

SCIENCE
CHALLENGE

19

HOW TO MAKE A LAVA LAMP



THE
JAMES
DYSON
FOUNDATION

HOW TO MAKE A LAVA LAMP

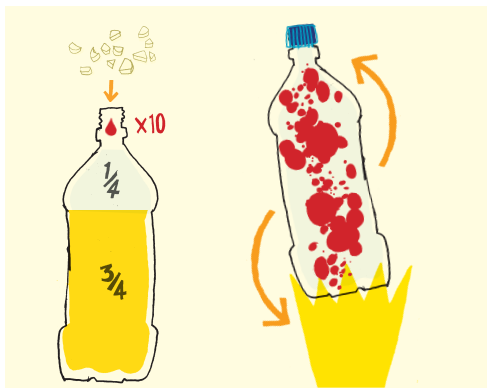
Designed by Gemma,
James Dyson
Foundation executive

The brief

Make your own lava lamp.

The method

1. Fill the empty bottle $\frac{3}{4}$ full with vegetable oil.
2. Top it off with water and about 10 drops of food colouring.
3. Break an Alka-Seltzer® tablet into pieces, and add pieces of the tablet to the bottle. The mixture will bubble.
4. Put the cap on and gently tip the bottle back and forth. This will cause the tiny droplets of coloured water moving around inside the oil to join together, making bigger blobs. Do not shake the bottle.
5. Shine a torch into the bottle from underneath, illuminating the bubbles.



Materials

Empty water bottle

A large bottle of
vegetable oil

Food colouring

Alka-Seltzer® tablets
(with adult supervision)

Water

A torch



How does it work?

Oil is hydrophobic – it will not mix with water – even if you try to really shake the bottle. The Alka-Seltzer® tablet reacts with the water to make tiny bubbles of carbon dioxide which are lighter than water. They attach themselves to the blobs of coloured water, causing them to float to the surface. When the bubbles pop, the coloured blobs sink back to the bottom of the bottle.