

1st Grade Science



Prioritized Standards and Instructional Units 2022-2023

1st Grade Science

UNIT 1: Space Systems: Patterns and Cycles 20 Days	UNIT 2: Waves: Light and Sound 25 Days	UNIT 3: Structure, Function, and Information Processing 25 Days
<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: Structure, Function, and Information Processing

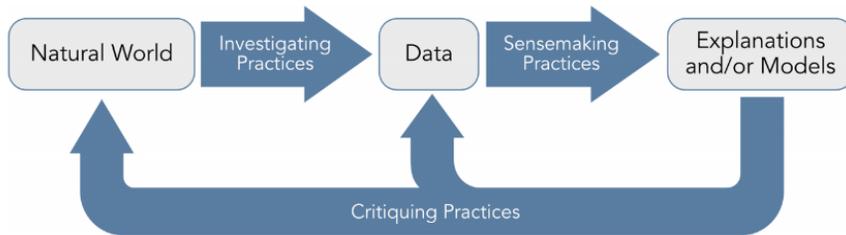
Pacing: 25 days

(10 days for biomimicry, 10-15 days for inherited traits and patterns in behavior of parents and offspring that help offspring survive)

Unit/Core Idea: Structure, Function, and Information Processing
Essential Question: What are some ways plants and animals meet their needs so that they can survive and grow?

Supporting Questions:

- How do the structures of organisms enable life's functions?
- How do organisms grow and develop?
- How do organisms detect, process, and use information about the environment?
- How are the characteristics of one generation related to the previous generation?
- Why do individuals of the same species vary in how they look, function, and behave?



	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>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 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 Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new</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.* [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.]</p> <p>1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]</p>

information.

- Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2)

1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

[Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.] [Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.]

Kentucky Academic Standards Connections

ELA/Literacy –

RI.1.1 Ask and answer questions about key details in a text. (1-LS1-2),(1-LS3-1)

RI.1.2 Identify the main topic and retell key details of a text. (1-LS1-2)

RI.1.10 With prompting and support, read informational texts appropriately complex for grade. (1-LS1-2)

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-LS1-1),(1-LS3-1)

W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. (1-LS3-1)

Mathematics –

MP.2 Reason abstractly and quantitatively. (1-LS3-1)

MP.5 Use appropriate tools strategically. (1-LS3-1)

1.NBT.B.3 Compare two two-digit numbers based on the meanings of the tens and one digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. (1-LS1-2)

1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. (1-LS1-2)

1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. (1-LS1-2)

1.NBT.C.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. (1-LS1-2)

1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object. (1-LS3-1)