

1st Grade Science



Prioritized Standards and Instructional Units 2022-2023

1st Grade Science

<p style="text-align: center;">UNIT 1: Space Systems: Patterns and Cycles 20 Days</p>	<p style="text-align: center;">UNIT 2: Waves: Light and Sound 25 Days</p>	<p style="text-align: center;">UNIT 3: Structure, Function, and Information Processing 25 Days</p>
<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;">Science and Engineering Practices</p> <p>Planning and Carrying Out Investigations</p> <ul style="list-style-type: none"> • Make observations (firsthand or from media) to collect data that can be used to make comparisons. (1-ESS1-2) <p>Analyzing and Interpreting Data</p> <ul style="list-style-type: none"> • Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (1-ESS1-1) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;">Performance Expectations</p> <p>1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.</p> <p>1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.</p>	<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;">Science and Engineering Practices</p> <p>Planning and Carrying Out Investigations</p> <ul style="list-style-type: none"> • Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question. (1-PS4-1),(1-PS4-3) <p>Constructing Explanations and Designing Solutions</p> <ul style="list-style-type: none"> • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena (1- PS4-2) • Use tools and materials provided to design a device that solves a specific problem. (1-PS4-4) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;">Performance Expectations</p> <p>1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.</p> <p>1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated.</p> <p>1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.</p> <p>1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.</p>	<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;">Science and Engineering Practices</p> <p>Constructing Explanations and Designing Solutions</p> <ul style="list-style-type: none"> • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-LS3-1) • Use materials to design a device that solves a specific problem or a solution to a specific problem. (1-LS1-1) <p>Obtaining, Evaluating, and Communicating Information .</p> <ul style="list-style-type: none"> • Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;">Performance Expectations</p> <p>1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.</p> <p>1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.</p> <p>1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.</p>

Unit/Core Idea: Waves: Light and Sound

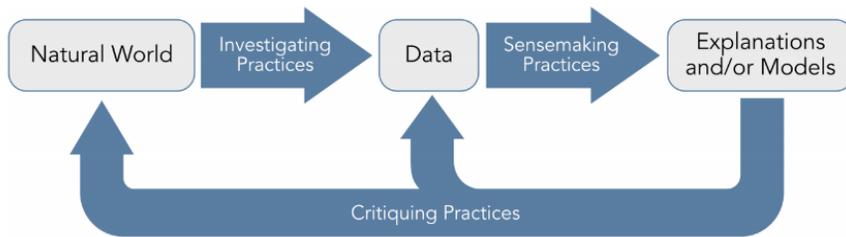
Pacing: 25 days

(10 days for light, 10 days for sound, 5 days for connections/communication)

Unit/Core Idea: Waves: Light and Sound Essential Question: How do waves transport light and sound?

Supporting Questions:

- What are the characteristic properties and behaviors of waves?
- How are instruments that transmit and detect waves used to extend human senses?
- What is light?
- How can one explain the varied effects that involve light?



	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)
<p>Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</p> <ul style="list-style-type: none"> Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question. (1-PS4-1),(1-PS4-3) <p>Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.</p> <ul style="list-style-type: none"> Make observations (firsthand or from media) to construct an 	<p>1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. [Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.]</p> <p>1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated. [Clarification Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.]</p> <p>1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of</p>

<p>evidence-based account for natural phenomena (1- PS4-2)</p> <ul style="list-style-type: none"> • Use tools and materials provided to design a device that solves a specific problem. (1-PS4-4) 	<p>light. [Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]</p> <p>1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.* [Clarification Statement: Examples of devices could include a light source to send signals, paper cup and string “telephones,” and a pattern of drum beats.] [Assessment Boundary: Assessment does not include technological details for how communication devices work.]</p>
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<p>Kentucky Academic Standards Connections</p>	<p>ELA/Literacy – W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure. (1-PS4-2) W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions). (1-PS4-1),(1-PS4-2),(1-PS4-3),(1-PS4-4) W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. (1-PS4-1),(1-PS4-2),(1-PS4-3) SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. (1-PS4-1),(1-PS4-2),(1-PS4-3)</p> <p>Mathematics – MP.5 Use appropriate tools strategically. (1-PS4-4) 1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object. (1-PS4-4) 1.MD.A.2 Express the length of an object as a whole number of length units, by layering multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. (1-PS4-4)</p>
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