Measuring Snowfall

Levels

Grades K-4

Overview:

During this lesson, students use the precipitation gauge they built previously to measure snowfall in their area. This lesson should be done during a week when snow is in the forecast. It should be started after students have completed the "Elders Predict Snow" lesson.

Objectives:

The student will:

- predict the amount of snowfall for the week;
- use a precipitation gauge to measure the week's snowfall; and
- analyze the data to determine whether or not the predictions were accurate.

GLEs Addressed:

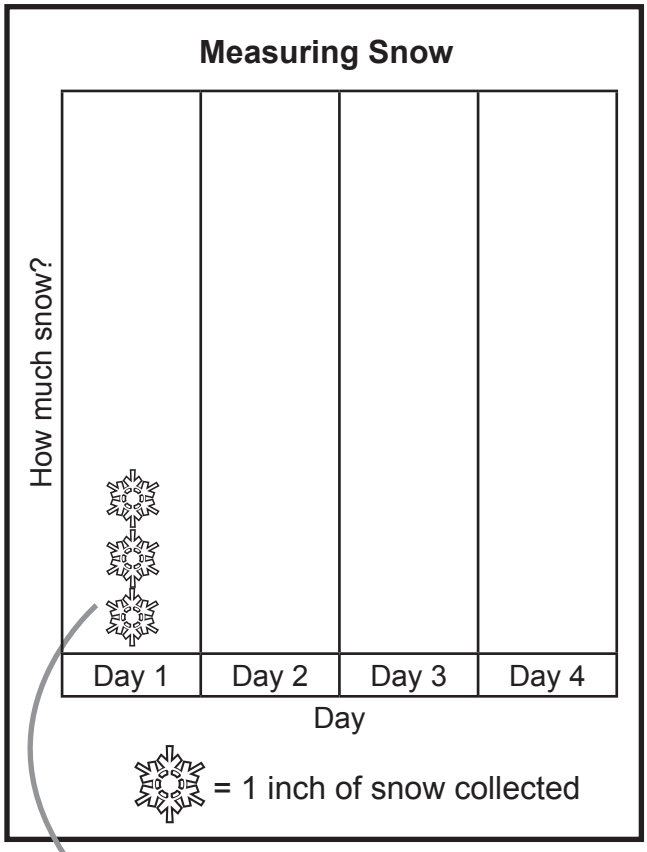
Science

- [3-4] 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.
- [3] SD3.1 The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by using recorded weather patterns (e.g., temperature, cloud cover, or precipitation) to make reasonable predictions.
- [3] SE2.1 The student demonstrates an understanding that solving problems involves different ways of thinking, perspectives, and curiosity by identifying local tools and materials used in everyday life.

Materials:

- Precipitation gauge (built previously)
- Scissors (1 pair)
- Poster board (1 sheet of light or bright colored poster board—not white)
- Tape
- Markers
- Ruler (1 for the whole class)
- TEMPLATE: "Pictograph Snowflakes" (Level I)
- STUDENT WORKSHEET: "Measuring Snowfall" (Level I)
- STUDENT LAB PACKET: "Measuring Snowfall" (Level II)

Poster Board



Activity Preparation:

1. Level 1: Create a class pictograph on the poster board as shown. Tape the pictograph to the wall in preparation for this activity.
2. Level 1: Make 3 copies of the TEMPLATE: "Pictograph Snowflakes." Cut out the snowflakes for use on the pictograph. More snowflakes may be needed as the week progresses.

Activity Procedure:

1. Ask students if they think snow will fall this week. How do they know? Students may share Elder observations or TV/Radio weather forecasts. Ask how much snow students think will fall. (Hold a ruler vertically so Level 1 students may point out their prediction). Explain that students will use the precipitation gauge to measure snowfall for the week.
2. Discuss the following: Where does snow come from? Snow comes from clouds high in the sky. What is snow? Snow is a solid form of water. Snow is one type of precipitation. Precipitation is any form of water that falls to Earth from the sky. Ask students to name some kinds of precipitation. Examples include rain, snow, sleet, and hail.
3. On Monday morning, place the precipitation gauge in an open area where it will not be disturbed throughout the week. If there already is snow in the area, dig a hole for the base of the gauge so that it will not tip over. If there is no snow yet, pile rocks around the gauge to keep it from blowing over. Do not place any rocks in the precipitation gauge.
5. Level 2: Distribute Student Lab Packet: "Measuring Snowfall." Ask students to record their hypotheses.
6. Each day for a week, check the amount of snowfall by looking into the precipitation gauge and noting the number visible above the level of snow that has collected inside, rounding up where necessary. Leave the gauge in place so that it can continue to accumulate snow.

   Level 1: Tape 1 snowflake per inch of snow to the class pictograph.

   Level 2: Ask students to make a bar on their graph for each day snowfall is measured. If there was no snowfall, students should leave that day blank.
7. **Wrap-up:** On the final day of the project, discuss the results.

   Level 1: Ask students what day had the most snowfall. Ask students how they know.

   Level 2: Ask students to complete the worksheet.

Answers to Level I Student Worksheet:

The precipitation gauge should be circled.

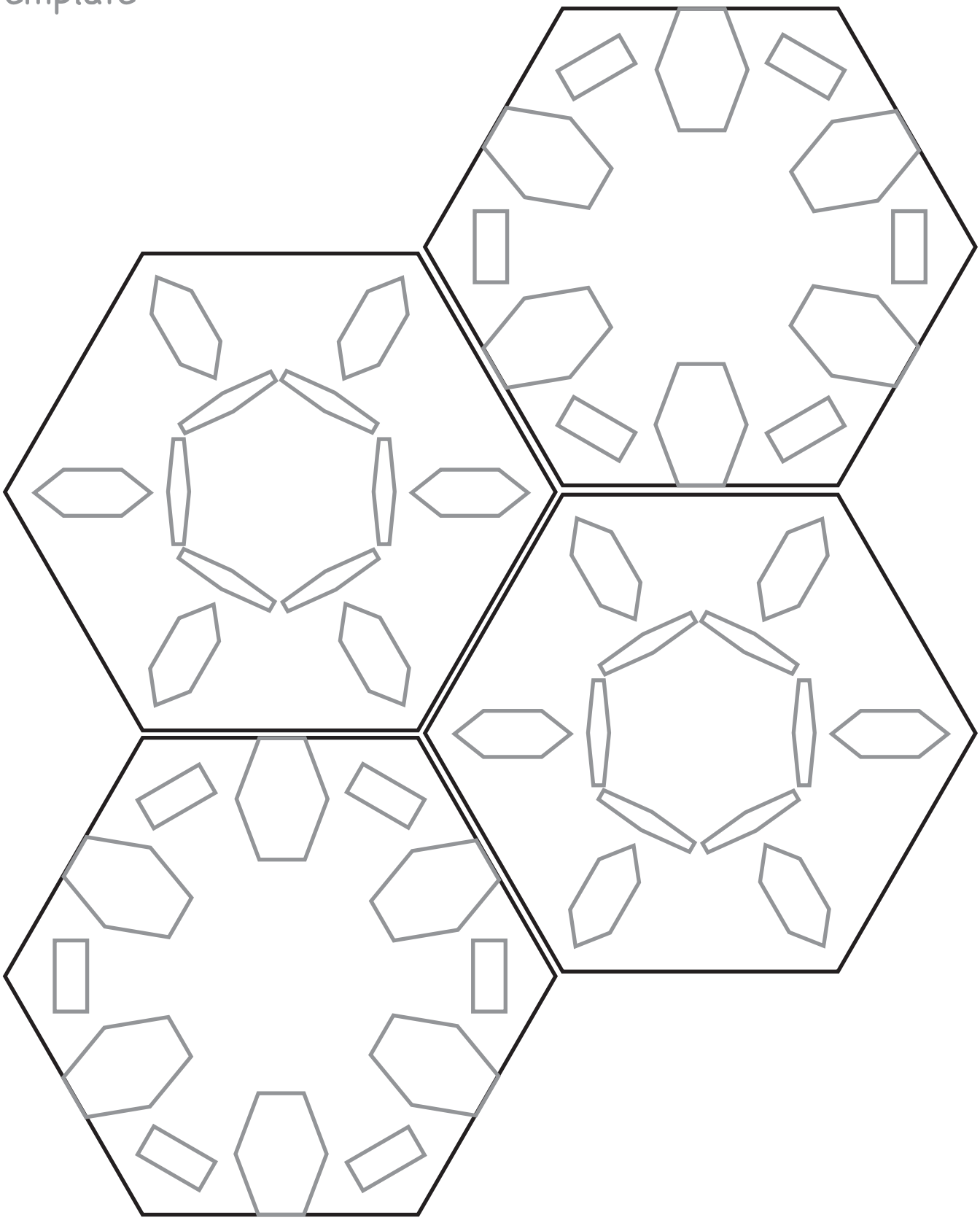
Answers to Level II Student Lab Packets:

Answers will vary for the hypothesis data, analysis, and conclusion sections, though the class should agree on the amount of snowfall each day.

Further questions:

1. The precipitation gauge should be circled.
2. Precipitation

Pictograph Snowflakes
Template



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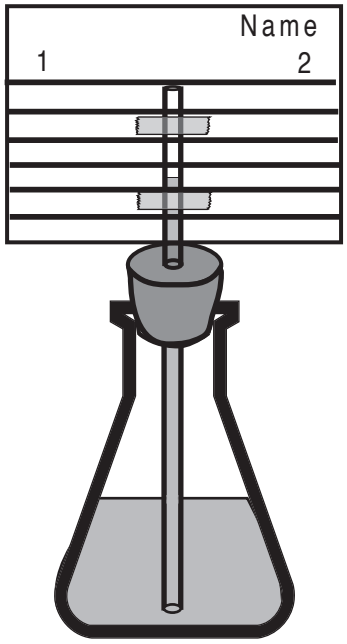
Level I

Grades K-2

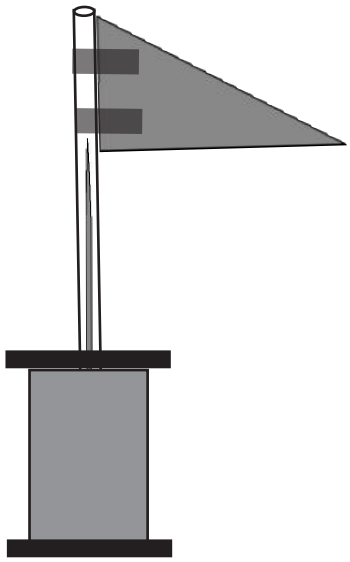
Measuring Snowfall

Student Worksheet

Circle the instrument that measures snowfall.



thermometer



weather vane

precipitation gauge

Name:_____

Level II

Measuring Snowfall

Student Lab Packet

Testable Question:

How much snow will fall this week?

Hypothesis (or Guess):

How many inches of snow will fall this week? _____

Experiment:

Materials:

- Precipitation Gauge

Procedure:

1. Place the precipitation gauge outside in an open area where it will not be disturbed.
2. Go outside each day and look in the precipitation gauge. Write down the first number that can be seen above the snow inside the bucket. This is how many inches of snowfall accumulated.
3. Record this number as the snow accumulation for Day 2. Graph your data.
4. Repeat each day this week.

Snow Accumulation Data:

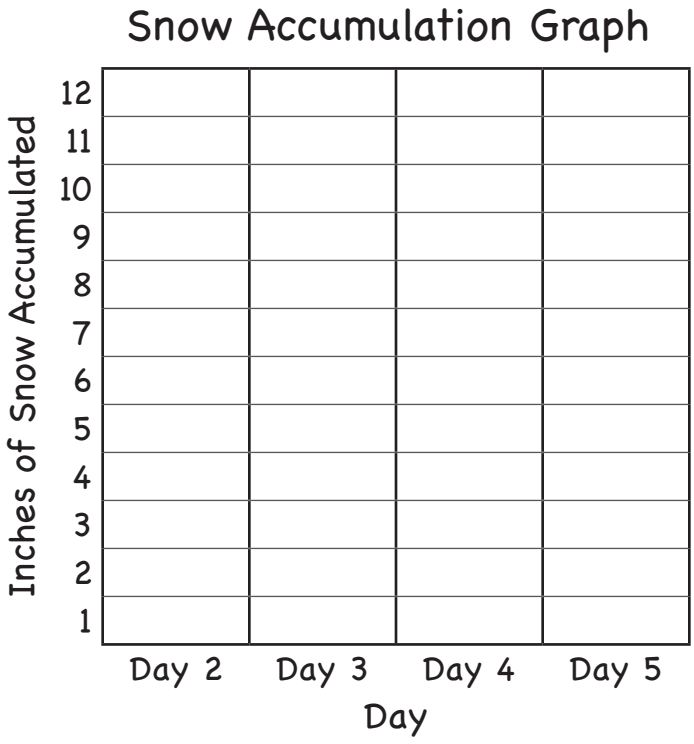
Day 1: Place precipitation gauge.

Day 2: _____ inches

Day 3: _____ inches

Day 4: _____ inches

Day 5: _____ inches



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Level II

Measuring Snowfall

Student Lab Packet

Data Analysis:

Which day had the most snowfall?

_____

Which day had the least snowfall?

_____

Conclusion:

Was your hypothesis proved or disproved? How do you know?

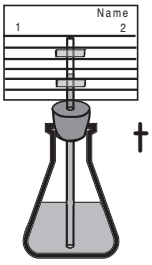
_____

_____

_____

Further Questions:

1. Circle the instrument that measures snowfall.



thermometer

weather vane

precipitation gauge

2. Snow and rain are two forms of:

a) evaporation b) condensation c) precipitation