

WEEK FUN!

Glass: More than  
• meets the eye

# Making Music with Glasses



Have you ever tried making music with glasses or bottles filled with water? I bet your favourite band hasn't. Experiment with your own special sounds by turning glasses of water into instruments, make some cool music and find out how it works.

## What you'll need:

- 5 or more drinking glasses or glass bottles
- Water
- Wooden stick such as a pencil

## Instructions:

1. Line the glasses up next to each other and fill them with different amounts of water. The first should have just a little water while the last should almost full, the ones in between should have slightly more than the last.
2. Hit the glass with the least amount of water and observe the sound, then hit the glass with the most water, which makes the higher sound?
3. Hit the other glasses and see what noise they make, see if you can get a tune going by hitting the glasses in a certain order.

## What's happening?

Each of the glasses will have a different tone when hit with the pencil, the glass with the most water will have the lowest tone while the glass with the least water will have the highest. Small vibrations are made when you hit the glass, this creates sound waves which travel through the water. More water means slower vibrations and a deeper tone.

# Fireworks in a Glass

## Science Experiment



### Method

1. To start with, make sure your glass is clean.
2. Pour the warm water into the glass until about  $\frac{3}{4}$  full.
3. In the other glass, add a few spoonfuls of oil and 4 drops of food colouring.
4. Add some different colours to the oil.
5. Using the fork, mix together the oil and food colouring, to spread the colours throughout the oil.
6. Finally, pour the coloured oil into the glass of warm water and watch for the 'firework' display to start.

### You will need:

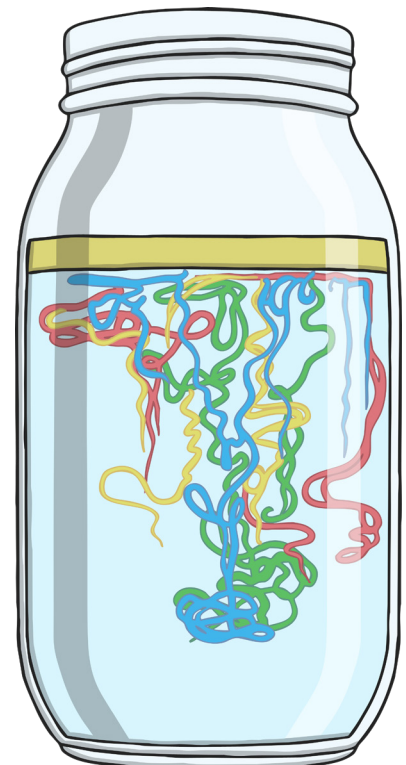
Food colouring (various colours)

Warm water

Oil

2 empty glasses

Fork



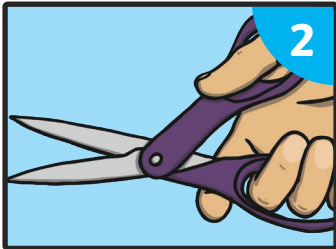
# DIY Magnifying Glass

## You will need:

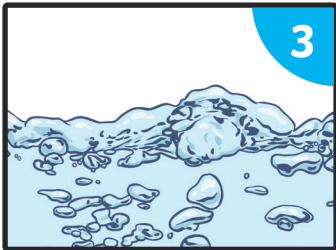
- clear plastic bottle with a rounded top
- scissors
- water
- marker



1 Draw a circle shape on the curved part of the bottle. This is usually at the top of the bottle where the neck has a rounded shape.



2 Carefully use the scissors to cut out the circle shape.



3 Place some water into the plastic circle to create a convex lens.



4 Test it out by holding it over a book to see if it makes the letters bigger.

## Further Suggestions:

- Try other liquids like oil.
- Make some more lenses that are smaller or bigger.
- Test one lens on top of another and gradually move one away.

# DIY Magnifying Glass

## **Explanation:**

The circle shape that was cut out curves outwards and this makes it a convex shape. When the water was added, the light that passes through is refracted (bent inwards) producing a lens effect.

A real magnifying glass makes things look bigger because the glass is thicker in the middle. It is called a convex lens because the glass or plastic surface bulges outwards in the center.

A lens works by refraction. It can bend light rays as they pass through it, so they change direction. Light from the object passes through the lens and is bent (refracted) towards your eye, so it seems like a much bigger object. Convex lenses bring distant light rays to a focus in your eyes.