

Kindergarten Science



Prioritized Standards and Instructional Units 2022-2023

Kindergarten Science

UNIT 1: Weather and Climate 20 Days	UNIT 2: Forces: Pushes and Pulls 10 Days	UNIT 3: Interdependent Relationships 15 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 based on observations to find more information about the designed world. (K-ESS3-2) <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. (K-PS3-1) <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. (K-ESS2-1) <p>Constructing Explanations and Designing Solutions</p> <ul style="list-style-type: none"> Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. (K-PS3-2) <p>Obtaining, Evaluating, and Communicating Information</p> <ul style="list-style-type: none"> Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world. (K-ESS3-2) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>K-PS3-1. Make observations to determine the effect of sunlight on Earth’s surface.</p> <p>K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.</p> <p>K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.</p>	<p style="text-align: center;"><u>PRIORITY</u></p> <p style="text-align: center;"><u>Science and Engineering Practices</u></p> <p>Planning and Carrying Out Investigations</p> <ul style="list-style-type: none"> With guidance, plan and conduct an investigation in collaboration with peers. (K-PS2-1) <p>Analyzing and Interpreting Data</p> <ul style="list-style-type: none"> Analyze data from tests of an object or tool to determine if it works as intended. (K-PS2-2) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.</p> <p>K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.</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 a model to represent relationships in the natural world. (K-ESS3- 1) <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. (KLS1-1) <p>Engaging in Argument from Evidence</p> <ul style="list-style-type: none"> Construct an argument with evidence to support a claim. (K-ESS2-2) <p>Obtaining, Evaluating, and Communicating Information</p> <ul style="list-style-type: none"> Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3) <p style="text-align: center;"><u>SUPPORTING</u></p> <p style="text-align: center;"><u>Performance Expectations</u></p> <p>K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.</p> <p>K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live</p> <p>K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.</p> <p>K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.</p>

Unit/Core Idea: Weather and Climate

Pacing: 20 days

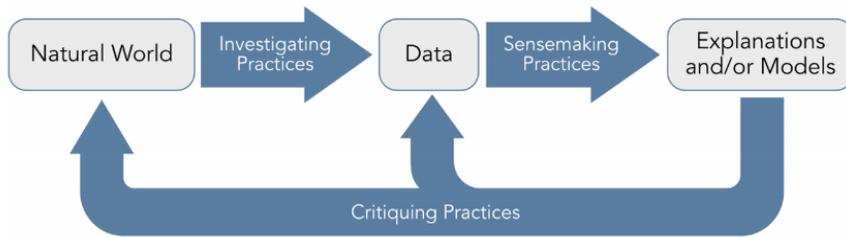
(10 days in Sept./Oct., 5 days in Jan. and 5 days in April)

Unit/Core Idea: Weather and Climate

Essential Question: What is the weather like today and how is it different from yesterday?

Supporting Questions:

- What is energy?
- How is energy transferred between objects or systems?
- What regulates weather and 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)

Asking Questions and Defining Problems

Asking questions and defining problems in grades K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.

- Ask questions based on observations to find more information about the designed world. (K-ESS3-2)

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.

- Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1)

Analyzing and Interpreting Data

Analyzing data in K–2 builds on prior experiences and progresses to collecting,

Performance Expectations (Supporting)

K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface. [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]

K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]

K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.]

recording, and sharing observations.

- Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-ESS2-1)

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.

- Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. (K-PS3-2)

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 information.

- Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world. (K-ESS3-2)

K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*

[Clarification Statement: Emphasis is on local forms of severe weather.]

Kentucky Academic Standards Connections

ELA/Literacy –

RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-ESS3-2)

W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS3-1),(K-PS3-2),(K-ESS2-1)

SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-ESS3-2)

Mathematics –

MP.2 Reason abstractly and quantitatively. (K-ESS2-1)

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

K.CC Counting and Cardinality (K-ESS3-2)

K.CC.A Know number names and the count sequence. (K-ESS2-1)

K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-ESS2-1)

K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-PS3-1), (K-PS3-2)

K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count. (K-ESS2-1)