

Unit 1: Weather

Content Area: **Science**
Course(s): **Science - Grade K**
Time Period: **3 weeks**
Length: **3 weeks**
Status: **Published**

Unit Overview

In this unit of study, students develop an understanding of patterns and variations in local weather and the use of weather forecasting to prepare for and respond to severe weather. The crosscutting concepts of *patterns; cause and effect; interdependence of science, engineering, and technology; and the influence of engineering, technology, and science on society and the natural world* are called out as organizing concepts for the disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in *asking questions, analyzing and interpreting data, and obtaining, evaluating, and communicating information*. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Transfer

Students will be able to independently use their learning to...

understand patterns and variations in local weather and use forecasting to prepare for severe weather.

Meaning

Understandings

Students will understand that predicting weather helps to see patterns over time.

Students will understand that predicting weather helps prepare for dangerous weather.

Essential Questions

How can someone predict what the weather will be tomorrow?

- a) Have we had more sunny days or cloudy days? What is your evidence?
- b) When was it warmest this week? What is your evidence?
- c) Is this week sunnier or cloudier than last week? What is your evidence?
- d) Has the weather gotten warmer or cooler over the past two weeks? What is your evidence?

How does weather forecasting help us to prepare for dangerous weather?

- a) How does cause and effect show weather patterns?
- b) How does weather forecasting help to prepare and respond to severe weather?
- c) What severe weather is there where you live?

Application of Knowledge and Skill

Students will know...

- 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.
- People look for patterns in the weather data when they organize and order when making observations about the world
- Some kinds of severe weather are more likely than others in a given region.
- Weather scientists forecast severe weather so that communities can prepare for and respond to these events.
- Events have causes that generate observable patterns.
- People encounter questions about the natural world every day.
- People depend on various technologies in their lives; human life would be very different without technology.

Students will be skilled at...

- making observations
- noticing patterns
- use evidence
- asking questions to obtain information
- define a simple problem

Academic Vocabulary

land, rain, snow, sun, ice, rainy, season, sunlight, warm, wind, cloudy, cool, daily weather pattern, Earth, heat, living things, seasonal changes, seasonal weather pattern, temperature, weather, weather patterns

Learning Goal 1

Use and share observations of local weather conditions to describe patterns over time.

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SCI.K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

SCI.K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time.

Target 1

Students will be able to

- understand that weather is the combination of sunlight, wind, snow, or rain and temperature in a particular region at a particular time.
- know that people measure these conditions to describe and record the weather and to notice patterns over time.
- understand that people look for patterns in the weather data when they organize and order when making observations about the world.

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Learning Goal 2

Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

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SCI.K-ESS2-2

Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

SCI.K-ESS2-1

Use and share observations of local weather conditions to describe patterns over time.

Target 1

- Observe patterns in events generated by cause-and-effect relationships.
- Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world.
- Ask questions based on observations to find more information about the designed world.
- Ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to severe weather. (Emphasis is on local forms of severe weather.)
- Define a simple problem that can be solved through the development of a new or improved object or tool.

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- Ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to severe weather. (Emphasis is on local forms of severe weather.)
- Define a simple problem that can be solved through the development of a new or improved object or tool.
- Observe patterns in events generated by cause-and-effect relationships.
- Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world.

Summative Assessment

Teacher observations.

Teacher will create formal assessment.

21st Century Life and Careers

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|----------------|--|
| CAEP.9.2.4.A | Career Awareness |
| CAEP.9.2.4.A.1 | Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals. |
| CAEP.9.2.4.A.2 | Identify various life roles and civic and work - related activities in the school, home, and community. |
| CAEP.9.2.4.A.3 | Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes. |
| CAEP.9.2.4.A.4 | Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. |

Formative Assessment and Performance Opportunities

Teacher directed Q and A.

Class discussions

Logs, journals and charts.

Accommodations/Modifications

- Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
- Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies).
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings.
- Use project-based science learning to connect science with observable phenomena.
- Structure the learning around explaining or solving a social or community-based issue.
- Provide ELL students with multiple literacy strategies.
- Collaborate with after-school programs or clubs to extend learning opportunities.

Restructure lesson using UDL principals (http://www.cast.org/our-work/about-udl.html#.VXmoXcfD_UA).

Unit Resources

<http://ngss.nsta.org/Resource.aspx?ResourceID=180>

<http://learningcenter.nsta.org/resource/?id=10.2505/5/SG-04>

Interdisciplinary Connections

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|-------------|---|
| LA.RI.K.1 | With prompting and support, ask and answer questions about key details in a text. |
| LA.RI.K.2 | With prompting and support, identify the main topic and retell key details of a text. |
| LA.RI.K.3 | With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. |
| MA.K.MD.A.1 | Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. |
| MA.K.G.A.1 | Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. |
| LA.SL.K.1 | Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. |