

Microbe Magic Experiments

<http://microbemagic.ucc.ie>

Healthy living – Grow your own minerals!

What you will need

- Two clean, dry jam jars (or similar - the only condition is that they are the same size)
- A strip of cloth 1 inch wide and 18 inches long
 - Note: (*ask an adult before you use a scissors or start to cut up a favourite tea towel!*)
- Cooking or serving tray
- 500mls hot water (from the tap)
- Tablespoon
- 10 tablespoons of sodium carbonate (sometimes called ‘washing soda’. It is slippery and soapy, not like the powdery sodium bicarbonate which is also known as baking soda.)
 - You can find sodium carbonate (washing soda) in the laundry aisle of the supermarket.

What to do:

- Make sure the containers that you use are dry and totally clean (you can run them through the dishwasher or wash them well in hot soapy water and rinse very well in cold, clean water).
- Place the jars 10 inches apart on the tray and place somewhere warm and dry, out of direct sunlight, where they won’t be disturbed.
- Pour 500mls of hot tap water into each jar.
- Add 5 tablespoons of the sodium carbonate (washing soda) into each jar and dissolve by stirring.
- Place the ends of the cloth strip into each jar so that they sit in the solution and there is a little droop in the cloth between the two jars (see diagram 1).
- The towel will begin to drip – this is expected.
- Over time you will see the mineral crystal growth that makes up stalactites and stalagmites!
- If you leave the experiment run long enough, the stalactite and stalagmite will join up to form a column. To do this, make sure to check if you need to top up the solution (with fresh solution, not just water!) as time goes on.

What’s happening?

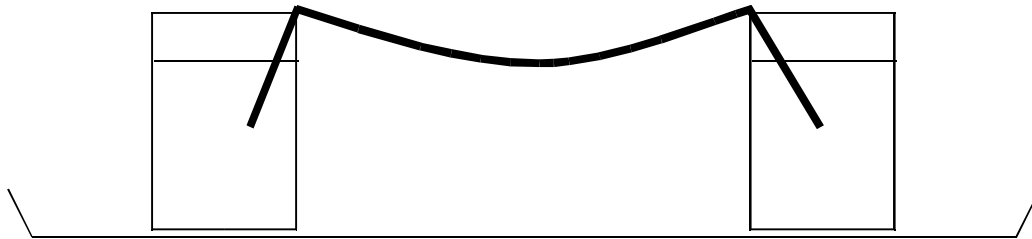
In caves, large stalactites and stalagmites grow only after many hundreds, thousands or millions of years! *Stalactites* hang from the roof of caves – the word comes from the Greek work ‘*to drip*’ (stalactites hang on tight!). Going the opposite way, *Stalagmites* grow upwards from the floors of caves - the word comes from another Greek work meaning ‘*to drop*’ (stalagmites push up with all their might!).

In (usually) limestone caves, stalactites are first formed from a single drop of water that contains minerals. When the drop falls, it dries, leaving behind the mineral content of the water, a little on the ceiling where the drop originated and a little on the floor. Over time, more and more minerals are deposited by the drips on the ceiling

and on the floor. The stalagmites and stalactites grow until they eventually join in the middle to form a column.

You have used the mineral Sodium Carbonate in this experiment. Sodium carbonate is also called washing soda. It is a slippery, soapy mineral, used to; make detergents, manufacture paper and glass and treat water.

Diagram 1: How to set up your mineral generator



Once formation begins:

