

# MODELLING CLIMATE CHANGE: MAKING A CLOUD IN A BOTTLE

Clouds are made of water which can absorb radiation giving a heating effect to the Earth. However, clouds can also reflect solar radiation giving a cooling effect. Different types of clouds absorb and reflect different amounts of radiation.

In this activity you will find out what is needed for a cloud to form.

1. Put a little warm water into a plastic drinks bottle and screw on the cap. This will make the air inside moist, because of the evaporation from the warm water.
2. Squeeze the bottle and then release it. Nothing appears to happen.  
In fact, there is a change in temperature of the air inside as you squeeze and release the bottle, though it is too small to observe. When you squeeze the bottle, the increase in pressure causes the air inside to become a little warmer, and when you release it, the air expands and becomes a little cooler.
3. Now light a splint and tap it out so that it glows and makes smoke. Unscrew the bottle cap and waft some smoke into it. Then remove the splint and replace the cap.
4. Squeeze the bottle hard for a few seconds and then suddenly release it. Do this a few times. What happens when you squeeze and release the bottle?
5. Think about what you have done and what you have observed. What conditions are needed to make a cloud?

