

SCIENCE INDUCTION

What is Science at Bexley Grammar School like?

Why don't you watch these two links before doing the activities below?

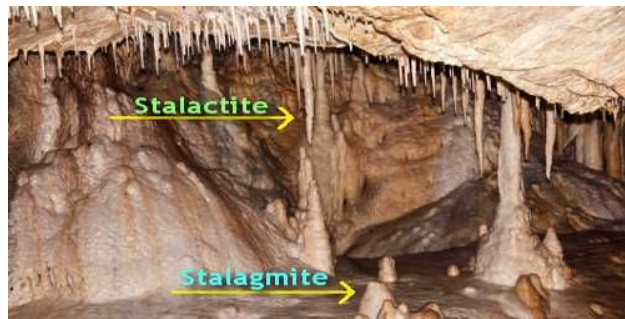
<https://www.youtube.com/watch?v=wmRUFMX6vrQ>

<https://www.youtube.com/watch?v=uuqwyCmywhA>

Activity 1: Create your own stalagmite and stalactite

Timing

- 10-15 minutes preparation
- Observe over 1 week.



Background

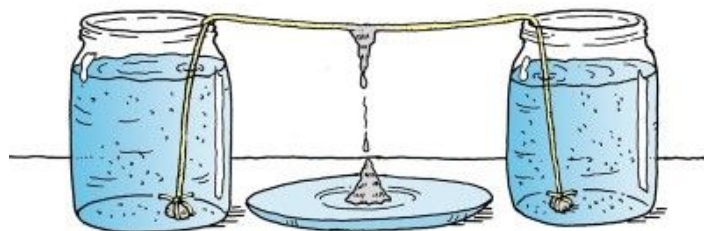
Stalactites and stalagmites found in caves are an impressive feature of nature but they take a long time to form. Stalactites and stalagmites are columns of stone which form in underground caves. They are made from minerals dissolved in rainwater that slowly drips from the roofs and walls of caves.

[Video: Stalactites and stalagmites](#)

Equipment:

- Two glass jars
- A saucer
- Woolen thread
- Either baking soda, washing soda or Epsom salts

Method:



1. Fill both jars with hot water. Dissolve as much soda as you can into each one.
2. Place the two jars in a warm place and put the saucer between them.

3. Twist several strands of woolen thread together before dipping the ends into the jars and letting the middle of the thread hang down above the saucer. The ends can be weighed down with various small, heavy objects to keep them in the jars.
4. The two solutions should creep along the thread until they reach the middle and then drip down onto the saucer.
5. Watch what happens to the experiment over the next few days.
6. Don't forget to wash your hands when you've finished.

Demo video

[Video: Stalagmites and stalactites](#)

Scientific explanation:

Over a few days the dripping water will leave behind the baking soda, forming a tiny stalactite (which forms from the roof) and stalagmite (which forms from the ground). With enough time these may eventually join to create a single column.

Activity 2: Pretend you are a secret agent and create secret codes and messages that can be hidden from others.

Timing

- 10-15 minutes

Equipment

- Half a lemon
- Water
- Spoon
- Bowl
- Cotton bud
- White paper
- Lamp or other light bulb

Method

1. Squeeze some lemon juice into the bowl and add a few drops of water.
2. Mix the water and lemon juice with the spoon.
3. Dip the cotton bud into the mixture and write a message onto the white paper.
4. Wait for the juice to dry so it becomes completely invisible.
5. When you are ready to read your secret message or show it to someone else, heat the paper by holding it close to a light bulb.

Demo Video

[Video: Lemon Experiment](#)

Scientific Explanation:

Lemon juice is an organic substance that turns brown when it reacts with oxygen in the presence of heat. Diluting the lemon juice in water makes it very hard to notice when you apply it to the paper, no one will be aware of its presence until it is heated (by the heat of the bulb) and the secret message is revealed. Other substances which work in the same way include orange juice, honey, milk, onion juice, vinegar and wine.

More activities you can carry out at home:

- <https://www.sciencekids.co.nz/experiments.html>
- <https://sciencebob.com/category/experiments/>