

**Kindergarten Unit 3 – Weather and Climate
(6 weeks)**

Big Ideas: Understand patterns and variations in local weather.

- Understand the purpose of weather forecasting to prepare for, and respond to, severe weather.

Essential Questions:

- What is the effect of sunlight on our earth?
- What are the patterns of weather throughout the year where you live?
- How does the weather forecast help us?

Vocabulary: weather, patterns, forecast, earth, temperature

Students who demonstrate understanding can:

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 provided to design and build a structure that will reduce the warming effect of sunlight on Earth’s surface.*[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.*]

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.]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>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.</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 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,</p>	<p>PS3.B: Conservation of Energy and Energy Transfer</p> <ul style="list-style-type: none"> • Sunlight warms Earth’s surface. (K-PS3-1),(K-PS3-2) <p>ESS2.D: Weather and Climate</p> <ul style="list-style-type: none"> • Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the 	<p>Patterns</p> <ul style="list-style-type: none"> • Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (K-ESS2-1) <p>Cause and Effect</p> <ul style="list-style-type: none"> • Events have causes that generate observable patterns. (K-PS3-1),(K-PS3-

<p>based on fair tests, which provide data to support explanations or design solutions.</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 Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</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 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"> • 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 Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new 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>weather and to notice patterns over time. (K-ESS2-1)</p> <p>ESS3.B: Natural Hazards</p> <ul style="list-style-type: none"> • Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (K-ESS3-2) <p>ETS1.A: Defining and Delimiting an Engineering Problem</p> <ul style="list-style-type: none"> • Asking questions, making observations, and gathering information are helpful in thinking about problems. (<i>secondary to K-ESS3-2</i>) 	<p>2),(K-ESS3-2)</p> <hr style="border-top: 1px dashed black;"/> <p>Connections to Engineering, Technology, and Applications of Science Interdependence of Science, Engineering, and Technology</p> <ul style="list-style-type: none"> • People encounter questions about the natural world every day. (K-ESS3-2) <p>Influence of Engineering, Technology, and Science on Society and the Natural World</p> <ul style="list-style-type: none"> • People depend on various technologies in their lives; human life would be very different without technology. (K-ESS3-2)
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<p><i>Connections to other DCIs in kindergarten:</i> K.ETS1.A (K-PS3-2),(K-ESS3-2); K.ETS1.B (K-PS3-2)</p>		
<p><i>Articulation of DCIs across grade-levels:</i> 1.PS4.B (K-PS3-1),(K-PS3-2); 2.ESS1.C (K-ESS3-2); 2.ESS2.A (K-ESS2-1); 2.ETS1.B (K-PS3-2); 3.ESS2.D (K-ESS2-1),(K-PS3-1); 3.ESS3.B (K-ESS3-2); 4.ESS2.A (K-ESS2-1); 4.ESS2.E (K-ESS2-2); 4.ESS3.B (K-ESS3-2); 4.ETS1.A (K-PS3-2)</p>		
<p><i>Common Core State Standards Connections:</i></p> <p><i>ELA/Literacy -</i></p> <p>RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-ESS3-2)</p> <p>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)</p> <p>SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-ESS3-2)</p> <p><i>Mathematics -</i></p> <p>MP.2 Reason abstractly and quantitatively. (K-ESS2-1)</p> <p>MP.4 Model with mathematics. (K-ESS2-1),(K-ESS3-2)</p> <p>K.CC Counting and Cardinality (K-ESS3-2)</p> <p>K.CC.A Know number names and the count sequence. (K-ESS2-1)</p> <p>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)</p> <p>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)</p> <p>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)</p>		