Name _____ Class _____ Date _____

QuickLab

Cloud Formation

Teacher Notes

Substitute a metal dish for the jar lid, and use additional ice cubes to chill the air above the water's surface more rapidly. To introduce the concept of condensation nuclei, use matches to add smoke particles to the jar, and then seal the jar quickly. Have students compare the size and speed of cloud formation.

SKILLS ACQUIRED

Experimenting
Observing
Analyzing

MATERIALS

- bottle opener
- glass jar
- 1 mL of hot water
- ice cube

PROCEDURE

1. Use a **bottle opener** to puncture 1 or 2 holes into the lid of a **glass jar.**
2. Pour **1 mL of hot water** into the jar.
3. Place an **ice cube** over the holes in the lid of the jar. Make sure the holes are completely covered.
4. Observe the changes that occur within the jar.

ANALYSIS

1. Draw a diagram of the jar. Label the areas of the diagram where evaporation and condensation take place. Also, label areas where latent heat is released and absorbed.

   Evaporation takes place near the water's surface, where latent heat is absorbed. Condensation in the form of a cloud forms at the top of the jar, where latent heat is released.

2. Explain why latent heat was released and absorbed in the areas you labeled on the diagram.

   The conversion of liquid water to a gas requires energy to break the attractive forces between water molecules. When the process is reversed, the energy reenters the air.

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