

2 Write secret messages

Pass secret messages to your friends then use science to reveal the text.

What you need

- 1 tbsp bicarbonate of soda
- 1 tbsp water
- ½ tsp turmeric powder
- 3 tbsp rubbing alcohol
- Small bowl
- Spoon
- Cotton bud
- A4 paper
- Messy mat
- Gloves
- Apron
- Medium bowl
- Paintbrush

How does it work?

This experiment harnesses the power of the pH scale. The pH scale measures how acidic or basic a substance is. Lemon juice is an acid, while baking soda (sodium bicarbonate) is a base (the chemical opposite of an acid). When you draw a message with the white baking soda it stays invisible on the white paper. Turmeric, however, is a chemical indicator (a substance that changes colour when it comes into contact with an acid or a base). When you paint it onto the paper, the parts that mix with baking soda turn red to reveal the hidden message.



1 In a small bowl, mix together bicarbonate of soda and water to form a paste. Then, using a cotton bud, write your secret message on paper.



2 Now, place a mat down or head outside. Put on some gloves then mix together turmeric and rubbing alcohol. Be careful as it will stain.



Turmeric reacts with sodium bicarbonate, turning red.



3 Reveal your secret message by painting the turmeric mixture onto the paper. Leave to dry and the message will become clearer.