

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.

WARNING!
Turmeric stains, so make sure you wear gloves and an apron, and put down a messy mat.

Turmeric reacts with sodium bicarbonate, turning red.



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.



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