

Everyday experimenting
for primary schools:
A simple fire
extinguisher



Pour a fizzy drink into a glass. What do you see? Yes, lots of bubbles. Do you know what these bubbles are? They are a gas which makes your drink fizzy. This gas is called carbon dioxide. Let's see can you use this gas to put out a candle flame.

What you need

- Plate or tray
- Sand
- Candle (a night-light)
- Glass
- Teaspoon
- Match
- Empty toilet roll
- Bicarbonate of soda (baking soda)
- Vinegar

What you do

1. Place the candle on a plate. If children are carrying out this activity, adult supervision is required and the candle should stand on a layer of sand inside a large metal tray. An adult should light the candle
2. Quarter fill the glass with vinegar
3. Add 1 teaspoon of bicarbonate of soda to the vinegar; bubbles of gas appear in the glass
4. With one hand, hold the empty toilet roll a short distance from the flame of the candle (be careful not to hold it too near the flame)
5. Bring the glass up to the other end of the tube and tip it as if you are pouring air into the tube, as shown



What happens?

The candle flame suddenly goes out.

Why?

When you mixed bicarbonate of soda and vinegar, carbon dioxide was produced. The bubbles you saw were bubbles of carbon dioxide gas.

Carbon dioxide is heavier than air. It travels down the tube and onto the flame, putting it out.

Note

For a fire to burn, you need air, heat and fuel. If you remove any of these the fire will go out.

In the above activity we removed the air supply with the carbon dioxide gas. Most fire extinguishers in buildings use carbon dioxide gas to put out fires.