



## “Exploring Types of Snowflakes” Winter Second Grade In-Class Activity

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

1. Describe how water exists in three states - solid, liquid and gas (Hydrosphere 1).
2. Be able to conduct a simple investigation about snow purity (Constructing New Scientific Knowledge 6).

**Thinking Skills:** Observe and draw conclusions.

**Overview of Activity:** Students will observe demonstrations and conduct simple investigations regarding states of matter. They will review how snowflakes are formed and understand why there are different shapes. A snow water pH investigation will be explained.

**National Park Connection:** Snow purity in National Parks is important to protect plant and animal resources.

### Procedure:

1. Display three sample containers with one holding snow, one with ice, and another with hot water from a thermos. Show how the vapor rising from the thermos hits glass and creates a “fog like” substance. Discuss.
2. Ask how a thermometer could be useful in an investigation of these objects. Have the students predict temperatures of each. Take temperatures of each.
3. Demonstrate how molecules of water can be like sand particles on a piece of cardboard. Move the sand slow and close together (similar to cold slow-moving water molecules forming ice or snow). Speed up and spread apart sand (to illustrate snow or ice melting into water). Move sand quick and far apart (to illustrate gas properties). Ask the students, “What causes water to change shapes?”
4. Show charts of different snowflakes and corresponding temperatures (appendix 5). Review how and why different snowflakes are formed.
5. Show students snow sample from parking lot that has now melted. Does it have dirt or pollution in it? How would you find out? Explain pH, and show water pH test kits. Explain how to collect and test snow purity.



**Materials needed:** Samples of snow, water and hot water, thermometers, containers, sand and cardboard, snowflake/temperature charts, parking lot snow sample, water pH test kits, water pH poster.

