

Fireworks in a jar science experiment

What you need

- 1 x empty jar
- drops of food colouring
- warm water
- 3 tbsp vegetable oil

Activity

Fill the jar about 3/4 full with warm water from the tap.

In a separate bowl or dish, place three tablespoons (approx) of vegetable oil.

Carefully put drops of food colouring into the oil.

Mix it all gently with a fork, just enough to disperse the food colouring a little bit. You'll notice it doesn't mix with the oil, it just breaks up into smaller dots.

Now pour the oily and colour mixture into the warm water in your jar.

Watch as the coloured drops sink down into the water and mix together creating a firework effect.

Why is it so?

It's to do with the density of each liquid. The food colouring will dissolve into the water, but the oil won't. By mixing the oil and food colouring together first, you slow the mixing process that would normally happen with the water and the food colouring. The food colouring drops down into the water (because it is denser than the oil) while the oil stays on top of the water (water is also denser than oil). When the food colouring eventually starts to mix with the water, it creates a tiny explosion, like a firework.

