

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: PHYSICAL SCIENCE

Essential Question(s)

Big Idea1 – The Practice of Science:

A: Scientific Inquiry is a multifaceted activity; the processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.

B: The process of science frequently does not correspond to the traditional portrayal of “the scientific method.”

C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.

D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity and its methods and processes, but also in its questions and explanations.

Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Fusion Text
Weeks 1-3 Scientific Method and Investigation And Science Tools and Observations	<ul style="list-style-type: none"> • Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations. • Ask "how do you know?" in appropriate situations and attempt reasonable answers when asked the same question by others. • Explain how particular scientific investigations should yield similar conclusions when repeated. • Explain how scientists alone or in groups are always investigating new ways to solve problems. • Compare the observations made by different groups using the same tools. • Distinguish between empirical observation (what you see, hear, feel, smell, or taste) and ideas or inferences (what you think). 	SC.2.N.1.1 High SC.2.N.1.3 High SC.2.N.1.4 High SC.2.N.1.6 Moderate SC.2.N.1.2 Moderate SC.2.N.1.5 Moderate	Explore Hypothesis Investigate Question Conclusion Scientist Technology Five senses Observation Predictions Results Length Temperature Tools Weight	Unit 1 Lessons 1 – 5 p. 1 – 37 And ongoing throughout the year

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: EARTH/ PHYSICAL SCIENCE				
Essential Question(s)	<p>Big Idea 6: Earth Structures</p> <p>A. Humans continue to explore the composition and structure of the surface of Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's water and natural resources.</p>			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Fusion Text
<p>Weeks 4-5</p> <p>Rocks</p>	<ul style="list-style-type: none"> Recognize that Earth is made up of rocks. Rocks come in many sizes and shapes. Describe how small pieces of rock and dead plant and animal parts can be the basis of soil and explain the process by which soil is formed. Classify soil types based on color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants. 	<p>SC.2.E.6.1 Moderate</p> <p>SC.2.E.6.2 High</p> <p>SC.2.E.6.3 High</p>	<p>Mineral Rock Soil Humus Weathering Erosion Gravity</p>	<p>Unit 2 Lessons 1 – 3 p. 39 - 63</p>

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: EARTH/ PHYSICAL SCIENCE				
Essential Question(s)	Big Idea 7: Earth Systems and Patterns Humans continue to explore the interactions among water, air, and land. Air and water are in constant motion that results in changing conditions that can be observed over time.			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Fusion Text
Weeks 6-10 Weather Patterns and Water Cycle	<ul style="list-style-type: none"> Compare and describe changing patterns in nature that repeat themselves, such as weather conditions including temperature and precipitation, day to day and season to season. State the importance of preparing for severe weather, lightning, and other weather related events. Investigate by observing and measuring, that the Sun's energy directly and indirectly warms the water, land, and air. Investigate, observe and describe how water left in an open container disappears (evaporates), but water in a closed container does not disappear (evaporate). Investigate that air is all around us and that moving air is wind. 	<p>SC.2.E.7.1 Moderate</p> <p>SC.2.E.7.2 High</p> <p>SC.2.E.7.3 High</p> <p>SC.2.E.7.4 High</p> <p>SC.2.E.7.5 Low</p>	Water Cycle Evaporation Water Vapor Condenses Precipitation Season Meteorologists Wind	Unit 3 Lessons 1 – 4 p. 65 - 93

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: PHYSICAL/ LIFE SCIENCE

Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Fusion Text
Essential Question(s)	<p>Big Idea 8: Properties of Matter: A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass. B. Objects and substances can be classified by their physical and chemical properties.</p> <p>Big Idea 9: Changes in Matter A. Matter can undergo a variety of changes. B. Matter can be changed physical or chemically.</p>			
Weeks 11-15 Properties of Matter	<ul style="list-style-type: none"> Observe and measure objects in terms of their properties, including size, shape, color, temperature, weight, texture, sinking or floating in water, and attraction and repulsion of magnets. Measure and compare temperatures taken every day at the same time. Measure and compare the volume of liquids using containers of various shapes and sizes. 	<p>SC.2.P.8.1 Low</p> <p>SC.2.P.8.5 Moderate</p> <p>SC.2.P.8.6 Moderate</p>	Definite Shape Liquid Solid Gas Volume Weight Mass Temperature Properties	Unit 4 Lessons 1 – 4 p. 95 – 123
Changes in Matter	<ul style="list-style-type: none"> Identify objects and materials as solid, liquid, or gas. Recognize that solids have a definite shape and liquids and gases take the shape of their container. Observe and describe water in its solid, liquid, and gaseous states. Investigate that materials can be altered to change some of their properties, but not all materials respond the same way to any one alteration. 	<p>SC.2.P.8.2 Low</p> <p>SC.2.P.8.3 Low</p> <p>SC.2.P.8.4 Low</p> <p>SC.2.P.9.1 High</p>	Solid Liquid Gas Evaporate Condensate Mixture Separate Dissolve	Unit 5 Lessons 1 – 2 p. 125 – 141

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: EARTH/ PHYSICAL SCIENCE				
Essential Question(s)	<p>Big Idea 10: Forms of Energy</p> <p>A. Energy is involved in all physical processes and is a unifying concept in many areas of science.</p> <p>B. Energy exists in many forms and has the ability to do work or cause a change.</p>			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Fusion Text
Week 16-17 Forms of Energy	<ul style="list-style-type: none"> Discuss that people use electricity or other forms of energy to cook their food, cool or warm their homes, and power their cars. 	SC.2.P.10.1 Low	Electricity Natural Resource Solar Fuel	Unit 6 Lessons 1 – 2 p. 143 - 159

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: PHYSICAL/ LIFE SCIENCE
Pacing:
Essential Question(s)
Big Idea 13: Forces and Changes in Motion

- A. It takes energy to change the motion of objects.
 B. Energy change is understood in terms of forces--pushes or pulls.
 C. Some forces act through physical contact, while others act at a distance.

**Concepts/
Content**
Learning Targets/Skills
Benchmarks
**Key
Terminology**
**Fusion
Text**
Weeks 18-20
Forces

- Investigate the effect of applying various pushes and pulls on different objects.
- Demonstrate that the greater the force (push or pull) applied to an object, the greater the change in motion of the object.

**SC.2.P.13.1
High**
**SC.2.P.13.4
Moderate**

 Position
 Motion
 Gravity
 Force
 Friction

 Unit 7
 Lessons 1 – 7
 p. 161 – 175

Weeks 21-23
**Magnet
Forces**

- Demonstrate that magnets can be used to make some things move without touching them.
- Recognize that objects are pulled toward the ground unless something holds them up.

**SC.2.P.13.2
Low**
**SC.2.P.13.3
Low**

 Pole
 Magnets
 Attracts
 Repels
 Magnetic
 Non Magnetic

 Unit 7
 Lessons 3 – 4
 p. 177 - 189

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: PHYSICAL/ LIFE SCIENCE
Essential Question(s)
Big Idea 14: Organization and Development of Living Organism

- A. All plants and animals, including humans, are alike in some ways and different in others.
- B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.
- C. Humans can better understand the natural world through careful observation.

Concepts/ Content
Learning Targets/Skills
Benchmarks
Key Terminology
Fusion Text
Weeks 24-25
Human Body

- Distinguish human body parts (brain, heart, lungs, stomach, muscles, and skeleton) and their basic functions.

**SC.2.L.14.1
Moderate**

 Brain
 Heart
 Lungs
 Stomach
 Muscles
 Skeleton
 Bones

 Unit 8
 Lesson 1 – 2
 p. 191 1 209

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: LIFE SCIENCE

Essential Question(s)	<p>Big Idea 16: Heredity and Reproduction</p> <p>A. Offspring of plants and animals are similar to, but not exactly like, their parents or each other. B. Life cycles vary among organisms, but reproduction is a major stage in the life cycle of all organisms.</p> <p>Big Idea 17: Interdependence</p> <p>A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs. B. Both human activities and natural events can have major impacts on the environment. C. Energy flows from the sun through producers to consumers.</p>
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Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Fusion Text
Weeks 26-28 Plant and Animal Life Cycles	<ul style="list-style-type: none"> Observe and describe major stages in the life cycles of plants and animals, including beans and butterflies. 	SC.2.L.16.1 Moderate	Life cycle Seedling Reproduce Offspring Larva pupa	Unit 9 Lessons 1 – 3 p. 211 - 241
Weeks 29-30 Survival of Living Things	<ul style="list-style-type: none"> Compare and contrast the basic needs that all living things, including humans, have for survival. 	SC.2.L.17.1 Moderate	Living thing Shelter Nutrient Flower Fruit Seed Adaptation	Unit 10 Lessons 1 – 4 p. 243 - 277
Weeks 31-33 Animal Habitats	<ul style="list-style-type: none"> Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs. 	SC.2.17.2 Moderate	Environment Habitat Stream Woodland Resource Drought Rain Forest Prairie	