

BLOW UP A BALLOON WITH A CHEMICAL REACTION

If you start a chemical reaction that gives off a gas, you can use it to blow up a balloon!

YOU WILL NEED

- A balloon
- 2-3 tablespoons of warm water
- A plastic drink bottle
- A drinking straw
- 1 teaspoon citric acid
- 1 teaspoon bicarbonate of soda

WHAT YOU DO

Step 1

Start by stretching the balloon with your hands to loosen up the polymers, making it easier to inflate.

Step 2

Add a small amount of water to a plastic drink bottle (two or three tablespoons should be enough) and add a teaspoon of bicarbonate of soda. Stir until it has dissolved.

Step 3

Add the teaspoon of citric acid powder and quickly stretch the opening of the balloon over the mouth of the bottle.



Citric acid powder can usually be found in supermarkets in the baking section, however, if you are unable to find some citric acid powder then lemon juice or vinegar can be used instead.



Step 4

Watch the reaction inflate your balloon!

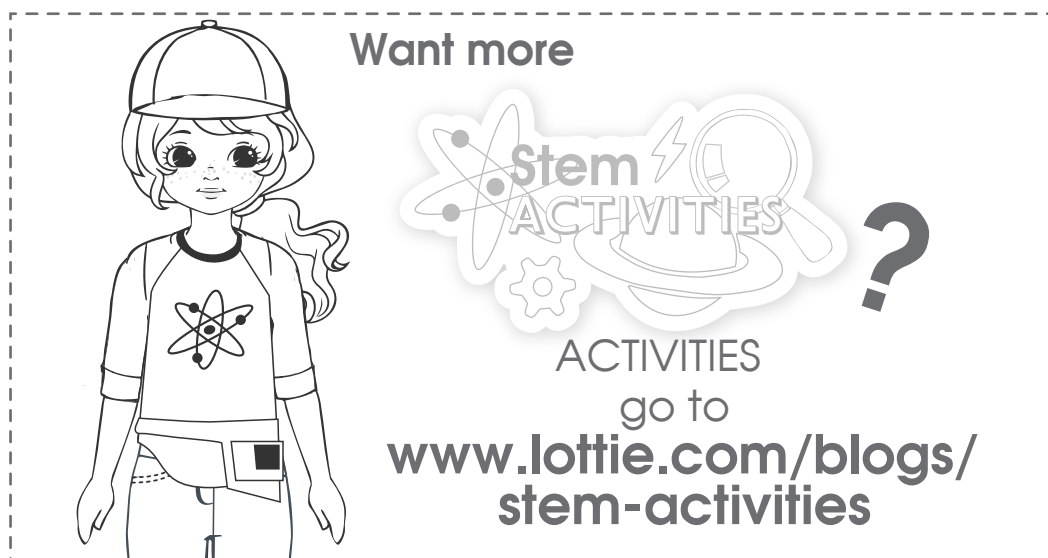
THE SCIENCE BEHIND IT

The citric acid powder (or the citric acid in the lemon juice) is an acid, like it says in its name. The bicarbonate of soda is a different kind of chemical substance called a base.

When you mix an acid with a base a chemical reaction happens called a neutralisation reaction, which is where they cancel each other out and make salt and water.

Bicarbonate of soda is a type of base called a carbonate, and this means that if you mix it with an acid (like citric acid) it makes salt, water and carbon dioxide.

Carbon dioxide is a natural gas that people and animals breathe out, and when it is made by the neutralisation reaction between the acid and the carbonate it cannot escape because it is trapped by the balloon and the bottle, and so it blows up the balloon!



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