

Fire extinguisher!

A floating candle is extinguished by carbon dioxide gas.

In the Classroom

What you need

A nightlight candle, a large jam jar, some water, some bicarbonate of soda, some vinegar, a match and a long splint.

What you do

Float the nightlight candle in a little water at the bottom of a large jam jar.

Light the candle with a long splint.

Can we put out the flame without blowing on it, dousing it with water or putting the lid on the jar?

Put several spoonfuls of bicarbonate of soda in the jar, adding it carefully to the water and avoiding the candle.

Then, carefully, without dousing the flame, add a little vinegar to the water/bicarbonate mix.

Ask the children to watch and explain what happens.

What happens

The mixture fizzes and the candle goes out.

Background Information

Why it happens

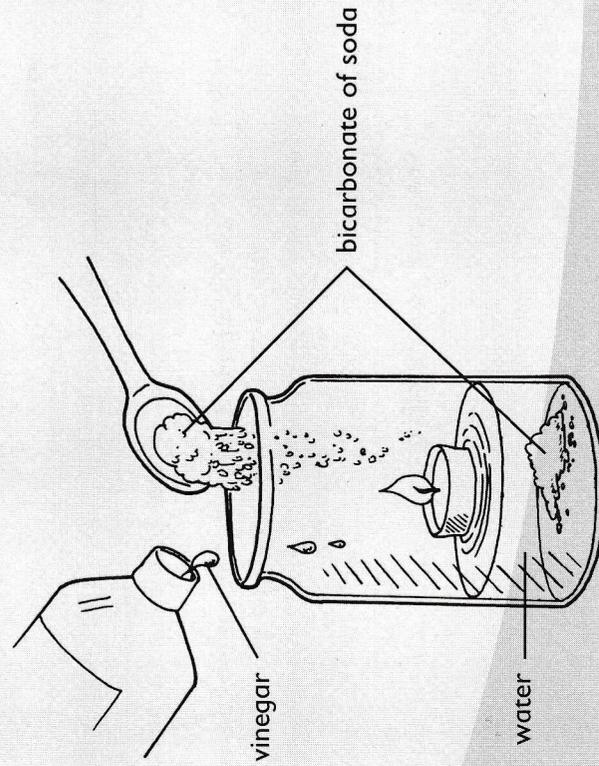
Fire needs oxygen to burn. Air contains oxygen, so the candle burns. The bicarbonate/vinegar mixture produces carbon dioxide (CO_2), a non-flammable gas. CO_2 is heavier than air so it pushes the air up and out. Without the oxygen, the candle cannot burn and so it goes out.

By the way

This is how carbon dioxide extinguishers put out a fire. The carbon dioxide smothers the flames and puts them out by stopping oxygen getting to them.



Be careful that children do not inhale the bicarbonate of soda, or rub it in their eyes and take care when working with fire.



Curriculum links

KS2 Sc3 2f. QCA SoW 5C Gases around us, 5D Changing state
Envl St/Science/E&S/CM/Level E/Target 1