

Making Clouds

INTRODUCTION

Condensation occurs when nucleation sites are available; that is, condensation occurs on surfaces. Clouds are merely condensation well above ground level, and require surfaces on which to form. The surfaces that allow cloud formation are generally particles of dust, salt or soot that are typically found in the air. This experiment illustrates the formation of clouds by nucleating on smoke particles.

MATERIALS

Clear 2 Liter bottle with a screw-on top
Warm water
Match



WHAT TO DO

1. Fill the bottom of the bottle to a depth of 2-3 cm with warm water. Place bottle on its side.
2. Light a match. Let it burn about halfway and then blow it out. Quickly drop the match into the bottle.
3. Screw the cap on the bottle. Swirl the water around on the sides to wash down the sides. Squeeze the bottle and then release several times. A cloud should be visible after releasing the bottle.
4. Repeat the squeeze and release step to form more clouds.
5. Try the same experiment without adding the smoke particles and compare the results.

QUESTIONS

1. Explain why the cloud forms and disappears as the bottle is squeezed and released.
2. How does the temperature of the air affect the formation of clouds?
3. What happened in this experiment when the smoke particles are not available?

SUMMARY

Clouds are condensation that appears well above the earth's surface. They appear fuzzy and diffuse. Clouds are also not light in mass. A mid-size cloud may have the mass of five elephants.

SOURCE

"Making Clouds and Rain" in "Teaching Physical Science Through Children's Literature." Grentz, Portman, Sarquis, Terrific Science Press, 1996, p. 67.

"Making Clouds" in "Science Is . . . A Resource Book for Fascinating Facts, Projects, and Activities." S. Bosak, Scholastic Canada, 1998, p.278.

"How Weather Works," Michael Allaby, Reader's Digest, Dorling Kindersley Limited, 1995, p. 44.

Grade Level: This experiment is expected to be appropriate for grades K and above.

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