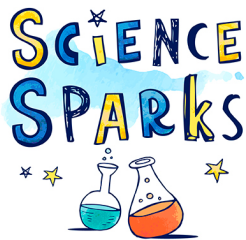
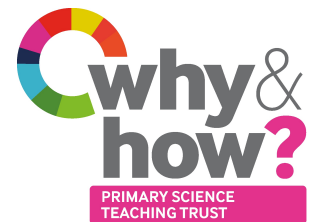


SCIENCE FUN AT HOME



Have some fun at home with these science activities from **Science Sparks** and the **Primary Science Teaching Trust**



BEFORE YOU START! Please read through this with an adult:

- * Make sure you have read the 'IMPORTANT NOTICE' on the back of this page.
- * If you have a space outside that you can use safely, then you can do the 'Try this outdoors' activity outside. Don't worry if not as you could still do it indoors.
- * Talk to your adult about sharing the science you have done and if they want to share on social media, please tag [@ScienceSparks](#) and [@pstt_whyhow](#) and use [#ScienceFromHome](#)

LIGHT UP SCIENCE

1 TRY THIS INDOORS ILLUSION

Draw some coloured arrows on a piece of paper. Hold the paper behind the glass and look carefully at the arrows as you slowly fill the glass with water. Move the piece of paper closer to, and then further away from, the glass. Next try writing a word and see what happens when you look at it through the glass as you fill the glass with water. What if you write a word that can be read forwards and backwards, e.g. the word 'now'?

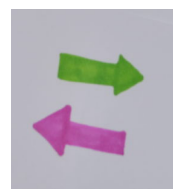
WHAT DO YOU NOTICE?

Things to talk about ...

What happens to your arrows and words when you look at them through the glass of water? What if you used a different liquid like cooking oil? What happens when you move either the paper or your eye closer to, or further away from, the glass?

You will need

- * Pens and paper
- * Drinking glass
- * Jug of water
- * A water sprayer (or an empty, well-rinsed cleaning fluid spray bottle)



2

TRY THIS OUTDOORS MAKE A RAINBOW

You need to do this on a sunny day, preferably in the morning or the evening, when the Sun is not very high in the sky. Fill your water sprayer, and practise spraying it so that it makes a fine mist. Stand outside with your back to the Sun and try to face something dark like a bush. Spray some water in front of you. You will see a band of colours from red to violet – your very own rainbow!

WHAT DO YOU NOTICE?

Things to talk about ...

Where else have you seen rainbows?
Have you ever noticed them indoors?
What happens if you shine a torch onto a CD?



3

WHAT IS THE SCIENCE?

The water in the glass acts like a lens which bends the light. This is called **refraction**. Light refracts because it travels faster through the air than it does through the water: when it passes from air to water it bends as it slows down. Depending on the positions of the paper and the viewer's eye, this can make the arrow/word appear to be reversed.

The light from the sun is known as visible, or white light. It actually consists of a combination of coloured light of different wavelengths. When light passes through the spray mist, the tiny droplets of water in the spray act like lenses and refract, reflect and disperse the light. Each colour, or wavelength, bends a slightly different amount so we see the light as a multi-coloured rainbow.

4

MORE ACTIVITIES YOU COULD TRY

LEARN MORE ABOUT LIGHT <https://wowscience.co.uk/resource/light/>

MAKE A RAINBOW BUBBLE BOTTLE <https://www.science-sparks.com/rainbow-bubbles/>

IMPRESS YOUR FRIENDS WITH THIS DISAPPEARING COIN TRICK!

<https://www.science-sparks.com/disappearing-coin-trick/>

BECOME A RAINBOW MECHANIC <https://wowscience.co.uk/resource/rainbow-mechanic/>

IMPORTANT NOTICE: Science Sparks and The Primary Science Teaching Trust are not liable for the actions of activity of any person who uses the information in this resource or in any of the suggested further resources. Science Sparks and The Primary Science Teaching Trust assume no liability with regard to injuries or damage to property that may occur as a result of using the information and carrying out the practical activities contained in this resource or in any of the suggested further resources.

These activities are designed to be carried out by children working with a parent, guardian or other appropriate adult. The adult involved is fully responsible for ensuring that the activities are carried out safely.