| Name | Date |  |
|------|------|--|
|------|------|--|



## Performance Task (continued)

## **Melting Matters**

When does the state of a substance change from solid to liquid or from liquid to solid? The states of different substances change at different temperatures. How do their melting points compare to that of ice? How can you use absolute values to solve problems about melting points?

The temperature at which a solid becomes a liquid is called a melting point. In Exercises 1–5, use the table below.

| Substance | Melting Point (°C) |
|-----------|--------------------|
| Ice       | 0                  |
| Beeswax   | 62                 |
| Mercury   | -39                |
| Plastic   | 130                |
| Tin       | 232                |
| Ethanol   | -114               |
| Acetone   | -95                |
| Chocolate | 32                 |

**1.** Graph each melting point on a number line. Label each point with its substance and temperature.

- **2.** Which substance has the highest melting point? Which substance has the lowest melting point?
- **3.** Order each substance's melting point from closest to farthest away from ice's melting point. Which substance's melting point is closest to ice's melting point?

| Name | Date |  |
|------|------|--|
|      |      |  |



## Performance Task (continued)

## **Melting Matters**

**4.** Dry ice is carbon dioxide in a solid state. Its freezing point is -79°C. You use dry ice to freeze liquid mercury that is at room temperature, or 22°C. How many degrees Celsius does the mercury need to drop?

**5.** The coldest temperature ever recorded on Earth was  $-93.2^{\circ}$ C on the East Antarctic Plateau on August 10, 2010. Would a mercury thermometer work in that region? Explain.