



The Royal Institution
Science Lives Here

In conjunction with University of Worcester

TRY THIS AT HOME!

Curious carbon dioxide

What you'll need

- Bicarbonate of soda
- Vinegar
- ½ litre jug
- Tablespoon
- Tealight or small candle
- Matches

Step one

Light your candle.

Young children will need adult supervision.



Step two

To avoid the vinegar mixture spilling over the top of the jug, slowly add 100ml of vinegar to ¼ tablespoon of bicarbonate of soda in your jug. Stir with a spoon. You should hear the carbon dioxide being released! Let the jug stand for a minute or two so that the liquid settles and the jug fills with gas.

Step three

Pour the carbon dioxide from your jug over your candle. Don't tip the jug forward completely. The liquid from the jug should not touch the candle.



What happens?

You have just seen a chemical reaction between vinegar (an acid) and bicarbonate of soda (a base). The reaction gives off a gas called carbon dioxide. Carbon dioxide is heavier than air, so it collects and settles in the jug. When you carefully pour the carbon dioxide over the candle, the flame goes out.

For a fire to happen, it needs fuel, heat and oxygen. The candle gets the oxygen it needs from the air around it. When you pour carbon dioxide over the candle, the heavy gas pushes the air away from the flame, depriving it of the oxygen it needs to keep burning.

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