

GOODTIMES AT HOME

DIY Lava Lamps

Science is pretty groovy which is why we're going to be making our own (temporary) lava lamps! Showcasing the principles of density and polarity, we can make our mesmerizing lava lamps with things found around the house!

What is density?

Why is it that ice cubes float in a glass of water when they're made of the same substance? Magic? Perhaps – but it more likely has to do with density. Density is a measurement of how compact and heavy a certain substance is and, in this case, the molecules of an ice cube are more spread apart than those in water so the ice floats in water since it is less dense.

What is polarity?

Despite its name, unfortunately polarity has nothing to do with polar bears and a lot to do with how much certain substances like each other. When we think of a magnet, magnets stick together when there is a positive and negative charge but magnets push away from each other when they share the same charge (I'm serious, try it out). The same thing is true for liquids – if a liquid (like water), is polar, it attracts other polar liquids and repels liquids that are non-polar (like oil). This is why our lava lamp works (and food colouring only mixes with water)!

Knowing this: Let's Science!

Materials

- Vegetable Oil
- Water
- Fizzing Tablets (we used Alka Seltzer)
- Food Colouring
- A large container (1L pop bottle, big mason jar, a cleaned out pasta jar)

Instructions

1. Fill 1/3 of your container with water
2. Fill the remainder of your container with vegetable oil. Let the container sit for a few minutes while the liquids separate.
3. Add your food colouring to your container. The food colouring will only mix with the water which is now at the bottom of your container, so you can use a skewer or chopstick to stir in the colour. Do not shake the bottle to mix in the food colouring.
4. NOW FOR SCIENCE! Break your alka-seltzer tab in to four pieces and add each piece one at a time. The alka-seltzer will push the water to the top through the oil creating our lava lamp!
5. The lava lamp will work as long as you drop alka-seltzer tabs in, so if you seal your lava lamp, you can come back to it a couple days later and fire it up again!



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