

**Grade K – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>1. Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and uses environmentally appropriate and responsible practices. The student is expected to:</b>	
1A. identify, discuss, and demonstrate safe and healthy practices as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately;	<p><b>FOSS Next Generation Materials and Motion</b>                      IG: pp. 60 (Step 9), 61(Step 16), 88, 90 (Step 7), 92 (Step 13), 94,106 (Step 7), 116, 122, 125(Step 4),129 (Step 3), 131(Steps 1-3), 199, 286                      DR: <i>Environmental Health</i></p> <p><b>FOSS Next Generation Animals Two by Two</b>                      IG: pp. 82 (Step 12), 107,130, 142,144- 145, 148,173-174,179,185,202,208,215,218</p> <p><b>FOSS Next Generation Trees and Weather</b>                      IG: pp. 56 (Step 10),80,86-88, 121,219-221                      DR: <i>Once There Was a Tree</i></p>
1B. demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reusing or recycling paper, plastic, and metal.	<p><b>FOSS Next Generation Materials and Motion</b>                      IG: pp. 93, 97, 137, 140 (Step 13), 141 (Step 14), 167, 190 (Step 8), 191 (Step 1), 195, 239, 246, 247 (Step 2), 249 (Step 10), 316                      SRB: pp. 41-46'                      DR: <i>Reduce, Reuse and Recycle, What is Agriculture?,, Recycling Center</i></p> <p><b>FOSS Next Generation Animals Two by Two</b>                      IG: pp.37, 38-39, 40-41, 74, 77, 102,126, 129, 151, 164,167, 176 (Step 7), 178, 183 (Step 5), 227, 240                      SRB: pp.19, 38, 65                      EA: Investigations Guide pp.97</p> <p><b>FOSS Next Generation Trees and Weather</b>                      IG: pp.56, 77, 79, 107 (Step 8), 116 (Step 11), 123, 213, 240, 255, 266                      SRB: pp. 4-12, 14-19</p>

**Grade K – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>2. Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:</b>	
2A. ask questions about organisms, objects, and events observed in the natural world;	<p><b>FOSS Next Generation Materials and Motion</b>                      IG: pp 85, 162, 175, 177, 191, 217, 247 (Step 2), 259 (Step 24), 271, 317                      SRB: pp. 9</p> <p><b>FOSS Next Generation Animals Two by Two</b>                      IG: pp. 75, 94, 106 (Step 11), 109, 139 (Step 1), 165, 240                      SRB: pp. 9, 36, 47-54, 56                      DOR: <i>Seashore Surprise</i></p>

IG: Investigations Guide • SRB: Science Resources Book • DR: Digital Resources • EA: Embedded Assessment BM: Benchmark Assessment

	<p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 77, 102 (Step 4), 104 (Step 6), 108, 134, 149 (Step 7), 150, 175, 198-199, 214, 227 (Step 4), 255, 266  <b>SRB:</b> pp. 41, 44, 58-59</p>
<p>2B. plan and conduct simple descriptive investigations;</p>	<p><b>FOSS Next Generation Materials and Motion</b>  <b>IG:</b> pp. 45, 49, 265, 266, 271, 278, 286, 287, 289, 297, 304, 317  <b>SRB:</b> pp. 58  <b>EA:</b> <i>Performance Assessment</i>, IG pp. 275-276 (Step 7), p.278 (Step 8), IG p. 280 (Step 15), IG p. 285 (Step 8), p. 286-287 (Step 5), IG p. 290 (Step 15), IG p. 295 (Step 11), p. 298 (Step 7)  <b>DR:</b> <i>Roller Coaster Builder</i></p> <p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp. 75, 94, 106 (Step 11), 109, 139 (Step 1), 165, 240  <b>SRB:</b> pp. 9, 36, 47-54, 56  <b>EA:</b> <i>Performance Assessment</i>, IG p. 87 (Step 6), p. 90 (Step 11), IG p. 189 (Step 14)  <b>DR:</b> <i>Seashore Surprise</i></p> <p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 77, 102 (Step 4), 104 (Step 6), 108, 134, 149 (Step 7), 150, 214, 227 (Step 4), 255, 266  <b>SRB:</b> pp. 58-59  <b>EA:</b> <i>Performance Assessment</i>, IG p. 116 (Step 11), IG p.121 (Step 9)</p>
<p>2C. collect data and make observations using simple tools;</p>	<p><b>FOSS Next Generation Materials and Motion</b>  <b>IG:</b> pp. 296-297, 303-305  <b>EA:</b> <i>Investigation Guide</i> Step 8 p. 285, Step 5 p. 302</p> <p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp. 75, 94, 106 (Step 11), 109, 139 (Step 1), 165, 240  <b>SRB:</b> pp. 9, 36, 47-54, 56  <b>DOR:</b> <i>Seashore Surprise</i></p> <p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 77, 102 (Step 4), 104 (Step 6), 108, 134, 149 (Step 7), 150, 214, 227 (Step 4), 255, 266  <b>SRB:</b> pp. 58-59</p>
<p>2D. record and organize data and observations using pictures, numbers, and words; and</p>	<p><b>FOSS Next Generation Materials and Motion</b>  <b>IG:</b> pp. 240-241, 296-297, 303-305</p> <p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp. 75, 94, 106 (Step 11), 109, 139 (Step 1), 165, 240  <b>SRB:</b> pp. 9, 36, 47-54, 56  <b>DR:</b> <i>Seashore Surprise</i></p> <p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 77, 102 (Step 4), 104 (Step 6), 108, 134, 149 (Step 7), 150, 214, 227 (Step 4), 255, 266  <b>SRB:</b> pp. 58-59</p>

2E. communicate observations about simple descriptive investigations.	<p><b>FOSS Next Generation Materials and Motion</b>                  IG: pp. 86, 162, 212-213, 218, 248-249, 296-297, 303-305,317                  SRB: pp. 41-46</p> <p><b>FOSS Next Generation Animals Two by Two</b>                  IG: pp. 75, 94, 106 (Step 11), 109, 139 (Step 1), 165, 240                  SRB: pp. 9, 36, 47-54, 56                  DOR: <i>Seashore Surprise</i></p> <p><b>FOSS Next Generation Trees and Weather</b>                  IG: pp. 77, 102 (Step 4), 104 (Step 6), 108, 134, 149, (Step 7),150, 214, 227 (Step 4), 255, 266                  SRB: pp. 58-59</p>
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**Grade K – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>3. Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:</b>	
3A. identify and explain a problem such as the impact of littering and propose a solution;	<p><b>FOSS Next Generation Materials and Motion</b>                  IG: pp. 137, 140 (Step 13), 141 (Step 14), 190 (Step 8), 191(Step 1), 195, 247 (Step 2), 249 (Step 10),                  SRB: pp. 41-46                  EA: <i>Performance Assessment</i>, IG: p. 253 (Step 9), IG: p. 257 (Steps 17-18), IG: p. 260 (Step 26)                  DR: <i>What is Agriculture? "Recycling Center"</i></p> <p><b>FOSS Next Generation Trees and Weather</b>                  IG: pp 173, 179,193 (Step 13),197,199 (Step 12), 266                  SRB: pp. 33-37,40</p>
3B. make predictions based on observable patterns in nature; and	<p><b>FOSS Next Generation Materials and Motion</b>                  IG: pp. 95-97                  DR: "Where is Wood?"</p> <p><b>FOSS Next Generation Animals Two by Two</b>                  IG: pp. 37, 39, 41                  EA: <i>Performance Assessment</i>, IG p. 87 (Step 6), IG p. 90 (Step 11), IG p. 189 (Step 14)</p> <p><b>FOSS Next Generation Trees and Weather</b>                  IG: pp. 41, 43, 45, 174, 188, 214, 215, 240, 243, 257, 266                  SRB: pp. 29 and 59                  EA: <i>Performance Assessment</i>, IG p. 116 (Step 11), IG p. 121 (Step 9)</p>

<p>3C. explore that scientists investigate different things in the natural world and use tools to help in their investigations.</p>	<p><b>FOSS Next Generation Materials and Motion</b>  <b>IG:</b> pp. 217, 253, 257, 317  <b>SRB:</b> pp. 9-12</p> <p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp 200 and 213</p> <p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> p.139 (Step 1), 140 (Step 9), 145-147, 162 (Step 8), 180 (Step 6) and 256 (Step 9)  <b>SRB:</b> p. 29  <b>DR:</b> Once There was a Tree</p>
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**Grade K – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<p><b>4. Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:</b></p>	
<p>4A. collect information using tools, including computing devices, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices; nonstandard measuring items; weather instruments such as demonstration thermometers; and materials to support observations of habitats of organisms such as terrariums and aquariums; and</p>	<p><b>FOSS Next Generation Materials and Motion</b>  <b>IG:</b> pp. 89-90,100-103,108-110,114,116,131-132, 248, 254-258, 226,284  <b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp.79-80,84,87,89,130-131,133,142,145-146,168,172, 177,182, 202-203, 206, 211,  <b>SRB:</b> pp. 10  <b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 83-84,87,90,173, 193 (Step 13), 197, 266,176-181,184,186-189, 191-195</p>
<p>4B. use the senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment.</p>	<p><b>FOSS Next Generation Materials and Motion</b>  <b>IG:</b> pp. 217-218, 255, 256, 258, 317  <b>SRB:</b> pp. 60-67</p> <p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp. 37, 39, 41  <b>EA:</b> <i>Performance Assessment</i>, IG p. 87 (Step 6), IG p. 90 (. Step 11), IG p.189 (Step 14)</p> <p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 41, 43, 45, 174, 188, 214, 215, 240, 243, 257, 266  <b>SRB:</b> pp. 29 and 59  <b>EA:</b> <i>Performance Assessment</i>, IG p. 116 (Step 11), IG p. 121 (Step 9)</p>

### Grade K – Matter and Energy

State Standard	FOSS Program
<b>5. Matter and energy. The student knows that objects have properties and patterns. The student is expected to:</b>	
5A. observe and record properties of objects, including bigger or smaller, heavier or lighter, shape, color, and texture; and	<b>FOSS Next Generation Materials and Motion</b> IG: pp. 94-100, 107-111, 115-121, 125-127, 131-133, 168-170, 176-179, 184-187, 223-230, 236-237, 240-241 SRB: pp. 101-102, 242 EA: Investigations Guide pp.167 (Step 10) DR: <i>Where is Wood</i>
5B. observe, record, and discuss how materials can be changed by heating or cooling	<b>FOSS Next Generation Materials and Motion</b> IG: pp. 254-257
<b>6. Force, motion, and energy. The student knows that energy, force, and motion are related and are a part of their everyday life. The student is expected to</b>	
6A. use the senses to explore different forms of energy such as light, thermal, and sound;	<b>FOSS Next Generation Materials and Motion</b> IG: pp. 254-257(thermal) SRB: pp. 62 (Sound) DR: <i>Roller Coaster Builder</i>  *Delta Explore Reader: <i>My Five Senses – Pink</i> pp. 2-21
6B. explore interactions between magnets and various materials;	*Delta Explore Reader: <i>Force and Motion – Pink</i> pp. 4
6C. observe and describe the location of an object in relation to another such as above, below, behind, in front of, and beside; and	<b>FOSS Next Generation Materials and Motion</b> IG: pp. 248, 254-258, 277-280, 286-290 SRB: pp.291 DR: <i>Roller Coaster Builder</i>
6D. observe and describe the ways that objects can move such as in a straight line, zigzag, up and down, back and forth, round and round, and fast and slow.	<b>FOSS Next Generation Materials and Motion</b> IG: pp. 43, 265, 268, 270, 273, 277-280, 286-290, 296-299, 304-305, 313, 316 SRB: pp. 28, 47-58, 60-68 DR: <i>Roller Coaster Builder</i>

### Grade K – Earth and Space

State Standard	FOSS Program
<b>7. Earth and space. The student knows that the natural world includes earth materials. The student is expected to:</b>	
7A. observe, describe, and sort rocks by size, shape, color, and texture;	<i>NOTE: This standard is covered in grade 2 in Pebbles, Sand, and Silt. Total K-2 standards coverage is 98%.</i>  <b>FOSS Next Generation Pebbles, Sand, and Silt</b> IG: pp. 101, 102, 108, 114 SRB: pp. 3-10 EA: Performance assessment, IG pp. 102, Notebook entry, IG pp. 109

	<p><b>DR:</b> "Rock Sorting," "Property Chain" <b>BM:</b> Assessment coding guide, pp. 2-3 (Item 2), 6-7 (Item 5)</p>
7B. observe and describe physical properties of natural sources of water, including color and clarity; and	<p><i>NOTE: This standard is covered in grade 2 in Pebbles, Sand, and Silt. Total K-2 standards coverage is 98%.</i></p> <p><b>FOSS Next Generation Pebbles, Sand, and Silt</b> <b>IG:</b> pp. 250, 251, 252 <b>SRB:</b> pp.50-60 <b>EA:</b> Notebook entry, IG pp. 253</p>
7C. give examples of ways rocks, soil, and water are useful.	<p><b>FOSS Next Generation Trees and Weather</b> <b>IG:</b> pp.107,120,123 <b>SRB:</b> pp. 14</p> <p><b>FOSS Next Generation Animals Two by Two</b> <b>IG:</b> N/A <b>SRB:</b> pp.38-41</p>
<b>8. Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:</b>	
8A. observe and describe weather changes from day to day and over seasons;	<p><b>FOSS Next Generation Trees and Weather</b> <b>IG:</b> pp. 39, 44-45, 167, 173, 175, 178 (Step 9), 202 (Steps 20-21), 205, 213, 226, 234, 253, 255, 266 <b>SRB:</b> pp. 38-40, 42-44, 59</p>
8B. identify events that have repeating patterns, including seasons of the year and day and night; and	<p><b>FOSS Next Generation Trees and Weather</b> <b>IG:</b> pp. 41,43, 45, 174, 188, 214, 215, 240, 243, 257, 266 <b>SRB:</b> pp. 29 and 59</p>
8C. observe, describe, and illustrate objects in the sky such as the clouds, Moon, and stars, including the Sun.	<p><b>FOSS Next Generation Trees and Weather</b> <b>IG:</b> pp. 176-177, 179-180, <b>SRB:</b> pp.20-31 <b>DR:</b> <i>Come a Tide</i></p>

### Grade K – Organisms and Environments

State Standard	FOSS Program
<b>9. Organisms and environments. The student knows that plants and animals have basic needs and depend on the living and nonliving things around them for survival. The student is expected to:</b>	
9A. differentiate between living and nonliving things based upon whether they have basic needs and produce offspring; and	<p><b>FOSS Next Generation Trees and Weather</b> <b>IG:</b> pp108,120</p> <p><b>FOSS Next Generation Animals Two by Two</b> <b>IG:</b> pp. 227-229 <b>SRB:</b> pp. 67-86 <b>EA:</b> pp: 226 (Step 8)</p>

<p>9B. examine evidence that living organisms have basic needs such as food, water, and shelter for animals and air, water, nutrients, sunlight, and space for plants.</p>	<p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp. 37, 75, 88 (Step 1), 87, 90, 106 (Step 11), 151,165, 167, 183, 189, 199, 201, 226, 240  <b>EA:</b> pp. 87 (Step 6)  <b>SRB:</b> pp. 5, 22, 38, 65-66, 68</p> <p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 41, 77, 79, 133, 159 (Step 6), 162, 213, 215, 220 (Step 6), 228 (Step 6), 242 (Step 7), 255, 257 (Step 10)  <b>SRB:</b> pp. 14-19, 50, 53  <b>DOR:</b> "Who Lives Here?" <i>Summer</i></p>
<p><b>10. Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:</b></p>	
<p>10A. sort plants and animals into groups based on physical characteristics such as color, size, body covering, or leaf shape;</p>	<p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp. 134-135, 207,</p> <p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 88-91,99-100,103-104,143-144,146-147,150-151,154,156,163  <b>DR:</b> <i>Leaf Sorting</i></p>
<p>10B. identify basic parts of plants and animals;</p>	<p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp. 84-85, 134-135, 171-173</p> <p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 88-90,95-96, 99-100, 165,218,225</p>
<p>10C. identify ways that young plants resemble the parent plant; and</p>	<p><b>FOSS Next Generation Trees and Weather</b>  <b>IG:</b> pp. 75,120,221</p> <p><b>FOSS Next Generation Animals Two by Two</b>  <b>IG:</b> pp. 229  <b>SRB:</b> pp. 69</p>
<p>10D. observe changes that are part of a simple life cycle of a plant: seed, seedling, plant, flower, and fruit.</p>	<p><b>FOSS Next Generation Trees and Weather</b>  <b>SRB:</b> pp. 47-56</p> <p><b>FOSS Next Generation Animals Two by Two</b>  <b>SRB:</b> pp. 79-80</p>

**Grade 1– Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>1. Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and uses environmentally appropriate and responsible practices. The student is expected to:</b>	
1A. identify, discuss, and demonstrate safe and healthy practices as outlined in Texas Education agency-approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately; and	<p><b>FOSS Next Generation Sound and Light</b>                      IG: pp. 85,88,91,113,186,217,221,222</p> <p><b>FOSS Next Generation Air and Weather</b>                      IG: pp.88,89,91,93,99,103,108,111, 113-114, 119, 122, 128, 149, 187, 203,234</p> <p><b>FOSS Next Generation Plants and Animals</b>                      IG: pp. 20,25, 82,86,92,108,117-120,149-150,187,189, 209-210,213,250,252</p>
1B. identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals	<p><b>FOSS Next Generation Sound and Light</b>                      IG: pp. 14,63,88                      SRB: pp. 44</p> <p><b>FOSS Next Generation Air and Weather</b>                      IG: pp. 65,88,91, 231-232</p> <p><b>FOSS Next Generation Plants and Animals</b>                      IG: pp. 215, 216, 217                      SRB: pp. 57-70</p>

**Grade 1– Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>2. Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:</b>	
2A. ask questions about organisms, objects, and events observed in the natural world;	<p><b>FOSS Next Generation Sound and Light</b>                      IG: pp. 49, 51,81-82, 90-93, 95, 105, 106,110, 115,129, 136,147,152-153, 161,163, 164, 213,246, 247 (Step 13)                      SRB: pp. 7,8-14, 32, 70-73                      EA: <i>Notebook Entry</i>, IG p. 164 (Step 15), IG p. 247 (Step 19), <i>Performance Assessment</i>, IG p. 164 (Step 11), IG p. 246 (Step 8)</p> <p><b>FOSS Next Generation Air and Weather</b>                      IG: pp. 84, 100, 101, 109                      SRB: p. 6                      DR: Friction and Air Resistance</p> <p><b>FOSS Next Generation Plants and Animals</b>                      IG: pp. 98,111,141,144,151,230, 253 (Step 14), 255 (Steps 20 and 21)                      SRB: pp.3-9,27-33</p>



<p>2B. plan and conduct simple descriptive investigations;</p>	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp.81, 91, 95, 105, 106, 115, 129, 136,153, 160,220  <b>SRB:</b> pp. 7, 32, 76  <b>EA:</b> <i>Performance Assessment</i> IG p.106 (Step 10)</p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 84,94,99, 100, (Step 3), 101 (Step 5), 104, 109, 114,214, 216, 247  <b>DR:</b> <i>Friction and Air Resistance</i></p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp. 10-11,34,104,118,147,178-179,180,241,244  <b>EA:</b> <i>Performance Assessment</i> p. 178 (Step 9),241 (Step 11), 244 (Step 11)</p>
<p>2C. collect data and make observations using simple tools;</p>	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp. 49,51,82, 92, 95, 106, 109, 130, 137, 176, 181,188, 196,214,220-222,230, 236, 244  <b>SRB:</b> pp. 41,42  <b>EA:</b> <i>Notebook Entry</i>, IG p. 164 (Step 15), IG p. 247 (Step 19), <i>Performance Assessment</i>, IG p. 164 (Step 11), IG p. 246 (Step 8)</p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp.51,154,160,162,189,247, 256,284  <b>EA:</b> <i>Notebook Entry</i>, IG p. 109 (Step 27), <i>Performance Assessment</i>, IG p. 108 (Step 23), IG p. 109 (Step 25)  <b>DR:</b> <i>What's the Weather?</i>  <b>BM:</b> pp.8-9 (Item 6)</p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp. 122 (Step 10), 124 (Step 15), 245, 253, 255 (Step 21)  <b>SRB:</b> pp. 23-25  <b>DR:</b> <i>Find the Parent</i></p>
<p>2D. record and organize data using pictures, numbers, and words; and</p>	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp. 49, 51,164 (Step 13), 246, 247 (Step 16), 248  <b>EA:</b> <i>Notebook Entry</i>, IG p. 164 (Step 15), IG p. 247 (Step 16), <i>Performance Assessment</i>, IG p. 164 (Step 13), IG p. 246 (Step 8)  <b>BM:</b> pp. 30-31 (Item 6)</p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 51, 84, 105 (Step 16), 109, 154,162,189, 256,284  <b>EA:</b> <i>Notebook Entry</i>, IG p. 109 (Step 27), <i>Performance Assessment</i>, IG p. 109 (Step 25)  <b>DR:</b> <i>What's the Weather?</i>  <b>BM:</b> pp. 8-9 (Item 6)</p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp.10-11, 82-84, 92-93, 98-99, 100,101,104,109-111,144,188,237  <b>EA:</b> <i>Performance Assessment</i> IG p.106 (Step 12)</p>

<p>2E. communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations.</p>	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp. 47, 51, 175, 181, 186, 188, 198, 213, 220, 222, 227  <b>SRB:</b> pp. 44-45  <b>EA:</b> pp: <i>Notebook Entry</i>, IG p. 182 (Step 14), IG p. 183 (Step 15), IG p. 200 (Step 14) <i>Performance Assessment</i>, IG p. 188 (Step 8)  <b>BM:</b> pp. 16-17 (Item 1), pp. 18-19 (Item 2), pp. 20-21 (Item 3), pp. 24-25 (Item 1), pp. 28-29 (Item 5)</p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 50-51,109,243, 255 (Step 5), 256 (Steps 7 and 8)  <b>SRB:</b> p.6</p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp. 82-84,92-93,98-99, 100,101,104,109-111,144, 172, 180 (Step 9), 181,188, 217,237  <b>EA:</b> Performance Assessment IG p.106 (Step 12) p. 181 (Step 12)</p>
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**Grade 1– Scientific Investigation and Reasoning**

State Standard	FOSS Program
<p><b>3. Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:</b></p>	
<p>3A. identify and explain a problem and propose a solution;</p>	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp. 47, 49, 51, 129, 161-165, 213, 243 (Step 5), 245 (Step 5), 246 (Step 1), 249 (Step 22)  <b>SRB:</b> p.76  <b>EA:</b> <i>Notebook Entry</i>, IG p. 164 (Step 15), IG p. 247 (Step 19) <i>Performance Assessment</i>, IG p.164 (Step 11), IG p. 246 (Step 8)  <b>BM:</b> pp. 28-29 (Item 5); pp. 30-31 (Item 6)</p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> p. 51, 84, 100, (Step 3), 101 (Step 5), 104, 109  <b>EA:</b> <i>Notebook Entry</i>, IG p. 109 (Step 27), <i>Performance Assessment</i>, IG p. 108 (Step 23), IG p. 109 (Step 25)  <b>DR:</b> Friction and Air Resistance  <b>BM:</b> pp. 8-9 (Item 6)</p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp.49,165, 166, 173, 175, 180, 181, 182, 217 (Step 19),  <b>EA:</b> <i>Notebook Entry</i>, IG p. 217 (Step 19), <i>Performance Assessment</i>, IG p. 181 (Step 12)  <b>BM:</b> pp. 278-279 (Item 1), pp. 282-283 (Item 4)</p>
<p>3B. make predictions based on observable patterns; and</p>	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp. 175,182</p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 49,51,53, 135, 142, 145,161 (Step 17), 179 (Step 3), 180, 181, 182 (Step 13), 184, 185 (Step 19), 245, 251, 257  <b>SRB:</b> pp. 26-28, 33-36  <b>EA:</b> <i>Notebook Entry</i>, IG p. 183 (Step 16), IG p. 185 (Step 20), IG p. 251 (Step 11), <i>Performance Assessment</i>, IG p. 183 (Step 14), IG p. 250 (Steps 10 and 12)</p>

IG: Investigations Guide • SRB: Science Resources Book • DR: Digital Resources • EA: Embedded Assessment BM: Benchmark Assessment

	<p><b>BM:</b> pp.11-12 (Item 2), pp. 13-14 (Item 3), pp. 24-25 (Item 2), pp. 26-27 (Item 3)</p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp. 78,122,230, 247,252 (Step 8), 253 (Step 14), 255(Steps 20 and 21)</p>
3C. describe what scientists do.	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp. pp. 82, 90, 92, 93,96, 110,114, 126,147, 152-153, 163, 234  <b>SRB:</b> pp. 8-14</p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 86,95,147, 155, 166,248,255,</p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp. 91,101,180,230, 247, 251,253</p>

**Grade 1– Scientific Investigation and Reasoning**

State Standard	FOSS Program
<p><b>4. Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:</b></p>	
<p>4A. collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; non-standard measuring items; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums; and</p>	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp. 56, 85, 87, 91,93, 95, 97,105, 106, 115, 129, 136,153, 160,163,220</p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 155, 157, 159-160, 174, 208, 210-211, 216,219, 221, 223, 229, 235,  <b>SRB:</b> p.38  <b>EA:</b> Notebook Entry p. 209 (Step 7)</p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp.10-11, 82-84, 92-93, 98-99, 100,101,104,109-111, 144, 158, 176, 188-193, 237</p>
<p>4B. measure and compare organisms and objects using non-standard units</p>	<p><b>FOSS Next Generation Sound and Light</b>  <b>IG:</b> pp. 163,  <b>SRB:</b></p> <p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 129</p> <p><b>FOSS Next Generation Plants and Animals</b>  <b>IG:</b> pp. 82,89,111,253,</p>

Grade 1 – Matter and Energy

State Standard	FOSS Program
<b>5. Matter and energy. The student knows that objects have properties and patterns. The student is expected to:</b>	
5A. classify objects by observable properties such as larger and smaller, heavier and lighter, shape, color, and texture;	<b>FOSS Next Generation Sound and Light</b> <b>IG:</b> pp. 89, 99, 100, 104, 148, 195, 197-198,219,230 <b>EA:</b> Notebook entry IG p.200 <b>DR:</b> <i>All About Light, All About Sound</i>
5B. predict and identify changes in materials caused by heating and cooling; and	<i>NOTE: This standard is covered in grade 2 in Solids and Liquids. Total K-2 standards coverage is 98%.</i>  <b>FOSS Next Generation Pebbles, Sand, and Silt</b> <b>IG:</b> pp. 265-272 <b>SRB:</b> pp. 62-67, 68-76 <b>EA:</b> Notebook entry, IG p. 269 <b>DR:</b> <i>Change It!, “Solids and Liquids”</i> <b>BM:</b> Assessment coding guide, pp. 22-23 (Item 3), 24-25 (Item 4)
5C. classify objects by the materials from which they are made.	<i>NOTE: This standard is covered in grade 2 in Pebbles, Sand, and Sand Silt. Total K-2 standards coverage is</i>  <b>FOSS Next Generation Pebbles, Sand, and Silt</b> <b>IG:</b> pp. 186, 187 <b>SRB:</b> pp. 31-37 <b>EA:</b> Notebook entry, IG pp. 188 <b>DR:</b> <i>Find Earth Materials,</i> <b>BM:</b> Assessment coding guide, pp. 14-15 (Item 1)
<b>6. Force, motion, and energy. The student knows that force, motion, and energy are related and are a part of everyday life. The student is expected to:</b>	
6A. identify and discuss how different forms of energy such as light, thermal, and sound are important to everyday life;	<b>FOSS Next Generation Sound and Light</b> <b>IG:</b> pp. 39,40,46,133,136,139, 165,172, 177, 180, <b>SRB:</b> p. 15, 24-37, 56-61 <b>DR:</b> <i>All about Sound, All about Light</i>
6B. predict and describe how a magnet can be used to push or pull an object; and	<b>*Delta Explore Reader: Force and Motion – Pink</b> pp. 4
6C. demonstrate and record the ways that objects can move such as in a straight line, zig zag, up and down, back and forth, round and round, and fast and slow.	<b>FOSS Next Generation Sound and Light</b> <b>IG:</b> pp. 79,83,104-105,107,109,126,133,196,211 <b>SRB:</b> pp.4-8  <b>FOSS Next Generation Air and Weather</b> <b>IG:</b> pp. 205

Grade 1 – Earth and Space

State Standard	FOSS Program
<b>7. Earth and space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems. The student is expected to:</b>	
7A. observe, compare, describe, and sort components of soil by size, texture, and color;	<p><i>NOTE: This standard is covered in grade 2 in Pebbles, Sand, and Sand Silt. Total K-2 standards coverage is 98%.</i></p> <p><b>FOSS Next Generation Pebbles, Sand, and Silt</b>  <b>IG:</b> pp. 233-235, 243, 244  <b>SRB:</b> pp. 44-47  <b>EA:</b> Performance assessment, IG pp. 233, Notebook entry, IG pp. 245  <b>DR:</b> <i>All About Soil</i>  <b>BM:</b> Assessment coding guide, pp. 18-19 (Item 1), 20-21 (Item 2)</p>
7B. identify and describe a variety of natural sources of water, including streams, lakes, and oceans; and	<p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 231,232  <b>SRB:</b> pp. 44-53</p> <p><b>FOSS Next Generation Pebbles, Sand, and Silt</b>  <b>IG:</b> pp. 250-251, 258-259  <b>SRB:</b> pp. 50-60, 79-91  <b>EA:</b> Notebook entry, IG pp. 253, Notebook entry, IG pp. 259</p>
7C. identify how rocks, soil, and water are used to make products.	<p><i>NOTE: This standard is covered in grade 2 in Pebbles, Sand, and Sand Silt. Total K-2 standards coverage is 98%.</i></p> <p><b>FOSS Next Generation Pebbles, Sand, and Silt</b>  <b>IG:</b> pp. 186, 187, 200, 205, 212  <b>SRB:</b> pp. 31-37, 38-43  <b>EA:</b> Notebook entry, IG pp. 188, Performance assessment, IG pp. 200, Notebook entry, IG pp. 206  <b>DR:</b> <i>Find Earth Materials</i>,  <b>BM:</b> Assessment coding guide, pp. 14-15 (Item 1)</p>
<b>8. Earth and space. The student knows that the natural world includes the air around us and objects in the sky. The student is expected to:</b>	
8A. record weather information, including relative temperature such as hot or cold, clear or cloudy, calm or windy, and rainy or icy;	<p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 148,151,174,247,249,262-263,  <b>SRB:</b> pp. 9-17, 38-43  <b>EA:</b> Notebook Entry IG p. 209 (Step 7) Performance Assessment p. 247 (Step 5)  <b>DR:</b> <i>What's the Weather?</i>  <b>BM:</b> pp. 267</p>
8B. observe and record changes in the appearance of objects in the sky such as the Moon and stars, including the Sun;	<p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp 147,149,151,154,156,161,166, 171,175,179-183,185,222,248,251,262  <b>SRB:</b> pp. 18-19,26-37  <b>EA:</b> Performance Assessment IG p158 (Step 6)</p>
8C. identify characteristics of the seasons of the year and day and night; and	<p><b>FOSS Next Generation Air and Weather</b>  <b>IG:</b> pp. 161,242, 245, 255, 257, 264 (Step 10), 265, 266  <b>SRB:</b> pp.55-58, 62</p>

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8D. demonstrate that air is all around us and observe that wind is moving air	<b>FOSS Next Generation Air and Weather</b> <b>IG:</b> pp.89, 93, 94, 99,100, 102, 107, 111, 160, 203, 211, 216, 230, 233 <b>SRB:</b> pp. 3-8 <b>EA:</b> Performance Assessment IG p. 205 (Step 6)
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**Grade 1 – Organisms and Environments**

State Standard	FOSS Program
<b>9. Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to:</b>	
9A. sort and classify living and nonliving things based upon whether they have basic needs and produce offspring;	<b>FOSS Next Generation Plants and Animals</b> <b>IG:</b> pp. 182,186,190,196,227,249,252-253, <b>SRB:</b> pp. 27-33 <b>EA:</b> Notebook entry, IG pp. 181 <b>BM:</b> Assessment coding guide pp. 14-15 (Item 2)
9B. analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and caregiver; and	<b>FOSS Next Generation Plants and Animals</b> <b>IG:</b> pp. 178-179,181-183, 186,191-193, 217 <b>SRB:</b> pp.27-33, 34-56 <b>EA:</b> Notebook entry, IG pp. 193 <b>DR:</b> <i>How Plants Live in Different Places, "Habitat Sort"</i> <b>BM:</b> Assessment coding guide pp. 14-15 (Item 2)
9C. gather evidence of interdependence among living organisms such as energy transfer through food chains or animals using plants for shelter.	<b>FOSS Next Generation Plants and Animals</b> <b>IG:</b> pp. 178-179,181-183, 186,191-193, 217 <b>SRB:</b> pp.27-33, 34-56 <b>EA:</b> Notebook entry, IG pp. 193 <b>DR:</b> <i>How Plants Live in Different Places, "Habitat Sort"</i> <b>BM:</b> Assessment coding guide pp. 14-15 (Item 2)
<b>10. Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:</b>	
10A. investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats;	<b>FOSS Next Generation Plants and Animals</b> <b>IG:</b> pp. 98 (Step 2), 111 (Step 14), 116 (Step 25), 134, 142 (Step 6), 172, 200, 206 (Step 13), 216 (Step 18), 244, 245, 246 (Step 20) <b>SRB:</b> pp. 57-70 <b>DR:</b> "Animal Structure Sort" "How Plants Live in Different Places"
10B. identify and compare the parts of plants;	<b>FOSS Next Generation Plants and Animals</b> <b>IG:</b> pp.98,107,111,141,242,244-247 <b>SRB:</b> pp.4 <b>EA:</b> Performance Assessment IG p. 244(Step 11) <b>DR:</b> Watch it Grow, How Plants Grow
10C. compare ways that young animals resemble their parents; and	<b>FOSS Next Generation Plants and Animals</b> <b>IG:</b> pp. 45, 47, 49, 213 (Step 12), 214, 228, 231, 255 (Step 21), 256 <b>SRB:</b> pp.71-84 <b>EA:</b> Notebook Entry, IG p. 124 (Step 16), <i>Performance Assessment</i> , IG p. 122 (Step 10), IG p. 125 (Step 17), IG p. 245 (Steps 17-18) <b>DR:</b> "Find the Parent," <i>Animal Offspring and Caring for Animals</i> <b>BM:</b> pp. 4-5 (Items 3-4), pp. 8-9 (Item 2), pp. 10-11 (Item 3), pp. 14-15 (Item 3), pp. 20-21 (Item 3)

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<p>10D. observe and record life cycles of animals such as a chicken, frog, or fish</p>	<p><i>NOTE: This standard is covered in grade 2 in Insects and Plants. Total K-2 standards coverage is 98%.</i></p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp.80, 87, 116, 118, 120, 194, 201, 213, 226, 292, 308, 309  <b>SRB:</b> pp.15-16, 46-54, 55-68  <b>EA:</b> Notebook Entry IG p. 213 (Step 11)  <b>DR:</b> <i>Monarch Butterfly Metamorphosis, Time Lapse Painted Lady Butterfly, Milkweed Bug Life Cycle</i>  <b>BM:</b> Assessment coding guide pp. 4-5 (Items 4 and 5), pp. 14-15 (Item 3), pp. 18-19 (Item 1), pp. 20-21 (Item 2)</p>
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**Grade 2 – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>1. Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures. The student is expected to:</b>	
1A. identify, describe, and demonstrate safe practices as outlined in Texas Education Agency approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately; and	<p><b>FOSS Next Generation Solids and Liquids</b>                      IG: pp. 25, 59, 80, 84, 120, 122, 201, 262, 275</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>                      IG: pp. 25, 58, 82, 85, 104, 105, 107, 157</p> <p><b>FOSS Next Generation Insects and Plants</b>                      IG: pp. 27, 58, 61, 86, 88, 91, 95, 124, 125, 143, 175, 220, 228, 277, 317</p>
1B. identify and demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reuse or recycling of paper, plastic, and metal.	<p><b>FOSS Next Generation Solids and Liquids</b>                      IG: pp. 14, 57, 59, 84, 110, 112, 129-130, 215, 217, 243, 262</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>                      IG: pp.14, 51, 58, 59, 85, 149, 154, 185, 210                      SRB: pp.38-43</p> <p><b>FOSS Next Generation Insects and Plants</b>                      IG: pp.16,57,91,</p>

**Grade 2 – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>2. Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:</b>	
2A. ask questions about organisms, objects, and events during observations and investigations;	<p><b>FOSS Next Generation Solids and Liquids</b>                      IG: p. 45, pp. 114 (Step 5), 115, 117 (Step 16), 118, 142, 147,186-188, 201, 276, etc.                      EA: <i>Notebook Entry</i>, IG p. 116 (Step 13), IG p. 119 (Step 23)  <i>Performance Assessment</i>, IG p. 115 (Step 8)                      BM: pp. 6-7 (Item 4)</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>                      IG: pp.49, 181, 195, 211, 212, 214, 227, 229, 233, 243                      EA: <i>Notebook Entry</i>, IG p. 190 (Step 14), IG p. 195 (Step 15), IG p. 257 (Step 4)</p> <p><b>FOSS Next Generation Insects and Plants</b>                      IG: pp. 49,127, 128, 135, 144, 146-147, 152-153, 157, 174, 189, 201 (Step 4), 203, 221 (Step 13), 299 (Step 1), 304 (Step 3)                      EA: <i>Notebook Entry</i>, IG p. 204 (Step 18), IG p. 222 (Steps 17-20)  <i>Performance Assessment</i>, IG p. 250 (Step 4)</p>



<p>2B. plan and conduct descriptive investigations;</p>	<p><b>FOSS Next Generation Solids and Liquids</b>  <b>IG:</b> pp. 107,113,114 (Step 5), 117 (Step 16),256,259  <b>SRB:</b> pp. 21 and 30</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>  <b>IG:</b> pp.180,181,185-190, 194, 195, 200-202, 206-207, 211, 212, 214, 227, 229, 233, 243  <b>SRB:</b> p.71</p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 45, 47, 221, 250, 299, 304  <b>EA:</b> <i>Notebook Entry</i>, IG p. 146 (Steps 10-11), <i>Performance Assessment</i>, IG p. 153 (Step 6)  <b>BM:</b> pp. 6-7 (Items 2-3), pp. 12-13 (Item 6), pp.16-17 (Items 4-6), pp. 26-27 (Item 5)</p>
<p>2C. collect data from observations using scientific tools;</p>	<p><b>FOSS Next Generation Solids and Liquids</b>  <b>IG:</b> pp. 114 (Step 5), 117 (Step 16)</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>  <b>IG:</b> pp. 181, 195, 211, 212, 214, 227, 229, 233, 243</p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 107, 176, 189, 201, 219, 237, 245, 251, 271, 315</p>
<p>2D. record and organize data using pictures, numbers, and words;</p>	<p><b>FOSS Next Generation Solids and Liquids</b>  <b>IG:</b> pp. 43, 45, 47, 77, 86, 100, 107, 122, 139, 147, 148, 162, 170, 183, 191, 199, 217, 233, 240, 242</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>  <b>IG:</b> pp. 79, 89, 96, 129, 146, 162, 168, 228, 235, 245, 250, 256</p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 127, 128, 135, 144, 146-147, 152-153, 157, 174</p>
<p>2E. communicate observations and justify explanations using student-generated data from simple descriptive investigations; and</p>	<p><b>FOSS Next Generation Solids and Liquids</b>  <b>IG:</b> pp. 43, 45, 47, 77, 86, 100, 107, 122, 139, 147, 148, 162, 170, 183, 191, 199, 217, 233, 240, 242  <b>EA:</b> <i>Notebook Entry</i>, IG p. 211 (Step 7), <i>Performance Assessment</i>, IG: p. 115 (Step 8), IG p. 199 (Step 8)  <b>BM:</b> pp. 4-5 (Item 3), pp. 6-7 (Item 4)</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>  <b>IG:</b> pp. 79, 89, 96, 129, 146, 162, 168, 228, 235, 245, 250, 256</p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 45, 47, 49  <b>EA:</b> <i>Notebook Entry</i>, IG p. 120 (Step 9), IG p.121 (Step 12) IG p.306 (Step 11) <i>Performance Assessment</i>, IG p.107 (Step 5)  <b>BM:</b> pp. 2-3 (Item 2), pp. 4-5 (Items 3-5), pp. 14-15 (Items 1 and 3), pp. 18-19 (Item 1), pp. 20-21 (Item 3), pp. 22-23 (Items 1-2), pp. 24-25 (Item 3)</p>

<p>2F. compare results of investigations with what students and scientists know about the world.</p>	<p><b>FOSS Next Generation Solids and Liquids</b>  <b>IG:</b> pp.86,89,109,113,193</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>  <b>IG:</b> pp. 80, 88, 100, 107, 114, 130, 134, 221, 227, 240, 250, 256  <b>SRB:</b> pp. 50-60, 68-78</p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp.37,97,153,</p>
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**Grade 2 – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<p><b>3. Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:</b></p>	
<p>3A. identify and explain a problem and propose a task and solution for the problem;</p>	<p><b>FOSS Next Generation Solids and Liquids</b>  <b>IG:</b> pp. 77, 86, 100, 107, 122, 139, 147, 148, 162, 170, 183, 191, 199, 217, 233, 240, 242</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>  <b>IG:</b> pp. 45,47,49, 79, 129, 219, 220, 228, 256, 259</p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 178, 287, 315, 317, 318  <b>EA:</b> <i>Notebook Entry</i>, IG p. 259 (Step 7)  <b>BM:</b> pp. 12-13 (Items 4ab), pp. 22-23 (Item 4)</p>
<p>3B. make predictions based on observable patterns; and</p>	<p><b>FOSS Next Generation Solids and Liquids</b>  <b>IG:</b> pp. 78, 107,140, 148, 184, 205, 211, 234, 244, 245, 258, 259, 265, 266, 267, 268, 270  <b>SRB:</b> pp. 44-46, 52-53</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>  <b>IG:</b> pp. 129, 165, 168, 227, 250, 252 (Step 8), 253 (Step 10), 257 (Step 3), 258</p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 36, 83, 99, 135-136, 146, 148, 156, 157, 159, 189, 245, 279</p>
<p>3C. identify what a scientist is and explore what different scientists do</p>	<p><b>FOSS Next Generation Solids and Liquids</b>  <b>IG:</b> pp. 234, 246, 266, 267, 269, 272  <b>SRB:</b> pp.64</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>  <b>IG:</b> pp. 80, 88, 100, 107, 114, 130, 134, 221, 227, 240, 250, 256  <b>SRB:</b> pp. 50-60, 68-78</p> <p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 93, 100, 113, 121, 190, 218, 220, 224</p>

**Grade 2 – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>4. Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:</b>	
4A. collect, record, and compare information using tools, including computers, hand lenses, rulers, plastic beakers, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; weather instruments such as thermometers, wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums; and	<p><b>FOSS Next Generation Solids and Liquids</b>                      IG: pp.52, 81, 83, 84, 89, 90, 94, 100, 103, 223, 244, 245, 252, 260</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>                      IG pp.87, 92, 94, 104, 107, 116, 148, 150, 191, 194, 228, 230</p> <p><b>FOSS Next Generation Insects and Plants</b>                      IG: pp.76, 79, 86, 103, 106, 108, 118, 134, 214, 240, 247, 267, 310, 316</p>
4B. measure and compare organisms and objects.	<p><b>FOSS Next Generation Solids and Liquids</b>                      IG: pp.115, 159, 202, 205</p> <p><b>FOSS Next Generation Pebbles, Sand and Silt</b>                      IG: pp.120, 132, 141, 199, 200, 208, 211</p> <p><b>FOSS Next Generation Insects and Plants</b>                      IG: pp.151,157,198</p>

**Grade 2 – Matter and Energy**

State Standard	FOSS Program
<b>5. Matter and energy. The student knows that matter has physical properties and those properties determine how it is described, classified, changed, and used. The student is expected to:</b>	
5A. classify matter by physical properties, including relative temperature, texture, flexibility, and whether material is a solid or liquid;	<p><b>FOSS Next Generation Solids and Liquids</b>                      IG: pp. 43, 45, 47, 94, 101 (Step 11), 108, 109, 123, 128,147, 155, 156, 183, 193                      SRB: pp.10, 14-19, 31-32, 40-42, 46-47, 49, 50                      EA: <i>Notebook Entry</i>, IG p. 90 (Step 14), IG p. 101 (Step 13), IG p. 157 (Step 18), IG p. 194 (Step 16), IG p. 245 (Step 23), IG p. 252 (Step 13) <i>Performance Assessment</i>, IG p. 107 (Step 7), IG p. 148 (Step 7), IG p. 205 (Step 7)                      DR: <i>All About the Properties of Matter, Properties of Materials Clothing and Building Materials</i>                      BM: p. 2-3 (Item 1), pp. 6-7 (Item 5), pp. 8-9 (Item 1), pp. 10-11 (Item 3), pp. 14-15 (Items 1-2), pp. 16-17 (Item 3), pp. 18-19 (Item 1)</p>
5B. compare changes in materials caused by heating and cooling;	<p><b>FOSS Next Generation Solids and Liquids</b>                      IG: 227, 233, 235, 242 (Step 12), 243, (Step 15), 263, 265,266 (Step 8), 267, 268, 269, 270, 271, 272,277                      SRB: pp. 62-67, 68-76                      EA: <i>Notebook Entry</i> IG p.269 (Step 19)                      DR: <i>Solids and Liquids, Change It!</i></p>

5C. demonstrate that things can be done to materials such as cutting, folding, sanding, and melting to change their physical properties; and	<b>FOSS Next Generation Solids and Liquids</b> <b>IG:</b> pp.119,261-263,265-267, 298 <b>SRB:</b> 62-67 <b>EA:</b> Notebook Entry IG pp.264 (Step 10),269 (Step 19) <b>DR:</b> <i>Properties of Materials, Solids and Liquids, Change It</i>
5D. combine materials that when put together can do things that they cannot do by themselves such as building a tower or a bridge and justify the selection of those materials based on their physical properties.	<b>FOSS Next Generation Solids and Liquids</b> <b>IG:</b> pp. 43, 45, 47, 77, 113, 115, 116, 118, 119, 217 <b>SRB:</b> pp. 12, 13, 17, 20,22-30 <b>EA:</b> <i>Notebook Entry</i> , IG p. 211 (Step 7), <i>Performance Assessment</i> , IG: p. 115 (Step 8), IG p. 199 (Step 8) <b>BM:</b> pp. 4-5 (Item 3), pp. 6-7 (Item 4)
<b>6. Force, motion, and energy. The student knows that forces cause change and energy exists in many forms. The student is expected to:</b>	
6A. investigate the effects on objects by increasing or decreasing amounts of light, heat, and sound energy such as how the color of an object appears different in dimmer light or how heat melts butter;	<b>FOSS Next Generation Solids and Liquids</b> <b>IG:</b> pp.39,202,204,231-232,234,266, <b>SRB:</b> pp.62-67
6B. observe and identify how magnets are used in everyday life; and	<b>*Delta Explore Reader: Force and Motion – Green</b> pp. 4  <b>FOSS Next Generation Solids and Liquids</b> <b>IG:</b> pp.223 <b>DR:</b> <i>Clothing and Building Materials</i>
6C. trace and compare patterns of movement of objects such as sliding, rolling, and spinning over time	<b>FOSS Next Generation Solids and Liquids</b> <b>IG:</b> pp.112,136,146, 202 <b>DR:</b> <i>Falling Bottle</i>

**Grade 2 – Earth and Space**

State Standard	FOSS Program
<b>7. Earth and space. The student knows that the natural world includes earth materials. The student is expected to:</b>	
7A. observe, describe, and compare rocks by size, texture, and color;	<b>FOSS Next Generation Pebbles, Sand and Silt</b> <b>IG:</b> pp.81,82,95,100,106,110,112, 116,122, <b>SRB:</b> p.3-21 <b>EA:</b> <i>Performance Assessment</i> IG p. 102 (Step10) <b>DR:</b> <i>Rock Sorting, Property Chain</i>
7B. identify and compare the properties of natural sources of freshwater and saltwater; and	<b>FOSS Next Generation Pebbles, Sand and Silt</b> <b>IG:</b> pp.45,82,248-253 <b>SRB:</b> pp.50-60,79-91 <b>DR:</b> <i>Sources of Water Card Sort</i>

7C. distinguish between natural and manmade resources.	<b>FOSS Next Generation Pebbles, Sand and Silt</b> <b>IG:</b> pp. 80, 88, 100, 107, 114, 130, 134, 221, 227, 240, 250, 256 <b>SRB:</b> pp. 31-37,38-43,50-60, 68-78 <b>DR:</b> <i>Find Earth Materials</i>
<b>8. Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:</b>	
8A. measure, record, and graph weather information, including temperature, wind conditions, precipitation, and cloud coverage, in order to identify patterns in the data;	<i>NOTE: This standard is covered in grade 1 in Air and Weather. Total K-2 standards coverage is 98%.</i>  <b>FOSS Next Generation Air and Weather</b> <b>IG:</b> pp. 151, 157, 160, 162, 169, 171 (Steps 8-10), 174, 175, 211, 222, 249 <b>SRB:</b> pp. 9-17, 18-19, 20-25, 38-43 <b>EA:</b> Notebook entry, IG pp. 152, Performance assessment, IG pp. 158, Notebook entry, IG pp. 173, Notebook entry, IG pp. 212, Notebook entry, IG pp. 223, Performance assessment, IG pp. 249 <b>DR:</b> <i>“Cloud Catcher,” “What’s the Weather?”</i> <b>BM:</b> Assessment coding guide pp. 10-11 (Item 1), pp. 14-15 (Item 4), pp. 18-19 (Item 3), pp. 20-21 (Items 4 and 5), pp. 22-23 (Item 1abc), pp. 24-25 (Item 2abcdefg)
8B. identify the importance of weather and seasonal information to make choices in clothing, activities, and transportation; and	<i>NOTE: This standard is covered in grade 1 in Air and Weather. Total K-2 standards coverage is 98%.</i>  <b>FOSS Next Generation Air and Weather</b> <b>IG:</b> pp. 265 <b>SRB:</b> pp. 26-37
8C. observe, describe, and record patterns of objects in the sky, including the appearance of the Moon.	<i>NOTE: This standard is covered in grade 1 in Air and Weather. Total K-2 standards coverage is 98%.</i>  <b>FOSS Next Generation Air and Weather</b> <b>IG:</b> pp. 179, 181, 182, 183, 185 (Step 19), 250, 256 <b>SRB:</b> pp. 26-37 <b>EA:</b> Notebook entry, IG pp. 256 <b>BM:</b> Assessment coding guide pp. 10-11 (Item 2), pp. 12-13 (Item 3abc), pp. 26-27 (Items 2 and 3)

**Grade 2 – Organisms and Environments**

State Standard	FOSS Program
<b>9. Organisms and environments. The student knows that living organisms have basic needs that must be met for them to survive within their environment. The student is expected to:</b>	
9A. identify the basic needs of plants and animals;	<b>FOSS Next Generation Insects and Plants</b> <b>IG:</b> pp. 45 and 47, pp.96,100-101 (Step 21), 112,145, 146 (Step 14), 147 (Step 15), 155-156 (Step 12), 157 (Steps 16 and 17), 173 (Step 2),204,221 <b>SRB:</b> pp. 3-17 <b>EA:</b> <i>Notebook Entry</i> , IG p. 146 (Steps 10-11), <i>Performance Assessment</i> , IG p. 153 (Step 6) <b>DR:</b> <i>How Plants Grow</i> <b>BM:</b> pp. 6-7 (Items 2-3), pp. 12-13 (Item 6), pp. 16-17 (Items 4-6), pp. 26-27 (Item 5)

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<p>9B. identify factors in the environment, including temperature and precipitation, that affect growth and behavior such as migration, hibernation, and dormancy of living things; and</p>	<p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 100-101 (Step 21), 145, 146 (Step 14), 147 (Step 15), 155-156 (Step 12), 157 (Steps 16 and 17), 173 (Step 2)  <b>SRB:</b> pp. 6-8,12-15,  <b>DR:</b> <i>How Plants Grow, Habitat Gallery</i></p>
<p>9C. compare the ways living organisms depend on each other and on their environments such as through food chains.</p>	<p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp. 157, 158 (Steps 19-22), 165, 177, 178 (Step 21)  <b>SRB:</b> pp. 27-34, 39  <b>DR:</b> <i>How Seeds get Here ... and There</i>  <i>What Is Pollination?, Where does it Live?</i></p>
<p><b>10. Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:</b></p>	
<p>10A. observe, record, and compare how the physical characteristics and behaviors of animals help them meet their basic needs;</p>	<p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp.96,100-101 (Step 21), 112,145, 146 (Step 14), 147 (Step 15), 155-156 (Step 12), 157, (Steps 16 and 17), 173 (Step 2),204,221  <b>SRB:</b> pp.10-11,41-45  <b>EA:</b> Notebook Entry IG p. 204  <b>DR:</b> <i>All about Water Ecosystems</i></p>
<p>10B. observe, record, and compare how the physical characteristics of plants help them meet their basic needs such as stems carry water throughout the plant; and</p>	<p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp.152,157, 158 (Steps 19-22)165, 173,177,178 (Step 1) 292,  <b>SRB:</b> pp. 6-8,13, 18-31  <b>DR:</b> <i>How Plants Grow, How Seeds get Here ... and There, What Is Pollination?</i></p>
<p>10C. investigate and record some of the unique stages that insects such as grasshoppers and butterflies undergo during their life cycle.</p>	<p><b>FOSS Next Generation Insects and Plants</b>  <b>IG:</b> pp.80,87,116,118,120,194,201, 213,226,292,309  <b>SRB:</b> pp.15-16,46-54,55-59  <b>EA:</b> Notebook Entry IG p. 213 (Step 11)</p>

**Grade 3– Scientific Investigation and Reasoning**

State Standard	FOSS Program
<p><b>1. Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and environmentally appropriate practices. The student is expected to:</b></p>	
<p>1A. demonstrate safe practices as described in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment as appropriate, including safety goggles or chemical splash goggles, as appropriate, and gloves; and</p>	<p><b>FOSS Next Generation Motion and Matter</b>                      IG: pp. 28, 59, 62, 63, 88, 90, 150, 156, 224-225, 227-228, 234, 236-237, 252                      SRB: p. 59</p> <p><b>FOSS Next Generation Water and Climate</b>                      IG: pp. 16, 28, 61, 86-88, 120, 122, 158, 183, 209, 303,                      SRB: p. 14, 63, 68, 90</p> <p><b>FOSS Next Generation Structures of Life</b>                      IG: pp. 28, 59, 64, 92, 95, 99, 110, 116, 132</p>
<p>1B. make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans, and plastics.</p>	<p><b>FOSS Next Generation Motion and Matter</b>                      IG: pp.16, 62, 65, 90, 122-125, 150, 209,</p> <p><b>FOSS Next Generation Water and Climate</b>                      IG: pp. 61, 87, 158, 183, 209, 303, 308-309, 323                      SRB: p.14-15, 61-63, 68</p> <p><b>FOSS Next Generation Structures of Life</b>                      IG: pp. 16, 64, 95</p>
<p><b>2. Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:</b></p>	
<p>2A. plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world;</p>	<p><b>FOSS Next Generation Motion and Matter</b>                      IG: pp. 49, 51, 53, 79, 80, 85, 94, 105, 108, 172, 175, 176, 177, 199, 200, 209, 211                      SRB: pp. 32-33                      EA: <i>Performance Assessment</i>, IG p. 106 (Step 6), IG p. 200 (Step 6), Response Sheet, IG p. 107                      BM: pp. 4-5 (Item 3), pp. 10-11 (Item 7), pp. 12-13 (Item 8ab), pp. 22-23 (Item 3ab), pp. 24-25 (Item 4ab), pp. 28-29 (Item 6) pp. 30-31 (Item 1abc), pp. 44-47 (Item 2abcd)</p> <p><b>FOSS Next Generation Water and Climate</b>                      IG: pp. 51, 225-227,292, 299, 314-317,319,324-328,                      SRB: pp.39-40                      EA: <i>Performance Assessment</i>, IG p. 325 (Step 8)                      DR: <i>Virtual Investigation: Water Retention in Water</i></p> <p><b>FOSS Next Generation Structures of Life</b>                      IG: pp.135 (Step 4), 136,137, 138, 236-237, 242-245                      DR: <i>How Seed Get Here ... and There, Walking Sticks</i></p>
<p>2B. collect and record data by observing and measuring using the metric system and recognize differences between observed and measured data;</p>	<p><b>FOSS Next Generation Motion and Matter</b>                      IG: pp. 105-106, 172, 178, 182, 190-191, 200, 209, 236-239, 246-247                      SRB: pp. 32-33, 38-39, 53                      EA: <i>Performance Assessment</i>, IG p.106 (Step 6)                      DR: <i>Metric Mystery, Measuring Mass, Measuring Volume and Mass</i></p> <p><b>FOSS Next Generation Water and Climate</b></p>

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	<p><b>IG:</b> pp. 114, 150, 154-155, 225-227, 264, 314-317  <b>SRB:</b> pp. 16, 20, 39-40  <b>EA:</b> Notebook Entry, IG p.114(Step 11)  <b>DR:</b> <i>Virtual Investigation: Water Retention in Water, Reading Graduated Cylinder, Kilogram Hunt</i></p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 154, 163, 242-245</p>
<p>2C. construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data;</p>	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 100, 105-106, 172, 178, 182, 190-191, 200, 202, 209, 231, 246-247  <b>SRB:</b> pp. 46</p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 49, 51, 169, 185, 192, 194, 201, 212, 213, 227, 228, 233, 253, 254, 259, 266, 267  <b>SRB:</b> pp. 39-40  <b>EA:</b> <i>Performance Assessment</i>, IG p. 212 (Step 13), IG p. 226 (Step 4) Notebook Entry, IG p. 269 (Step 13)  <b>BM:</b> pp. 14-15 (Item 10), pp. 46-47 (Items 2-3), pp. 50-51 (Item 7), pp. 56-59 (Items 1ab-2), pp. 60-61 (Item 4)</p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp.161,236,256,311,448  <b>SRB:</b> pp.22,66,78  <b>DR:</b> <i>Walking Sticks</i></p>
<p>2D. analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations;</p>	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 80, 85, 105, 124, 129, 151, 154, 200  <b>SRB:</b> pp. 25-27, 28-33, 34-37  <b>EA:</b> <i>Performance Assessment</i>, IG p. 106 (Step 6), Response Sheet, IG p. 107  <b>BM:</b> pp. 4-5 (Item 3), pp. 10-11 (Item 7), pp. 22-23 (Item 3ab), pp. 24-25 (Item 4ab), pp. 30-31 (Item 1abc)</p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 212-213,281-285,292, 299, 319,323-328  <b>SRB:</b> pp. 55-60, 61-62  <b>EA:</b> <i>Performance Assessment</i>, IG p.325(Step 8)  <b>DR:</b> <i>Virtual Investigation: Water Retention in Water</i></p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 85, 90, 101, 104, 117, 119, 152, 162, 170 (Step 13), 173  <b>SRB:</b> p.12-15, 79-80, 81-88  <b>DR:</b> <i>Walking Sticks</i></p>
<p>2E. demonstrate that repeated investigations may increase the reliability of results; and</p>	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 80, 85, 86, 97, 99, 101, 105, 109, 114, 124, 129, 151, 154,172, 178, 182, 191, 200, 209  <b>SRB:</b> pp. 32-33</p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 150-151, 225-227, 314-317  <b>SRB:</b> pp. 39-40  <b>DR:</b> <i>Virtual Investigation: Water Retention in Water</i></p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 242-245</p>

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	<b>DR:</b> <i>Walking Sticks</i>
2F. communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion.	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 80, 85, 105, 124, 129, 151, 154, 172,178, 182,191,200, 209  <b>SRB:</b> pp. 32-33</p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 150-151,192, 194, 201, 212, 213, 227, 228, 233, 253, 254, 259, 266, 267, 314-317  <b>SRB:</b> pp. 12-13,39-40  <b>DR:</b> <i>Virtual Investigation: Water Retention in Water</i></p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 146,152, 158, 169, 188, 202, 242-245, 250, 268 (Step 14), 261, 280, 291, 301, 309, 320, 336  <b>EA:</b> Response Sheet, IG p. 257,  <b>DR:</b> <i>Walking Sticks</i>  <b>BM:</b> pp.8-9 (Item 5ab), pp. 26-27 (Item 1ab), pp. 32-33 (Item 6)</p>

**Grade 3 – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<b>3. Scientific investigation and reasoning. The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:</b>	
3A. analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 49, 51, 80, 85, 105, 124, 129, 151, 154,172, 175-177, 199, 200, 209, 211  <b>SRB:</b> pp.25-27, 28-33, 34-37,42-45  <b>EA:</b> <i>Performance Assessment</i>, IG p. 200 (Step 6)  <b>BM:</b> pp. 28-29 (Item 6)</p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 281-285, 292, 299, 319, 323-328  <b>SRB:</b> pp. 55-60, 61-62  <b>EA:</b> Notebook Entry, IG p. 285 (Step 16)  <b>BM:</b> pp. 58-59 (Item 3)</p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 47, 49, 51,136, pp. 44-47, 146,152,158, 169, 188, 202, 244-245, 250 268 (Step 14), 261, 280, 291, 301, 309, 320, 336  <b>EA:</b> Performance Assessment, IG: p. 309 (Step 10)  <b>BM:</b> pp. 2-3 (Item 1), pp. 18-19 (Item 1ab), pp. 24-25 (Items 5-6)</p>

<p>3B. represent the natural world using models such as volcanoes or the Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials; and</p>	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 98-101, 182, 203  <b>SRB:</b> pp.3, 40  <b>EA:</b> <i>Notebook Entry</i>, IG p. 99 (Step 14), <i>Response Sheet</i>, IG p. 107 (Step 11)</p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> p.124,323-325</p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 47, 49, 81, 82, 87, 90, 135, 137, 146, 152, 170  <b>EA:</b> <i>Notebook Entry</i>, IG p. 170 (Step 13)  <b>BM:</b> pp. 6-7 (Item 4ab), 9-10 (Item 6), 16-17 (Item 12)</p>
<p>3C. connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.</p>	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> p. 108,185, 203 (Steps 13-14)  <b>SRB:</b> pp. 8-9, 22-27,40-41, 42-45 ,53-58</p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 112,118,161,208, 214-215, 260, 284-285, 300, 318-319,328, 329  <b>SRB:</b> pp. 55-60, 61-62, 68-72, 73-76, 77-82,86-89</p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 117,127, 137, 162, 249, 307, 311, 338  <b>SRB:</b> pp. 12-15, 17,100-103  <b>DR:</b> <i>Humphry, The Lost Whale, All about Fossils</i></p>
<p><b>4. Scientific investigation and reasoning. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to</b></p>	
<p>4A. collect, record, and analyze information using tools, including cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, magnets, collecting nets, notebooks, and Sun, Earth, and Moon system models; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums.</p>	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 88-102, 105 107, 109, 110, 187, 189, 190, 192, 201, 206-209, 224, 225, 228, 244-246  <b>EA:</b> <i>Notebook Entry</i>, IG p. 99 (Step 14), <i>Response Sheet</i>, IG p. 107 (Step 11)  <b>DR:</b> <i>Magnetic Poles</i></p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp.11, 58, 108, 113, 128, 146, 148, 150, 181, 189, 193, 196, 224, 225, 227, 229, 304-306  <b>EA:</b> <i>Notebook Entry</i>, IG p. 114 (Step 11), <i>Response Sheet</i>, IG p. 307 (Step 11)  <b>DR:</b> <i>Measuring Temperature, Metric Mystery</i></p> <p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp.120, 121, 125, 154, 157, 174, 178, 206, 236, 239, 251, 254, 292, 439  <b>DR:</b> <i>Walking Sticks</i></p>

Grade 3 – Matter and Energy

State Standard	FOSS Program
<b>5. Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to:</b>	
5A. measure, test, and record physical properties of matter, including temperature, mass, magnetism, and the ability to sink or float;	<b>FOSS Next Generation Motion and Matter</b> <b>IG:</b> pp.43, 70, 89, 95, 98-100, 221, 224-229, 230, 231, 234, 236-239, 253 <b>SRB:</b> pp. 3-7,42-49 <b>DR:</b> <i>Conservation of Mass</i>
5B. describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container;	<b>FOSS Next Generation Motion and Matter</b> <b>IG:</b> pp. 43-44, 224-229, 234, 238-239, 242 <b>SRB:</b> p. 46-48, 50-52
5C. predict, observe, and record changes in the state of matter caused by heating or cooling such as ice becoming liquid water, condensation forming on the outside of a glass of ice water, or liquid water being heated to the point of becoming water vapor; and	<b>FOSS Next Generation Water and Climate</b> <b>IG:</b> pp. 41, 95, 172-179, 218-219, 242-244 <b>SRB:</b> p.3-5, 21,24-29,38, 41-47 <b>EA:</b> <i>Response Sheet</i> , IG p. 178 (Step 19), <i>Notebook entry</i> IG p. 245 (Step 16) <b>DR:</b> <i>Expansion and Contraction of Water, The Water Cycle</i>
5D. explore and recognize that a mixture is created when two materials are combined such as gravel and sand or metal and plastic paper clips.	<b>FOSS Next Generation Motion and Matter</b> <b>IG:</b> pp. 43-44, 224-229, 231, 234-235, 236-239 <b>SRB:</b> pp. 46-50 <b>EA:</b> <i>Performance Assessment</i> , IG p. 228 (Step 8), <i>Notebook Entry</i> , IG p.235 (Step 6)
<b>6. Force, motion, and energy. The student knows that forces cause change and that energy exists in many forms. The student is expected to:</b>	
6A. explore different forms of energy, including mechanical, light, sound, and thermal in everyday life;	<i>NOTE: This standard is covered in grade 4 in Energy. Total 3-5 standards coverage is 100%.</i>  <b>FOSS Next Generation Energy</b> <b>IG:</b> pp. 120-125, 137, 139, 291-297, 303, 313, 320, 346, 349, 363, <b>SRB:</b> pp. 8-12, 65-73, 79-82, 83-85, 86-90, 100-105, 114-119 <b>EA:</b> <i>Notebook entry</i> , IG pp. 126, <i>Performance assessment</i> , IG pp. 293, <i>Notebook entry</i> , IG pp. 304, <i>Response sheet</i> , IG pp. 315, <i>Notebook entry</i> , IG pp. 352, <i>Response sheet</i> , IG pp. 367 <b>DR:</b> <i>“Simple Circuits,” “Conductors and Insulators,” “Turn the Switch,” “Conductor Detector,” “D-Cell Orientation,” All About the Transfer of Energy, Waves, Real World Science: Sound, All About Waves, All About Light,</i> <b>BM:</b> <i>Assessment coding guide</i> pp. 5-6 (Item 2ab), pp. 9-10 (Item 4), pp. 15-16 (Item 10), pp. 53-54 (Item 1), pp. 55-56 (Item 2b), pp. 57-58 (Items 3 and 4), pp. 59-60 (Items 5 and 6), pp. 61-62 (Item 7), pp. 63-64 (Item 8 and 9)
6B. demonstrate and observe how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons; and	<b>FOSS Next Generation Motion and Matter</b> <b>IG:</b> pp. 123, 125, 126-127, 129, 131, 136 (Step 7), 142 (Step 4), 147 (Step 16), 154 (Steps 9-12), 166, 196 <b>SRB:</b> pp.10-21,16-21 <b>EA:</b> <i>Response Sheet</i> , IG p. 141 (Step 7) <b>DR:</b> <i>“Roller Coaster Builder, All about Motion and Balance</i>

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<p>6C. observe forces such as magnetism and gravity acting on objects.</p>	<p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 49, 51,79, 81, 83, 84-85, 87, 116 (Step 7), 98-100,117-118 (Steps 9-11), 119, 126-128, 129, 131, 166  <b>SRB:</b> pp. 3-7, 10-15, 42-45  <b>EA:</b> <i>Performance Assessment</i>, IG p. 200 (Step 6), <i>Notebook Entry</i>, IG p.99 (Step 14)  <b>DR:</b> <i>All about Motion and Balance, Magnetic Poles, All about Magnets</i>  <b>BM:</b> pp. 28-29 (Item 6)</p>
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**Grade 3– Earth and Space**

State Standard	FOSS Program
<p><b>7. Earth and space. The student knows that Earth consists of natural resources and its surface is constantly changing. The student is expected to:</b></p>	
<p>7A. explore and record how soils are formed by weathering of rock and the decomposition of plant and animal remains;</p>	<p><i>NOTE: This standard is covered in grade 4 in Soils, Rocks, and Landforms. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 101-109, 113, 115, 127, 140  <b>SRB:</b> pp. 3-5, 6-8  <b>EA:</b> Notebook entry, IG pp. 106, Response sheet, IG pp. 118,  <b>DR:</b> <i>Weathering and Erosion, Soils</i>  <b>BM:</b> Assessment coding guide pp. 3-4 (Item 1), pp. 22-23 (Items 2abc), pp. 26-27 (Item 6ab), pp. 30-31 (Item 8)</p>
<p>7B. investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides; and</p>	<p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 282-283  <b>SRB:</b> pp. 83  <b>DR:</b> <i>Naburn, Bangladesh</i></p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 253-257  <b>SRB:</b> pp. 38-49  <b>EA:</b> Notebook entry, IG pp. 255  <b>DR:</b> <i>All About Earthquakes</i>  <b>BM:</b> Assessment coding guide pp. 46-47 (Items 2 and 3), pp. 48-49 (Item 4ab)</p>
<p>7C. explore the characteristics of natural resources that make them useful in products and materials such as clothing and furniture and how resources may be conserved.</p>	<p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 124-125, 308-309, 323  <b>SRB:</b> p. 14,61-63-72,79-82</p>
<p><b>8. Earth and space. The student knows there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:</b></p>	
<p>8A. observe, measure, record, and compare day-to-day weather changes in different locations at the same time that include air temperature, wind direction, and precipitation;</p>	<p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 49, 51, 196, 200, 202-203, 207 (Step 9), 214-215 (Steps 18-19), 256, 259, 261  <b>SRB:</b> pp. 30-36  <b>EA:</b> <i>Performance Assessment</i>, IG p. 212 (Step 13), IG p. 226 (Step 4) <i>Notebook Entry</i>, IG p. 269 (Step 13)  <b>DR:</b> <i>"Weather Grapher"</i>  <b>BM:</b> pp. 14-15 (Item 10), pp. 46-47 (Items 2-3), pp. 50-51 (Item 7), pp. 56-59 (Items 1ab-2), pp. 60-61 (Item 4)</p>

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<p>8B. describe and illustrate the Sun as a star composed of gases that provides light and thermal energy;</p>	<p><i>NOTE: This standard is covered in grade 5 in Earth and Sun. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 133-143, 189, 190, 109, 210-211, 215, 217, 218, 223, 228-229,  <b>SRB:</b> pp. 48-49, 66-70  <b>EA:</b> Notebook entry, IG pp. 142, Performance assessment, IG pp. 189,  <b>DR:</b> "Seasons," <i>The Planets and the Solar System, All About Stars</i>  <b>BM:</b> Assessment coding guide, pp. 6-7 (Item 3), 30-31 (Item 1 and 2), 34-35 (Item 5), 36-37 (Item 6), 38-39 (Item 8)</p>
<p>8C. construct models that demonstrate the relationship of the Sun, Earth, and Moon, including orbits and positions; and</p>	<p><i>NOTE: This standard is covered in grade 5 in Earth and Sun. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 133-143, 189, 190, 109, 201-205, 210-211, 215, 217, 218, 223, 228-229,  <b>SRB:</b> pp. 8-13, 17, 33-37, 48-49, 66-70  <b>EA:</b> Notebook entry, IG pp. 142, Performance assessment, IG pp. 189, Notebook entry, IG pp. 203  <b>DR:</b> "Seasons," <i>The Planets and the Solar System, All About Stars</i>  <b>BM:</b> Assessment coding guide, pp. 6-7 (Item 3), 30-31 (Item 1 and 2), 34-35 (Item 5), 36-37 (Item 6), 38-39 (Item 8)</p>
<p>8D. identify the planets in Earth's solar system and their position in relation to the Sun.</p>	<p><i>NOTE: This standard is covered in grade 5 in Earth and Sun. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 208-219  <b>SRB:</b> pp. 47-60, 61  <b>EA:</b> Response sheet, IG pp. 218  <b>DR:</b> <i>The Planets and the Solar System</i></p>

### Grade 3 – Organisms and Environments

State Standard	FOSS Program
<p><b>9. Organisms and environments. The student knows and can describe patterns, cycles, systems, and relationships within the environments. The student is expected to:</b></p>	
<p>9A. observe and describe the physical characteristics of environments and how they support populations and communities of plants and animals within an ecosystem;</p>	<p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 187, 189, 194-195, 201, 203, 232 (Step 24), 233 (Step 26), 237 (Step 38), 272  <b>SRB:</b> pp. 66-69  <b>DR:</b> "Walking Stick Survival"</p>
<p>9B. identify and describe the flow of energy in a food chain and predict how changes in a food chain affect the ecosystem such as removal of frogs from a pond or bees from a field; and</p>	<p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp.199, 262-270, 272, 387, 451, 453  <b>SRB:</b> pp.70-73  <b>BM:</b> Assessment coding guide, pp. 16-17 (Item 10), 44-45 (Item 7)</p>

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<p>9C. describe environmental changes such as floods and droughts where some organisms thrive and others perish or move to new locations.</p>	<p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 187, 191, 246 (Step 18), 248-249 (Steps 21-22), 249 (Step 23), 260-261, 268, 272  <b>SRB:</b> pp. 66-69  <b>DR:</b> All About Animal Adaptations, “Where Does It Live?” “What Doesn’t Belong?” <i>Humphrey, the Lost Whale: A True Story</i></p>
<p><b>10. Earth and space. The student knows there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:</b></p>	
<p>10A. explore how structures and functions of plants and animals allow them to survive in a particular environment; and</p>	<p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp.41, 100,105, 117, 125, 126, 205-209, 214-215, 222-230, 272, 341, 412-413, 460  <b>SRB:</b> pp.3,34,42  <b>EA:</b> Notebook Entry IG p. 211(Step 9)  <b>DR:</b> <i>Plants Have Basic Needs, Animals Basic Needs, All About Animal Adaptations</i></p>
<p>10B. investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady beetles.</p>	<p><b>FOSS Next Generation Structures of Life</b>  <b>IG:</b> pp. 82, 83, 84, 86, 88-89, 91, 99, 140, 145, 147, 149, 151-152, 153, 169-171 (Steps 9-15), 173 (Steps 21-21), 182  <b>SRB:</b> p. 3-7, 22-25, 26-33, 47-49  <b>DR:</b> “Life Cycles,” <i>All About Animal Life Cycles</i></p>

**Grade 4– Scientific Investigation and Reasoning**

State Standard	FOSS Program
<p><b>1. Scientific investigation and reasoning. The student conducts classroom and outdoor investigations, following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:</b></p>	
<p>1A. demonstrate safe practices and the use of safety equipment as described in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment, including safety goggles or chemical splash goggles, as appropriate, and gloves, as appropriate; and</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 30, 77, 114, 116, 122, 138, 166  <b>SRB:</b> pp.</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 28, 62, 66, 94, 97, 101, 110, 114  <b>SRB:</b> pp.</p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 57-58, 64, 93, 94-96, 102, 130  <b>SRB:</b> pp.</p>

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<p>1B. make informed choices in the use and conservation of natural resources and reusing and recycling of materials such as paper, aluminum, glass, cans, and plastic.</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp.18, 327, 382, 385  <b>SRB:</b> pp.114</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 66, 97, 282-283, 290-291, 294, 296, 304,  <b>EA:</b> <i>Performance Assessment</i>, IG p 296 (Step 5)</p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 64, 66, 96,</p>
<p><b>2. Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:</b></p>	
<p>2A. plan and implement descriptive investigations, including asking well defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions;</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 59, 61, 63, 285, 303, 304, 306 (Step 20), 314, 315,321,338, 381  <b>SRB:</b> pp.  <b>EA:</b> <i>Performance Assessment</i>, IG p. 255 (Step 6), IG p. 293 (Step 10)  <b>BM:</b> pp. 8-9 (Item 4), pp. 22-23 (Items 4-5), pp. 24-25 (Item 6), pp. 26-27 (Items 7-8), pp.56- 57 (Item 4), pp. 58-59 (Item 5) pp. 62-63 (Item 9)</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. pp. 51, 53, 103, 114, 124, 139, 163, 175, 176, 179, 182 (Step 28), 187  <b>SRB:</b> pp.  <b>EA:</b> <i>Response Sheet</i>, IG p. 118, <i>Performance Assessment</i>, IG p. 124 (Step 7), IG p. 180 (Step 23)  <b>DR:</b> <i>Virtual Investigation: Stream Tables</i>  <b>BM:</b> pp. 12-13 (Item 8), pp. 18-19 (Items 1ab), pp. 22-23 (Item 4), pp. 30-31 (Items 1ab), pp. 32-33 (Item 2),</p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 47, 49, 51, 125, 129, 154, 161, 189, 263, 282, 291, 312, 313  <b>SRB:</b> pp.  <b>EA:</b> <i>Response Sheet</i>, IG p. 211  <b>BM:</b> pp. 2-3 (Items 1-2), pp. 4-5 (Item 3), pp. 8-9 (Item 7), pp. 16-17 (Item1a), pp. 18-19 (Item 3), pp. 20-21 (Item 5), pp. 22-23 (Item 6), pp.28-29 (Item 1b), pp. 34-35 (Item 6), pp. 40-41 (Item 1d), pp. 46-47 (Item 6), pp. 48-49 (Items 2ab)</p>
<p>2B. collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept maps;</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 303, 304, 306 (Step 20), 314, 321</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 51, 53, 103, 114, 124, 139, 163, 175, 176, 179, 182 (Step 28), 187  <b>SRB:</b> pp.  <b>EA:</b> <i>Response Sheet</i>, IG p. 118, <i>Performance Assessment</i>, IG p. 124 (Step 7), IG p. 180 (Step 23)  <b>DR:</b> <i>Virtual Investigation: Stream Tables</i>  <b>BM:</b> pp. 12-13 (Item 8), pp. 18-19 (Items 1ab), pp. 22-23 (Item 4), pp. 30-31 (Items 1ab), pp. 32-33 (Item 2),</p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp.104, 105, 112, 120, 125, 129, 154, 161, 168, 180, 189, 195, 252, 263, 282, 291, 312, 313</p>

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	<p><b>EA:</b> <i>Notebook Entry</i> IG p. 104 (Step 16) <b>DR:</b> <i>Virtual Investigation: Trout Range of Tolerance</i></p>
2C. construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data;	<p><b>FOSS Next Generation Energy</b> <b>IG:</b> pp. 137, 173, 217-220, 254-255, 297, 307, 312-313, <b>EA:</b> Performance Assessment p. 218 (Step 11) p. 255 (Step 6) <b>DR:</b> <i>Creating Graphs</i></p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b> <b>IG:</b> pp. 51, 53, 227 (Steps 21-23), 239 (Step 16), 240 (Step 18), 256 (Steps 9-11), 258 <b>SRB:</b> pp. 31-33, 38-49 <b>EA:</b> <i>Performance Assessment</i>, IG p. 180 (Step 23), IG p. 245 (Step 5) <b>DR:</b> Topographer <b>BM:</b> pp. 6-7 (<i>Items 4ab</i>), pp. 16-17 (<i>Items 11ab</i>), pp. 42-43 (<i>Items 1abc</i>), pp. 48-49 (<i>Item 6</i>)</p> <p><b>FOSS Next Generation Environments</b> <b>IG:</b> pp. 105, 111, 128, 171, 180, 182, 194, 196, 268-269, 315-320,</p>
2D. analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured;	<p><b>FOSS Next Generation Energy</b> <b>IG:</b> pp. 285, 303, 304, 306 (Step 20), 314, 315, 321, 338, 346, 347, 351, 352, 357, 381 <b>SRB:</b> pp.</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b> <b>IG:</b> pp. 102, 105, 127, 139, 156, 164, 180, 188, 216, 244</p> <p><b>FOSS Next Generation Environments</b> <b>IG:</b> pp. 120-125, 257-260, 299-302 <b>EA:</b> <i>Response Sheet</i> IG p. 260 (Step 10), <i>Performance Assessment</i> IG p. 125 (Step 22), p. 302 (Step 12)</p>
2E. perform repeated investigations to increase the reliability of results; and	<p><b>FOSS Next Generation Energy</b> <b>IG:</b> pp. 59, 61, 63, 65, 163 (Step 3), 215-220, 254-256 <b>SRB:</b> pp. <b>EA:</b> <i>Notebook Entry</i>, IG p. 126 (Step 17), <i>Response Sheet</i>, IG p. 156, <i>Performance Assessment</i>, IG p. 255 (Step 6), IG p. 293 (Step 10), IG p. 381 (Step 18) <b>BM:</b> pp. 2-3 (<i>Items 1ab</i>), pp. 4-5 (<i>Items 2ab</i>), pp. 58-59 (<i>Item 6</i>), pp. 60-61 (<i>Item 7</i>), pp. 62-63 (<i>Item 8</i>)</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b> <b>IG:</b> pp. 207, 208, 215, 248, 253, 254</p> <p><b>FOSS Next Generation Environments</b> <b>IG:</b> pp. 124, 127, 238, 244, 304 <b>EA:</b> <i>Notebook Entry</i>, IG p. 244 (Step 2)</p>
2F. communicate valid oral and written results supported by data.	<p><b>FOSS Next Generation Energy</b> <b>IG:</b> pp. 163-164, 169, 303, 304, 306 (Step 20), 314, 321, 380-381, 384</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b> <b>IG:</b> pp. 166, 175, 176, 178, 182, 188, 196, 248, 253, 254</p> <p><b>FOSS Next Generation Environments</b> <b>IG:</b> pp. 47, 49, 51, 125, 129, 154, 161, 189, 263, 282, 291, 312,</p>

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Grade 4 – Scientific Investigation and Reasoning

State Standard	FOSS Program
<p><b>3. Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:</b></p>	
<p>3A. analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 59, 61, 63, 121, 138, 140, 152, 153, 246, 302, 303, 304, 306 (Step 20), 314, 321  <b>EA:</b> <i>Performance Assessment</i>, IG p. 255 (Step 6), IG p. 293 (Step 10)  <b>BM:</b> pp. 8-9 (Item 4), pp. 22-23 (Items 4-5), pp. 24-25 (Item 6), pp. 26-27 (Items 7-8), pp.56- 57 (Item 4), pp. 58-59 (Item 5) pp. 62-63 (Item 9)</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 51, 53, 164, 166, 175, 176, 178, 180, 182, 188, 196, 233, 236, 237, 244, 248, 253, 254  <b>EA:</b> <i>Response Sheet</i>, IG p. 118, <i>Performance Assessment</i>, IG p. 124 (Step 7), IG p. 180 (Step 23)  <b>DR:</b> Virtual Investigation: Stream Tables  <b>BM:</b> pp. 12-13 (Item 8), pp. 18-19 (Items 1ab), pp. 22-23 (Item 4), pp. 30-31 (Items 1ab), pp. 32-33 (Item 2)</p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 47, 49, 51, 125, 129, 154, 161, 189, 263, 282, 291, 312, 313  <b>EA:</b> <i>Response Sheet</i>, IG p. 211  <b>BM:</b> pp. 2-3 (Items 1-2), pp. 4-5 (Item 3), pp. 8-9 (Item 7), pp. 16-17 (Item1a), pp. 18-19 (Item 3), pp. 20-21 (Item 5), pp. 22-23 (Item 6), pp. 28-29 (Item 1b), pp. 34-35 (Item 6), pp. 40-41 (Item 1d), pp. 46-47 (Item 6), pp. 48-49 (Items 2ab)</p>
<p>3B. represent the natural world using models such as the water cycle and stream tables and identify their limitations, including accuracy and size; and</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp.59,65  <b>EA:</b> <i>Notebook Entry</i>, IG p. 352 (Step 18)  <b>BM:</b> pp. 6-7 (Items 3ab)</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 159-172, 173-182  <b>SRB:</b> pp.9 ,15  <b>EA:</b> <i>Notebook Entry</i>, IG p167 (Step 15), <i>Performance Assessment</i>, IG p. 180 (Step 23)  <b>DR:</b> <i>Stream Tables, Erosion and Deposition</i></p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 47, 49, 51, 127, 153, 154, 180, 196, 201, 210  <b>EA:</b> IG pp. 212-213 (Step 22)  <b>BM:</b> pp. 6-7 (Items 5-6), pp. 8-9 (Item 8), pp. 18-19 (Item 3), pp. 24-25 (Items 7-8), pp. 32-33 (Item 4)</p>

<p>3C. connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 112, 164-165, 167, 168, 246-249, 250-251, 259 (Step 16), 264-266, 269, 282, 382-383  <b>SRB:</b> pp. 21-24, 25-29, 44-46, 49-57, 58-64, 114-118</p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp.232-235, 246 (Step 6), 265,271,281(Steps 10-11) 282 (Steps 12-14) and 289 (9-11), 290  <b>SRB:</b> pp. 50-54,55-59, 60-64  <b>BM:</b> <i>Mt. St. Helens Impact</i></p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 105, 213, 262, 271, 298, 301, 304, 310  <b>SRB:</b> pp. 55, 86</p>
<p><b>4. Scientific investigation and reasoning. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. The student is expected to</b></p>	
<p>4A. collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, balances, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums.</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp.114-117,131,133,227,242,298,308,312, 358-363,  <b>DR:</b> <i>Reflected Light</i></p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 64, 94, 97, 158, 160, 163, 170, 174, 176, 295</p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 69, 123, 127, 128, 137, 146, 164-169, 177, 181, 200  <b>DR:</b> <i>Virtual Aquarium, Virtual Terrarium</i></p>

**Grade 4 – Matter and Energy**

State Standard	FOSS Program
<p><b>5. Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to:</b></p>	
<p>5A. measure, compare, and contrast physical properties of matter, including mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float; and</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp.190-192,194-195  <b>EA:</b> <i>Notebook Entry</i> IG p. 194 (Step 19)  <b>DR:</b> <i>Virtual Investigation, What Sticks and What Conducts</i></p> <p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 107, 109, 117, 120, 128, 184-186, 214-219  <b>SRB:</b> pp. 3-7, 8-12, 21-22, 23-25  <b>EA:</b> Notebook entry, IG pp. 111, Performance assessment, IG p. 127, Response sheet, IG pp. 188, Response sheet, IG pp. 219  <b>DR:</b> <i>“Tutorial: Mixtures,” “Tutorial: Solutions,” Elements, Compounds, and Mixtures, “Separating Mixtures,” Changes in Properties of Matter,</i></p>
<p>5B. compare and contrast a variety of mixtures, including solutions</p>	<p><i>NOTE: This standard is covered in grade 5 in Mixtures and Solutions. Total 3-5 standards coverage is</i></p> <p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 107, 109, 117, 120, 128, 184-186, 214-219  <b>SRB:</b> pp. 3-7, 8-12, 21-22, 23-25</p>

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	<p><b>EA:</b> Notebook entry, IG pp. 111, Performance assessment, IG p. 127, Response sheet, IG pp. 188, Response sheet, IG pp. 219  <b>DR:</b> "Tutorial: Mixtures," "Tutorial: Solutions," Elements, Compounds, and Mixtures, "Separating Mixtures," Changes in Properties of Matter,</p>
<p><b>6. Force, motion, and energy. The student knows that energy exists in many forms and can be observed in cycles, patterns, and systems. The student is expected to:</b></p>	
<p>6A. differentiate among forms of energy, including mechanical, sound, electrical, light, and thermal;</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 59, 61, 63, 123 (Step 10), 126 (Step 18), 164, 169, 271, 294-295 (Steps 13-15), 321  <b>SRB:</b> pp. 65-73  <b>EA:</b> Performance Assessment, IG p. 255 (Step 6), IG p. 293 (Step 10)  <b>DR:</b> All About Transfer of Energy, Reflecting Light, All About Light  <b>BM:</b> pp. 8-9 (Item 4), pp. 22-23 (Items 4-5), pp. 24-25 (Item 6), pp. 26-27 (Items 7-8), pp.56- 57 (Item 4), pp. 58-59 (Item 5) pp. 62-63 (Item 9)</p>
<p>6B. differentiate between conductors and insulators of thermal and electrical energy;</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 127-128 (Steps 19-21), 165 (Step 10), 169, 271, 293, 321, 384  <b>SRB:</b> pp.3-7  <b>EA:</b> Notebook Entry IG p. 142 (Step 22)  <b>DR:</b> Conductor Detector, Virtual Investigation, What Sticks and What Conducts, Conductors and Insulators</p>
<p>6C. demonstrate that electricity travels in a closed path, creating an electrical circuit; and</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 127-128 (Steps 19-21), 164, 169, 271, 293, 296 (Step 16), 314 (Step 13), 316 (Steps 17-19), 320 (Step 26), 321, 368-369 (Steps 22-24)  <b>SRB:</b> pp. 3-7, 100-105  <b>DR:</b> Lighting a Bulb, Flow of Electric Current, Simple Circuits</p>
<p>6D. design a descriptive investigation to explore the effect of force on an object such as a push or a pull, gravity, friction, or magnetism.</p>	<p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 59, 63,277,286,293,295, 301 (Step 5), 303 (Step 11), 304 (Step 15),305-306, 314 (Step 13),317-318, 320 (Step 26), 321,322  <b>SRB:</b> pp. 74-77, 79-82  <b>EA:</b> Notebook Entry, IG p. 304 (Step 15), Response Sheet, IG p. 315  <b>DR:</b> All About Transfer of Energy  <b>BM:</b> pp. 12-13 (Item 8), pp. 54-55 (Items 2ab), pp. 56-57 (Item 3), pp. 62-63 (Item 9)</p>

Grade 4– Earth and Space

State Standard	FOSS Program
<b>7. Earth and space. The students know that Earth consists of useful resources and its surface is constantly changing. The student is expected to:</b>	
7A. examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants;	<p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 73,101-109  <b>SRB:</b> pp. 3  <b>DR:</b> <i>Soil Formation</i></p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 299-313  <b>SRB:</b> pp. 91-92  <b>EA:</b> Performance assessment, IG pp. 302</p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 304-309, 314-316  <b>SRB:</b> pp. 68-72  <b>EA:</b> Response sheet, IG pp. 307, Notebook entry, IG pp. 317</p>
7B. observe and identify slow changes to Earth’s surface caused by weathering, erosion, and deposition from water, wind, and ice; and	<p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp.124, 129-130 (Steps 18-21), 131-132 (Step 23), 142,168-169 (Steps 18-20), 181 (Step 27), 182 (Step 28), 201  <b>SRB:</b> pp. 6-8, 9-14  <b>EA:</b> <i>Notebook Entry</i>, IG p167 (Step 15), <i>Performance Assessment</i>, IG p. 180 (Step 23)  <b>DR:</b> <i>Weathering and Erosion</i>, “Tutorial: Weathering”</p>
7C. identify and classify Earth’s renewable resources, including air, plants, water, and animals, and nonrenewable resources, including coal, oil, and natural gas, and the importance of conservation.	<p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 51, 55, 268-270, 278 (Step 6), 283 (Step 15), 301,303 (Step 11),318-319 (Steps 23-25),321,384  <b>SRB:</b> pp. 83-85  <b>EA:</b> <i>Response Sheet</i>, IG p. 280, <i>Notebook Entry</i>, IG p. 291 (Step 15)  <b>DR:</b> <i>Natural Resources, Resource ID, Virtual Investigation: Natural Resources</i>  <b>BM:</b> pp. 8-9 (Item 6)</p>
<b>8. Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to:</b>	
8A. measure, record, and predict changes in weather;	<p><i>NOTE: This standard is covered in grade 3 in Water and Climate. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Water and Climate</b>  <b>IG:</b> pp. 208-215, 265-269  <b>SRB:</b> pp. 30-36  <b>EA:</b> Performance assessment, IG pp. 212, Notebook entry, IG pp. 269  <b>BM:</b> Assessment coding guide pp. 6-7 (Item 4), pp. 8-9 (Item 5), pp. 14-15 (Item 9), pp. 16-17 (Item 10), 20-23(Item 12ab), pp. 46-67 (Items 2 and 3)</p>

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<p>8B. describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; and</p>	<p><i>NOTE: This standard is covered in grade 5 in Earth and Sun. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 383-389, 392-395, 399-411  <b>SRB:</b> pp. 120-123, 124, 125-129, 130-138  <b>EA:</b> Performance assessment, IG pp. 386, Response sheet IG pp. 395, Notebook entry IG pp. 406  <b>DR:</b> <i>Water Cycle, "Water Cycle,"</i>  <b>BM:</b> Assessment coding guide pp. 12-13 (Item 7ab), pp. 14-15 (Item 8)</p>
<p>8C. collect and analyze data to identify sequences and predict patterns of change in shadows, seasons, and the observable appearance of the Moon over time.</p>	<p><i>NOTE: This standard is covered in grade 5 in Earth and Sun. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 119-128, 199-205  <b>SRB:</b> pp. 3-7, 8-13, 33-37, 38-42  <b>EA:</b> Response sheet IG pp. 127, Notebook entry IG pp. 203  <b>DR:</b> <i>"Sun Tracking," "Shadow Tracker," All About the Moon, "Lunar Calendar,"</i>  <b>BM:</b> Assessment coding guide pp. 4-5 (Item 1ab), pp. 6-7 (Item 2), pp. 18-19 (Items 12 and 13), pp. 20-21 (Item 2), pp. 22-23 (Items 3 and 4), pp. 26-27 (Item 6), pp. 28-29 (Item 7ab), pp. 32-33 (Item 3abc)</p>

**Grade 4 – Organisms and Environments**

<p><b>9. Organisms and environments. The student knows and understands that living organisms within an ecosystem interact with one another and with their environment. The student is expected to:</b></p>	
<p>9A. investigate that most producers need sunlight, water, and carbon dioxide to make their own food, while consumers are dependent on other organisms for food; and</p>	<p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp.157, 178-179,183-184, 189, 193, 200  <b>SRB:</b> pp. 35  <b>EA:</b> Notebook entry, IG pp. 187  <b>DR:</b> <i>Food Webs</i>  <b>BM:</b> Assessment coding guide pp. 30-31 (Item 1a),</p>
<p>9B. describe the flow of energy through food webs, beginning with the Sun, and predict how changes in the ecosystem affect the food web.</p>	<p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 82, 157, 175-185, 189, 200, 244-250  <b>SRB:</b> pp.35, 46,59  <b>DR:</b> <i>Food Webs</i>  <b>BM:</b> Assessment coding guide pp. 30-31 (Item 1a),</p>
<p><b>10. Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environment. The student is expected to:</b></p>	
<p>10A. explore how structures and functions enable organisms to survive in their environment;</p>	<p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 47, 49, 51, pp. 126 (Steps 27-28), 153, 155, 160,163, 185 (Step 25), 262 (Step 15), 273, 311 (Steps 48-49)  <b>SRB:</b> pp. 16-17, 91-92  <b>EA:</b> <i>Response Sheet</i>, IG p. 211  <b>DR:</b> <i>"Virtual Investigation: Trout Range of Tolerance"</i>  <b>BM:</b> Assessment coding guide pp. 2-3 (Items 1-2), pp. 4-5 (Item 3), pp. 8-9 (Item 7), pp. 16-17 (Item1a), pp. 18-19 (Item 3), pp. 20-21 (Item 5), pp. 22-23 (Item 6), pp. 28-29 (Item 1b), pp. 34-35 (Item 6), pp. 40-41 (Item 1d), pp. 46-47 (Item 6), pp. 48-49 (Items 2ab)</p>

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<p>10B. explore and describe examples of traits that are inherited from parents to offspring such as eye color and shapes of leaves and behaviors that are learned such as reading a book and a wolf pack teaching their pups to hunt effectively; and</p>	<p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 115, 229, 270, 272, 327-328  <b>SRB:</b> pp.79, 102  <b>DR:</b> <i>All About Plant Adaptations</i></p>
<p>10C. explore, illustrate, and compare life cycles in living organisms such as beetles, crickets, radishes, or lima beans.</p>	<p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 85, 94-95, 100-116, 260, 270  <b>SRB:</b> pp. 102-105  <b>EA:</b> Notebook entry, IG pp. 104, Notebook entry, IG pp. 110,  <b>BM:</b> Assessment coding guide pp. 4-5 (Item 1)</p>

Grade 5– Scientific Investigation and Reasoning

State Standard	FOSS Program
<b>1. Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:</b>	
1A. demonstrate safe practices and the use of safety equipment as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment, including safety goggles or chemical splash goggles, as appropriate, and gloves, as appropriate; and	<p><b>FOSS Next Generation Mixtures and Solutions</b>                      IG: pp. 22, 28, 62-63, 66, 101, 102, 106-107, 124, 181, 205, 208, 214-215, 224, 233, 237, 248, 280, 340-341                      SRB: pp. 82</p> <p><b>FOSS Next Generation Earth and Sun</b>                      IG: pp. 28, 73, 104, 105, 111, 112, 175, 214, 350                      SRB: pp.152</p> <p><b>FOSS Next Generation Living Systems</b>                      IG: pp. 28, 63, 65, 92-93, 168, 215</p>
1B. make informed choices in the conservation, disposal, and recycling of materials.	<p><b>FOSS Next Generation Mixtures and Solutions</b>                      IG: pp. 16,70, 83,102-103,179, 257,</p> <p><b>FOSS Next Generation Earth and Sun</b>                      IG: pp. 57, 61, 63, 104, 295, 346, 359-360 (Steps 26-27), 361, 376-377, 421 (Step 20), 422 ,426                      SRB: pp.144-151                      DR: <i>Climate and Seasons, Water Conservation and Pollution</i></p> <p><b>FOSS Next Generation Living Systems</b>                      IG: pp. 47, 55, 108 (Step 6), 270, 307, 309 (Step 4), 316                      SRB: pp. pp. 73, 74-80                      DR: <i>Marine Ecosystems</i></p>
<b>2. Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:</b>	
2A. describe, plan, and implement simple experimental investigations testing one variable;	<p><b>FOSS Next Generation Mixtures and Solutions</b>                      IG: pp. 49,51, 88, 96, 128 (Step 13), 132 (Step 19), 137-138 (Steps 6-8), 315, 321, 322, 329-330 (Steps 3-6), 340-341(Steps 2-3)                      SRB: pp. 14-15                      BM: pp.4-5 (Item 3a)</p> <p><b>FOSS Next Generation Earth and Sun</b>                      IG: pp. 57, 61, 294, 313, 315, 325, 339, 340, 353, 355                      EA: <i>Performance Assessment, IG p. 355 (Step 14)</i>                      BM: <i>pp.14-15 (Item 11)</i></p> <p><b>FOSS Next Generation Living Systems</b>                      IG: pp. 133, 158, 160, 171-174, 223, 225-226, 285                      SRB: pp. 23-26, 40-42, 74, 77                      DR: <i>Plant Structure and Growth</i>                      BM: Assessment coding guide pp. 2-3 (Item 1a), pp. 12-13 (Item 7), pp. 30-31(Item 1), pp. 32-33 (Item 2), pp. 40-41 (Item 9), pp. 42-43 (Item 1a), pp. 44-45 (Item 1b) pp. 46-47 (Item 3), pp. 50 - 51 (Item 5)</p>

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<p>2B. ask well defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology;</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 49,51, 88, 96, 128 (Step 13), 132 (Step 19), 137-138 (Steps 6-8) 315, 321, 322, 329-330 (Steps 3-6), 340-341(Steps 2-3)</p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 57,61,294, 313, 315, 325, 339, 340, 353, 355</p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. 171-173 (Steps 7-9), 173 (Step 11), 223 (Step 28), 225-226 (Steps 30-33)  <b>SRB:</b> pp. 23-26, 40-42, 74, 77  <b>DR:</b> <i>Plant Structure and Growth</i></p>
<p>2C. collect and record information using detailed observations and accurate measuring;</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 49, 51, 88, 96, 128 (Step 13), 132 (Step 19), 137-138 (Steps 6-8) 315, 321, 322, 329-330 (Steps 3-6), 340-341(Steps 2-3)</p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 57,61,294, 313, 315, 325, 339, 340, 353, 355,402, 417, 419, 422</p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. 171-173 (Steps 7-9), 173 (Step 11), 190, 193, 223 (Step 28), 225-226 (Steps 30-33)  <b>SRB:</b> pp.23-26, 40-42, 74, 77</p>
<p>2D. analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence;</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 114-116, 142,177-179, 207-211, 293-298, 376  <b>SRB:</b> pp. 18, 50-53  <b>EA:</b> <i>Notebook Entry</i>, IG p. 210 (Step 17)  <b>DR:</b> <i>Solutions Up Close</i>  <b>BM:</b> Investigation 1 I-Check (Item 9)</p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 27,314-316, 354-357  <b>SRB:</b> pp.  <b>EA:</b> <i>Performance Assessment</i> IG p.355 (Step 14)  <b>DR:</b>  <b>BM:</b></p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp.171-173 (Steps 7-9), 173 (Step 11), 190, 193, 223 (Step 28), 225-226 (Steps 30-33)  <b>SRB:</b> pp. 23-26, 40-42, 74, 77</p>
<p>2E. demonstrate that repeated investigations may increase the reliability of results;</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 315, 321, 322, 329-330 (Steps 3-6), 340-341(Steps 2-3)</p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 316-317, 325,327</p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. 171-173 (Steps 7-9), 173 (Step 11), 190,193, 223 (Step 28), 225-226 (Steps 30-33)</p>

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<p>2F. communicate valid conclusions in both written and verbal forms; and</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 315, 321, 322, 329-330 (Steps 3-6), 340-341(Steps 2-3) p.376  <b>BM:</b> Investigation 1 I-Check (Item 9)</p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 57, 61,294, 313, 315, 325, 339, 340, 353, 355</p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. pp. 171-173 (Steps 7-9), 173 (Step 11), 190,193, 223 (Step 28), 225-226 (Steps 30-33)</p>
<p>2G. construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information.</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 114-117, 120, 183, 230, 277, 283-285  <b>SRB:</b> pp. 32  <b>EA:</b> Response Sheet, IG p. 117 (Step 117)  <b>BM:</b> Investigation 3 I-Check (Item 4)</p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 57, 59, 63,101, 112, 122, 124, 136, 143, 178, 181, 199, 209, 357,377, 394, 400_401-402, 403-404  <b>SRB:</b> pp. 124  <b>EA:</b> <i>Notebook Entry</i>, IG pp. 142-143 (Steps 27-29), IG p. 182 (Step 18) IG p. 229 (Step 15), <i>Response Sheet</i>, IG p. 127  <b>BM:</b> pp. 2-3 (Items 1ab), pp. 4-5 (Item 2), pp. 16-17 (Items 12 and 13), pp. 18-19 (Items 1ab), pp. 20-21 (Items 3 and 4), pp. 22-23 (Items 5ab) pp. 24-25 (Item 6), pp. 26-27 (Items 7ab), pp. 28-29 (Item 2), pp. 30-31 (Items 3abc),pp. 34-35 (Items 7ab), pp. 36-37 (Item 8)</p> <p><b>FOSS Next Generation Living SystemsIG:</b>  pp. 101, 107, 135, 163, 171  <b>BM:</b> Investigation 1 I-Check p. 344 (Item 9)</p>

**Grade 5 – Scientific Investigation and Reasoning**

State Standard	FOSS Program
<p><b>3. Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:</b></p>	
<p>3A. analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 49,51,88, 96, 127,128 (Step 13), 132),137-138 (Steps 6-8), 183  <b>SRB:</b> pp.14-15</p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 57, 59, 61,167, 177, 189, 217, 295, 304-305  <b>EA:</b> <i>Notebook Entry</i>, IG p. 182 (Step 18) IG 229 (Step 15)  <b>BM:</b> pp. 4-5 (Items 3ab), pp. 32-33 (Item 5), pp. 34-35 (Item 6)</p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. 47, 51, 53,172, 190, 193  <b>BM:</b> pp. 2-3 (Item 1a), pp. 12-13 (Item 7), pp. 30-31 (Item 1), pp. 32-33 (Item 2), pp. 40-41 (Item 9), pp. 42-43 (Item 1a), pp. 44-45 (Item 1b) pp. 46-47 (Item 3), pp. 50 -51 (Item 5)</p>

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<p>3B. draw or develop a model that represents how something that cannot be seen such as the Sun, Earth, and Moon system and formation of sedimentary rock works or looks; and</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 49,55,57, 59,167, 177, 189, 217  <b>SRB:</b> pp. 14-15, 26-27, 28-29, 30, 32, 47, 48  <b>EA:</b> <i>Notebook Entry</i>, IG p. 182 (Step 18) IG 229 (Step 15)  <b>BM:</b> pp. 4-5 (Items 3ab), pp. 32-33 (Item 5), pp. 34-35 (Item 6)</p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 57, 61, 258, 260, 361, 377, 386-387, 401, 404, 422 (Step 21)  <b>EA:</b> <i>Notebook Entry</i>, IG p. 273 (Step 12), IG p. 333 (Step 28)  <i>Performance Assessment</i>, IG p. 386 (Step 12) <i>Response Sheet</i>, IG p. 353</p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. 49, 51, 53, 55, 88, 113, 115, 122, 123, 137, 151, 165, 176, 193, 209, 237, 240, 242, 257  <b>EA:</b> <i>Notebook Entry</i>, IG p. 102 (Step 13), IG p. 116 (Step 29), IG p. 230 (Step 40) <i>Performance Assessment</i>, IG p. 132 (Step 6), IG p. 249 (Step 4)  <b>BM:</b> pp. 4-5 (Items 1bd), pp. 6-7 (Item 3), pp. 8-9 (Items 4 and 5), pp. 14-15 (Item 10), pp. 18-19 (Items 1ab and 2), pp. 20-21 (Item 4), pp. 22-23 (Items 5ab), pp. 26-27 (Items 8ab), pp. 32-33 (Item 3), pp. 34-35 (Item 4), pp. 36-37 (Item 7), pp. 38-39 (Item 8), pp. 44-45 (Item 2), pp.48-49 (Item 4), pp. 50-51 (Items 6 and 7), pp. 52-53 (Item 8)</p>
<p>3C. connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 75,98, 118,132,163, 165,177,178, 298 (Step 22),300  <b>SRB:</b> pp. 36-38,41,50-53,54-61,62-69, 70-73,76  <b>DR:</b> <i>Tutorial: Models</i></p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp.110,143,192-193, 209,211,212,232,346 (Step 28),360 (Step 27)  <b>SRB:</b> pp. 19,71,110-111</p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. 114-115 (Step 26), 122, 172, 224, 241, 244, 265, 269  <b>SRB:</b> pp. 78-80</p>
<p><b>4. Scientific investigation and reasoning. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to</b></p>	
<p>4A. collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices; and materials to support observations of habitats or organisms such as terrariums and aquariums.</p>	<p><b>FOSS Next Generation Mixtures and Solutions</b>  <b>IG:</b> pp. 60, 62, 65, 85,100, 107, 112, 115, 114, 117, 134, 141, 180, 184, 216, 267, 284, 285, 291, 297  <b>SRB:</b> pp. 47  <b>DR:</b> <i>Celsius and Fahrenheit</i></p> <p><b>FOSS Next Generation Earth and Sun</b>  <b>IG:</b> pp. 68, 90, 116, 123-124,129, 186-189, 265, 308, 380-381, 383, 396</p> <p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. 60, 76, 126, 154, 157, 158, 159, 169, 170, 177, 212, 217, 220, 221</p>

Grade 5 – Matter and Energy

State Standard	FOSS Program
<b>5. Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to:</b>	
5A. classify matter based on measurable, testable, and observable physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating using water as a reference point), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;	<b>FOSS Next Generation Mixtures and Solutions</b> <b>IG:</b> pp. 42, 43, 49, 53, 55, 107, 114, 116, 120-121, 126-127, 137-139, 183-185, 234-240, 284-287, 322-323 <b>SRB:</b> pp.21-25 <b>EA:</b> <i>Performance Assessment</i> , IG p. 226 (Step 4) IG p. 284 (Step 7) <b>EA:</b> <i>Response Sheet</i> , IG p. 279 <b>DR:</b> <i>Tutorial: Density, Tutorial; Saturation, Changes in Properties of Matter, Virtual Investigation: Solubility</i> <b>BM:</b> pp. 6-7 (Item 5), pp. 8-9 (Item 7), pp. 10-11 (Item 8), pp. 40-41 (Item 3), pp. 44-45 (Item 7), pp. 48-49 (Item 3), pp. 52-53 (Items 6ab), pp. 54-55 (Items 7ab)
5B. demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand and sand and water; and	<b>FOSS Next Generation Mixtures and Solutions</b> <b>IG:</b> pp. 107,126-128,137-139,278-279,322-323 <b>SRB:</b> pp. 3,8 <b>EA:</b> <i>Notebook Entry</i> IG p. 111(Step 20) <b>DR:</b> <i>Tutorial: Mixtures</i>
5C. identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water.	<b>FOSS Next Generation Mixtures and Solutions</b> <b>IG:</b> pp. 49, 55,114, 137-139, 278, 279, 284-287, 322-323 <b>SRB:</b> pp. 21 <b>EA:</b> <i>Notebook Entry</i> IG p. 111(Step 20) <b>DR:</b> <i>Changes in Properties of Matter</i>
<b>6. Force, motion, and energy. The student knows that energy occurs in many forms and can be observed in cycles, patterns, and systems. The student is expected to:</b>	
6A. explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy;	<p><i>NOTE: This standard is covered in grade 4 in Energy. Total 3-5 standards coverage is 100%.</i></p> <b>FOSS Next Generation Energy</b> <b>IG:</b> pp. 59, 61, 63, 123 (Step 10), 126 (Step 18), 164, 169, 271, 294-295 (Steps 13-15), 321 <b>SRB:</b> pp. 65-73 <b>EA:</b> <i>Performance Assessment</i> , IG p. 255 (Step 6), IG p. 293 (Step 10) <b>DR:</b> <i>All About Transfer of Energy, Reflecting Light, All About Light</i> <b>BM:</b> pp. 8-9 (Item 4), pp. 22-23 (Items 4-5), pp. 24-25 (Item 6), pp. 26-27 (Items 7-8), pp.56- 57 (Item 4), pp. 58-59 (Item 5) pp. 62-63 (Item 9)
6B. demonstrate that the flow of electricity in closed circuits can produce light, heat, or sound;	<p><i>NOTE: This standard is covered in grade 4 in Energy. Total 3-5 standards coverage is 100%.</i></p> <b>FOSS Next Generation Energy</b> <b>IG:</b> pp. 59, 61, 63, 123 (Step 10), 126 (Step 18), 164, 169, 271, 294-295 (Steps 13-15), 321 <b>SRB:</b> pp. 65-73 <b>EA:</b> <i>Performance Assessment</i> , IG p. 255 (Step 6), IG p. 293 (Step 10)

IG: Investigations Guide • SRB: Science Resources Book • DR: Digital Resources • EA: Embedded Assessment BM: Benchmark Assessment

	<p><b>DR:</b> <i>All About Transfer of Energy, Reflecting Light, All About Light</i>  <b>BM:</b> pp. 8-9 (Item 4), pp. 22-23 (Items 4-5), pp. 24-25 (Item 6), pp. 26-27 (Items 7-8), pp.56- 57 (Item 4), pp. 58-59 (Item 5) pp. 62-63 (Item 9)</p>
6C. demonstrate that light travels in a straight line until it strikes an object and is reflected or travels through one medium to another and is refracted; and	<p><i>NOTE: This standard is covered in grade 4 in Energy. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Energy</b>  <b>IG:</b> pp. 361-372  <b>SRB:</b> pp. 100-105, 111-113  <b>EA:</b> Response sheet IG pp. 367  <b>DR:</b> <i>All About Light, "Reflected Light," "Tutorial: Reflection"</i></p>
6D. design a simple experimental investigation that tests the effect of force on an object.	<p><i>NOTE: This standard is covered in grade 3 in Motion and Matter. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Motion and Matter</b>  <b>IG:</b> pp. 98-99, 105-107, 113-118, 135  <b>SRB:</b> pp. 3-7, 10-15, 18,  <b>EA:</b> Notebook entry, IG pp. 99, Response sheet IG pp. 107,  <b>DR:</b> <i>All About Motion and Balance</i>  <b>BM:</b> Assessment coding guide pp. 4-5 (Item 1c), pp. 12-13 (Item 7), pp. 16-17 (Item 8d), pp. 22-23 (Item 2ab), pp. 24-25 (Item 3ab), pp. 26-27 (Item 4ab)</p>

**Grade 5– Earth and Space**

State Standard	FOSS Program
<b>7. Earth and space. The student knows Earth's surface is constantly changing and consists of useful resources. The student is expected to:</b>	
7A. explore the processes that led to the formation of sedimentary rocks and fossil fuels; and	<p><i>NOTE: This standard is covered in grade 4 in Soils, Rocks, and Landforms. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 193-195, 278-279  <b>SRB:</b> pp. 23-26  <b>EA:</b> Notebook entry, IG pp. 197, Response sheet IG pp. 280  <b>DR:</b> <i>Fossils, Natural Resources</i>  <b>BM:</b> Assessment coding guide pp. 14-15 (Item 8), pp. 34-35 (Item 2)</p>
7B. recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, or ice.	<p><i>NOTE: This standard is covered in grade 4 in Soils, Rocks, and Landforms. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 162-168, 173-182, 186-189  <b>SRB:</b> pp. 23-26  <b>EA:</b> Notebook entry, IG pp. 167, Performance assessment, IG pp. 180, Response sheet, IG pp. 189  <b>DR:</b> <i>Erosion and Deposition, "Stream Tables: Slope and Flood"</i>  <b>BM:</b> Assessment coding guide pp. 10-11 (Item 5), pp. 12-13 (Item 7a), pp. 20-21 (Item 1ab), pp. 36-37 (Item 3ab), pp. 38-39 (Item 4)</p>

8. Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to:	
8A. differentiate between weather and climate;	<b>FOSS Next Generation Earth and Sun</b> <b>IG:</b> pp. 374-385,409-410,413-419 <b>SRB:</b> pp.92-94,130-138,139-150 <b>EA:</b> <i>Notebook Entry</i> IG p. 283 (Step 15) <b>DR:</b> <i>Climate, All about Meteorology, Climate Region Map</i>
8B. explain how the Sun and the ocean interact in the water cycle;	<b>FOSS Next Generation Earth and Sun</b> <b>IG:</b> pp. 399-408 <b>SRB:</b> pp. 125 <b>EA:</b> <i>Notebook Entry</i> IG p. 406 <b>DR:</b> <i>Water Cycle, Water Cycle Game</i>
8C. demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky; and	<b>FOSS Next Generation Earth and Sun</b> <b>IG:</b> pp. 57, 93, 95 100-101, 111, 113 (Step 12), 115, 122 (Step 13), 124 (Step 19), 126 (Step 22), 128 (Step 25), 132, 133-139 (Steps 5-20), 142 (Steps 26-27), 144, 145 (Step 31), 155, 165-166, 177 (Step 9), 185, 228-229, 234 (Step 22) <b>SRB:</b> pp. 3-7,8-9, 10-13, 34-35 <b>EA:</b> <i>Notebook Entry</i> IG p. 114 (Step 16) <b>DR:</b> <i>Tutorial: Sun Tracking, Shadow Tracker</i>
8D. identify and compare the physical characteristics of the Sun, Earth, and Moon.	<b>FOSS Next Generation Earth and Sun</b> <b>IG:</b> pp. 188-191, 200,223 <b>SRB:</b> pp. 14, 25,33, 48-49,52, 85-91 <b>DR:</b> <i>All about the Moon</i>

### Grade 5 – Organisms and Environments

9. Organisms and environments. The student knows that there are relationships, systems, and cycles within environments. The student is expected to:	
9A. observe the way organisms live and survive in their ecosystem by interacting with the living and nonliving components;	<b>FOSS Next Generation Living Systems</b> <b>IG:</b> pp. 49, 51, 53, 55, 88, 113, 115, 122, 123, 137, 151, 165, 176, 193, 209, 237, 240, 242, 257 <b>SRB:</b> pp. <b>EA:</b> <i>Notebook Entry</i> , IG p. 102 (Step 13), IG p. 116 (Step 29), IG p. 230 (Step 40) <i>Performance Assessment</i> , IG p. 132 (Step 6), IG p. 249 (Step 4) <i>Response Sheet</i> , IG p. 123, IG p. 243
9B. describe the flow of energy within a food web, including the roles of the Sun, producers, consumers, and decomposers;	<b>FOSS Next Generation Living Systems</b> <b>IG:</b> pp. pp. 79, 81, 83-84, 90-91, 110-113,121 (Step 4), 122, 123, 125 (Step 17), 126 (Step 20), 130, 150-151, 162 (Step 19), 192 (Step 24), 312 (Step 4) <b>SRB:</b> pp. 7-10, 14-15,16, 17, 18-20, 26, 27, 29-31, 71, 74-77 <b>DR:</b> <i>Food Chains, Marine Ecosystems, Web of Life: Life in the Sea, Food Webs</i> <b>BM:</b> Investigation 1 I-Check p. 344 (Item 9)

<p>9C. predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways; and</p>	<p><i>NOTE: This standard is covered in grade 4 in Environments. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 193-201  <b>SRB:</b> pp. 42-45  <b>EA:</b> Notebook entry, IG pp. 198  <b>DR:</b> <i>Virtual Aquarium, Virtual Terrarium</i>  <b>BM:</b> Assessment coding guide pp. 32-33 (Item 2ab)</p>
<p>9D. identify fossils as evidence of past living organisms and the nature of the environments at the time using models</p>	<p><i>NOTE: This standard is covered in grade 4 in Soils, Rocks, and Landforms. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Soils, Rocks, and Landforms</b>  <b>IG:</b> pp. 193-197  <b>SRB:</b> pp. 23-26  <b>EA:</b> Notebook entry, IG pp. 197  <b>DR:</b> <i>Fossils</i>  <b>BM:</b> Assessment coding guide pp. 32-33 (Item 1ab), 34-35 (Item 2)</p>
<p><b>10. Organisms and environments. The student knows that organisms have structures and behaviors that help them survive within their environments. The student is expected to:</b></p>	
<p>10A. compare the structures and functions of different species that help them live and survive in a specific environment such as hooves on prairie animals or webbed feet in aquatic animals; and</p>	<p><i>NOTE: This standard is covered in grade 4 in Environments. Total 3-5 standards coverage is 100%.</i></p> <p><b>FOSS Next Generation Environments</b>  <b>IG:</b> pp. 206-213, 270, 327-328  <b>SRB:</b> pp. 48-54, 55-57, 79-85  <b>EA:</b> Response sheet, IG pp. 211  <b>DR:</b> <i>All About Plant Adaptations</i>  <b>BM:</b> Assessment coding guide pp. 34-35 (Item 4), pp. 36-37 (Item 6), pp. 44-45 (Item 2ab)</p>
<p>10B. differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle.</p>	<p><b>FOSS Next Generation Living Systems</b>  <b>IG:</b> pp. 303-307  <b>SRB:</b> pp. 70  <b>EA:</b> <i>Notebook Entry</i>, IG p.305 (Step 8)  <b>DR:</b> <i>Animal Behavior and Communication</i></p>