

EXPERIMENTS AT HOME

Blow up a balloon with Science!

You will need:

- ★ Vinegar
- ★ Teaspoon
- ★ Bicarbonate of soda
- ★ Balloon
- ★ 500ml plastic bottle
- ★ Funnel (optional)

This experiment involves a very simple reaction between an acid (vinegar) and a base (bicarbonate of soda). When combined, these two give off carbon dioxide which will fill up the balloon.

STEP 1: Fill the plastic bottle up to about 1/4 full with vinegar.

STEP 2: Put a couple of teaspoons of bicarbonate of soda into the balloon (use a funnel to help you if needed).

STEP 3: Attach the neck of the bottle to the top of the balloon and then lift the balloon up so that the bicarbonate of soda falls down into the bottle and mixes with the vinegar. This will create bubbles of carbon dioxide gas which will rise up to fill the balloon. Try not to take the balloon off until later when the bubbles have reduced down again or there will be a bit of a mess.



Elephant's toothpaste

You will need:

- ★ Hydrogen Peroxide - 6% or 9% (purchase from any chemist)
- ★ Yeast
- ★ Washing up liquid
- ★ Water
- ★ Tray
- ★ Spoon
- ★ Plastic bottle
- ★ Funnel (optional)



The basis of this next reaction is mixing hydrogen peroxide (H_2O_2) and washing up liquid with yeast which breaks it down into H_2O (water and O (oxygen) so quickly that the oxygen gets trapped in the washing up liquid and creates a thick foam. It is called the elephant's toothpaste reaction because if elephants used toothpaste it is likely it would look like this! This reaction also gives off heat. Hydrogen peroxide is used as a mild skin disinfectant so is safe to touch but you should avoid touching it if you have sensitive skin as it can be a little drying.

STEP 1: Pour half a bottle of hydrogen peroxide into the bottle and place this into the middle of the tray.

STEP 2: Add a large squirt of washing up liquid.

STEP 3: In a separate cup mix 2 teaspoons of yeast with half a cup of warm water and stir.

STEP 4: Smell the yeast - the fact that it is starting to smell suggests that something is happening! That yeast is alive and the water is activating the yeast.

STEP 5: Use a funnel to pour the yeast / water mixture into the plastic bottle of hydrogen peroxide then quickly move the funnel out of the way!

STEP 6: You can touch the foam that is made and play with it. It should not stain clothes as it is now water and oxygen.

Bubble Snakes

You will need:

- ★ 1 Polystyrene / foam cup
- ★ 1 Pen
- ★ 1 Straw
- ★ Washing up liquid
- ★ 1 Elastic Band
- ★ Felt tip pens (optional)
- ★ Teatowel / flannel cut into a square big enough to cover the top of a cup

STEP 1: Before you start, poke a hole in the cup using a pen. The hole should be about 2 inches from the top of the cup and big enough to poke a straw through.

STEP 2: Decorate your cup (optional).

STEP 3: Place the tea towel square on top of the cup and secure with an elastic band.

STEP 4: Push the straw through the hole.

STEP 5: Make some bubble mixture in a bowl or tray by mixing washing up liquid with water.

STEP 6: Dip the tea towel part of the bubble snake maker into the bubble mixture and then blow through the straw to make bubble 'snakes'. The design of these means it should be impossible to suck up the bubble mixture but just in case, make sure to blow and not suck.

If it doesn't work, try adding more washing up liquid to your bubble mixture or use a thinner tea towel.



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