

British Science Week 2022

Kitchen Experiments

Experiment 1 Erupting Volcano

You will need:

Test tube and holder or small narrow necked plastic beaker, vinegar, baking soda(bicarbonate of soda), food colouring (optional).

Make sure you do this in a safe area, on a draining board or a tray would be ideal.

Add two small measures of baking soda into your beaker, then pour in a small amount of vinegar and watch it erupt. You could add food colouring to the vinegar for a more dramatic effect, be careful not to stain your hands.

What happens if we use more baking soda or more vinegar?

Remember to wash the tube or glass out before trying to repeat.



What is happening?

Baking soda and vinegar react chemically because one is a base and the other is an acid. Baking soda is a basic compound called sodium bicarbonate. Vinegar is a diluted solution that contains acetic acid.

There are two chemical reactions that take place when the two chemicals react but the final stage is that they turn into water and carbon dioxide gas.

Just like carbon dioxide bubbles in a carbonated drink, the carbon dioxide rises to the top of the mixture. This creates the bubbles and foam you see when you mix baking soda and vinegar.

All experiments should be done under Adult supervision.

Experiment 2 Bubbles

You will need:

Straws, cup of bubble solution, glycerine or sugar solution.

For the bubble solution you need to mix 4 parts water, 2 parts washing up liquid and 1 part glycerine. If you don't have glycerine then make a sugar solution by dissolving sugar in warm water.

On a flat clean surface pour a small amount of bubble solution and spread it into an circle with a diameter of about 15-20cm.

Dip your straw into the bubble solution and then touch into the centre of the circle and very slowly blow a bubble. When you are happy with it carefully pull the straw out and dip in the bubble solution again. Carefully put the straw inside the bubble and place in the centre and slowly blow another bubble. Repeat and see how many bubbles within bubbles you can blow.

Blow bubbles through the straw into the air and try and catch them.



What is happening?

A traditional soap mixture for a bubble is made up of three layers: soap, water, and then another layer of soap.

This “sandwich” on the outside of the bubble is called soap film. The soap film pops when the water trapped between the layers evaporates.

When you add glycerine it makes the soap layers thicker and allows the water to evaporate much less quickly. This creates longer and stronger bubbles!

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Experiment Crystal Growing

You will need:

Saturated saline, plastic beaker, spoon, thin card or thick paper, scissors, small plate.

Pour some hot water in to the beaker and stir with the spoon, pour in salt and keep stirring. To start with the salt will dissolve and disappear, once it stops dissolving stop pouring. You now have a saturated saline solution, we use hot water as more salt will dissolve in hot water.

Whilst the salt water cools cut a shape from the card, this could be your favourite shape or animal.

Once the salt water has cooled so you can touch it dip your card into the water and make sure it gets really wet so it's almost soggy. Put the card on the plate and put it in a sunny place, such as a windowsill. Watch it change over the next few days.



What is happening?

The salt has dissolved in the water and as the water slowly evaporates the salt will be left behind and form crystals on the card.

You could examine them, with a magnifying glass, to see the shapes they form

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LOCOMOTION

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