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Conservation of Matter Activity for Kids

Lava Lamp DIY

 Duration: **30-60 min**  Difficulty: **Easy**  Cost: **\$0 to \$5**

Make your own lava lamp to study the law of conservation of matter!

Material List

- 1** Funnel
- 1** Clear bottle 1L or larger
- 1** Cup of water
- 1** Liter of vegetable oil enough to fill the bottle
- 1** Tube of food coloring
- 4** Fizzy tablets such as Alka-Seltzer®
- 1** Scale
- 1** Balloon

Instructions

- 1** Fill the bottle about $\frac{1}{4}$ full with water.
- 2** Add 5–6 drops of food coloring and swirl.
- 3** Tilt the bottle and slowly fill the rest of it with vegetable oil using the funnel.
- 4** Weigh the bottle and its contents, the balloon, and the fizzy tablets all together.
- 5** Break the tablets in half and quickly drop the pieces into the bottle.
- 6** Immediately stretch the balloon over the top of the bottle to seal it.
- 7** When the action stops, weigh the bottle with balloon still on it.

How It Works

Initially, the colored water sits at the bottom of the bottle because it is more dense than oil. When the fizzy tablets are dropped in, they mix with the water and a chemical reaction happens producing carbon dioxide gas. The gas rises up and drags droplets of colored water with it. Eventually, the droplets fall back down. This happens over and over, making it look like a lava lamp. It is important to remember that the tablets don't disappear, they simply change form – they make gas which is trapped in the balloon and they also dissolve into the water. We can't see the tablets when it is done but the weight is the same thanks to the law of conservation of matter!