



Fire Extinguisher

You will need:

Measuring jug, short candle, long candle, 5 tea candles, matches, large bowl, modelling clay, vinegar, baking soda

What to do:

1. Fix both short and long candles to the bottom of the bowl with modelling clay.
2. Measure out 100ml of vinegar in the jug and pour carefully into the bowl.
3. Light both candles
4. Add 1 heaped dessertspoon baking soda to the vinegar in the bowl.
5. What happens?
6. Now line up 5 tea candles in a row and light all of them
7. Measure out 100ml vinegar into a jug and add 1 heaped dessertspoon of baking soda
8. Carefully pour the GAS from the jug over the flames (NOT the liquid)



Take it further:

If you have more tea candles see how many you can extinguish in one go. Try different amounts of vinegar and baking soda to get more carbon dioxide.

The Science:

The chemical reaction between vinegar and baking soda –gives off CO₂ gas. CO₂ is denser than air and won't support combustion. Because CO₂ is heavier than air it sits below the air in the bowl. As it is continually being produced it pushes the air out of the bowl and puts out the flame on the short candle first, then as it moves up the bowl pushing the air out, it puts out the taller candle. In the same way you can carefully “pour” the gas from the jug along the line of the tea candles to extinguish the flames.