GROWING CRYSTALS ACTIVITY

TIME NEEDED

120 minutes over two weeks

Instructions:

1. Run 100ml of hot water from the tap into a heat-resistant jug. While doing it explain to your Cubs that it should be as hot as possible.
2. Use the scales to weigh 100g of Epsom salt and pour it into the heat-resistant jug, along with the water.
3. Stir the mixture carefully until all the salt is dissolved and there is none left in the bottom of the jug – this may take a few minutes.
4. Ask one of your Cubs to add a drop of food colouring to the liquid in the jug. This will colour the crystals and make them easier to see.
5. Ask your Cubs to place a white plate on a tray (to catch any drips).
6. Place the tray on a windowsill in the sun, make sure that it is level and stable and will not fall off.
7. Carefully pour some of the liquid out of the jug and onto the plate.
8. Place a penny in the middle of the plate.
9. Leave for three days (or until your next session) and long, thin crystals will form on the plate. You may want to use a magnifying glass to take a closer look.
10. Repeat the experiment using caster sugar, and a different colour food colouring to compare the two different crystals.

You will need:

- Weighing scales
- 100g Epsom salt (can be found in mainstream health and beauty retailers)
- 100g caster sugar
- Heat-resistant jug
- Stirring spoon
- Food colouring (Two different colours)
- White plate x 2
- Tray
- One penny x 2
- Magnifying glass
- Hot water

Safety

Don't drink the Epsom salt liquid – it is not toxic, but it would make you feel ill.
Be careful with the hot water out of the tap – avoid splashing it on yourself if possible.

KEY WORDS

- *A crystal is a solid made up of different shapes with straight lines and flat surfaces.*
- *A solution is when 2 or more liquids are mixed together. (A little bit like making orange squash!)*
- *Saturated means when something is full and cannot take any more. (for example when a sponge is very wet it is saturated and cannot suck up any more liquid)*

How it works:

The salt or sugar has dissolved in the water to create a solution. The more salt/sugar you can get to dissolve in the water, the more concentrated the solution will be. Eventually, it will be impossible to dissolve any more of the salt/sugar in the water. This means the solution is now saturated. A saturated solution is ideal for growing crystals.

Putting this saturated solution on a plate in the sunlight allows the water in the solution to evaporate. This then leaves behind the salt/sugar in the form of crystals. You will notice that they are in a different shape to before they were mixed into the water.