



Correlation to the
**SOUTH CAROLINA ACADEMIC STANDARDS AND
PERFORMANCE INDICATORS FOR SCIENCE**

Grade 5
Delta Education



GRADE FIVE

SCIENCE AND ENGINEERING PRACTICES

NOTE: Scientific investigations should always be done in the context of content knowledge expected at this grade level. The standard describes how students should learn and demonstrate knowledge of the content outlined in the other standards.

Standard 5.S.1: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content.

5.S.1A. Conceptual Understanding: The practices of science and engineering support the development of science concepts, develop the habits of mind that are necessary for scientific thinking, and allow students to engage in science in ways that are similar to those used by scientists and engineers.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
5.S.1A.1 Ask questions used to (1) generate hypotheses for scientific investigations or (2) refine models, explanations, or designs.	FOSS modules provide opportunities to develop this science and engineering practice. Example: FOSS Next Generation Environments Investigation 3, Part 3, Pages 236 - 240
5.S.1A.2 Develop, use, and refine models to (1) understand or represent phenomena, processes, and relationships, (2) test devices or solutions, or (3) communicate ideas to others.	FOSS modules provide opportunities to develop this science and engineering practice. Example: FOSS Third Edition Motion, Force and Models Investigation 4, Parts 1 - 3, Pages 224 - 253
5.S.1A.3 Plan and conduct controlled scientific investigations to answer questions, test hypotheses and predictions, and develop explanations: (1) formulate scientific questions and testable hypotheses, (2) identify materials, procedures, and variables, (3) select and use appropriate tools or instruments to collect qualitative and quantitative data, and (4) record and represent data in an appropriate form. Use appropriate safety procedures.	FOSS modules provide opportunities to develop this science and engineering practice. Example: FOSS Next Generation Environments. Investigation 4, Part 1, Pages 274 - 291
5.S.1A.4 Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulation or graphing) to (1) reveal patterns and construct meaning or (2) support hypotheses, explanations, claims, or designs.	FOSS modules provide opportunities to develop this science and engineering practice. Example: FOSS Next Generation Environments Investigation 3, Part 2, Pages 222 - 235 FOSS Next Generation Environments – Science Resources “What Happens When Ecosystems Change?”, Pages 66 - 71
5.S.1A.5 Use mathematical and computational thinking to (1) express quantitative observations using appropriate metric units, (2) collect and analyze data, or (3) understand patterns, trends and relationships between variables.	FOSS modules provide opportunities to develop this science and engineering practice. Example: FOSS Third Edition Mixtures and Solutions Investigation 2, Part 2, Pages 114 - 119 FOSS modules also provide opportunities to develop this science and engineering practice in the Math Extension activities at the end of each Investigation.
5.S.1A.6 Construct explanations of phenomena using (1) scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams.	FOSS modules provide opportunities to develop this science and engineering practice. Example: FOSS Next Generation Environments Investigation 3, Part 2, Pages 222 – 235
5.S.1A.7 Construct scientific arguments to support claims, explanations, or designs using evidence from observations, data, or informational texts.	FOSS modules provide opportunities to develop this science and engineering practice. Example: FOSS Third Edition Motion, Force and Models Investigation 3, Part 3, Pages 120 - 129 FOSS Third Edition Motion, Force and Models – Science Resource Book “Force and Energy”, Pages 15 - 18 “Potential and Kinetic Energy”, Pages 19 - 20

<p>5.S.1A.8 Obtain and evaluate informational texts, observations, data collected, or discussions to (1) generate and answer questions, (2) understand phenomena, (3) develop models, or (4) support hypotheses, explanations, claims, or designs. Communicate observations and explanations using the conventions and expectations of oral and written language.</p>	<p>FOSS Third Edition Mixtures and Solutions Investigation 2, Part 3, Pages 116 - 121 FOSS Third Edition Mixtures and Solutions – Science Resource Book “Concentrated Solutions”, Pages 16 - 19</p>
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5.S.1B. Conceptual Understanding: Technology is any modification to the natural world created to fulfill the wants and needs of humans. The engineering design process involves a series of iterative steps used to solve a problem and often leads to the development of a new or improved technology.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
<p>5.S.1B.1 Construct devices or design solutions to solve specific problems or needs: (1) ask questions to identify problems or needs, (2) ask questions about the criteria and constraints of the devices or solutions, (3) generate and communicate ideas for possible devices or solutions, (4) build and test devices or solutions, (5) determine if the devices or solutions solved the problem and refine the design if needed, and (6) communicate the results.</p>	<p>FOSS Third Edition Motion, Force and Models Investigation 4, Part 3, Pages 206 - 215 FOSS Third Edition Motion, Force and Models – Science Resource Book “The Path to Invention”, Pages 55 - 59 “Creative Solutions”, Pages 60 - 68</p>

GRADE FIVE

PHYSICAL SCIENCE: MATTERS AND MIXTURES

Standard 5.P.2: The student will demonstrate an understanding of the physical properties of matter and mixtures.

5.P.2A. Conceptual Understanding: Matter is made up of particles that are too small to be seen. Even though the particles are very small, the movement and spacing of these particles determines the basic properties of matter.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
5.P.2A.1 Analyze and interpret data from observations and measurements of the physical properties of matter (including volume, shape, movement, and spacing of particles) to explain why matter can be classified as a solid, liquid or gas.	FOSS Third Edition Mixtures and Solutions Investigation 1, Parts 1 - 2, Pages 55 - 75 FOSS Third Edition Mixtures and Solutions – Science Resource Book “Mixtures”, Pages 3 - 7 “Solutions Up Close”, Pages 14 - 15

5.P.2B. Conceptual Understanding: A mixture is formed when two or more kinds of matter are put together. Sometimes when two or more different substances are mixed together, a new substance with different properties may be formed but the total amount (mass) of the substances is conserved. Solutions are a special type of mixture in which one substance is dissolved evenly into another substance. When the physical properties of the components in a mixture are not changed, they can be separated in different physical ways.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
<p>5.P.2B.1 Obtain and communicate information to describe what happens to the properties of substances when two or more substances are mixed together.</p>	<p>FOSS Mixtures and Solutions, 3rd ed. Investigation 1, Parts 1 and 4, Pages 56 -67, 82 - 90 Investigation 2, Parts 1 - 3, Pages 100 - 121 Investigation 3, Parts 1 - 3, Pages 146 - 168 Investigation 4, Parts 1 and 3, Pages 180 - 190, 197 - 204</p> <p>FOSS Third Edition Mixtures and Solutions – Science Resource Book “Mixtures” “Solutions Up Close”, Pages 14 - 15 “When Substances Change”, Pages 42 - 46</p> <p>FOSS Third Edition Mixtures and Solutions - FOSSWEB Digital Resources: “Fizz Quiz:</p> <p>Streaming Videos: Investigation 1, Part 1 – What are Mixtures? Investigation 1, Part 1 – Elements, Compounds and Mixtures Investigation 4, Part 1 – Chemical Reactions</p>
<p>5.P.2B.2 Analyze and interpret data to support claims that when two substances are mixed the total amount (mass) of the substances does not change.</p>	<p>FOSS Third Edition Mixtures and Solutions Investigation 1, Part 2, Pages 68 - 75</p>
<p>5.P.2B.3 Develop models using observations to describe mixtures, including solutions, based on their characteristics</p>	<p>FOSS Third Edition Mixtures and Solutions Investigation 1, Part 1, Pages 56 - 67 Investigation 2, Parts 1 - 3, Pages 100 - 121 Investigation 3, Parts 1 - 3, Pages 146 - 168 Investigation 4, Parts 1 - 3, Pages 180 - 190, 197 - 204</p>
<p>5.P.2B.4 Construct explanations for how the amount of solute and the solvent determine the concentration of a solution.</p>	<p>FOSS Third Edition Mixtures and Solutions Investigation 2, Parts 1 - 4, Pages 99 - 130 Investigation 3, Parts 1 - 3, Pages 144 - 168</p> <p>FOSS Third Edition Mixtures and Solution – Science Resource Book “Concentrated Solutions”, Pages 16 - 19</p>
<p>5.P.2B.5 Conduct controlled scientific investigations to test how different variables (including temperature change, particle size, and stirring) affect the rate of dissolving.</p>	<p>FOSS Third Edition Mixtures and Solutions Investigation 3, Parts 1 - 3, Pages 146 - 168</p>
<p>5.P.2B.6 Design and test the appropriate method(s) (such as filtration, sifting, attraction to magnets, evaporation, chromatography, or floatation) for separating various mixtures.</p>	<p>FOSS Third Edition Mixtures and Solutions Investigation 1, Parts 1 - 4, Pages 56 - 101 Investigation 4, Part 4, Pages 205 - 211</p>

GRADE FIVE

EARTH SCIENCE: CHANGES IN LANDFORMS AND OCEANS

Standard 5.E.3: The student will demonstrate an understanding of how natural processes and human activities affect the features of Earth’s landforms and oceans.

5.E.3A. Conceptual Understanding: Some of the land on Earth is located above water and some is located below the oceans. The downhill movement of water as it flows to the ocean shapes the appearance of the land. There are patterns in the location and structure of landforms found on the continents and those found on the ocean floor.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
<p>5.E.3A.1 Construct explanations of how different landforms and surface features result from the location and movement of water on Earth’s surface through watersheds (drainage basins) and rivers.</p>	<p>Delta Science Module Earth Processes Activity 4, Sediments Become Rocks, Pages 39 - 45 Activity 11, A Balancing Act, Pages 97 - 103</p> <p>Earth Processes – Delta Science Readers “Water”, Pages 11 - 13</p> <p>Weathering and Erosion – Delta Science Content Readers “Water”, Pages 14 - 17 “Erosion”, Pages 10 - 11</p>
<p>5.E.3A.2 Develop and use models to describe and compare the characteristics and locations of the landforms on continents with those on the ocean floor (including the continental shelf and slope, the mid-ocean ridge, the rift zone, the trench, and the abyssal plain).</p>	<p>Delta Science Module Earth Processes Activity 3, Earth’s Weathered Crust, Pages 29 - 37 Activity 7, Mountain Building, Pages 63 - 70 Activity 13, The Ocean Floor, Pages 111 - 120</p> <p>Earth Processes – Delta Science Readers “Sea-Floor Spreading”, Page 6</p> <p>Weathering and Erosion – Delta Science Content Readers “Earth’s Landforms”, Pages 4 - 5</p>

5.E.3B. Conceptual Understanding: Earth’s oceans and landforms can be affected by natural processes in various ways. Humans cannot eliminate natural hazards caused by these processes but can take steps to reduce their impacts. Human activities can affect the land and oceans in positive and negative ways.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
<p>5.E.3B.1 Analyze and interpret data to describe and predict how natural processes (such as weathering, erosion, deposition, earthquakes, tsunamis, hurricanes, or storms) affect Earth’s surface.</p>	<p>Delta Science Module Earth Processes Activity 3, Earth’s Weathered Crust, Pages 29 - 37 Activity 7, Mountain Building, Pages 63 - 70 Activity 8, Earthquake!, Pages 71 - 79 Activity 11, A Balancing Act, Pages 97 - 103</p> <p>Earth Processes – Delta Science Readers “Plate Movements”, Pages 7 - 10 “Weathering, Erosion, and Deposition”, Pages 11 - 15</p> <p>Weathering and Erosion – Delta Science Content Readers “What Are Weathering and Erosion?”, Pages 7 - 11 “What Causes Weathering and Erosion?”, Pages 13 - 19</p>
<p>5.E.3B.2 Develop and use models to explain the effect of the movement of ocean water (including waves, currents, and tides) on the ocean shore zone (including beaches, barrier islands, estuaries, and inlets).</p>	<p>Earth Processes – Delta Science Readers “Waves”, Page 12</p> <p>Weathering and Erosion – Delta Science Content Readers “Waves”, Page 16</p>
<p>5.E.3B.3 Construct scientific arguments to support claims that human activities (such as conservation efforts or pollution) affect the land and oceans of Earth.</p>	<p>Weathering and Erosion – Delta Science Content Readers “How Do People Change the Land?”, Pages 21 - 23</p> <p>FOSS Next Generation Environments Part 3, Reading in Science Resources, 21. Human Activities and Aquatic Ecosystems, Pages 181 - 182</p> <p>FOSS Next Generation Environments – Science Resources “Human Activities and Aquatic Ecosystems”, Pages 42 - 45 “The Mono Lake Story”, Pages 59 - 65 “The Shrimp Club”, Pages 71 - 78</p>
<p>5.E.3B.4 Define problems caused by natural processes or human activities and test possible solutions to reduce the impact on landforms and the ocean shore zone.</p>	<p>Delta Science Module Earth Processes Activity 4, Connections - Science, Technology and Society, Page 46 Activity 8, Connections - Science, Technology and Society, Page 78</p> <p>FOSS Next Generation Environments. Investigation 4, Extension - Simulate acid rain, Page 311</p>

GRADE FIVE

LIFE SCIENCE: INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS

Standard 5.L.4: The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems.

5.L.4A. Conceptual Understanding: Ecosystems are complex, interactive systems that include both the living components (biotic factors) and physical components (abiotic factors) of the environment. Ecosystems can be classified as either terrestrial (such as forests, wetlands, and grasslands) or aquatic (such as oceans, estuaries, lakes, and ponds).

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
<p>5.L.4A.1 Analyze and interpret data to summarize the abiotic factors (including quantity of light and water, range of temperature, salinity, and soil composition) of different terrestrial ecosystems and aquatic ecosystems.</p>	<p>FOSS Next Generation Environments Investigation 1, Parts 1 and 2, Pages 88 - 121 Investigation 3, Parts 1 - 3, Pages 214 - 243 Investigation 4, Part 1, Pages 274 - 291</p> <p>FOSS Next Generation Environments – Science Resources “Two Terrestrial Environments”, Pages 3 - 12 “Range of Tolerance”, Pages 91 - 92</p>
<p>5.L.4A.2 Obtain and communicate information to describe and compare the biotic factors (including individual organisms, populations, and communities) of different terrestrial and aquatic ecosystems</p>	<p>FOSS Next Generation Environments Investigation 1, Parts 1 and 2, Pages 88 - 117 Investigation 3, Parts 1 - 3, Pages 214 - 243 Investigation 4, Part 1, Pages 274 -287, 291</p> <p>FOSS Next Generation Environments – Science Resources “Two Terrestrial Environments”, Pages 3 - 12</p>

5.L.4B. Conceptual Understanding: All organisms need energy to live and grow. Energy is obtained from food. The role an organism serves in an ecosystem can be described by the way in which it gets its energy. Energy is transferred within an ecosystem as organisms produce, consume, or decompose food. A healthy ecosystem is one in which a diversity of life forms are able to meet their needs in a relatively stable web of life.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
<p>5.L.4B.1 Analyze and interpret data to explain how organisms obtain their energy and classify an organisms as producers, consumers (including herbivore, carnivore, and omnivore), or decomposers (such as fungi and bacteria).</p>	<p>FOSS Next Generation Environments Investigation 2, Part 2, Pages 161 - 171</p> <p>FOSS Next Generation Environments – Science Resources “What is an Ecosystem”, Pages 32 - 34 “Food Chains and Webs”, Pages 35 - 41 “Comparing Aquatic and Terrestrial Ecosystems”, Pages 46 - 47</p>
<p>5.L.4B.2 Develop and use models of food chains and food webs to describe the flow of energy in an ecosystem.</p>	<p>FOSS Next Generation Environments Investigation 2, Part 2, Pages 161 - 171</p> <p>FOSS Next Generation Environments – Science Resources “What is an Ecosystem”, Pages 32 - 34</p>
<p>5.L.4B.3 Construct explanations for how organisms interact with each other in an ecosystem (including predators and prey, and parasites and hosts).</p>	<p>FOSS Next Generation Environments Investigation 2, Parts 2 and 4</p> <p>FOSS Next Generation Environments – Science Resources “Amazon Rain Forest Journal”, Pages 18 - 26 “Freshwater Environments”, Pages 27 - 31 “Food Chains and Webs”, Pages 35 - 41 “What Happens When Ecosystems Change”, Pages 66 - 70 “How Organisms Depend on One Another”, Pages 93 - 96</p>
<p>5.L.4B.4 Construct scientific arguments to explain how limiting factors (including food, water, space, and shelter) or a newly introduced organism can affect an ecosystem.</p>	<p>FOSS Next Generation Environments Investigation 2, Part 3, Pages 172 - 183</p> <p>FOSS Next Generation Environments – Science Resources “Human Activities and Aquatic Ecosystems”, Pages 42 - 45 “The Mono Lake Story”, Pages 59 - 65 “What Happens When Ecosystems Change?”, Pages 66 - 70</p>

GRADE FIVE

PHYSICAL SCIENCE: FORCES AND MOTION

Standard 5.P.5: The student will demonstrate an understanding of the factors that affect the motion of an object.

5.P.5A. Conceptual Understanding: The motion of an object can be described in terms of its position, direction, and speed. The rate and motion of an object is determined by multiple factors.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
5.P.5A.1 Use mathematical and computational thinking to describe and predict the motion of an object (including position, direction, and speed).	FOSS Third Edition Motion, Force and Models Investigation 1, Parts 1 - 3, Pages 58 - 90 Investigation 2, Parts 1 - 2, Pages 104 - 118
5.P.5A.2 Develop and use models to explain how the amount or type of force (contact and non-contact) affects the motion of an object.	FOSS Third Edition Motion, Force and Models Investigation 1, Parts 1 - 2, Pages 58 - 80 Investigation 2, Parts 1 - 4, Pages 104 - 141 Investigation 3, Parts 1 - 3, Pages 152 - 174
5.P.5A.3 Plan and conduct controlled scientific investigations to test the effects of balanced and unbalanced forces on the rate and direction of motion of objects.	FOSS Third Edition Motion, Force and Models Investigation 1, Parts 1 - 2, Pages 58 - 80 Investigation 2, Parts 1 - 4, Pages 104 - 141 Investigation 3, Parts 1 - 3, Pages 152 - 174
5.P.5A.4 Analyze and interpret data to describe how a change of force, a change in mass, or friction affects the motion of an object.	FOSS Third Edition Motion, Force and Models Investigation 1, Parts 2, Pages 72 - 80 Investigation 2, Parts 2 and 4, Pages 112 - 118, 130 - 142 Investigation 3, Parts 2 - 3, Pages 159 - 174 FOSS Third Edition Motion, Force and Models – Science Resource Book “What Causes Change of Motion”, Pages 3 - 6 “Force and Energy”, Pages 15 - 18 “Potential and Kinetic Energy at Work”, Pages 19 - 20 “Springs in Action”, Pages 34 - 37
5.P.5A.5 Design and test possible devices or solutions that reduce the effects of friction on the motion of an object.	FOSS Third Edition Motion, Force and Models Investigation 2, Part 1, Pages 104 - 111

4.L.5B. Conceptual Understanding: Plants and animals have physical characteristics that allow them to receive information from the environment. Structural adaptations within groups of plants and animals allow them to better survive and reproduce.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
<p>4.L.5B.1 Develop and use models to compare how humans and other animals use their senses and sensory organs to detect and respond to signals from the environment.</p>	
<p>4.L.5B.2 Construct explanations for how structural adaptations (such as the types of roots, stems, or leaves; color of flowers; or seed dispersal) allow plants to survive and reproduce.</p>	
<p>4.L.5B.3 Construct explanations for how structural adaptations (such as methods for defense, locomotion, obtaining resources, or camouflage) allow animals to survive in the environment.</p>	<p>Delta Science Module Food Chains and Food Webs Activity 5, Observing Anoles, Pages 47 - 52 Activity 7, Animal Behavior, Pages 59 - 66 Activity 8, What Do Crickets Eat, Pages 67 - 72</p>