



UNIT 1

COMMUNICATING IN SCIENCE
WEATHER & CLIMATE



Unit 1: Communicating in Science; Weather & Climate

6 weeks

In this first unit, students begin their year by using their five senses to make observations about the world around them and learning to communicate in science. Kindergartners need experiences making observations and sharing about these observations. They should be encouraged to begin asking questions about the world around them, based on their observations. The ability to make observations and communicate in science is crucial to science learning throughout Kindergarten and in subsequent grade levels.

Students will also begin to develop understanding of patterns and variations in local weather. Observations and recordings of local weather conditions will begin in this unit and will continue to be made throughout the course of the school year in order to describe patterns over time. This will involve analysis and interpretation of the data collected and recorded. Students will also begin to develop an understanding of how sunlight affects the Earth's surface, using observations to determine relative temperatures of various surfaces. Experiences with these ideas will continue throughout the school year.

Unit 1 Performance Expectations

- ❖ **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-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, or 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 or the number of sunny days versus cloudy days in different months.
Assessment Boundary: Assessment of quantitative observations is limited to whole numbers and relative measures such as warmer/cooler.

In Unit 1, students will understand...

- ❖ Asking questions, making observations, and gathering information are helpful in learning about the world around them.
- ❖ People encounter questions about the natural world every day.
- ❖ 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 weather and to notice patterns over time.
- ❖ Sunlight warms Earth's surface.
- ❖ Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
- ❖ Scientists use different ways to study the world and look for patterns when making observations about the world.

Unit 1 Essential Questions:

- ❖ How can my 5 senses help me make observations in Science?

- ❖ What is the weather like today and how is it different from yesterday?



Additional Content Connections:

*These connections provide opportunities to score to other content standards with focused instruction.

ELA:

Unit 1 EQ: *How does answering questions help us learn?*

Unit 1 Text: *My Five Senses* by Aliko

❖ Speaking and Listening

- SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood
- SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups

Math:❖ Classifying and Sorting Objects (*using five senses to make observations*)

- K.MD.B.3 Classify, sort and count objects using both measurable and non-measurable attributes such as size, number, color, or shape
- K.G.A.1 Describe the positions of objects in the environment and geometric shapes in space using names of shapes and describe the relative positions of these objects.
(Positions could be: *inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, or beside.*)

❖ Measurement and Data (*observations of measurable attributes*)

- K.MD.A.1 Describe several measurable attributes of a single object, including but not limited to length, weight, height, and temperature. (Vocabulary may include short, long, heavy, light, tall, hot, cold, warm or cool.)
- K.MD.A.2 Describe the difference when comparing two objects (side-by-side) with a measureable attribute in common, to see which object has more of or less of the common attribute. (Vocabulary may include shorter, longer, taller, lighter, heavier, warmer, cooler, or holds more.)
- K.MD.C.4 Understand concepts of time including morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year. Understand that clocks, both analog and digital, and calendars are tools that measure time.

Social Studies:

❖ Geography

- G.9.K.3 Identify ways weather and climate impact daily life

Unit Vocabulary:

sense(s)	record	sun/sunny
touch	weather	rain/rainy
taste	temperature	fog/foggy
hear	thermometer	cloud/cloudy
sight/see	season	wind/windy
smell	air	warm/warmer
question	heat	cool/cooler
observe/observation	energy	hot/hotter
measure		cold/colder

*Students should engage with these terms throughout this unit and within other units in Kindergarten.



Weather and Climate

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-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, or 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 or the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations is limited to whole numbers and relative measures such as warmer/cooler.]

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. <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"> Make observations (firsthand or from media) to collect data that can be used to make comparisons. <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. <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> <hr/> <p style="text-align: center;">Connections to Nature of Science</p> <p>Scientific Investigations Use a Variety of Methods</p> <ul style="list-style-type: none"> Scientists use different ways to study the world. <p>Science Knowledge is Based on Empirical Evidence</p> <ul style="list-style-type: none"> Scientists look for patterns and order when making observations about the world. 	<p>PS3.B: Conservation of Energy and Energy Transfer</p> <ul style="list-style-type: none"> Sunlight warms Earth’s surface. <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 weather and to notice patterns over time. 	<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) <hr/> <p style="text-align: center;">Connections to Engineering, Technology, and Applications of Science</p> <p>Interdependence of Science, Engineering, and Technology</p> <ul style="list-style-type: none"> People encounter questions about the natural world every day.

