. 32-33, 53-55 Weather and Water CD-ROM/FOSS web site</p>
---	---

***Standard 5: Personal and Social Perspectives; Technology***

Students understand that science and technology interact and impact both society and the environment. Students describe issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

GOALS/OBJECTIVES	FOSS
<p><b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b></p> <p><b>Objective(s): By the end of Earth Science, the student will be able to:</b></p> <p>8-9.ES.5.1.1 Analyze environmental issues such as water and air quality, hazardous waste, and depletion of natural resources. (656.01a)</p> <p><b>Goal 5.2: Understand the Relationship between Science and Technology</b></p> <p><b>Objective(s): By the end of Earth Science, the student will be able to:</b></p>	<p>FOSS Middle School modules provide the opportunity to analyze natural resource and environmental issues. See for example:</p> <p><b>Weather and Water</b> Investigation 7, Parts 1-2, pp. 232-244 Investigation 9, Parts 3-4, pp. 311-320 Resources, pp. 45-47, 63-66, 67-76, 82-83 Weather and Water CD-ROM/FOSS web site</p>

<p>8-9.ES.5.2.1 Explain how science advances technology. (655.01a)</p> <p>8-9.ES.5.2.2 Explain how technology advances science. (655.01a)</p> <p>8-9.ES.5.2.3 Explain how science and technology are pursued for different purposes. (655.01b)</p>	<p>FOSS investigations provide the opportunity to address these objectives. See below:</p> <p><b>Weather and Water</b> Investigation 1, Part 1, pp. 43-47 Resources, pp. 5, 20-21, 43-44, 50-51 Weather and Water CD-ROM/FOSS web site</p> <p><b>Planetary Science</b> Resources, pp. 74-77, 90-96 Planetary Science CD-ROM/FOSS web site</p> <p><b>Weather and Water</b> Investigation 1, Part 2, pp. 48-56 Resources, pp. 3-5, 67-76 Weather and Water CD-ROM/FOSS web site</p> <p><b>Planetary Science</b> Resources, pp. 74-77, 90-96</p> <p><b>Earth History</b> Resources, pp. 60-63, 64-67, 98-99</p>
<p><b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b></p> <p><b>Objectives(s): By the end of Earth Science, the student will be able to:</b></p> <p>8-9.ES.5.3.1 Describe the difference between renewable and nonrenewable resources. (656.03a)</p>	<p>FOSS Middle School modules provide the opportunity to study renewable and nonrenewable resources. See for example:</p> <p><b>Weather and Water</b> Investigation 7, Parts 1-2, pp. 232-244 Investigation 9, Parts 3-4, pp. 311-320 Resources, pp. 45-47, 63-66, 67-76, 82-83 Weather and Water CD-ROM/FOSS web site</p>