



# 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.

