



RAINBOWS IN A BOTTLE

Make your own rainbows using a bottle of bubbles!

YOU WILL NEED

- An empty clear bottle
- Dish soap / washing up liquid
- Water



WHAT YOU DO

Step 1

Fill the bottle a quarter full with water and add about a tablespoon of washing up liquid / dish soap. Swirl the solution around to ensure they are well mixed.

Step 2

Turn the bottle upside-down in the sink and allow the water to escape the bottle.

Step 3

You will find that the bottle is now full of bubbles. Place your bottle of bubbles on a windowsill where sunlight can reach it and watch your rainbows form in the bubbles!



THE SCIENCE BEHIND IT

When we think of light we think of white light, such as the light that comes from the sun. But what we see as white light is actually a collection of all the different colours of light at once.

Our eyes can see all the colours of the rainbow; red, orange, yellow, green, blue and violet. These are all types of electromagnetic radiation, and there are more that we cannot see but we've all heard of them. For example, before red we have infrared light, which we cannot see with our naked eyes but we can use night vision cameras that pick up infrared light to see in the dark. After violet we have ultraviolet light, which has lots of energy and can give you sunburn if you don't use sunscreen!

The sun gives out all of these types of light, and because it gives out all of the colours at the same time it looks white, but when it passes through something, like water for example, the light bends and each colour of light bends at a different angle. Violet light bends the most and red light bends the least, and so the colours separate out into a spectrum of light.

Raindrops that are falling from the sky do this, and like the bubbles in your bottle are bending the light into a spectrum of coloured light, raindrops bend sunlight into a rainbow in the sky!

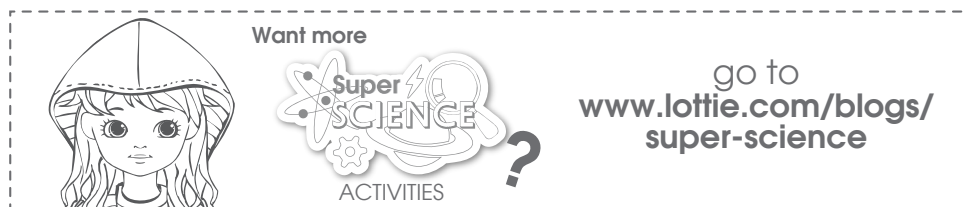


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