

Curiosity Labs™ by Merck:
self-inflating balloon

in this experiment, you will learn...

- What **acetic acid** is
- What **sodium bicarbonate** is
- What a **chemical reaction** is

Share your results and tag us! #SPARKCuriosity

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SUPPLIES

- Plastic bottle
- Standard balloon
- White vinegar
- Baking soda
- Small funnel (Optional)

Instructions

STEP 1

Carefully pour ½ cup (120mL) white vinegar into the bottle.

STEP 2

Loosen the neck of the balloon by stretching it in multiple directions a few times. Insert the funnel into the neck of the balloon and carefully pour 2 tsp. (10 g) baking soda in so that it fills one third to one half of the balloon.

STEP 3

Without flipping the balloon over, slowly stretch and seal the mouth and neck of the balloon over the entire mouthpiece of the bottle.

STEP 4

When ready, lift the top of the balloon so that the baking soda falls into the bottle and mixes with the vinegar.

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FUN FACTS

Vinegar is actually a mixture of water and a weak acid that chemists call acetic acid.

Baking soda is what chemists call a base, and it is known as sodium bicarbonate.



WHAT HAPPENED?

When vinegar and baking soda mix, they create an Acid-Base reaction, which results in the release of lots of bubbles of carbon dioxide (CO₂) gas. Inside the bottle, liquid that was the vinegar has more mass than CO₂ gas, and so the CO₂ rises and fills the space of the balloon.