



National Park Service
U.S. Department of the Interior
Pictured Rocks National Lakeshore
www.nps.gov/piro/forteachers.htm

Education Outreach
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“Exploring Types of Snowflakes” Winter Second Grade Outdoor Activity

Michigan Science Objectives: At the end of this lesson, students will be able to:

1. Identify a snowflake and explain the relationship between its shape and the temperature range in the upper atmosphere (Hydrosphere 1).
2. Observe snow on top, inside, and at the bottom of a snow bank and understand factors that affected the snow (Changes in Matter 1).
3. Explain how particulate pollutants can get into snow (Ecosystems 5).

Thinking Skills: Observing, comparing and contrasting, drawing conclusions.

Overview of Activity: Student will examine snowflakes and snow banks to understand their formation and changes due to temperature and pressure. They will set up a snow pollution monitoring station and test a snow sample for pH.

National Park Connection: Snow purity in National Parks is important to protect plant and animal resources. Some National Parks monitor air quality levels on a regular basis.

Procedure:

1. Students go outside to capture and identify snowflakes using snowflake formation / atmosphere temperature charts (Appendix 5).
2. Next, students will examine snowflakes and measure temperatures in a snow bank to understand about pressure changes to snowflakes and the insulation value of snow.
3. Finally, students will set up a snow collection station and bring collected snow into the classroom. There they will drain snow meltwater through a paper towel to find particulate matter and test the water for pH. Discuss results and potential impacts on plants, animals and National Parks.

Materials Needed: Snowflake catchers (black laminated cardboard), hand lens, snowflake type / temperature charts, containers for snow samples, paper towels, water pH test kits.

