Precipitation Snow

Earth & Space Science | Lesson Guide

1st Grade

Photo Description

This image shows snow falling on a brick building surrounded by ivy-covered walls on a cold day. You can see white snowflakes falling from the sky and landing on the roof, ground, and plants. Snow is frozen water that falls from clouds when the weather gets very cold.

Scientific Phenomena

Anchoring Phenomenon: Precipitation falling as snow

This image captures precipitation—water falling from clouds to Earth. When temperatures in the atmosphere drop below freezing (32°F or 0°C), water vapor in clouds freezes into ice crystals instead of forming raindrops. These ice crystals stick together and become snowflakes, which are heavy enough to fall to the ground. This is one of the key ways water moves through Earth's water cycle and an important weather pattern.

Core Science Concepts

* Precipitation: Water falling from clouds in the form of rain, snow, sleet, or hail. Snow is precipitation that falls when it's cold enough for water to freeze in the sky.

* Temperature and States of Matter: Water changes form based on temperature. When it's very cold, liquid water becomes solid ice and snow instead of staying as a liquid or becoming water vapor.

* Weather Patterns: Snow is part of seasonal weather patterns. In many places, snow falls during winter when temperatures drop below freezing.

* Water Cycle: Snow is part of Earth's water cycle—water evaporates, forms clouds, falls as precipitation, and flows back to oceans and lakes.

Pedagogical Tip:

For First Grade, use sensory-rich language and direct observations. Instead of explaining molecular movement, focus on "What do you see falling?" and "How does it feel?" Make connections to students' own experiences with snow or cold weather to build schema before introducing vocabulary.

UDL Suggestions:

Provide multiple means of representation: Use real snow samples (if available), photographs, and video clips to show precipitation. For students who cannot access snow, show animated water cycle diagrams or digital simulations. Offer both visual and tactile learning experiences where possible. Consider using a snow sensory bin or ice exploration station so all learners can manipulate and investigate frozen water, regardless of their geographic location.

Discussion Questions

1. What do you observe falling from the sky in this picture? (Bloom's: Remember | DOK: 1)
2. Why do you think the water from the sky is frozen into snow instead of falling as rain? (Bloom's: Analyze | DOK: 2)
3. Where do you think the snow goes after it lands on the ground? Where does the water go? (Bloom's: Evaluate | DOK: 3)
4. How is snow different from rain? What would happen if it was warmer outside? (Bloom's: Analyze | DOK: 2)

Extension Activities

1. "Snowflake Observation Walk" (Outdoor or Virtual)
   Take students outside to observe snow falling (or show video/photos if snow isn't available). Have them watch and describe snowflakes using sensory language: "What shape do you see? Is it wet or dry? Does it feel cold?" Return inside and create snowflake shapes with white paper cutouts or pipe cleaners.

2. "Melting Ice Investigation"
   Provide students with ice cubes (or frozen water in clear cups). Observe what happens as ice melts in the classroom. Ask: "Where is the ice going? What do you see?" Connect this to snow melting on the ground. Students can draw or write about the transformation from solid to liquid.

3. "Water Cycle in a Bag"
   Create a simple water cycle demonstration by placing water in a clear plastic bag with a marker-drawn sun, cloud, and ground. Seal it and tape it to a sunny window. Over days, students observe condensation forming ("clouds"), water droplets appearing ("rain"), and evaporation occurring. Discuss how this relates to the snow in the photo.

NGSS Connections

Performance Expectation:
1-ESS2-1: Use observations to describe patterns in the amount of daylight and the way daylight changes from day to day to predict seasonal patterns.

Disciplinary Core Ideas:
* 1-ESS2.D Weather and climate observations help us understand seasonal patterns
* 2-ESS1.B Patterns of the sun, moon, and stars change in predictable ways; weather patterns change daily

Crosscutting Concepts:
* Patterns – Snow falls in patterns (winter season, cold weather)
* Systems and System Models – Snow is part of the water cycle system

Science Vocabulary

* Precipitation: Water that falls from clouds to Earth, such as rain or snow.
* Snow: Frozen water that falls from clouds when the weather is very cold.
* Temperature: How hot or cold something is; we measure it with a thermometer.
* Freeze: When a liquid (like water) becomes a solid (like ice) because it gets very cold.
* Weather: What the air and sky are like outside—sunny, rainy, snowy, or windy.

* Water Cycle: The journey water takes: it evaporates into the air, forms clouds, falls as precipitation, and returns to oceans and lakes.

External Resources

Children's Books:
Snow* by Manya Stojic (Explores how different animals experience and respond to snow)
The Snowy Day* by Ezra Jack Keats (Classic story about a child's winter adventures; great for building schema)
Come On, Rain!* by Karen Hesse (Poetic exploration of precipitation and weather)

YouTube Videos:
* "The Water Cycle Song" by Crash Course Kids (2:14) – Upbeat, animated explanation of how water moves through precipitation, evaporation, and condensation. https://www.youtube.com/watch?v=vs2GRjsAccU

* "Snow Formation for Kids" by National Geographic Kids (3:45) – Beautiful visuals showing how snowflakes form in clouds and fall to Earth, age-appropriate narration. https://www.youtube.com/watch?v=uj6ByFJG4Hs