

5th Grade Science



Prioritized Standards and Instructional Units 2022-2023

5th Grade Science

UNIT 1: Earth's Systems 25 Days	UNIT 2: Matter and Energy in Organisms and Ecosystems 25 Days
<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;"><u>Science and Engineering Practices</u></p> <p>Developing and Using Models</p> <ul style="list-style-type: none">• Develop a model using an example to describe a scientific principle. (5-ESS2-1) <p>Using Mathematics and Computational Thinking</p> <ul style="list-style-type: none">• Describe and graph quantities such as area and volume to address scientific questions. (5-ESS2- 2) <p>Obtaining, Evaluating, and Communicating Information</p> <ul style="list-style-type: none">• Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to a design problem. (5-ESS3-1) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.</p> <p>5-ESS2-2. Describe and graph the amounts of saltwater and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.</p> <p>5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.</p>	<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;"><u>Science and Engineering Practices</u></p> <p>Developing and Using Models</p> <ul style="list-style-type: none">• Use models to describe phenomena. (5- PS3-1)• Develop a model to describe phenomena. (5-LS2-1) <p>Engaging in Argument from Evidence</p> <ul style="list-style-type: none">• Support an argument with evidence, data, or a model. (5-LS1-1) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.</p> <p>5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.</p> <p>5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</p>

5th Grade Science

UNIT 3: Space System: Stars and the Solar System 25 Days	UNIT 4: Structure and the Properties of Matter 25 Days
<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;"><u>Science and Engineering Practices</u></p> <p>Analyzing and Interpreting Data</p> <ul style="list-style-type: none">• Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. (5- ESS1-2) <p>Engaging in Argument from Evidence</p> <ul style="list-style-type: none">• Support an argument with evidence, data, or a model. (5-PS2-1),(5-ESS1-1) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.</p> <p>5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.</p> <p>5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.</p>	<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;"><u>Science and Engineering Practices</u></p> <p>Developing and Using Models</p> <ul style="list-style-type: none">• Develop a model to describe phenomena. (5-PS1-1) <p>Planning and Carrying Out Investigations</p> <ul style="list-style-type: none">• Conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered. (5-PS1-4)• Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon. (5-PS1-3) <p>Using Mathematics and Computational Thinking</p> <ul style="list-style-type: none">• Measure and graph quantities such as weight to address scientific and engineering questions and problems. (5-PS1-2) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.</p> <p>5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.</p> <p>5-PS1-3. Make observations and measurements to identify materials based on their properties.</p> <p>5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.</p>

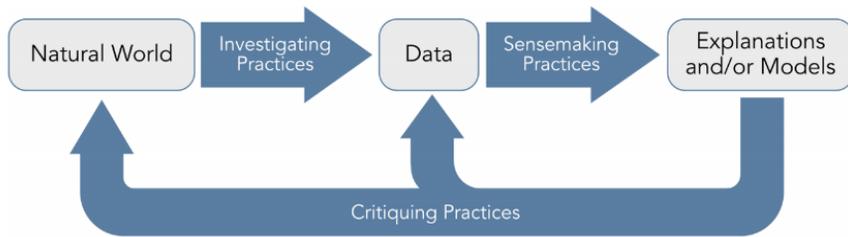
Unit/Core Idea: Earth's Systems

Pacing: 25 days

Unit/Core Idea: Earth's Systems
Essential Question: How do Earth's surface processes and human activities affect each other?

Supporting Questions:

- How do Earth's major systems interact?
- How do the properties and movements of water shape Earth's surface and affect its systems?
- How do humans depend on Earth's resources?
- How do humans change the planet?
- How do people model and predict the effect of human activities on Earth's climate?



	Investigating Practices	Sensemaking Practices	Critiquing Practices
	1. Asking questions	2. Developing and using models	7. Engaging in argument from evidence
Science Practices	3. Planning and carrying out investigations	4. Analyzing and interpreting data	8. Obtaining, evaluating, and communication information
	5. Using mathematical and computational thinking	6. Constructing explanations	

Science and Engineering Practices (Priority) | **Performance Expectations (Supporting)**

Developing and Using Models
 Modeling in 3–5 builds on K–2 experiences and progresses to building and revising simple models and using models to represent events and design solutions.

- Develop a model using an example to describe a scientific principle. (5-ESS2-1)

Using Mathematics and Computational Thinking
 Mathematical and computational thinking in 3–5 builds on K–2 experiences and progresses to extending quantitative measurements to a variety of physical properties and using computation and mathematics to analyze data and compare alternative design solutions.

- Describe and graph quantities such as area and volume to address scientific questions. (5-ESS2- 2)

Obtaining, Evaluating, and Communicating Information
 Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods.

- Obtain and combine information from books and/or other reliable

5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
 [Clarification Statement: Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system.] [Assessment Boundary: Assessment is limited to the interactions of two systems at a time.]

5-ESS2-2. Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. [Assessment Boundary: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere.]

5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

media to explain phenomena or solutions to a design problem.
(5-ESS3-1)

**Kentucky Academic
Standards Connections**

ELA/Literacy –

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-ESS3-1)

RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-ESS2-1),(5-ESS2-2),(5-ESS3-1)

RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-ESS3-1)

W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (5-ESS2-2),(5-ESS3-1)

W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research. (5-ESS3-1)

SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-ESS2-1),(5-ESS2-2)

Mathematics –

MP.2 Reason abstractly and quantitatively. (5-ESS2-1),(5-ESS2-2),(5-ESS3-1)

MP.4 Model with mathematics. (5-ESS2-1),(5-ESS2-2),(5-ESS3-1)

5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (5-ESS2-1)