

Activity R3: Making your own stalactites and stalagmites

The following activity models how crystal deposits form in caves. Water containing a dissolved salt moves through a porous string. As the water evaporates, crystals are deposited. The formation grows from the top down and from the bottom up, as the water movement and evaporation process continues. This experiment mimics the natural process by which stalagmites and stalactites form.

Equipment:

Two clean 600ml beakers

A water-soluble salt such magnesium sulphate (Epsom salt)

Water

Spoon

45cm long strip of cotton (e.g. torn from an old towel) about 2.5cm wide, alternatively wool or cotton string can also be used.

Two washers - one on each end of the towel strip to act as weights

Tray (to catch the drippings)

Method:

- 1) Fill each beaker about 3/4 full of hot water and place the beakers on the tray.
- 2) Add the water-soluble salt while stirring until no more can be dissolved in the hot water.
- 3) Attach a washer to each end of the strip of cotton.
- 4) Put one end of the cotton strip in one beaker and the other end of the cotton strip in the other beaker.
- 5) Position the beakers so the middle of the cotton strip hangs about 5cm from the tray and the cotton strip will be able to drip onto the tray.
- 6) Set the experiment in a safe place where it will be undisturbed for one week.
- 7) Watch what happens to the experiment over the week.

Final notes:

- Magnesium sulphate is not regarded as a health hazard under current legislation, but you should avoid breathing dust from this salt.
- Wash your hands after setting up this experiment.
- Your stalactites and stalagmites will begin to grow over a few days. The dripping water will evaporate and leave behind the salt, forming a tiny stalactite and stalagmite. With enough time these may eventually join to create a single column.