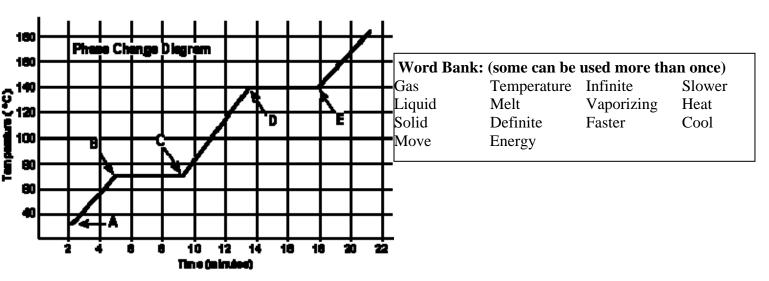
Phase Change Worksheet



The graph was drawn from data collected as a substance was heated at a constant rate. Use the graph to answer the following questions.

At **point A**, the beginning of observations, the substance exists in a solid state. Material in this phase has **definite** volume and **definite** shape. With each passing minute, **heat or energy** is added to the substance. This causes the molecules of the substance to **move** more rapidly which we detect by a **temperature** rise in the substance. At **point B**, the temperature of the substance is **70**°C. The solid begins to **melt**. At point C, the substance is completely **melted** or in a **liquid** state. Material in this phase has **definite** volume and **indefinite** shape. The energy put to the substance between minutes 5 and 9 was used to convert the substance from a **solid** to a **liquid**. This heat energy is called the **latent heat of fusion**.

Between 9 and 13 minutes, the added energy increases the **temperature** of the substance. During the time from **point D to point E**, the liquid is **vaporizing**. By **point E**, the substance is completely in the **gas** phase. Material in this phase has **infinite** volume and **infinite** shape. The energy put to the substance between minutes 13 and 18 converted the substance from a **liquid** to a gas **state**. This heat energy is called the **latent heat of vaporization**. Beyond **point E**, the substance is still in the **gas** phase, but the molecules are moving **faster** as indicated by the increasing temperature.

Which of these three substances was likely used in this phase change experiment?

| ery used in this | Substance | Melting point | Boiling point |
|------------------|-------------|---------------|---------------|
| | Bolognium | 20 °C | 100 °C |
| | Unobtainium | 40 °C | 140 °C |
| | Foosium | 70 °C | 140 °C |

Foosium