Delta Education

FOSS

DSM
THIRD EDITION

Correlation to the

SOUTH CAROLINA ACADEMIC STANDARDS AND PERFORMANCE INDICATORS FOR SCIENCE

Grade 1

Delta Education

GRADE ONE

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 1.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.

1.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
1.S.1A.1 Ask and answer questions about the natural world using explorations, observations, or structured investigations.	FOSS modules provide opportunities to develop this science and engineering practice. Example: **FOSS Next Generation, Plants and Animals** Investigations 1 - 4, All parts
1.S.1A.2 Develop and use 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 Next Generation, Pebbles, Sand and Silt** Investigation 4, Part 4, Pages 248 - 253
1.S.1A.3 With teacher guidance, conduct structured investigations to answer scientific questions, test predictions and develop explanations: (1) predict possible outcomes, (2) identify materials and follow procedures, (3) use appropriate tools or instruments to make qualitative observations and take nonstandard measurements, 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, Plants and Animais** Investigation 1, Part 1, Pages 76 - 91
1.S.1A.4 Analyze and interpret data from observations, measurements, or investigations to understand patterns and meanings.	FOSS modules provide opportunities to develop this science and engineering practice. Example: **FOSS Next Generation, Plants and Animals** Investigation 2, Part 2, Pages 142 - 150
1.S.1A.5 Use mathematical thinking to (1) recognize and express quantitative observations, (2) collect and analyze data, or (3) understand patterns and relationships.	FOSS modules provide opportunities to develop this science and engineering practice. Example: **FOSS Next Generation Pebbles, Sand and Silt** Investigation 2, Part 2, Pages 136 - 143 FOSS modules also provide opportunities to develop this science and engineering practice in the Math Extension activities at the end of each Investigation.
1.S.1A.6 Construct explanations of phenomena using (1) student-generated observations and measurements, (2) results of investigations, or (3) data communicated in graphs, tables, or diagrams.	FOSS modules provide opportunities to develop this science and engineering practice. Example: **FOSS Next Generation, Plants and Animais** Investigation 1, Part 3, Pages 99 - 109
1.S.1A.7 Construct scientific arguments to support explanations using evidence from observations or data collected.	FOSS modules provide opportunities to develop this science and engineering practice. Example: **FOSS Next Generation, Pebbles, Sand and Silt.** Investigation 4, Part 2, Pages 231 – 241
1.S.1A.8 Obtain and evaluate informational texts, observations, data collected, or discussions to (1) generate and answer questions about the natural world, (2) understand phenomena, (3) develop models, or (4) support explanations. Communicate observations and explanations using oral and written language.	FOSS modules provide opportunities to develop this science and engineering practice. Example: **FOSS Next Generation, Pebbles, Sand and Silt** Investigations 4, Part 3, Pages 242 - 247 **FOSS Next Generation, Pebbles, Sand and Silt –** Science Resource Book "Where is Water Found", Pages 50 - 60

1.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
1.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 (6) communicate the results.	FOSS modules provide opportunities to develop this science and engineering practice. Example: **FOSS Next Generation, Plants and Animals** Investigation 3, Parts 1 - 2, Pages 172 - 188

GRADE ONE

PHYSICAL SCIENCE: EXPLORING LIGHT AND SHADOWS

Standard 1.P.2: The student will demonstrate an understanding of the properties of light and how shadows are formed.

1.P.2A. Conceptual Understanding: Objects can only be seen when light shines on them. Some materials allow light to pass through them; others allow only some light to pass through; and some do not allow any light to pass through and will create a shadow of the object. Technology such as mirrors can change the direction of a beam of light.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
1.P.2A.1 Obtain and communicate information to describe how light is required to make objects visible.	**FOSS Next Generation, Sound and Light** **FOSS Next Generation, Sound and Light –** Science Resource Book "Seeing the Light", Pages 56 – 68 **FOSS Next Generation, Sound and Light –** FOSSWEB , Streaming Video **FOSS Plants and Animals** Investigation 1, Light and Darkness **FOSS Plants and Animals** Investigation 1, Science Extensions "Grow plants in the dark", Page 93 "Try growing plants without water", Page 94 Part 3, Pages 223 - 232
1.P.2A.2 Analyze and interpret data from observations to compare how light behaves when it shines on different materials.	**FOSS Next Generation, Sound and Light** Investigation 3, Part 3, Pages 185 - 193 **FOSS Next Generation, Sound and Light** – FOSSWEB, Streaming Video Investigation 3, All About the Light
1.P.2A.3 Conduct structured investigations to answer questions about how shadows change when the position of the light source changes.	**FOSS Next Generation, Sound and Light** Investigation 3, Parts 1 - 2, Pages 178 - 189 **FOSS Next Generation, Sound and Light –** Science Resource Book "Playing in the Light", Pages 38 - 45 **FOSS Next Generation, Sound and Light** – FOSSWEB, Streaming Video Investigation 3 Light and Shadow My Shadow
1.P.2A.4 Develop and use models to describe what happens when light shines on mirrors based on observations and data collected.	**FOSS Next Generation, Sound and Light** Investigation 4, Parts 1 - 2, Pages 206 - 222 **FOSS Next Generation, Sound and Light –** Science Resource Book "Reflections", Pages 46 - 55

GRADE ONE

EARTH SCIENCE: EXPLORING THE SUN AND MOON

Standard 1.E.3: The student will demonstrate an understanding of the Sun and the Moon and the Sun's effect on Earth.

1.E.3A. Conceptual Understanding: Objects in the sky move in predictable patterns. Some objects are better seen in the day sky and some are better seen in the night sky. The Sun is a star that provides heat and light energy for Earth.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
1.E.3A.1 Use, analyze, and interpret data from observations to describe and predict seasonal patterns of sunrise and sunset.	**Delta Science Module, Finding the Moon** Activity 3, Pages 30 - 32, 37
1.E.3A.2 Use data from personal observations to describe, predict, and develop models to exemplify how the appearance of the moon changes over time in a predictable pattern.	**Delta Science Module, Finding the Moon** Activities 9 - 10, Pages 77 - 90 **Delta Science Module, Finding the Moon Delta** "What Are Moon Phases?", Pages 6 - 10
1.E.3A.3 Obtain and communicate information to describe how technology has enabled the study of the Sun, the Moon, planets, and stars.	**Delta Science Module Finding the Moon** Pages 58 - 59, 63 - 64, 72 - 73, 100 **Delta Science Reader, Finding the Moon** "What Are Moon Phases?" Pages 7 and 14
1.E.3A.4 Conduct structured investigations to answer questions about the effect of sunlight on Earth's surface.	**Delta Science Module, Finding the Moon** Activity 5, Pages 49 - 50
1.E.3A.5 Define problems related to the warming effect of sunlight and design possible solutions to reduce its impact on a particular area.	

GRADE ONE

EARTH SCIENCE: EARTH'S NATURAL RESOURCES

Standard 1.E.4: The student will demonstrate an understanding of the properties and uses of Earth's natural resources.

1.E.4A. Conceptual Understanding: Earth is made of different materials, including rocks, sand, soil, and water. An Earth material is a resource that comes from Earth. Earth materials can be classified by their observable properties.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
1.E.4A.1 Analyze and interpret data from observations and measurements to compare the properties of Earth materials (including rocks, soils, sand, and water).	**FOSS Next Generation, Pebbles, Sand and Silt** Investigation 1, Parts 1 - 5. Pages 78 - 113 Investigation 2, Parts 1 - 4, Pages 128 - 162 Investigation 4, Parts 1 - 2, Pages 224 - 241 **FOSS Next Generation, Pebbles, Sand and Silt** – Science Resource Book "Exploring Rocks", Pages 3 - 10 "Colorful Rocks", Pages 11 - 13 "The Story of Sand", Pages 14 - 21 "Landforms", Pages 24 - 30 "What is in Soil?", Pages 44 - 47 "Testing Soils", Pages 48 - 49
1.E.4A.2 Develop and use models (such as drawings or maps) to describe patterns in the distribution of land and water on Earth and classify bodies of water (including oceans, rivers and streams, lakes, and ponds).	**FOSS Next Generation, Pebbles, Sand and Silt** Investigation 4, Part 4, Pages 248 - 254 **FOSS Next Generation, Pebbles, Sand and Silt**– Science Resource Book "Ways to Represent Land and Water", Pages 79 - 91
1.E.4A.3 Conduct structured investigations to answer questions about how the movement of water can change the shape of the land.	**FOSS Next Generation, Pebbles, Sand and Silt** Investigation 4, Part 4, Pages 248 - 254 **FOSS Next Generation, Pebbles, Sand and Silt** – Science Resource Book "Erosion", Pages 68 - 78

1.E.4B. Conceptual Understanding: Natural resources are things that people use that come from Earth (such as land, water, air, and trees). Natural resources can be conserved.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
1.E.4B.1 Obtain and communicate information to summarize how natural resources are used in different ways (such as soil and water to grow plants; rocks to make roads, walls, or buildings; or sand to make glass).	**FOSS Next Generation, Pebbles, Sand and Silt** Investigation 3, Parts 1- 4, Pages 178 - 208 Home/School Extension, Pages 118, 166, 212, 258 **FOSS Next Generation, Pebbles, Sand and Silt** – Science Resource Book "Making Things with Rocks", Pages 31 - 37 "What are Natural Resources?", Pages 38 - 43 **FOSS Next Generation, Pebbles, Sand and Silt** – FOSSWEB Online Activity Investigation 3 , Find Earth Materials
1.E.4B.2 Obtain and communicate information to explain ways natural resources can be conserved (such as reducing trash through reuse, recycling, or replanting trees).	**FOSS Next Generation, Pebbles, Sand and Silt** Investigation 3, Part 1, Pages 178 - 184 Investigation 4, Part 3, Pages 242 - 247 **FOSS Next Generation, Pebbles, Sand and Silt** – Science Resource Book "Making Things with Rocks", Pages 31 - 37

GRADE ONE

LIFE SCIENCE: PLANTS AND THEIR ENVIRONMENTS

Standard 1.L.5: The student will demonstrate an understanding of how the structures of plants help them survive and grow in their environments.

1.L.5A. Conceptual Understanding: Plants have specific structures that help them survive, grow, and produce more plants. Plants have predictable characteristics at different stages of development.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
1.L.5A.1 Obtain and communicate information to construct explanations for how different plant structures (including roots, stems, leaves, flowers, fruits, and seeds) help plants survive, grow, and produce more plants.	**FOSS Next Generation, Plants and Animals.** Investigation 1, Parts 1,3 - 4, Pages 76 - 83, 79 - 128 Investigation 2, Parts 1 - 3, Pages 130 - 155 Investigation 3, Part 1, Pages 172 - 180 Investigation 4, Parts 1 - 3, Pages 222 - 250 **FOSS Next Generation, Plants and Animals** – Science Resource Book "What do Plants Need?", Pages 3 - 9 "The Story of Wheat", Pages 10 - 18 "Variations", Pages 19 - 26 "Plants and Animals Around the World", Pages 34 - 56 **FOSS Next Generation, Plants and Animals –** FOSSWEB**,** Streaming Video Investigation 1, How Plants Grow Online Activity Investigation 4, Watch it Grow!
1.L.5A.2 Construct explanations of the stages of development of a flowering plant as it grow from a seed using observations and measurements.	**FOSS Next Generation, Plants and Animals** Investigation 1, Parts 1 and 3, Pages 76 - 83, 99 - 109 Investigation 3, Part 1, Pages 172 - 180 **FOSS Next Generation, Plants and Animals** – Science Resource Book "The Story of Wheat", Pages 10 - 18 "Variations", Pages 19 - 26 **FOSS Next Generation, Plants and Animals** – FOSSWEB, Streaming Video Investigation 1, How Plants Grow

1.L.5B. Conceptual Understanding: Plants have basic needs that provide energy in order to grow and be healthy. Each plant has a specific environment where it can thrive. There are distinct environments in the world that support different types of plants. These environments can change slowly or quickly. Plants respond to these changes in different ways.

Students who demonstrate this understanding can:

PERFORMANCE INDICATOR	DELTA EDUCATION WHERE TAUGHT
1.L.5B.1 Conduct structured investigations to answer questions about what plants need to live and grow (including air, water, sunlight, minerals, and space).	**FOSS Next Generation, Plants and Animals** Investigation 1, Parts 1 and 3, Pages 76 - 83, 99 - 109 Investigation 2, Parts 1 - 3, Pages 130 - 155 Investigation 3, Part 1, Pages 172 - 180 Investigation 4, Parts 1 and 2, Pages 226 - 232
1.L.5B.2 Develop and use models to compare how the different characteristics of plants help them survive in distinct environments (including deserts, forests, and grasslands).	**FOSS Next Generation, Plants and Animals** Investigation 3, Parts 2 - 3, Pages 181 - 200 **FOSS Next Generation, Plants and Animals** Investigation 3, Part 3 "How Plants Live in Different Places", Video **FOSS Next Generation, Plants and Animals** – Science Resource Book "Plants and Animals Around the World", Pages 34 - 56
1.L.5B.3 Analyze and interpret data from observations to describe how changes in the environment cause plants to respond in different ways (such as turning leaves toward the Sun, leaves changing color, leaves wilting, or trees shedding leaves).	**FOSS Next Generation, Plants and Animals** Investigation 1, Science Extensions "Grow plants in the dark", Page 123 "Try growing plants without water", Page 124