



Where do rainbows come from?

Fact

- Rainbows are made when raindrops refract or bend sunlight and reflect the colours back to you.
- Sunlight is made up of rays of light that are different colours; red, orange, yellow, green, blue, indigo and violet.
- Each of the 7 colours that make up white light is bent at a different angle when the light hits a drop of water, so the 7 colours show up separately.
- A prism works like a raindrop to bend light so you can see the colours of a rainbow.

Do you know

- Sir Isaac Newton used a prism in 1666 to show how white light is made up of the 7 colours of a rainbow.
- You will only ever see a rainbow when the rain is in front of you and the sun is behind you.
- Rainbows are usually half circle shapes but when you're flying in a plane you can sometimes see rainbows that make a full circle.
- No matter how fast you run you'll never ever get to a rainbow – it always seems to move. That's because once you get to the area where you could see the light reflected in the moisture in the air you're looking at it from a different angle.
- The colours of a rainbow can look stronger when they have dark clouds behind them.

Experiments you can do

Make a rainbow

What you need:

A garden hose

A sunny day

A place in the garden that needs watering.

What you do:

Turn the garden hose on and water the garden and see if you can see a rainbow in the water as it falls to the ground. Where is the sun? Is it behind you? Keep moving until it is and see if that makes a difference?

Other Investigations

Make a rainbow inside

What you need:

The help of your teacher (this can get a bit fiddly)

A darkened room

A glass dish of water

A small mirror

A lamp

A large piece of black card with a slit cut in it to let the light through

A small piece of white card

What you do:

Sit the small piece of mirror in the dish of water so that it sits at an angle facing towards the black cardboard. Shine the lamp through the slit in the black card (don't get it too close) and keep moving the mirror until it reflects the light back onto the black card. Put the white card in front of the black card so that the light reflected from the mirror falls on it. Keep moving the mirror until you can see a rainbow on the white card

Jokes

What kind of bow can you never tie? A rainbow