Student Sheet 9 (continued)

Section B
Multiple Choice

1. Which one of the following units provides the best measure of the amount of matter in a plastic block?
   a. Milliliters (mL)
   b. Cubic centimeters (cm^3)
   c. Grams (g)
   d. Grams per cubic centimeter (g/cm^3)

2. A student was given a small ball of clay that sank in water. He remodeled the clay so that it formed a small boat that could float in water. Which one of the following statements about the clay after remodeling is correct?
   a. The density of the clay did not change.
   b. Air made the clay less dense.
   c. The density of the clay was less than water.
   d. The mass of the clay was reduced.

3. A student measured the mass of a beaker. She put some water into the beaker and, after carefully measuring its mass again, placed it in a warm place for 3 days. After 3 days, she again measured the mass of the beaker and water. The results she obtained are shown in this table:

Mass of the Beaker	180.2 g
Mass of the Beaker + Water	230.2 g
Mass of the Beaker + Water After 3 Days	212.7 g

Use this information to answer questions 3A through 3D.

A. What was the volume of the water she placed in the beaker?
   a. 410.4 g
   b. 50.0 g
   c. 50.0 mL
   d. 410.4 mL

B. What was the change in the mass of the water over the 3-day period?
   a. −17.5 g
   b. −32.5 g
   c. −50.0 g
   d. +50.0 g

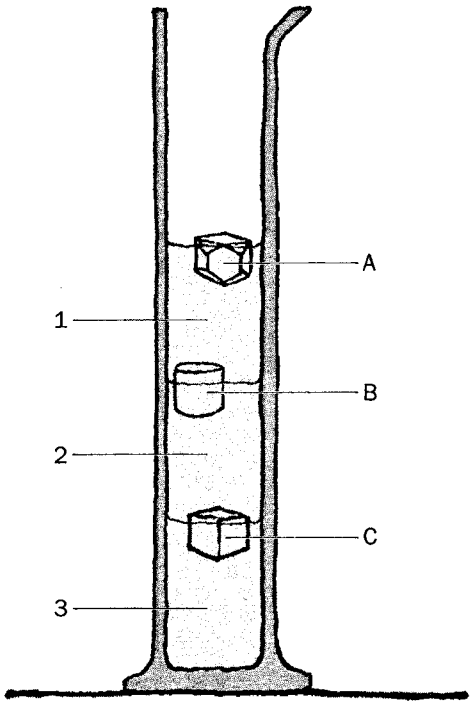
(continued)

Student Sheet 9 (continued)

C. Which one of the following statements best explains the change in mass?
   a. The water absorbed air.
   b. Some of the water evaporated and escaped into the air.
   c. Some of the water disappeared.
   d. Some of the water was lost as hydrogen and oxygen gases.

D. If the student had used a *sealed* bottle, how would the mass of the water at the end of 3 days be different? It would—
   a. Show the same change as in the experiment described
   b. Increase
   c. Decrease
   d. Show no change

4. The graduated cylinder shown in the diagram contains three liquids labeled 1, 2, and 3. The objects (A, B, and C) in the cylinder are made from three different substances. All three objects have the same volume. Use the information in the diagram to answer questions 4A and 4B.



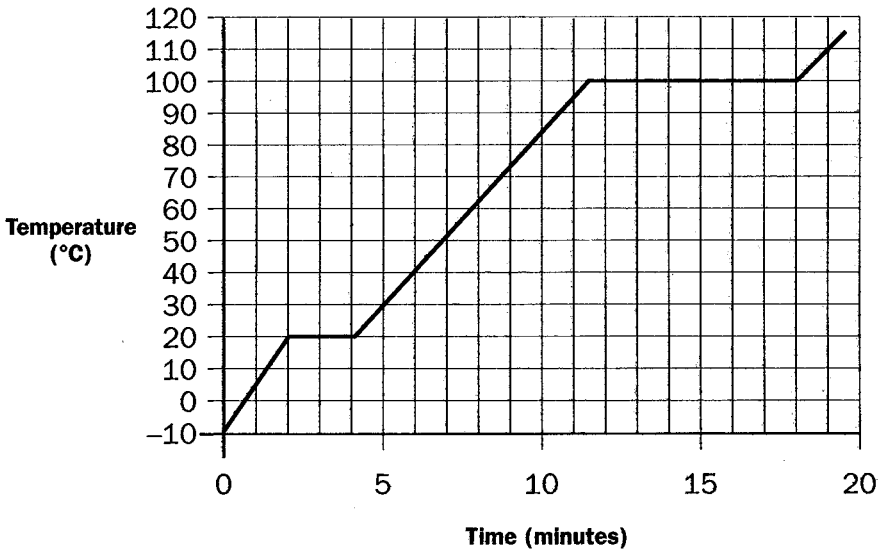
A. Using the information *available* in the diagram, determine which one of the following statements is correct.
   a. Object C is heavier than Object B.
   b. Object B is less dense than Liquid 1.
   c. Object B is less dense than Liquid 3.
   d. Objects B and C have the same density.

B. Of all the liquids *and* objects in the graduated cylinder, which has the greatest density?
   a. Liquid 1
   b. Object A
   c. Object C
   d. Liquid 3

(continued)

Student Sheet 9 (continued)

5. Look at the graph. It shows the temperature of a solid that was heated with a candle. Use the information in the graph to answer questions 5A through 5D.



A. How long was the substance heated before it reached 50 °C?
   a. 4 minutes
   b. 5.75 minutes
   c. 7 minutes
   d. 11 minutes, 30 seconds

B. What is the melting point of this substance?
   a. 100 °C
   b. 20 °C
   c. 0 °C
   d. –10 °C

C. How long from the start of the experiment was the substance heated before all of the substance turned into a gas?
   a. 20 minutes
   b. 18 minutes
   c. 4 minutes
   d. The graph does not provide this information.

D. At what temperature does this substance freeze?
   a. –10 °C
   b. 0 °C
   c. 20 °C
   d. 21 °C