Homemade Thermometer

Name: _____

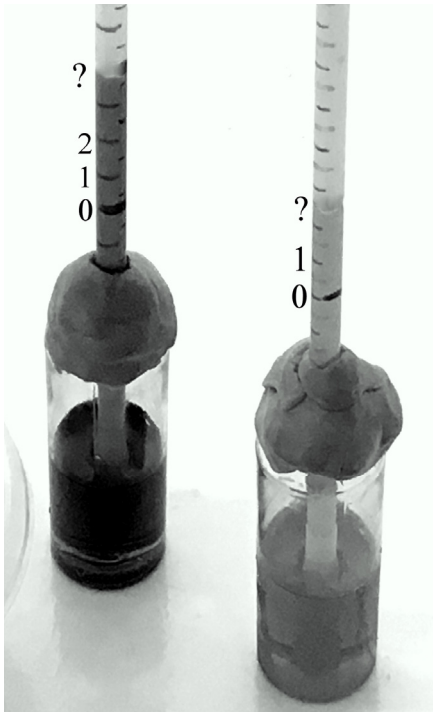
Date: _____

Student quiz — *Answer Key*

Directions: Indicate the best answer for each question below.

1. Select all correct statements.
   a. A thermometer measures how cold or how warm it is.
   b. A thermometer *only* measures how warm it is.
   c. A thermometer *only* measures how cold it is.
   d. A thermometer measures the weather.

2. Indicate which statement fits with Picture 1.
   a. Both thermometers read 4.
   b. One thermometer reads 4, and the other reads 2.5.
   c. One thermometer reads 6, and the other reads 3.
   d. None of the above.



Picture 1

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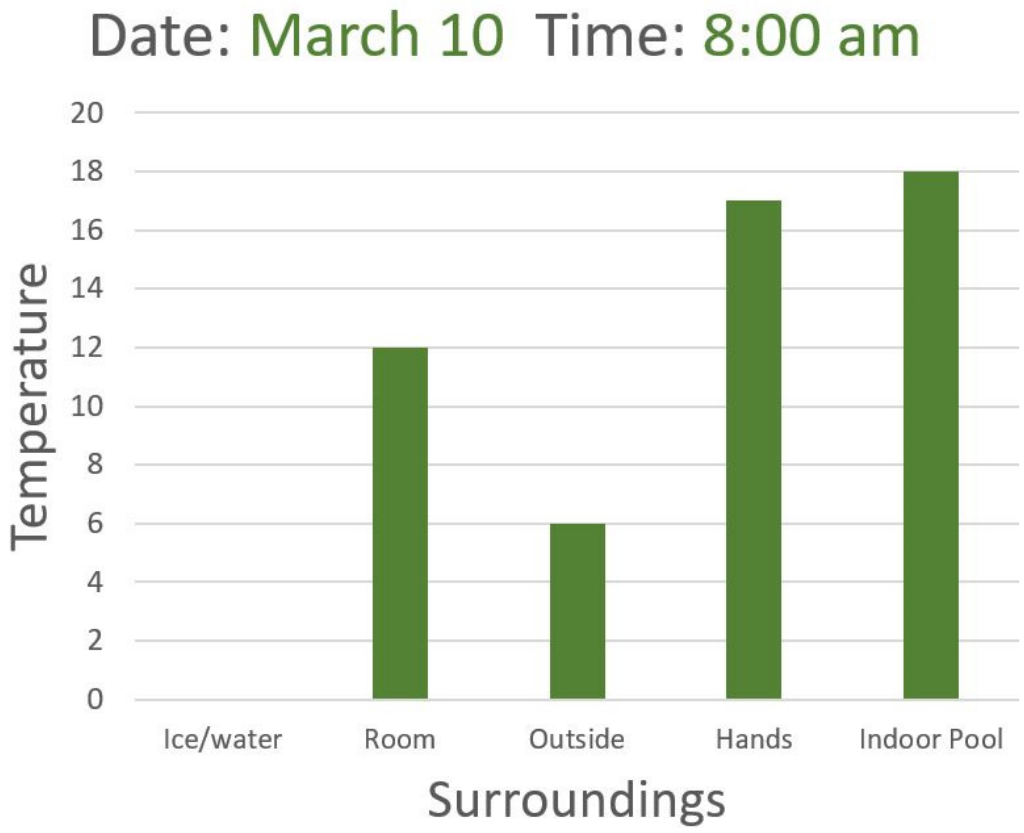
Answer Key

Directions: Complete the graph below, as described.

3. Lea used her homemade thermometer to measure the temperature of an ice/water bath, her room, outside, her hands, and the indoor pool area. She records her data in Table 1.

Table 1: Temperature measurements March 10, 8:00 a.m. Homemade Thermometer					
Surrounding	Ice/water bath	Room	Outside	Hands	Indoor Pool
Temperature	0	12	6	17	18

Make a bar graph of her data.



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Answer Key

Directions: Answer the questions below.

4. Lea measures the temperature of the same locations at 8:00 a.m. and shortly after noon. All her data are recorded in Table 2.

Table 2: Temperature measurements March 10, 8:00 a.m. and 1:00 p.m.

	Ice/water bath	Room	Outside	Hands	Indoor Pool
8:00 a.m.	0	12	6	17	18
1:00 p.m.	0	13	10	1	18

Do Lea's afternoon data look realistic? Why or why not? Make sure to use the data in your arguments.

Yes, no, or partially are all correct answers to this question as long as the argument supports the answer. Students should compare the measurements, using the outcome to support their conclusion.

Students can compare the numerical values, a ranking of the measurements from coldest to warmest, or bar graphs for both measurements to evaluate the differences. The result of the comparison should support their conclusion.

A detailed answer could be:

- *The value for ice water is zero in both measurements. As zero is the calibration point of the thermometer, this value is correct.*
- *The data for the room may be correct; it is slightly higher in the early afternoon, but did not change by much. People often regulate the temperature inside to stay comfortable.*
- *The value for the hands seems off in the second measurement. Even when you have very cold hands, the temperature does not drop nearly as low as ice water.*
- *The temperature of the indoor pool may be correct. It is unchanged, and the temperature in a pool area is often kept constant to keep swimmers comfortable.*