

Grade 6 – Scientific Investigation and Reasoning

State Standard	FOSS Program
1. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:	
1A. demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards;	<p>FOSS Next Generation Weather and Water IG: pp. 35, 90, 98, 100, 147, 150, 269, 272, 287, 289, 326, 328 SRB: p. 137 EA: Investigations Guide pp. 147-148 (Step 7), 270 (Step 6), 408 (Step 17), 503 (Step 9)</p> <p>FOSS Next Generation Earth History IG: pp. 146, 210, 214, 278, 280, 416, 428, 430, 448, 574, 579, SRB: pp. 73</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 124-127, 139, 142, 218, 221, 447, 495-496, 584-585, 613, 615-616, 644, 646 SRB: pp. 185</p>
1B. practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	<p>FOSS Next Generation Weather and Water IG: pp. 350, 381, 391, 396, 398, 404, 410</p> <p>FOSS Next Generation Earth History IG: pp. 81, 84, 206, 275, 425, 432, 492</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 288, 390, 394, 402,</p>
2. The student uses scientific practices during laboratory and field investigations. The student is expected to:	
2A. Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology;	<p>FOSS Next Generation Weather and Water IG: pp. 154, 348, 379-380, 396, 405, 416, 618, 448 SRB: pp. 108 EA: Investigations Guide pp. 350 (Step 9), 398 (Step 19), 618 (Step 7)</p> <p>FOSS Next Generation Earth History IG: pp. 143-145, 211, 234, 279-281, 331 SRB: pp. 146-152, 167-172 EA: Investigations Guide pp. 145 (Step 23), 279 (Step 9), 416 (Step 3) DR: <i>Limestone Formation</i></p> <p>FOSS Next Generation Chemical Interactions IG: pp. 135-140, EA: Investigations Guide pp. 140 (Step 13)</p>
2B. design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology;	<p>FOSS Next Generation Weather and Water IG: pp. 148, 254, 256, 272, 274, 290, 328, 353, 436, 454, 505, 509, 587 SRB: pp. 19 EA: Investigations Guide pp. 148 (Step 7) DR: <i>Seasons</i> BM: Assessment masters pp. 5 (Item 1)</p> <p>FOSS Next Generation Earth History IG: pp. 154-158, 160-161, 193-198, 211, 215, 225, 236, 417-</p>

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

	<p>419, 430-434, 480-486 SRB: pp. 144-145, 12-19, 20-26, 27-33 EA: Investigations Guide pp. 161 (Step 17), 195-196 (Step 14), 431 (Step 11), 481 (Step 8) DR: <i>Glen Canyon Dam High Flow Experiment, Earth's Interior, Salol Crystal Formation, Volcanoes</i> BM: N/A</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 231-236, 245, 279, 280, 309, 388, 438, 533, 587 SRB: pp. 27 EA: Investigations Guide pp. 232 (Step 8), 276 (Step 7) DR: <i>Particles in Solids, Liquids, and Gases, Energy Flow</i> BM: Assessment masters pp. 9 (Item 1), 17 (Item 2)</p>
<p>2C. collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;</p>	<p>FOSS Next Generation Weather and Water IG: pp. 148, 254, 256, 272, 274, 290, 328, 353, 436, 454, 505, 509, 587 SRB: pp. 19 EA: Investigations Guide pp. 148 (Step 7) DR: <i>Seasons</i> BM: Assessment masters pp. 5 (Item 1)</p> <p>FOSS Next Generation Earth History IG: pp. 154-158, 160-161, 193-198, 211, 215, 225, 236, 417-419, 430-434, 480-486 SRB: pp. 144-145, 12-19, 20-26, 27-33 EA: Investigations Guide pp. 161 (Step 17), 195-196 (Step 14), 431 (Step 11), 481 (Step 8) DR: <i>Glen Canyon Dam High Flow Experiment, Earth's Interior, Salol Crystal Formation, Volcanoes</i></p> <p>FOSS Next Generation Chemical Interactions IG: pp. 231-236, 245, 279, 280, 309, 388, 438, 533, 587 SRB: pp. 27 EA: Investigations Guide pp. 232 (Step 8), 276 (Step 7) DR: <i>Particles in Solids, Liquids, and Gases, Energy Flow</i> BM: Assessment masters pp. 9 (Item 1), 17 (Item 2)</p>
<p>2D. construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and</p>	<p>FOSS Next Generation Weather and Water IG: pp. 139, 143-145, 173, 348-350, 396-397, 406, 501, 531, 618 SRB: N/A EA: Investigations Guide pp. 145 (Step 23), 148 (Step 7), 350 (Step 9) DR: <i>Elevator to Space</i> BM: Assessment masters pp. 5 (Item 1), 13 (Item 1)</p> <p>FOSS Next Generation Earth History IG: pp. 146-149, 415-416, 574 EA: Investigations Guide pp. 416 (Step 3) DR: <i>Pacific Northwest Tour, Earth's Interior</i></p> <p>FOSS Next Generation Chemical Interactions IG: pp. 139, 336-338, 364-367, 391, 435-436, 486 EA: Investigations Guide pp. 367 (Step 8)</p>

<p>2E. analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p>	<p>FOSS Next Generation Weather and Water IG: pp. 149-150, 203, 255, 261, 271, 272, 290, 335-337, 351, 353, 355, 380, 383, 385, 452, 466, 510, 556, 579, 586-587, 627-630, 641, 679, SRB: pp. 96-102, 105-110 EA: Investigations Guide pp. 148 (Step 7), 263 (Step 31), 270 (Step 6), 319 (Step 11), 350 (Step 9), 467 (Step 17), 503 (Step 9), 505 (Step 14), 565 (Step 22), 586 (Step 5), 631 (Step 10), 679-680 (Step 20) DR: <i>Energy Transfer: Conduction, Radiation, and Convection; Thermometer; Greenhouse-Gas Simulator</i> BM: Assessment masters pp. 12 (Item 4), 17 (Item 1), 20 (Item 5), 29 (Item 7), 31 (Item 3), 41 (Item 15), 42 (Item 16)</p> <p>FOSS Next Generation Earth History IG: pp. 160, 195-201, 225-226, 264-266, 277-280, 335-337, 364-373, 429-434, 491-492, 505, 548-554, 577-578, 582-584, 652-654 SRB: pp. 20-26, 138, 153, 159, 178 EA: Investigations Guide pp. 161 (Step 17), 196 (Step 14), 226 (Step 26), 266 (Step 13), 367 (Step 8), 623 (Step 10), 625 (Step 16) DR: <i>Glen Canyon Dam High Flow, Stream-Table Videos, Sandstone Formation, Rock Column Movie Maker, Index-Fossil Correlation, Convection Tank, Convergent Boundary, Divergent Boundary, Transform Boundary, Folding</i> BM: Assessment masters pp. 7 (Item 3), 9 (Item 7), 13 (Item 7), 19 (Item 1)</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 183, 230, 232, 235, 276, 280, 289-290, 346-358, 366-367, 438-439, 446-450, 488-489, 534-536, 574, 616-618, SRB: pp. 46-55 EA: Investigations Guide pp. 183 (Step 12), 232 (Step 8), 276 (Step 7), 358 (Step 15), 367 (Step 8), 439 (Step 17) 447 (Step 4), 511 (Step 18), 536 (Step 14), 574 (Step 20) DR: <i>Thermometer</i> BM: Assessment masters pp. 5 (Item 1), 12 (Item 6), 16 (Item 6)</p>
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State Standard	FOSS Program
<p>3. The student uses scientific practices during laboratory and 3A. analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student;</p>	<p>field investigations. The student is expected to:</p> <p>FOSS Next Generation Weather and Water IG: pp. 502-504, 646-653 SRB: pp. 105-110 EA: Investigations Guide pp. 505 (Step 14) DR: <i>Climate Blog, Climate Change Basics</i> BM: Assessment masters pp. 30 (Item 1-2), 33 (Item 5), 40 (Item 13)</p> <p>FOSS Next Generation Earth History IG: pp. 298, 578-579, 630, 633, 661 SRB: pp. 88-92, 93-98, 99-103, 104-108, 109-113, 114-118 EA: Investigations Guide pp. 579 (Step 19), 630 (Step 4) BM: Assessment masters pp. 12 (Item 6), 18 (Item 8)</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 140-141, 232-233, 453-464, 487, 524-525, 617, 653-654</p>

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

	<p>SRB: pp. 64-73 EA: Investigations Guide pp. 232 (Step 8), 487 (Step 8), 525 (Step 18) BM: Assessment masters pp. 6 (Item 4)</p>
3B. use models to represent aspects of the natural world such as a model of Earth's layers;	<p>FOSS Next Generation Earth History IG: pp. 154-161, 190-201, 208-225, 232-238, 264-270, 276-281, 294-301, 332-337, 364-390, 417-419, 501-505 SRB: pp. 24-26, 50-63, 82-84 EA: Investigations Guide pp. 161 (Step 17), 266 (Step 13), 297 (Step 10), 367 (Step 8) DR: <i>Colorado River Trip, Heterogeneous vs. Homogeneous Material, Sandstone Formation, Shale Formation, Limestone Formation, Rock Column Movie Maker, Sedimentary Rock Tours, Dating Rock Layers, Index-Fossil Correlation, Earth's Interior, NOAA Plate Tectonics</i> BM: Assessment masters pp. 14 (Item 8), 26 (Item 5)</p>
3C. identify advantages and limitations of models such as size, scale, properties, and materials;	<p>FOSS Next Generation Weather and Water IG: pp. 151, 205, 330, 399, 404, 465-466, 554, 629 SRB: pp. 65 EA: Investigations Guide pp. 398 (Step 19), 408 (Step 17) DR: <i>Gas in a Syringe</i> BM: Assessment masters pp. 28 (Item 6), 39 (Item 10)</p> <p>FOSS Next Generation Earth History IG: pp. 197, 264, 440 549-551, 578 SRB: pp. 72 EA: Investigations Guide pp. 355 (Step 11) DR: <i>Timeliner</i> BM: Assessment masters pp. 16 (Item 4b)</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 399, 220, 222, 241, 457 SRB: pp. 27, 67 BM: Assessment masters pp. 27 (Item 7)</p>
3D. relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.	<p>FOSS Next Generation Weather and Water IG: pp. 140, 629-630, 651 SRB: pp. 37, 60, 63, 79 DR: <i>Climate Blog</i></p> <p>FOSS Next Generation Earth History IG: pp. 662 SRB: pp. 119-124</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 621, 649, 655 SRB: pp. 134-140, 148-154, 155-160 DR: <i>Science and Engineering Careers Database</i></p>

4. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:

<p>4A. use appropriate tools, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, balances, microscopes, thermometers, calculators, computers, timing devices, and other necessary equipment to collect, record, and analyze information;</p>	<p>FOSS Next Generation Weather and Water IG: pp. 148, 254, 256, 272, 274, 290, 328, 353, 436, 454, 505, 509, 587 SRB: pp. 19 EA: Investigations Guide pp. 148 (Step 7) DR: <i>Seasons</i> BM: Assessment masters pp. 5 (Item 1)</p> <p>FOSS Next Generation Earth History IG: pp. 154-158, 160-161, 193-198, 211, 215, 225, 236, 417-419, 430-434, 480-486 SRB: pp. 144-145, 12-19, 20-26, 27-33 EA: Investigations Guide pp. 161 (Step 17), 195-196 (Step 14), 431 (Step 11), 481 (Step 8) DR: <i>Glen Canyon Dam High Flow Experiment, Earth's Interior, Salol Crystal Formation, Volcanoes</i></p> <p>FOSS Next Generation Chemical Interactions IG: pp. 231-236, 245, 279, 280, 309, 388, 438, 533, 587 SRB: pp. 27 EA: Investigations Guide pp. 232 (Step 8), 276 (Step 7) DR: <i>Particles in Solids, Liquids, and Gases, Energy Flow</i> BM: Assessment masters pp. 9 (Item 1), 17 (Item 2)</p>
<p>4B. use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>	<p>FOSS Next Generation Weather and Water IG: pp. 35, 90, 98, 100, 147, 150, 269, 272, 287, 289, 326, 328 SRB: p. 137 EA: Investigations Guide pp. 147-148 (Step 7), 270 (Step 6), 408 (Step 17), 503 (Step 9)</p> <p>FOSS Next Generation Earth History IG: pp. 146, 210, 214, 278, 280, 416, 428, 430, 448, 574, 579, SRB: pp. 73</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 124-127, 139, 142, 218, 221, 447, 495-496, 584-585, 613, 615-616, 644, 646 SRB: pp. 185</p>

Grade 8 – Matter and Energy

State Standard	FOSS Program
<p>5. The student knows the differences between elements and compounds. The student is expected to:</p>	
<p>5A. know that an element is a pure substance represented by a chemical symbol and that a compound is a pure substance represented by a chemical formula;</p>	<p>FOSS Next Generation Chemical Interactions IG: pp. 136-137, 169-183, 189-197, 558-574, 612-613 SRB: pp. 3-10, 13-14, 24-27 EA: Investigations Guide pp. 183 (Step 12), 574 (Step 20) DR: <i>Periodic Table of the Elements, Element ID Games</i> BM: Assessment masters pp. 6 (Items 2 & 3), 16 (Items 5 & 6)</p>
<p>5B. recognize that a limited number of the many known elements comprise the largest portion of solid Earth, living matter, oceans, and the atmosphere;</p>	<p>FOSS Next Generation Weather and Water IG: pp. 107, 118-119, 120-121, 166-173, 186, 300, 602 SRB: pp. 19-20, 23, 36, 73 EA: Investigations Guide pp. 172 (Step 11) DR: <i>Atoms and Molecules, The Carbon Cycle, Elevator to Space</i> BM: N/A</p>

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	<p>FOSS Next Generation Chemical Interactions IG: pp. 189-197 SRB: pp. 13-14 EA: Investigations Guide pp. 192 (Step 9) DR: <i>Element ID Games</i></p>
5C. identify the formation of a new substance by using the evidence of a possible chemical change such as production of a gas, change in temperature, production of a precipitate, or color change.	<p>FOSS Next Generation Earth History IG: pp. 148, 278-281 SRB: pp. 34-39 EA: Investigations Guide pp. 279 (Step 9) DR: <i>Limestone Formation</i> BM: Assessment masters pp. 6 (Item 1)</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 126-127, 135-146, 218-223, 583-605, 611-620, 642-650 SRB: pp. 110-115, 118-129, 130-133 EA: Investigations Guide pp. 127 (Step 10), 139-140 (Step 13), 222 (Step 11), 588 (Step 13), 619 (Step 17), 648 (Step 15) DR: <i>Two-Substance Reactions, Burning Sugar Demonstration</i> BM: Assessment masters pp. 8 (Item 7), 11 (Items 4 & 5), 24 (Item 7), 25 (Items 1-3), 25 (4 & 5), 28 (Items 8 & 9)</p>

Grade 6 – Matter and Energy

State Standard	FOSS Program
6. The student knows matter has physical properties that can be used for classification. The student is expected to:	
6A. compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability;	<p><i>NOTE: This standard is covered in grade 8 Electromagnetic Force. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 153-154 SRB: pp. 21 DR: <i>Magnetism</i></p>
6B. calculate density to identify an unknown substance;	<p>FOSS Next Generation Weather and Water IG: pp. 256-263 SRB: pp. 47-50 EA: Response Sheet, IG pp. 263 BM: Assessment Coding Guide, pp. 28-29 (Item 1),</p>
6C. test the physical properties of minerals, including hardness, color, luster, and streak.	<p>FOSS Next Generation Earth History IG: pp. 146, 574, SRB: pp. 68-73 BM: Assessment masters pp. 27 (Item 6)</p>

Grade 6 – Matter and Energy

State Standard	FOSS Program
7. The student knows that some of Earth's energy resources are available on a nearly perpetual basis, while others can be renewed over a relatively short period of time. Some energy resources, once depleted, are essentially nonrenewable. The student is expected to:	
7A. research and discuss the advantages and disadvantages of using coal, oil, natural gas, nuclear power, biomass, wind, hydropower, geothermal, and solar resources.	<p>FOSS Next Generation Earth History IG: pp. 612-617, 620-625, 629-632 SRB: pp. 99-103, 104-108, 109-113, 114-118 EA: Investigations Guide pp. 623 (Step 10), 625 (Step 16), 630-</p>

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	631 (Step 5) DR: <i>Geoscenarios, Timeliner</i>
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Grade 6 – Motion, Force, and Energy

State Standard	FOSS Program
8. The student knows force and motion are related to potential and kinetic energy. The student is expected to:	
8A. compare and contrast potential and kinetic energy;	<p>FOSS Next Generation Weather and Water IG: pp. 273, 328, 333, 338, 379, 381-386, 437, 505, 510-514, 522-524 SRB: pp. 34, 46, 68, 70 EA: Investigations Guide pp. 447 (Step 8) DR: <i>Energy Transfer by Collision</i> BM: Assessment masters pp. 2 (Item 3), 14 (Item 3)</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 279-280, 289-303, 307-310, 333-338, 342-359, 363-369, 434-440, 488-489, 497-511, 519-521, 531-536 SRB: pp. 33-39, 46-55, 89-100 EA: Investigations Guide pp. 302 (Step 17), 312 (Step 11), 338 (Step 13), 359 (Step 15), 439 (Step 17), 511 (Step 18), 536 (Step 14) DR: <i>Particles in Solids, Liquids, and Gases, Energy Transfer by Collision, Mixing Hot and Cold Water, Thermometer</i> BM: Assessment masters pp. 13 (Item 1), 14 (Items 2 & 3), 15 (Items 4 & 5), 18-20 (Items 3-8), 21 (Item 1)</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 214-221 SRB: pp. 5,15,17 EA: Performance Assessment, IG pp. 217-218</p>
8B. identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces;	<p><i>NOTE: This standard is covered in grade 8 Gravity and Kinetic Energy and Electromagnetic Force. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 98-106, 111-119, 126-132 SRB: pp. 3-10, 11-17, 22-25 EA: Notebook Entry, IG pp. 102, 106; Notebook Entry, IG pp. 119, Performance Assessment, IG pp. 119; Notebook Entry, IG 128 DR: <i>Falling Ball: Movie Tracker</i> BM: <i>Assessment Coding Guide</i>, pp. 2-3 (Item 1), pp. 4-5 (Item 3ab), pp. 8-9 (Items 1abcd and 2), pp. 12-13 (Items 4-6), pp. 20-21 (Item 6), pp. 24-25 (Item 1ab), pp. 26-27 (Item 4), pp. 28-29 (Item 6abc), pp. 32-33 (Items 1 and 3), pp. 34-35 (Item 4), pp. 44-45 (Item 14)</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 121-126 EA: Response Sheet IG pp. 126 DR: <i>Forces: What is Force & When are Forces Balanced?</i> BM: <i>Assessment Coding Guide</i>, pp. 2-3 (Items 1 and 2), pp. 8-9 (Items 1 and 2), pp. 14-15 (Items 7 and 8), pp. 38-39 (Items 3 and 4), pp. 42-43 (Item 8)</p>

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8C. calculate average speed using distance and time measurements;	<p><i>NOTE: This standard is covered in grade 8 Gravity and Kinetic Energy. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 98-106, 111-119, 126-132 SRB: pp. 3-10, 11-17, 22-25 EA: Notebook Entry, IG pp. 102, 106; Notebook Entry, IG pp. 119, Performance Assessment, IG pp. 119; Notebook Entry, IG 128 DR: <i>Falling Ball: Movie Tracker</i></p>
8D. measure and graph changes in motion;	<p><i>NOTE: This standard is covered in grade 8 Gravity and Kinetic Energy. Total 6-8 standards coverage is %.</i></p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 102,116, 111-119 EA: Notebook Entry, IG pp. 102; Notebook Entry, IG pp. 116, Performance Assessment, IG pp. 119 DR: <i>Falling Ball; Movie Tracker</i></p>
8E. investigate how inclined planes can be used to change the amount of force to move an object.	<p><i>NOTE: This standard is covered in grade 8 Gravity and Kinetic Energy. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 213-221 EA: Performance Assessment, IG pp. 217</p>

State Standard	FOSS Program
<p>9. The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form. The student is expected to:</p>	
9A. investigate methods of thermal energy transfer, including conduction, convection, and radiation;	<p>FOSS Next Generation Weather and Water IG: pp. 268-275, 290-292, 328-338, 347-348, 352-354, 378-386, 405, 436-447, 462-479, 627-631 SRB: pp. 21, 51-52, 69-75, 76-84, 106 EA: Investigations Guide pp. 270 (Step 6), 291-292 (Step 12), 334 (Step 15), 350 (Item 9), 386 (Step 21), 447 (Step 8), 467 (Item 17), 631 (Step 10) DR: <i>Fluid Convection; Energy Transfer: Conduction, Radiation, and Convection; Seasons; Energy Transfer by Collision; Particles in Solids, Liquids, and Gases; Thermometer, Greenhouse Simulator</i> BM: Assessment masters pp. 13 (Item 2), 14 (Item 3), 15 (Item 4), 21 (Item 1 and 3), 22 (Item 4), 23 (Item 5), 27 (Item 4), 37 (Item 6)</p> <p>FOSS Next Generation Earth History IG: pp. 504-507, 573, 660 SRB: pp. 83 EA: Investigations Guide pp. 516 (Step 20) DR: <i>Convection, NOAA Plate Tectonics, Convection Tank</i> BM: Assessment masters pp. 16 (Item 4a), 17 (Item 7)</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 342-359, 387-393, 403-413 SRB: pp. 46-55, 56-63 EA: Investigations Guide pp. 393 (Step 19) DR: <i>Energy Transfer by Collision, Mixing Hot and Cold Water, Thermometer, Energy Flow</i> BM: Assessment masters pp. 13 (Item 1), 15 (Items 4 & 5), 23 (Item 6)</p>

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<p>9B. verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature such as an ice cube melting;</p>	<p>FOSS Next Generation Weather and Water IG: pp. 378-386, 392-399, 403-417, 451-456 SRB: pp. 64-68, 76-84 EA: Investigations Guide pp. 398 (Step 19), 408 (Step 17), 455 (Step 12) DR: <i>Energy Transfer by Collision; Energy Transfer: Conduction, Radiation, and Convection; Thermometer</i> BM: Assessment masters pp. 16 (Item 5), 21 (Item 2), 26 (Item 3), 35 (Item 4), 37 (Item 6)</p> <p>FOSS Next Generation Chemical Interactions IG: pp. 333-338, 344-359, 494-512 SRB: pp. 46-55, 89-100 EA: Investigations Guide pp. 338 (Step 13), 358 (Step 15), 511 (Step 18) DR: <i>Energy Transfer by Collision, Mixing Hot and Cold Water, Thermometer, Energy Flow</i> BM: Assessment masters pp. 17 (Item 1), 20 (Item 8)</p>
<p>9C. demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy.</p>	<p><i>NOTE: This standard is covered in grade 8 Electromagnetic Force. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 209-213 SRB: pp. 35-37 EA: Notebook Entry, IG pp. 211 DR: Lighting a Bulb</p>

Grade 6 – Earth and Space

State Standard	FOSS Program
<p>10. Earth and space. The student understands the structure of Earth, the rock cycle, and plate tectonics. The student is expected to</p>	
<p>10A. build a model to illustrate the compositional and mechanical layers of Earth, including the inner core, outer core, mantle, crust, asthenosphere, and lithosphere;</p>	<p>FOSS Next Generation Earth History IG: pp. 502-503 SRB: pp. 82 DR: <i>NOAA Plate Tectonics</i> BM: Assessment masters pp. 16 (Item 4a)</p>
<p>10B. classify rocks as metamorphic, igneous, or sedimentary by the processes of their formation;</p>	<p>FOSS Next Generation Earth History IG: pp. 265-270, 276-290, 295-301, 416-420, 427-442, 447-452, 573-591, 654-655 SRB: pp. 34-39, 50-63, 72, 88-92 EA: Investigations Guide pp. 266 (Step 13), 279 (Step 9), 297-298 (Step 10), 416 (Step 3), 431 (Step 11), 451 (Step 9), 579 (Step 19), 656 (Step 15) DR: <i>Sandstone Formation, Shale Formation, Limestone Formation, Rock Column Movie Maker, Sedimentary Rocks Tour, Extrusive Rock Formation, Intrusive Rock Formation, Rock Database, How Metamorphic Rocks Form</i> BM: Assessment masters pp. 15 (Item 1 & 3), 17 (Item 6), 17 (Item 9), 20 (Item 2), 22 (Item 5), 24 (Item 3), 27 (Item 6)</p>
<p>10C. identify the major tectonic plates, including Eurasian, African, Indo-Australian, Pacific, North American, and South American;</p>	<p>FOSS Next Generation Earth History IG: pp. 501-516 SRB: pp. 74-79, 83-84 EA: Investigations Guide pp. 516 (Step 20)</p>

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	<p>DR: NOAA Plate Tectonics, Plate-Boundaries Map BM: Assessment masters pp. 22 (Item 4)</p>
<p>10D. describe how plate tectonics causes major geological events such as ocean basin formation, earthquakes, volcanic eruptions, and mountain building.</p>	<p>FOSS Next Generation Earth History IG: pp. 490-495, 546-566, 660 SRB: pp. 81-87 EA: Investigations Guide pp. 494 (Step 15), 554 (Step 22), 564 (Step 27) DR: Convergent Boundary, Divergent Boundary, Transform Boundary, Folding BM: Assessment masters pp. 15 (Item 2), 17 (Items 5 & 7), 21 (Item 3), 23 (Items 1 & 2), 27 (Item 7), 28 (Items 8 & 9)</p>

State Standard	FOSS Program
<p>11. The student understands the organization of our solar system and the relationships among the various bodies that comprise it. The student is expected to:</p>	
<p>11A. describe the physical properties, locations, and movements of the Sun, planets, moons, meteors, asteroids, and comets;</p>	<p><i>NOTE: This standard is covered in grade 8 Planetary Science. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Planetary Science IG: pp. 174-181, 241-243, 254-260, 294-299, 381-384, 444-447, 550-555 SRB: pp. 16-17, 42-48, 67-79, 86-96, 110-120, 135, 160-165 EA: Performance Assessment, IG pp. 177; Notebook Entry, IG pp. 260; Response Sheet, IG pp. 297, Notebook Entry, IG pp. 384; Notebook Entry, IG pp. 447; Notebook Entry, IG pp. 554 DR: Day/Night Simulation. Seasons, Cosmos Card Set, Moon Puzzle, Moon Orientation, Crater Formation on the Moon, Moons of Jupiter Animation BM: Assessment Coding Guide, pp. 2-3 (Item 3), pp. 6-7 (Item 4), pp. 10-15 (Items 1-3), pp. 16-20 (Items 4-7), pp. 22-23 (Item 1), pp. 24-29 (Items 3-6), pp. 58-59 (Item 1), pp. 60-67 (Items 3-7)</p>
<p>11B. understand that gravity is the force that governs the motion of our solar system;</p>	<p><i>NOTE: This standard is covered in grade 8 Planetary Science. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Planetary Science IG: pp. 80-86, 112-113, SRB: pp. EA: Notebook Entry, IG pp. DR: Solar System Evolution Simulator BM: Assessment Coding Guide, pp. 6-7 (Item 5), pp. 38-39 (Items 7 and 8), pp. 70-71 (Item 11)</p>
<p>11C. describe the history and future of space exploration, including the types of equipment and transportation needed for space travel.</p>	<p><i>NOTE: This standard is covered in grade 8 Planetary Science. Total 6-8 standards coverage is %.</i></p> <p>FOSS Next Generation Planetary Science IG: pp. 523-529, 550-555, 560-567 SRB: pp. 86-96, 169-179 EA: Performance Assessment, IG pp. 525; Notebook Entry, IG pp. 554; Assessment Performance, IG pp. 567 DR: Hubble's Amazing Universe Video, Moons of Jupiter animation, Venus Transit, Orrey Video, Exoplanet Transit Hunt, NASA History</p>

Grade 6 – Organisms and Environments

State Standard	FOSS Program
<p>12. The student knows all organisms are classified into domains and kingdoms. Organisms within these taxonomic groups share similar characteristics that allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:</p>	
<p>12A. understand that all organisms are composed of one or more cells;</p>	<p><i>NOTE: This standard is covered in grade 7 Diversity of Life. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Diversity of Life IG: pp. 228-235, 241-249, 263-266, 365-370 SRB: pp. 20-27 EA: Performance Assessment, IG pp. 231; Notebook Entry, IG pp. 242; Notebook Entry, IG pp. 266 DR: <i>Levels of Complexity: Plant Cell; Levels of Complexity: Animal Cell, Levels of Complexity: Protist Cell, Levels of Complexity: Bacterial Cell,</i> BM: <i>Assessment Coding Guide, pp. 2-3 (Item 2ab), pp. 10-11 (Item 2), pp. 14-15 (Item 6)</i></p>
<p>12B. recognize that the presence of a nucleus is a key factor used to determine whether a cell is prokaryotic or eukaryotic;</p>	<p><i>NOTE: This standard is covered in grade 7 Diversity of Life. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Diversity of Life IG: pp. 369-370 SRB: pp. 25, 30 DR: <i>Levels of Complexity: Bacterial Cell; Levels of Complexity: Archaeal Cell</i></p>
<p>12C. recognize that the broadest taxonomic classification of living organisms is divided into currently recognized domains;</p>	<p><i>NOTE: This standard is covered in grade 7 Diversity of Life. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Diversity of Life IG: pp. 365-370 SRB: pp. 119, 121 EA: Performance Assessment, IG pp. DR: <i>Classification History slide show, Levels of Complexity: Archaeal Cell, Levels of Complexity: Bacterial Cell</i></p>
<p>12D. identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized kingdoms;</p>	<p><i>NOTE: This standard is covered in grade 7 Diversity of Life. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Diversity of Life IG: pp. 119-124, 244-249, 228-235, 241-249, 263-266, 365-370, 480-489, 573-580 SRB: pp. 3-9, 14-19, 22,28-30, 62-64, 81-89 EA: Performance Assessment, IG pp. 231; Notebook Entry, IG pp. 242; Notebook Entry, IG pp. 266; Response Sheet, IG pp 497; Notebook Entry, IG pp. 580 DR: <i>Levels of Complexity: Plant Cell; Levels of Complexity: Plant Cell; Levels of Complexity: Animal Cell, Levels of Complexity: Protist Cell, Levels of Complexity: Bacterial Cell, Levels of Complexity Multicellular Organisms, Genes and Heredity</i></p>
<p>12E. describe biotic and abiotic parts of an ecosystem in which organisms interact;</p>	<p><i>NOTE: This standard is covered in grade 7 Populations and Ecosystems. Total 6-8 standards coverage with FOSS is 97%.</i></p>

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

	<p>FOSS Next Generation Populations and Ecosystems IG: pp. 187-193 SRB: pp. 15 EA: Performance Assessment, IG pp. 190 DR: <i>Ecosystem Card Sort, Ecoscenarios</i></p>
12F. diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem.	<p><i>NOTE: This standard is covered in grade 7 Populations and Ecosystems. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 187-193, 206-208 SRB: pp. 15, 16-34 EA: Performance Assessment, IG pp. 190 DR: <i>Ecosystem Card Sort, Ecoscenario</i></p>

Grade 7– Scientific Investigation and Reasoning

State Standard	FOSS Program
13. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:	
1A. demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency approved safety standards	<p>FOSS Next Generation Diversity of Life IG: pp. pp. 123,142,174,197,239, 261,282,305,308,310 SRB: pp. 143-144</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 33, 86-87, 132,137, 313-314, 391,396- 399.438 SRB: pp. 145-146</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 29, 123 SRB: pp. 89-90</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 29, 66, 217 SRB: pp. 105-106</p>
1B. practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	<p>FOSS Next Generation Diversity of Life IG: pp. 82, 84, 136, 179, 181, 202, 355, 397, 419</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 29,90, 127, 160, 399</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 25, 61-62</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 25, 60, 92, 205, 237</p>
14. The student uses scientific practices during laboratory and field investigations. The student is expected to:	
2A. Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology;	<p>FOSS Next Generation Diversity of Life IG: pp. 133-139, 200, 240-245, 352-356, 394-399, 409-411, 467-473, 502-503 EA: Notebook Entry, IG pp. 139; Performance Assessment, IG pp. 201; Notebook Entry, IG pp. 248-249; Performance Assessment, IG pp. 249; Notebook Entry, IG pp. 356; Notebook</p>

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

	<p>Entry, IG pp. 397 Performance Assessment, IG pp. 399; Notebook Entry- Response Sheet IG pp. 411; Notebook Entry, IG pp. 473</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 123-126, 328-332, 3360-366, 502-503 EA: Notebook Entry, IG pp 126; Performance Assessment, IG pp. 124-125; Notebook Entry, IG pp 329; Performance Assessment, IG pp. 332; Notebook Entry, IG pp 362,364; Performance Assessment, IG pp. 360-361; Notebook Entry, IG pp 503</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 278-279 and 282-283 EA: Notebook Entry, IG pp. 278, 282</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 89-93, 217-218, 221-224, 227 EA: Notebook Entry, IG pp. 93; Notebook Entry, IG pp.217, Notebook Entry, IG pp.228</p>
<p>2B. design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology;</p>	<p>FOSS Next Generation Diversity of Life IG: pp. 405-412 EA: Response Sheet, IG pp. 411, Notebook Entry, IG pp. 412</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 360-367 EA: Teacher Master, Notebook Entry, IG pp 365, Performance Assessment, IG pp. 360-361</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 166-169 EA: Notebook Entry, IG pp. 166-168</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 99-108 EA: Performance Assessment, IG pp. 108; Notebook Entry, IG pp. 109</p>
<p>2C. collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;</p>	<p>FOSS Next Generation Diversity of Life EA: Notebook Entry, IG pp. 134; Notebook Entry, IG pp. 139; Notebook Entry, IG pp. 179; Notebook Entry, IG pp. 189; Notebook Entry, IG pp. 200; Notebook Entry, IG pp. 229; Notebook Entry, IG pp. 311; Notebook Entry, IG pp. 396-398; Notebook Entry, IG pp. 458; Notebook Entry, IG pp. 470; Notebook Entry, IG pp. 480; Notebook Entry, IG pp. 496; Notebook Entry, IG pp. 537, Notebook Entry, IG pp. 578; Notebook Entry, IG pp. 617 Performance Assessment, IG pp. 619</p> <p>FOSS Next Generation Populations and Ecosystems EA: Notebook Entry, IG pp 94-95; Notebook Entry, IG pp. 153; Notebook Entry, IG pp. 189; Notebook Entry, IG pp. 305-306; Notebook Entry, IG pp. 364; Notebook Entry, IG pp. 371-372; Notebook Entry, IG pp. 398-400; Notebook Entry, IG pp. 499; Notebook Entry, IG pp. 503; Notebook Entry, IG pp. 567</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 182 EA: Notebook Entry, IG pp.94-95; Notebook Entry, IG pp. 123; Notebook Entry, IG pp. 185</p>

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

	<p>FOSS Next Generation Human Systems Interactions IG: pp. 102 EA: Notebook Entry, IG pp 100 ; Notebook Entry, IG pp. 174; Notebook Entry, IG pp. 217; Notebook Entry, IG pp. 223;</p>
2D. construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and	<p>FOSS Next Generation Diversity of Life IG: pp. 140, 399 EA: Notebook Entry, IG pp. 397; Performance Assessment, IG pp. 399</p> <p>FOSS Next Generation Populations and Ecosystems EA: Notebook Entry, IG pp. 503-504</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 162-167, 254-255, 282-283 EA: Notebook Entry, IG pp.162-163, 167; Notebook Entry, IG pp. 255; Notebook Entry, IG pp. 282</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 174-175 EA: Notebook Entry, IG pp. 100; Notebook Entry, IG pp. 174; Notebook Entry IG pp. 223</p>
2E. analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.	<p>FOSS Next Generation Diversity of Life IG: pp. 397, 497-498, 535-537 EA: Notebook Entry, IG pp. 397; Notebook Entry, IG pp. 537</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 190, 365-367, 404, 427, 443, 453-454,458-459, 477, 506-507, 534-535, 540-541,542-543, 571-572, 582, 589, 634-637, 648-649 EA: Response Sheet, IG: pp. 459, Performance Assessment, IG pp. 642-643</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 205-207, 213-217, 282-283 EA: Response Sheet, IG pp. 207, Notebook Entry, IG pp. 208; Notebook Entry, IG pp. 217; Response Sheet, IG pp. 293</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 146, 186 EA: Performance Assessment, IG pp. 146; Notebook Entry, IG pp. 186</p>

State Standard	FOSS Program
15. The student uses scientific practices during laboratory and field investigations. The student is expected to:	
3A. analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student;	<p>FOSS Next Generation Diversity of Life IG: pp. 124, 138-139, 142, 203, 235,243-248, 257, 344, 353-359, 370 EA: Notebook Entry, IG pp. 139; Notebook Entry, IG 203; Notebook Entry, IG pp. 638</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 330, 366, 442, 504, 571-572 EA: Performance Assessment, IG pp. 332; Performance Assessment, IG pp. 642-643, Notebook Entry, IG pp. 507;</p>

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

	<p>Notebook Entry 582</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 132-133, 294-296 EA: Response Sheet, IG pp. 130; Notebook Entry, IG pp. 294-295</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 146, 186 EA: Performance Assessment, IG pp. 146; Notebook Entry, IG pp. 186</p>
<p>3B. use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature;</p>	<p>FOSS Next Generation Diversity of Life IG: pp. 276, 401,412, 534-537 EA: Notebook Entry, IG pp. 234; Notebook Entry, IG pp. 247; Notebook Entry, IG pp. 266; Notebook Entry, IG pp. 234; Notebook Entry 366</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 136-140, 264-267, 321, 328-332, 392-393, 398-401, 436-444, 453-458, 502-503, EA: Notebook Entry, IG pp. 147; Notebook Entry, IG pp. 270; Response Sheet, IG pp. 270; Notebook Entry IG pp. 329, 331; Performance Assessment, IG pp. 332</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 98-101, 159-179, 203-207 EA: Notebook Entry, IG pp. 161,175; Response Sheet, IG pp. 207; Notebook Entry, IG pp. 213-215;</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 128-135, 142-144, 184-186, 202-205 EA: Response Sheet, IG pp. 135; Performance Assessment, IG pp. 146; Notebook Entry, IG pp. 186; Response Sheet, IG pp. 206</p>
<p>3C. identify advantages and limitations of models such as size, scale, properties, and materials; and</p>	<p>FOSS Next Generation Diversity of Life IG: pp. 608</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 140, 393, 401, 502</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 161-171</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 205</p>
<p>3D. relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.</p>	<p>FOSS Next Generation Diversity of Life IG: pp. 182, 206, 272, 275, 334-339, 367-369 SRB: pp. 10-13, 15, 23-24, 29-30, 35,43,91, 97 DR: Marla Spivak, Ted Talk</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 187,196-200, 227, 308 SRB: pp. 42-50, 70-74, 119-120 DR: Mono Lake, Science and Restoration in the Mono Basin, National Geographic: Among the Wild Chimpanzees</p> <p>FOSS Next Generation Heredity and Adaptation</p>

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

	<p>IG: pp. SRB: pp. 5,7,9, 12-16, 18, 24-27, 28-35, 36-40, 61-68</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 111, 249 SRB: pp. 57,65,71,87</p>
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16. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:	
<p>4A. use appropriate tools, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectrometers, timing devices, and other necessary equipment to collect, record, and analyze information; and</p>	<p>FOSS Next Generation Diversity of Life IG: pp. 176-180, 186-193,200-202, 229-232 EA: Performance Assessment, IG pp.181; Notebook Entry, IG pp. 190; Response Sheet, IG pp. 192; IG pp, Performance Assessment, IG pp. 231; Notebook Entry, IG 242</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 124,136-139, 396-399 EA: Notebook Entry, IG pp. 124, 126, 127; Notebook Entry, IG pp. 147 Notebook Entry, IG pp. 398, 402</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 122-123, 203-207 EA: Notebook Entry, IG pp. 123; Notebook Entry IG pp. 206</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 222-227 EA: Notebook Entry, IG pp. 228</p>
<p>4B. use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>	<p>FOSS Next Generation Diversity of Life IG: pp.261, 308, 310</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 33, 396-399</p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 29</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 29</p>

Grade 7 – Matter and Energy

State Standard	FOSS Program
17. The student knows that interactions occur between matter and energy. The student is expected to:	
<p>5A. recognize that radiant energy from the Sun is transformed into chemical energy through the process of photosynthesis; and</p>	<p>FOSS Next Generation Populations and Ecosystems IG: pp. 359-367 SRB: pp. 51-55 EA: Notebook entry, IG pp. 362,363,364,365,366</p>
<p>5B. diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids.</p>	<p>FOSS Next Generation Populations and Ecosystems IG: pp. 264-270, 277-278 SRB: pp.75-82 EA: Notebook entry, IG pp. 270; Response Sheet, IG pp. 270; Notebook entry, IG pp. 278; Performance Assessment, IG pp. 278; DR: Mono Lake Food Web</p>

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

State Standard	FOSS Program
18. The student knows that matter has physical and chemical properties and can undergo physical and chemical changes. The student is expected to:	
6A. distinguish between physical and chemical changes in matter.	<p><i>NOTE: This standard is covered in grade 8 Chemical Interactions. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Chemical Interactions IG: 531-536, 583-590 SRB: 28-32,118-129 EA: Notebook Entry, IG pp. 536; Performance Assessment, IG pp. 588</p> <p><i>Partial coverage in</i> FOSS Next Generation Populations and Ecosystems IG: 397-400 EA: Notebook entry, IG pp. 400</p>

Grade 7 – Force, Motion, and Energy

State Standard	FOSS Program
19. The student knows that there is a relationship among force, motion, and energy. The student is expected to:	
7A. illustrate the transformation of energy within an organism such as the transfer from chemical energy to thermal energy; and ;	<p>FOSS Next Generation Populations and Ecosystems IG: pp. 374, 394-402, SRB: pp. 54-55,78 EA: Response Sheet, IG pp. 375 , Notebook Entry, IG pp. 398,402, 404 BM: <i>Assessment Coding Guide</i>, pp. 4-5 (Item 2a), pp. 6-7 (Item 3ab), pp.24-25 (Item 1ab), pp. 26-27 (Items 4 and 5), pp. 30-31 (Item 7abc), pp. 68-69 (Item 9), pp.72-73 (Item 14ab), pp. 74-75 (Item 15)</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 100-102, 127-135 SRB: pp. 50-54 DR: Human Cardiovascular System, Circulatory & Respiratory Video, Digestive and Excretory Systems Video</p>
7B. demonstrate and illustrate forces that affect motion in organisms such as emergence of seedlings, turgor pressure, geotropism, and circulation of blood.	<p>FOSS Next Generation Human Systems Interactions IG: pp. 100-102 SRB: pp. 4-7 EA: Notebook Entry, IG pp. 102 DR: Circulatory & Respiratory Video</p>

Grade 7 – Earth and Space

State Standard	FOSS Program
20. The student knows that natural events and human activity can impact Earth systems. The student is expected to	
8A. predict and describe how catastrophic events such as floods, hurricanes, or tornadoes impact ecosystems;	<p><i>NOTE: This standard is covered in grade 6 Weather and Water and Grade 6 Earth History. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Weather and Water IG: pp. 133-134, 646-653 SRB: pp. 2-17, 108-109</p>

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

	<p>EA: Notebook Entry, IG pp. 651; Performance Assessment, IG pp. 649 DR: Hurricanes Video, Tornadoes Video</p>
8B. analyze the effects of weathering, erosion, and deposition on the environment in ecoregions of Texas	<p><i>NOTE: This standard is covered in grade 6 Earth History. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Earth History IG: pp. 208-216, 262-265, 269, 277-28 SRB: pp. 20-26 EA:, Notebook Entry, IG pp. 226 DR: Freezing Glass Bottle video, Debris Flow video, Rock Fall video, Frost Wedging video, Sandstone Formation, Shale Formation, Limestone Formation</p>
8C. model the effects of human activity on groundwater and surface water in a watershed.	<p>FOSS Next Generation Weather and Water IG: pp. 558-564 SRB: pp. 92-95</p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 171, 335, 625-627 EA: Notebook Entry, IG pp. 626; Performance Assessment pp. 627</p>

State Standard	FOSS Program
21. The student knows components of our solar system. The student is expected to	
9A-analyze the characteristics of objects in our solar system that allow life to exist such as the proximity of the Sun, presence of water, and composition of the atmosphere; and	<p><i>NOTE: This standard is covered in grade 8 Planetary Science and Grade 6 Weather and Water. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Planetary Science IG: pp. 453-459 SRB: pp. 2-6, 90 EA: Notebook Entry, IG pp. 459; Notebook Entry, IG pp. 565 DR: Models of Jupiter’s Atmosphere</p> <p>FOSS Next Generation Weather and Water IG: pp. 161-173, 551-557 SRB: pp. 18-23, 24-31, 91-95 EA: Notebook Entry, IG pp. 172 DR: Elevator to Space</p>
9B-identify accommodations, considering the characteristics of our solar system, that enabled manned space exploration.	<p><i>NOTE: This standard is covered in grade 8 Planetary Science. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Planetary Science IG: pp. 521-527 EA: Performance Assessment, IG pp. 525</p>

Grade 7 -Organisms and Environments

State Standard	FOSS Program
22. The student knows that there is a relationship between organisms and the environment. The student is expected to	

10A-observe and describe how different environments, including microhabitats in schoolyards and biomes, support different varieties of organisms;	FOSS Next Generation Populations and Ecosystems IG: pp. 208, 215-217, 249-250, 257, 385-386, 565-571, 641-643 SRB: pp. 16-33, 35-40, EA: Notebook Entry, IG pp. 216; Notebook Entry, IG pp. 257; Notebook Entry, IG pp. 386; Notebook Entry, IG pp. 567; Notebook Entry, IG pp. 643; Performance Assessment, IG pp. 257 DR: Ecoscenarios, Ecoscenario Cards, The Mono Lake Story Video, Biomes
10B-describe how biodiversity contributes to the sustainability of an ecosystem; and	FOSS Next Generation Populations and Ecosystems IG: pp. 565-572 SRB: pp. 100-107 EA: Notebook Entry, IG pp. 582 FOSS Next Generation Diversity of Life IG: pp. SRB: pp. 90-93 EA: Notebook Entry, IG pp. 582
10C- observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds.	<i>NOTE: This standard is covered in a Delta Science Content Reader. Total 6-8 standards coverage with FOSS is 97%.</i> *Delta Science Content Reader Changes in Ecosystems pp. 16-19

State Standard	FOSS Program
23. The student knows that populations and species demonstrate variation and inherit many of their unique traits through gradual processes over many generations. The student is expected to	
11A-examine organisms or their structures such as insects or leaves and use dichotomous keys for identification;	Not covered in FOSS or Delta Readers
11B-explain variation within a population or species by comparing external features, behaviors, physiology of organisms that enhance their survival such as migration, hibernation, or storage of food in a bulb; and	FOSS Next Generation Heredity and Adaptation IG: pp. 254-256 SRB: pp. 53-59 EA: Notebook Entry, IG pp. DR: Walking Sticks: Eat Insects
11C-identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding such as the Galapagos Medium Ground Finch (<i>Geospiza fortis</i>) or domestic animals and hybrid plants.	FOSS Next Generation Heredity and Adaptation IG: pp. 278-283, 292-293 SRB: pp. 53-59, 62-65 EA: Response Sheet, IG pp. 293 DR: Walking Sticks: Find Insects in Three Environments, The Making of the Fittest: Natural Selection and Adaptation, Video, Larkey Natural Selection, The Origin of the Species Video

State Standard	FOSS Program
24. The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to	
12 A-investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish, hollow bones in birds, or xylem in plants;	FOSS Next Generation Heredity and Adaptation IG: pp. 114-120, 256 SRB: pp. 11,15, 41-52 78-81 EA: Notebook entry, IG pp. 115, Response sheet, IG pp. 130 DR: Fish with Fingers Video, Great Transitions: The Original Tetrapods Video FOSS Next Generation Diversity of Life

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

	<p>IG: pp. 413, 418-420, 456-460, 495-500 SRB: pp. 51, 62-64 EA: Notebook Entry, IG pp. 420; Notebook Entry, IG pp. 459; Notebook Entry, IG pp. 500 DR: Pollinator Collection, Pollinators Game</p>
12B-identify the main functions of the systems of the human organism including circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems;	<p>FOSS Next Generation Human Systems Interactions IG: pp. 98-103, 128- 135, 193-212 SRB: pp. 3-49, 84-87 EA: Notebook Entry, IG pp. 102, Performance Assessment, IG pp 108; Response Sheet, IG pp. 135; Response Sheet, IG pp. 206 DR: Human System Structural Levels, Circulatory & Respiratory Video, Digestive & Excretory Video, Human Cardiovascular System, Brain Synapse Function BM: Assessment Coding Guide, pp. 6-7 (Items 1-3), pp. 8-9 (Item 9), pp.10-11 (Item 7ab), pp.12-13 (Item 9), pp. 22-23 (Item 1ab), pp. 26-27 (Items 7 and 8), pp. 28-29 (Item 10)</p>
12C. recognize levels of organization in plants and animals, including cells, tissues, organ systems, and organisms;	<p>FOSS Next Generation Diversity of Life IG: pp. 368-369, 419-420 SRB: pp. 50-57, 121 EA: Notebook Entry, IG pp. 368; Notebook Entry, IG pp. 406 DR: Classification History, Levels of Complexity BM: <i>Assessment Coding Guide</i>, pp. 2-3 (Item 2ab), pp. 10-11 (Item 2), pp. 14-15 (Item 6)</p> <p>FOSS Next Generation Human Systems Interactions IG: pp. 89-93 EA: Notebook Entry, IG pp. 93 DR: Levels of Complexity, Human System Structural Levels, Structural Level Cards BM: <i>Assessment Coding Guide</i>, pp. 6-7 (Items 1-3), pp. 8-9 (Item 9), pp.10-11 (Item 7ab), pp.12-13 (Item 9), pp. 22-23 (Item 1ab), pp. 26-27 (Items 7 and 8), pp. 28-29 (Item 10)</p>
12D- differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole;	<p>FOSS Next Generation Diversity of Life IG: pp. 228-235, 241-249, 263-266,276 SRB: pp. 20-27 EA: Notebook Entry, IG pp. 229; Performance Assessment, IG, pp. 231; Notebook Entry, IG pp. 246; Response Sheet, IG, pp. 249; Notebook Entry, IG pp. 266 DR: Levels of Complexity: Plant Cell, Levels of Complexity: Protist Cell, Levels of Complexity: Animal Cell BM: <i>Assessment Coding Guide</i>, pp. 14-15 (Item 7), pp. 16-17 (Item 9), pp.18-19 (Item 1), pp. 52-53 (Item 4), pp. 60-61 (Item 16), pp. 62-63 (Item 17)</p>
12E-compare the function of cell organelles to the functions of an organ system; and	<p>FOSS Next Generation Diversity of Life IG: pp. 234 SRB: pp. 15 EA: Notebook Entry, IG pp. 234</p>
12F-recognize the components of cell theory.	<p>FOSS Next Generation Diversity of Life IG: pp. 267, 277-278 EA: Review Notebook Entries, IG pp. 377 SRB: pp. 24</p>

State Standard	FOSS Program
25. The student knows that an organism must be able to maintain balance in stable internal conditions in response to external and internal stimuli. The student is expected to	
13A-investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight; and	<p>FOSS Next Generation Human Systems Interactions IG: pp. 222-224,227-228 EA: Notebook Entry, IG pp. 228 SRB: 18, 60-63, 79-83</p> <p>FOSS Next Generation Diversity of Life IG: pp. 18, 579-581 EA: Notebook Entry, IG pp. 408 SRB: 88-89 BM: <i>Assessment Coding Guide</i>, pp. 4-5 (Items 5 and 6), pp. 14-15 (Items 2 and 3), pp. 18-19 (Items 6 and 7), pp. 20-21 (Item 9), pp. 24-25 (Item 4abc)</p>
13B.-describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance.	<p>FOSS Next Generation Diversity of Life IG: pp. 407-412 EA: Notebook Entry, IG pp. 408, Response Sheet, IG pp. 411 SRB: 44-47,49 DR: Database: Stem Collection, Database: Stomata Collection</p>

State Standard	FOSS Program
26. The student knows that reproduction is a characteristic of living organisms and that the instructions for traits are governed in the genetic material. The student is expected to	
14A-define heredity as the passage of genetic instructions from one generation to the next generation:	<p>FOSS Next Generation Heredity and Adaptation IG: pp. 180-199 SRB: pp. 22-27 EA: Notebook Entry, IG pp. 199 DR: Heredity Slide Show, A Larkey Yammer</p>
14B.-compare the results of uniform or diverse offspring from asexual or sexual reproduction; and	<p>FOSS Next Generation Diversity of Life IG: pp. 521-530, 534-537 SRB: pp. 19, 73-80 EA: Notebook Entry, IG pp. 530; Notebook Entry, IG pp. 537 DR: Genes and Heredity Video</p>
14C-recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus.	<p>FOSS Next Generation Heredity and Adaptation IG: pp. 185-188 SRB: pp. 25-27 EA: Notebook Entry, IG pp. 185 DR: Heredity Slide Show,</p>

Grade 8 – Scientific Investigation and Reasoning

State Standard	FOSS Program
27. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:	
1A. demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency approved safety standards	<p>FOSS Next Generation Planetary Science IG: 143, 327, 505, 508</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 101, 209, 273</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 111, 183, 214, 221, 236</p>

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

	<p>FOSS Next Generation Waves IG: 95, 194, 197, 234, 262</p>
1B. practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	<p>FOSS Next Generation Electromagnetic Force IG: pp. 220, 221, 229</p> <p>FOSS Next Generation Waves IG: pp. 169</p>

28. The student uses scientific practices during laboratory and field investigations. The student is expected to:	
2A. Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology;	<p>FOSS Next Generation Planetary Science IG: pp. 121, 217, 242, 247, 249, 250, 287, 289, 294, 349, 356, 392, 401, 405, 476, 477, 512, 520, 526, 528, 569, 574 EA: Notebook Entry, IG pp. 247, Performance Assessment, IG pp. 287</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 114, 133, 176, 189, 230, 236, 250, 252, 287, 293 EA: Performance Assessment, IG pp. 114</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 127, 145, 180, 184, 195, 251, 254, 291</p> <p>FOSS Next Generation Waves IG: pp. 168, 199, 237, 240, 276 EA: Performance Assessment, IG pp. 237</p>
2B. design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology;	<p>FOSS Next Generation Planetary Science IG: pp. 148, 150, 151, 175, 204, 256, 286, 288, 296, 328, 331, 354, 358, 383, 553, 563 EA: Performance Assessment, IG pp. 148, Performance Assessment, IG pp. 287, Performance Assessment, IG pp. 331</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 99, 102, 113, 114, 133, 154, 155, 157, 166, 183, 184, 189, 210, 223, 247, 248, 249, 252, 277, 291, 306, EA: Performance Assessment, IG pp. 114, Performance Assessment, IG pp. 185, Performance Assessment, IG pp. 249, Performance Assessment, IG pp. 291</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 129, 145, 167, 183, 195, 214, 216, 218, 243, 252, 254, 275, 291 EA: Performance Assessment, IG pp. 167, Performance Assessment, IG pp. 218,</p> <p>FOSS Next Generation Waves IG: pp. 95, 107, 108, 135, 164, 167, 173, 197, 207, 226, 230, 236, 263, EA: Notebook Entry, IG pp. 95, Performance Assessment, IG pp. 108, Performance Assessment, IG pp. 167, Performance Assessment, IG pp. 237</p>

<p>2C. collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;</p>	<p>FOSS Next Generation Planetary Science IG: pp. 124, 146, 190, 202, 205, 220, 297, 332, 355, 358, 383, 405, 409, 455, 465, 467, 475, 488, 508, 510, 528, 553, 554, 563, 566, 569 EA: Response Sheet, IG pp. 297, Performance Assessment, IG pp. 410, Notebook Entry, IG pp. 467, Performance Assessment, IG pp. 475, Notebook Entry, IG pp. 554, Performance Assessment, IG pp. 567</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 102, 114, 133, 157, 164, 166, 185, 186, 189, 249, 251, 252, 277, 286, 306 EA: Performance Assessment, IG pp. 114, Performance Assessment, IG pp. 185, Performance Assessment, IG pp. 249</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 100, 102, 115, 116, 119, 131, 145, 167, 181, 195, 218, 219, 235, 236, 254, 277, 291 EA: Performance Assessment, IG pp. 119, Performance Assessment, IG pp. 167, Performance Assessment, IG pp. 277</p> <p>FOSS Next Generation Waves IG: pp. 106, 108, 111, 135, 136, 137, 167, 168, 173, 197, 207, 227, 237, 240, 270, 274, 280, 291 EA: Performance Assessment, IG pp. 108, Performance Assessment, IG pp. 167, Performance Assessment, IG pp. 237</p>
<p>2D. construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and</p>	<p>FOSS Next Generation Planetary Science IG: pp. 124, 146, 190, 202, 205, 220, 297, 332, 355, 358, 383, 405, 409, 455, 465, 467, 475, 488, 508, 510, 528, 553, 554, 563, 566, 569 EA: Response Sheet, IG pp. 297, Performance Assessment, IG pp. 410, Notebook Entry, IG pp. 467, Performance Assessment, IG pp. 475, Notebook Entry, IG pp. 554, Performance Assessment, IG pp. 567</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 102, 114, 133, 157, 164, 166, 185, 186, 189, 249, 251, 252, 277, 286, 306 EA: Performance Assessment, IG pp. 114, Performance Assessment, IG pp. 185, Performance Assessment, IG pp. 249</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 100, 102, 115, 116, 119, 131, 145, 167, 181, 195, 218, 219, 235, 236, 254, 277, 291 EA: Performance Assessment, IG pp. 119, Performance Assessment, IG pp. 167, Performance Assessment, IG pp. 277</p> <p>FOSS Next Generation Waves IG: pp. 106, 108, 111, 135, 136, 137, 167, 168, 173, 197, 207, 227, 237, 240, 270, 274, 280, 291 EA: Performance Assessment, IG pp. 108, Performance Assessment, IG pp. 167, Performance Assessment, IG pp. 237</p>
<p>2E. analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p>	<p>FOSS Next Generation Planetary Science IG: pp. 177, 178, 179, 194, 206, 210, 220, 287, 289, 295, 299, 303, 304, 333, 334, 344, 406, 408, 420, 457, 458, 475, 476, 525, 569 EA: Performance Assessment, IG pp. 177, Response Sheet, IG pp. 194, Notebook Entry, IG pp. 209, Performance Assessment, IG pp. 287, Notebook Entry, IG pp. 304, Performance Assessment, IG pp. 409, Performance Assessment, IG pp. 475,</p>

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

	Performance Assessment, IG pp. 525 FOSS Next Generation Electromagnetic Force IG: pp. 104, 108, 131, 133, 155, 164, 168, 171, 186, 189, 218, 232, 239, 252, 275, 277, 278, 291, 301, 306 EA: Response Sheet, IG pp. 168, Performance Assessment, IG pp. 292 FOSS Next Generation Gravity and Kinetic Energy IG: pp. 105, 144, 173, 175, 195, 235, 245, 254, 277, 279, 291 EA: Notebook Entry, IG pp. 144, Performance Assessment, IG pp. 277 FOSS Next Generation Waves IG: pp. 104, 110, 135, 136, 173, 208, 227, 228, 240, 264, 281, 291 EA: Notebook Entry, IG pp. 208
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State Standard	FOSS Program
29. The student uses scientific practices during laboratory and field investigations. The student is expected to:	
3A. analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student;	FOSS Next Generation Planetary Science IG: pp. 177, 178, 179, 194, 206, 210, 220, 287, 289, 295, 299, 303, 304, 333, 334, 344, 406, 408, 420, 457, 458, 475, 476, 525, 569 EA: Performance Assessment, IG pp. 177, Response Sheet, IG pp. 194, Notebook Entry, IG pp. 209, Performance Assessment, IG pp. 287, Notebook Entry, IG pp. 304, Performance Assessment, IG pp. 409, Performance Assessment, IG pp. 475, Performance Assessment, IG pp. 525 FOSS Next Generation Electromagnetic Force IG: pp. 104, 108, 131, 133, 155, 164, 168, 171, 186, 189, 218, 232, 239, 252, 275, 277, 278, 291, 301, 306 EA: Response Sheet, IG pp. 168, Performance Assessment, IG pp. 292 FOSS Next Generation Gravity and Kinetic Energy IG: pp. 105, 144, 173, 175, 195, 235, 245, 254, 277, 279, 291 EA: Notebook Entry, IG pp. 144, Performance Assessment, IG pp. 277 FOSS Next Generation Waves IG: pp. 104, 110, 135, 136, 173, 208, 227, 228, 240, 264, 281, 291 EA: Notebook Entry, IG pp. 208
3B. use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature;	FOSS Next Generation Planetary Science IG: pp. 146, 148, 175, 177, 178, 188, 191, 204, 220, 254, 256, 258, 260, 284, 286, 294, 296, 303, 304, 331, 332, 382, 400, 405, 414, 420, 444, 447, 454, 481, 488, 507, 551, 562 EA: Performance Assessment, IG pp. 148, Performance Assessment, IG pp. 177, Performance Assessment, IG pp. 258, Performance Assessment, IG pp. 286, Performance Assessment, IG pp. 331, Notebook Entry, IG pp. 400, Notebook Entry, IG pp. 447 FOSS Next Generation Electromagnetic Force

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

	<p>IG: pp. 123, 129, 130, 132, 164, 167, 168, 170, 173, 185, 188, 216, 239, 252, 278, 291, 306 EA: Performance Assessment, IG pp. 185, Performance Assessment, IG pp. 291</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 144, 179, 188, 195, 219, 221, 236, 254, 277, 291 EA: Notebook Entry, IG pp. 144, Performance Assessment, IG pp. 277</p> <p>FOSS Next Generation Waves IG: pp. 106, 111, 135, 136, 161, 164, 167, 208, 226, 240, 263 EA: Performance Assessment, IG pp. 167, Notebook Entry, IG pp. 208</p>
<p>3C. identify advantages and limitations of models such as size, scale, properties, and materials; and</p>	<p>FOSS Next Generation Planetary Science IG: pp. 146, 148, 175, 177, 178, 188, 191, 204, 220, 254, 256, 258, 260, 284, 286, 294, 296, 303, 304, 331, 332, 382, 400, 405, 414, 420, 444, 447, 454, 481, 488, 507, 551, 562 EA: Performance Assessment, IG pp. 148, Performance Assessment, IG pp. 177, Performance Assessment, IG pp. 258, Performance Assessment, IG pp. 286, Performance Assessment, IG pp. 331, Notebook Entry, IG pp. 400, Notebook Entry, IG pp. 447</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 123, 129, 130, 132, 164, 167, 168, 170, 173, 185, 188, 216, 239, 252, 278, 291, 306 EA: Performance Assessment, IG pp. 185, Performance Assessment, IG pp. 291</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 144, 179, 188, 195, 219, 221, 236, 254, 277, 291 EA: Notebook Entry, IG pp. 144, Performance Assessment, IG pp. 277</p> <p>FOSS Next Generation Waves IG: pp. 106, 111, 135, 136, 161, 164, 167, 208, 226, 240, 263 EA: Performance Assessment, IG pp. 167, Notebook Entry, IG pp. 208</p>
<p>3D. relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.</p>	<p>FOSS Next Generation Planetary Science IG: pp. 182, 221, 359 SRB: pp. 8-14, 22-26, 63-66, DR: "Round Earth/Flat Earth," <i>Sailing of the Libertad</i></p> <p>FOSS Next Generation Electromagnetic Force IG: p. 116, 213, 234-238, 253, 290 SRB: pp. 8-14, 28-29, 39, 42-46, 49</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 135-143, 185, 188-194, 244, 246-251 SRB: pp. 18-25, 31-36, 45-49</p> <p>FOSS Next Generation Waves IG: pp. 148-154, 170, 266, 293 SRB: pp. 12-16, 21-26, 59-62, 69-78</p>

30. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:	
<p>4A. use appropriate tools, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectrosopes, timing devices, and other necessary equipment to collect, record, and analyze information; and</p>	<p>FOSS Next Generation Planetary Science IG: pp. 148, 150, 151, 175, 204, 256, 286, 288, 296, 328, 331, 354, 358, 383, 553, 563 EA: Performance Assessment, IG pp. 148, Performance Assessment, IG pp. 287, Performance Assessment, IG pp. 331</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 99, 102, 113, 114, 133, 154, 155, 157, 166, 183, 184, 189, 210, 223, 247, 248, 249, 252, 277, 291, 306, EA: Performance Assessment, IG pp. 114, Performance Assessment, IG pp. 185, Performance Assessment, IG pp. 249, Performance Assessment, IG pp. 291</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 129, 145, 167, 183, 195, 214, 216, 218, 243, 252, 254, 275, 291 EA: Performance Assessment, IG pp. 167, Performance Assessment, IG pp. 218,</p> <p>FOSS Next Generation Waves IG: pp. 95, 107, 108, 135, 164, 167, 173, 197, 207, 226, 230, 236, 263, EA: Notebook Entry, IG pp. 95, Performance Assessment, IG pp. 108, Performance Assessment, IG pp. 167, Performance Assessment, IG pp. 237</p>
<p>4B. use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>	<p>FOSS Next Generation Planetary Science IG: 143, 327, 505, 508</p> <p>FOSS Next Generation Electromagnetic Force IG: pp. 101, 209, 273</p> <p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 111, 183, 214, 221, 236</p> <p>FOSS Next Generation Waves IG: 95, 194, 197, 234, 262</p>

Grade 8 – Matter and Energy

State Standard	FOSS Program
31. The student knows the differences between elements and compounds. The student is expected to:	
<p>5A. describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud;</p>	<p><i>NOTE: This standard is covered in a Delta Science Content Read. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>*Delta Science Reader Matter and Change pp. 1-8</p>

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5B. identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity;	<p><i>NOTE: This standard is covered in a Delta Science Content Read. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>*Delta Science Reader Matter and Change pp. 1-8</p>
5C. interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements;	<p><i>NOTE: This standard is covered in grade 6 Chemical Interactions. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Chemical Interactions IG: pp. 169-184 SRB: pp. 3-10 EA: Performance Assessment, IG pp. 183 DR: "Periodic Table" BM: Assessment Coding Guide, pp. 16-17 (Item 5ab), pp. 54-55 (Item 4)</p>
5D. recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts; and	<p><i>NOTE: This standard is covered in grade 6 Chemical Interactions. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Chemical Interactions IG: pp. 136, 171, 229, 558, 560, 585, 587, 589, 612 SRB: pp. 24-27, 89-100, 118-129, 131-133, 141-147 EA: Performance Assessment, IG pp. 588 DR: "Two-Substance Reactions" BM: Assessment Coding Guide, pp. 14-15 (Items 2 and 3)</p>
5E. investigate how evidence of chemical reactions indicates that new substances with different properties are formed and how that relates to the law of conservation of mass.	<p><i>NOTE: This standard is covered in grade 6 Chemical Interactions. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation IG: pp. 141, 145-148, 218, 222, 228, 255, 448, 464, 497, 584, 586, 588, 591, 601, 611, 613, 619, 620, 642, 648 SRB: pp. 118-129, 134-140, EA: Notebook Entry, IG pp. 222, Performance Assessment, IG pp. 588, Response Sheet, IG pp. 619, Notebook Entry, IG pp. 648 DR: "Two-Substance Reactions" BM: Assessment Coding Guide, pp. 6-7 (Item 3c), pp. 10-11 (Items 5 and 6), pp. 14-15 (Item 4), pp. 18-19 (Item 7), pp. 24-25 (Item 5ab), pp. 46-47 (Item 3), pp. 48-49 (Item 5), pp. 52-53 (Item 3), pp. 52-53 (Items 1 and 2)</p>

Grade 8 – Force, Motion, and Energy

State Standard	FOSS Program
32. The student knows that there is a relationship between force, motion, and energy. The student is expected to:	
6A. demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion;	<p>FOSS Next Generation Electromagnetic Force IG: pp. 97-106, 112, 122, 123, 127 SRB: pp. 2-7, 13, 15-18, 21 EA: Notebook entry, IG pp. 105, Response sheet, IG pp. 126 DR: Forces BM: Assessment coding guide pp. 4-5 (Item 2ab), pp. 6-7 (Item 3), pp. 10-11 (Items 1 and 2ab), pp. 12-13 (Items 3 and 4), pp. 14-15 (Items 5 and 6), pp. 16-17 (Items 7 and 8)</p>
6B. differentiate between speed, velocity, and acceleration; and	<p>FOSS Next Generation Gravity and Kinetic Energy IG: pp. 98-106, 111-119 SRB: pp. 2-10, 11-17 EA: Notebook Entry, IG pp. 106, Performance Assessment, IG pp. 119</p>

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	BM: Assessment coding guide pp. 10-11 (Items 1 and 2), pp. 14-15 (Items 4, 5 and 6)
6C. investigate and describe applications of Newton’s three laws of motion such as in vehicle restraints, sports activities, amusement park rides, Earth’s tectonic activities, and rocket launches.	FOSS Next Generation Gravity and Kinetic Energy IG: pp. 185, 186, 244-254 SRB: pp. 31-36, 37-40, 45-49 EA: Notebook Entry, IG pp. 187, Notebook Entry, IG pp. 253 BM: Assessment coding guide pp. 20-21 (Items 1 and 2), pp. 22-23 (Item 6), pp. 26-27 (Item 1b), pp. 28-9 (Item 4)

Grade 8 – Earth and Space

State Standard	FOSS Program
33. The student knows the effects resulting from cyclical movements of the Sun, Earth, and Moon. The student is expected to:	
7A. model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun, causing changes in seasons;	FOSS Next Generation Planetary Science IG: pp. 176, 178, 180, 181, 193, 194, 204, 207, 208, 210, 249, 296, 298 SRB: pp. 15-21 EA: Response Sheet, IG pp. 194, Notebook Entry, IG pp. 210 DR: “Day/Night Simulation,” “Earth Models” BM: Assessment Coding Guide, pp. 14-15 (Item 2), 16-17 (Item 3b), 18-19 (Item 4), 22-23 (Item 6), 60-61 (Item 1), 62-63 (Items 2 and 3), 64-65 (Item 5)
7B. demonstrate and predict the sequence of events in the lunar cycle; and	FOSS Next Generation Planetary Science IG: pp. 249, 260, 281-289, 294-299, 302-306 SRB: pp. 42-48 EA: Performance Assessment, IG pp. 286, Response Sheet, IG pp. 297 DR: “Day/Night Simulation,” “Phases of the Moon” BM: Assessment Coding Guide, pp. 8-9 (Item 4), 14-15 (Item 2), 16-17 (Item 3b), 30-31 (Item 6)
7C. relate the positions of the Moon and Sun to their effect on ocean tides.	FOSS Next Generation Planetary Science IG: pp. 418 SRB: pp. 84-85, 90 DR: “Tides”

Grade 8 – Earth and Space

State Standard	FOSS Program
34. The student knows characteristics of the universe. The student is expected to	
8A. Describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification;	FOSS Next Generation Planetary Science IG: pp. 381-400 SRB: pp. 67-79 EA: Notebook Entry, IG pp. 400 DR: “Hubble’s Amazing Universe”
8B. recognize that the Sun is a medium-sized star located in a spiral arm of the Milky Way galaxy and that the Sun is many thousands of times closer to Earth than any other star; and	FOSS Next Generation Planetary Science IG: pp. 119, 145, 174, 179, 189, 194, 204, 210, 249, 284, 289, 384, 400 SRB: pp. 67-79 EA: Response Sheet, IG pp. 194, Notebook Entry, IG pp. 210, Notebook Entry, IG pp. 400

8C. identify how different wavelengths of the electromagnetic spectrum such as visible light and radio waves are used to gain information about components in the universe.	<p>FOSS Next Generation Planetary Science IG: pp. 506-520 SRB: pp. 105-109 EA: Notebook Entry, IG pp. 519 DR: “Properties of Light” BM: Assessment Coding Guide, pp. 52-53 (Items 1-3), 54-55 (Item 4), 56-57 (Item 7)</p> <p>FOSS Next Generation Waves IG: pp. 204-222 SRB: pp. 32-41 EA: Notebook Entry, pp. 208</p>
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State Standard	FOSS Program
35. The student knows that natural events can impact Earth systems. The student is expected to	
9A. describe the historical development of evidence that supports plate tectonic theory;	<p><i>NOTE: This standard is covered in grade 6 Earth History. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Earth History IG: pp. 490-495, 500-516 SRB: pp. 74-79 EA: Notebook Entry, IG pp. 494, Notebook Entry, IG pp. 516 DR: NOAA Plate Tectonics, Wegener BM: pp. 32-33 (Item 2), 36-37 (Item 5), 38-39 (Item 8)</p>
9B. relate plate tectonics to the formation of crustal features; and	<p><i>NOTE: This standard is covered in grade 6 Earth History. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Earth History IG: pp. 490-495, 500-516 SRB: pp. 74-79 EA: Notebook Entry, IG pp. 494, Notebook Entry, IG pp. 516 DR: NOAA Plate Tectonics, Wegener BM: pp. 32-33 (Item 2), 36-37 (Item 5), 38-39 (Item 8)</p>
9C. interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.	<p>FOSS Next Generation IG: pp. 116-130 SRB: pp. 2-6, 64-165, 132-135, 137-141, 185 EA: Notebook Entry, IG pp. 120</p>

State Standard	FOSS Program
36. The student knows that climatic interactions exist among Earth, ocean, and weather systems. The student is expected to	
10A. recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds;	<p><i>NOTE: This standard is covered in grade 6 Weather and Water. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Weather and Water IG: pp. 288-294 SRB: pp. 51-52 EA: Notebook Entry, IG pp. 291 DR: “Convection Cell,” “Energy Transfer: Conduction, Radiation, and Convection” BM: pp. 6-7 (Item 4ab), 30-31 (Item 3c), 46-47 (Item 4abcd), 8-49 (Item 5), 76-77 (Items 6 and 7)</p>

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<p>10B. identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts; and</p>	<p><i>NOTE: This standard is covered in grade 6 Weather and Water. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Weather and Water IG: pp. 222-228 SRB: pp. 32-40 EA: Performance Assessment, IG pp. 226 BM: Assessment Coding Guide pp. 24-25 (Items 2 and 3), 26-27 (Item 4abcd)</p>
<p>10C. identify the role of the oceans in the formation of weather systems such as hurricanes.</p>	<p><i>NOTE: This standard is covered in grade 6 Weather and Water. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Weather and Water IG: pp. 451-456, 462-480, 569-580, 584-594 SRB: pp. 76-84, 96-102, 103-104 EA: Notebook Entry, IG pp. 454, Notebook Entry, IG pp. 467, Notebook Entry, IG pp. 580, Performance Assessment Data, IG pp. 586 DR: "Local Wind," "NOAA Ridge," "Red Spot Movie" BM: Assessment Coding Guide, pp. 52-53 (Item 2), 60-61 (Item 7ab)</p>

State Standard	FOSS Program
<p>37. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is expected to</p>	
<p>11A. investigate how organisms and populations in an ecosystem depend on and may compete for biotic factors such as food and abiotic factors such as quantity of light, water, range of temperatures, or soil composition;</p>	<p><i>NOTE: This standard is covered in grade 7 Populations and Ecosystems. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Populations and Ecosystems IG: pp. 188-193, 196-201, pp. 497-507, 512-527 SRB: pp. 13-15, 87-96 EA: Performance Assessment, IG pp. 190, Notebook Entry, IG pp. 199, Notebook Entry, IG pp. 507, Notebook Entry, IG pp. 515 DR: <i>Among Wild Chimpanzees</i> BM: Assessment Coding Guide, IG pp. 41-43 (Item 1ab), 44-45 (Item 2ab), 46-67 (Item 4)</p>
<p>11B. explore how short- and long-term environmental changes affect organisms and traits in subsequent populations; and</p>	<p><i>NOTE: This standard is covered in grade 7 Heredity and Adaptation. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Heredity and Adaptation IG: pp. 250-272, 278-294 SRB: pp. 41-52, 53-59 EA: Notebook Entry, IG pp. 272, Response Sheet, IG pp. 293 DR: <i>The Origin of Species</i> BM: pp. 26-27 (Item 2ab), 28-29 (Items 3 and 4), 32-33 (Items 7, 8 and 9)</p>
<p>11C. recognize human dependence ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems.</p>	<p><i>NOTE: This standard is covered in grade 6 Weather and Water. Total 6-8 standards coverage with FOSS is 97%.</i></p> <p>FOSS Next Generation Weather and Water IG: pp. 451-456, 462-480, 569-580, 584-594 SRB: pp. 76-84, 96-102, 103-104 EA: Notebook Entry, IG pp. 454, Notebook Entry, IG pp. 467, Notebook Entry, IG pp. 580, Performance Assessment Data, IG pp. 586 DR: "Local Wind," "NOAA Ridge," "Red Spot Movie" BM: Assessment Coding Guide, pp. 52-53 (Item 2), 60-61 (Item 7ab)</p>

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