

Create Your Own Weather

CLOUD IN A

BOTTLE

Changes in the temperature and pressure of the atmosphere create weather. Reaction to those changes manifest as wind, humidity and precipitation.

WHAT YOU'LL NEED:

a flat-sided, clear 1 or 2-liter plastic bottle with lid
warm water
matches



WHAT TO DO

- Fill a clear plastic 2-liter bottle with a couple of inches of warm water and screw the lid on.
As warm water evaporates, it warms and adds water vapor to the air inside the bottle.
- Squeeze and release the bottle and observe what happens.
Squeezing the bottle represents a further warming of the atmosphere. When you squeeze the bottle, the pressure increases. This causes the temperature inside the bottle to rise. When you release the bottle, the pressure decreases causing the temperature inside the bottle to fall.
- Remove the lid. Carefully light a match. Hold the lit match near the opening of the bottle for a few seconds and then drop it into the bottle.
- Quickly put on the cap, trapping the smoke inside.
The smoke represents dust, smoke or other particles in the atmosphere.
- Slowly squeeze the bottle hard and release. What happens?
- Once again, remove the lid, light a match, hold the lit match near the opening, drop it into the bottle and replace the lid
- Slowly squeeze the bottle hard and release. What happens? What changes do you observe?

Do you think you would get the same results with cold water? No water? Try it and see.

What ingredients are necessary for the formation of clouds?