



Cloud in a Bottle



Purpose

To make a cloud in a bottle and to explain how clouds form.

Equipment

- * clear plastic water bottle with cap. The label should be removed.
- * water, cold and hot
- * matches

Procedure

1. Pour a little cold water into the bottle.
2. Screw on the cap and shake the bottle vigorously.
3. Squeeze and release the bottle a few times.

Does anything happen inside the bottle? _____

Describe what you see:

4. Open the bottle and drop a lit match into it.
5. Quickly screw on the cap and shake the bottle vigorously.
6. Squeeze and release again.

Does anything happen inside the bottle? _____

Describe what you see:

Questions

1. Why does shaking the bottle help the experiment?
2. Why do you think the smoke from the match helps the cloud form?

Repeat the activity using hot water.

3. Does it work better? _____ Why or why not?

Explanation:

When water condenses, the droplets may form clouds. Particles of dust help droplets to form. Without tiny particles in the air, clouds would not form. These particles are called **condensation nuclei**.

Droplets in clouds are small enough to be supported by the air. The size of these particles ranges from approximately 5 to 75 microns (0.005 to 0.075 mm). When they join together to form larger droplets they can no longer be supported and rain falls. It takes about 1 million cloud droplets to make an average size rain drop.

