



WARNING!

This experiment involves matches. DO NOT attempt it without the help of an adult.

Creating clouds

You see clouds in the sky almost every day, but did you know you can make a cloud in the comfort of your own home?

What you need

- Empty two-litre plastic bottle with a lid
- Water
- Matches

How does it work?

In nature, clouds form in the sky when the invisible water vapour in the air condenses (changes from a gas to a liquid) into visible water droplets or ice crystals. Exactly the same thing happens inside the bottle, when you create a fall in pressure and temperature. Squeezing the bottle increases the pressure inside and raises the temperature. Then, when you let go, the pressure and temperature drop – this makes water vapour in the air above the water cool and condense, forming a cloud of water droplets at the top of the bottle. Smoke particles help water droplets to form by giving them something to stick to. Squeezing the bottle again raises the temperature and pressure, causing the cloud to disappear.

COLOSSAL CLOUDS

The average cumulonimbus cloud (a heavy, dense and very tall cloud that produces heavy rain) weighs roughly 400,000 kilograms, about the same as an Airbus A380.



1 Start by adding water to the empty plastic bottle. Stop when it is just over half-full.

WARNING!

Ask an adult to help you.



2 Make sure you have an adult with you for this part. Carefully light a match and drop it straight into the bottle. The water will extinguish the flame.



3 Quickly screw on the bottle lid. Squeeze the bottle and then release it. When you release it, you should see a cloud form above the water.