



# Winter Weather, A Teaching Box

## Topic: Winter Weather

## Level: Primary Grades

### How to use this resource:

Each tab correlates with a part of the scope and sequence for this topic and includes links to hands-on activities, background content, and multimedia resources. Select resources within each tab that are best suited for your students to meet the learning goals. (There are often more resources linked within each section than you will need.)

**Spark Teaching Boxes** are themed collections of classroom-ready educational resources to build student understanding of science, technology, engineering, and math (STEM). Resources highlighted within teaching boxes are from various science education programs and all have been vetted by the Spark education team.

This page provides an overview of the Teaching Box contents and associated standards.

### Explore this Teaching Box and its educational resources at:

[spark.ucar.edu/winter-weather-teaching-box](http://spark.ucar.edu/winter-weather-teaching-box)

### Keeping warm

- Goal: Students learn how people and wildlife keep warm during cold winter weather.
- Activity: Students explore how people dress for cold and how wildlife is adapted to keep warm during winter.
- Performance Expectation: K-LS1-1. Students use observations to describe patterns of what animals (including humans) need to survive cold winter weather.
- Standards:
  - NGSS Science and Engineering Practices: Analyzing and interpreting data; obtaining, evaluating and communicating information
  - NGSS DCI: LS1A Structure and function
  - NGSS Crosscutting themes: Cause and effect
  - National Geography Standards: 15 How Physical Systems Affect Human Systems (3. People adapt to the conditions of the physical environment)

### Snowflake shapes

- Goal: Students learn that snowflakes come in different shapes.
- Activity: Students investigate the shapes of snowflakes.
- Performance Expectation: K-ESS2-1. Students make observations of snowflakes over time and describe the shape variations in a graphic.
- Standards:
  - NGSS Science and Engineering Practices: Analyzing data
  - NGSS DCI: ESS2.D Weather and climate
  - NGSS Crosscutting themes: Patterns

### Colors of snow

- Goal: Students learn that snow can be various shades, but is usually light in color, which reflects most of the sunlight that hits it unlike darker materials.
- Activity: Students explore the colors of snow as represented by artists, explore how different colors absorb and reflect sunlight, and predict what would happen if snow and ice were covered by a layer of dark soot or dirt.
- Performance Expectation: K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.
- Standards:
  - NGSS Science and Engineering Practices: Planning and carrying out investigations
  - NGSS DCI: PS3.B Conservation of energy and energy transfer
  - NGSS Crosscutting themes: Cause and effect

### Water and ice

- Goal: Students learn that water can be a solid or a liquid depending on temperature.
- Activity: Students read the book *A Snowy Day*, by Ezra Jack Keats, experiment with water and ice, and consider where ice and snow is found on Earth.
- Performance Expectation: 2-ESS2-3. Students obtain information to identify where water is found on earth and that it can be solid or liquid.
- Standards:
  - NGSS Science and Engineering Practices: Obtaining, evaluating and communicating information
  - NGSS DCI: ESS2.C The roll of water in Earth's surface processes
  - NGSS Crosscutting themes: Patterns of the natural world