

3rd Grade Science



Prioritized Standards and Instructional Units 2022-2023

3rd Grade Science

UNIT 1: Forces and Interactions 25 Days	UNIT 2: Weather and Climate 25 Days
<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;"><u>Science and Engineering Practices</u></p> <p>Asking Questions and Defining Problems</p> <ul style="list-style-type: none">• Ask questions that can be investigated based on patterns such as cause and effect relationships. (3-PS2-3)• Define a simple problem that can be solved through the development of a new or improved object or tool. (3-PS2-4) <p>Planning and Carrying Out Investigations</p> <ul style="list-style-type: none">• Plan and 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. (3-PS2-1)• Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution. (3-PS2-2) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.</p> <p>3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.</p> <p>3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.</p> <p>3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.</p>	<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 tables and various graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. (3-ESS2-1) <p>Engaging in Argument from Evidence</p> <ul style="list-style-type: none">• Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-ESS3-1) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.</p> <p>3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.</p> <p>3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.</p>

3rd Grade Science

UNIT 3: Inheritance and Variation of Traits 25 Days	UNIT 4: Interdependent Relationships in Ecosystems 25 Days
<p style="text-align: center;">PRIORITY</p> <p style="text-align: center;">Science and Engineering Practices</p> <p>Developing and Using Models</p> <ul style="list-style-type: none">• Develop models to describe phenomena. (3-LS1-1) <p>Analyzing and Interpreting Data</p> <ul style="list-style-type: none">• Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS3-1) <p>Constructing Explanations and Designing Solutions</p> <ul style="list-style-type: none">• Use evidence (e.g., observations, patterns) to support an explanation. (3-LS3-2)• Use evidence (e.g., observations, patterns) to construct an explanation. (3-LS4-2) <p style="text-align: center;">SUPPORTING</p> <p style="text-align: center;">Performance Expectations</p> <p>3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p> <p>3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.</p> <p>3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.</p> <p>3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.</p>	<p style="text-align: center;">PRIORITY</p> <p style="text-align: center;">Science and Engineering Practices</p> <p>Analyzing and Interpreting Data</p> <ul style="list-style-type: none">• Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS4-1) <p>Engaging in Argument from Evidence</p> <ul style="list-style-type: none">• Construct an argument with evidence, data, and/or a model. (3-LS2-1)• Construct an argument with evidence. (3-LS4-3)• Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-LS4-4) <p style="text-align: center;">SUPPORTING</p> <p style="text-align: center;">Performance Expectations</p> <p>3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.</p> <p>3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.</p> <p>3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.</p> <p>3-LS2-1. Construct an argument that some animals form groups that help members survive.</p>

Unit/Core Idea: Forces and Interactions

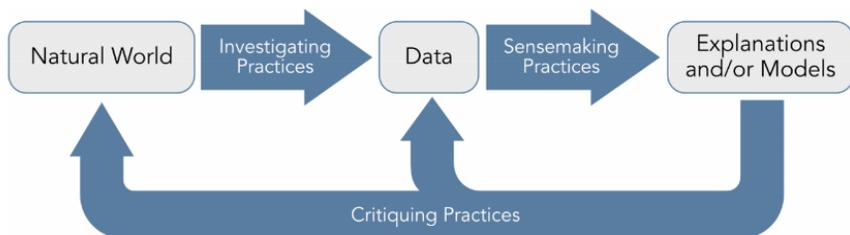
Pacing: 25 days

Unit/Core Idea: Forces and Interactions

Essential Question: How do equal and unequal forces on an object affect the object? How can magnets be used?

Supporting Questions:

- How can one predict an object's continued motion, changes in motion, or stability?
- What underlying forces explain the variety of interactions observed?
- Why are some physical systems more stable than others?



	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)

Asking Questions and Defining Problems

Asking questions and defining problems in grades 3–5 builds on grades K–2 experiences and progresses to specifying qualitative relationships.

- Ask questions that can be investigated based on patterns such as cause and effect relationships. (3-PS2-3)
- Define a simple problem that can be solved through the development of a new or improved object or tool. (3-PS2-4)

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions.

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which

Performance Expectations (Supporting)

3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

[Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.]

3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

[Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.]

3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.

[Clarification Statement: Examples of an electric force could include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force

<p>variables are controlled and the number of trials considered. (3-PS2-1)</p> <ul style="list-style-type: none"> • Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution. (3-PS2-2) 	<p>between an electromagnet and steel paper clips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.]</p> <p>3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.* [Clarification Statement: Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.]</p>
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<p>Kentucky Academic Standards Connections</p>	<p>ELA/Literacy –</p> <p>RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-PS2-1),(3-PS2-3)</p> <p>RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-PS2-3)</p> <p>RI.3.8 Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). (3-PS2-3)</p> <p>W.3.7 Conduct short research projects that build knowledge about a topic. (3-PS2-1),(3-PS2-2)</p> <p>W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3- PS2-1),(3-PS2-2)</p> <p>SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. (3-PS2-3)</p> <p>Mathematics –</p> <p>MP.2 Reason abstractly and quantitatively. (3-PS2-1)</p> <p>MP.5 Use appropriate tools strategically. (3-PS2-1)</p> <p>3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (3-PS2-1)</p>
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