

PROPERTY CHANGES IN MELTING SNOW

(MODIFIED FOR ADEED)

INSTRUCTIONS



Overview:

Snow can change from a solid to a liquid.

Objectives:

The student will:

- describe how temperature changes a solid to a liquid;
- make observations; and
- draw pictures and write sentences.

GLEs Addressed:

Science

- [3] SB3.1 The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by recognizing that temperature changes cause changes in phases of substances (e.g., ice changing to liquid, water changing to water vapor, and vice versa).
- [3] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.

Writing

- [1] W1.2.2 The student writes for a variety of purposes and audiences by writing a variety of responses to text (e.g., response logs, journals).

Vocabulary:

liquid – a substance that is of constant volume, and takes the shape of the container (example: water or oil)

solid – firm and stable in shape; not liquid or gas

temperature – a degree or intensity of heat present in a substance or object, reflecting the average kinetic energy of the molecules, especially as expressed according to a comparative scale and shown by a thermometer or perceived by touch

Materials:

- Ice cube (one)
- Plastic transparent cups (one 8-ounce per student, plus two extras for gear up and assessment)
- *Snow and Ice - A Science Fun Book*, by Stephen Krensky (1994)
- Popsicles (one per student)
- Science journals
- STUDENT WORKSHEET: "The Popsicle"

Activity Preparation:

1. Place an ice cube in a transparent cup prior to starting the "Gear Up" activity.
2. Fill a cup with loosely packed snow for each small group and keep it frozen until the Explore activity.

PROPERTY CHANGES IN MELTING SNOW

INSTRUCTIONS



Activity Procedure:

Please refer to the assessment task and scoring rubric located at the end of these instructions. Discuss the assessment descriptors with the class before teaching this lesson.

Gear Up

Process Skills: *observing, describing, predicting, and communicating*

1. Ask students what they know about snow and ice, and record responses on the board.
2. Show students an ice cube in a cup and ask them to predict what will happen to the ice if it is left sitting in the classroom. Record responses on the board and discuss.
3. Read the book *Snow and Ice-A Science Fun Book*. Stop to have students observe the ice and cup every 10 minutes while the book is being read. When the book is completed discuss the observations made.
4. Have students define and discuss the vocabulary words (liquid, solid, temperature). Write the definitions on the board.

Explore

Process Skills: *observing, predicting, and collecting data*

6. Tell students they will be observing snow to see what happens when it sits in the classroom.
7. Ask students to predict what will happen to the snow and record their responses on the board.
8. Divide the class into small groups. Each group will be given a cup of snow. Ask students to observe the snow by using their eyes only. In their science journals students will record observations made every 10 minutes for 30 minutes. The teacher will let students know when 10 minutes have passed. They should record the observations by using pictures and/or words.

Generalize

Process Skills: *describing and communicating*

9. Bring the students back together after 30 minutes and ask the following questions:
 - a. What happened to the snow in the cup?
 - b. Why did that happen?
 - c. How did the temperature in the room effect the melting?
 - d. What would happen to the snow if we observed it for a longer time?
 - e. How would the snow melt if it was packed tightly in the cup?
 - f. What would happen if the cup was put into a freezer or outside now?

Apply

Process Skills: *predicting, describing, inferring, and communicating*

10. In your science journal draw a picture of the playground in the winter and another picture of it in the summer. Write three sentences to tell why it looks different.

Assessment Task:

Give each student a popsicle in a cup. Ask students to observe the popsicle for 30 minutes and record at least two observations in their science journal. Students will describe how temperature changed the popsicle from a solid to a liquid by drawing two pictures and writing at least three complete sentences on the Student Worksheet "The Popsicle". The student may also describe how the liquid can be changed back to a solid after it has become a liquid.

PROPERTY CHANGES IN MELTING SNOW

INSTRUCTIONS



Rubric:

Objective	GLE	Below Proficient	Proficient	Above Proficient
The student describes how temperature changes a solid to a liquid.	[3] SB3.1	The student does not describe how temperature changes a solid to a liquid.	The student describes how temperature changes a solid to a liquid.	The student describes how temperature changes a solid to a liquid. The student also describes how the liquid can be changed back to a solid.
The student makes observations.	[3] SA1.1	The student records one or does not record an observation in science journal.	The student records two observations in science journal.	The student records three or more observations in science journal.
The student draws pictures and write sentences.	[1] W1.2.2	The student draws one or does not draw a picture and writes two or fewer complete sentences.	The student draws two pictures and writes three complete sentences.	The student draws two pictures and writes four or more complete sentences.

NAME: _____

THE POPSICLE

Directions: Draw two pictures that show what happened to your popsicle.

--	--

Describe how temperature changed your popsicle from a solid to a liquid. You may also describe how it could be changed back to a solid. Remember to write at least 3 complete sentences.
