

Lava Lamp

Create your own lava lamp using household products and a chemical reaction.

Materials:

- ❖ Plastic Bottle
- ❖ Vegetable oil
- ❖ Food coloring
- ❖ Alka-Seltzer tablet
- ❖ Water



Procedure:

1. Fill the plastic bottle 3/4 full with vegetable oil.
2. Fill the rest of the plastic bottle with water (almost to the top but not overflowing).
3. Add about 4 drops of food coloring. Be sure to make the water fairly dark in color. Notice that the food coloring only colors the water and not the oil.
4. Divide the Alka-Seltzer tablet into 8 pieces.
5. Drop one of the tiny pieces of Alka-Seltzer into the oil and water mixture. Watch what happens. When the bubbling stops, add another chunk of Alka-Seltzer.
6. When you have used up all of the Alka-Seltzer and the bubbling has completely stopped, screw on the soda bottle cap. Tip the bottle back and forth and watch the wave appear. The tiny droplets of liquid join together to make one big lava-like blob.

How does it work?

First of all, you confirmed what you already knew... oil and water do not mix. The molecules of water do not like to mix with the molecules of oil. Even if you try to shake up the bottle, the oil breaks up into small little drops, but the oil doesn't mix with the water. Also, food coloring only mixes with water. It does not color the oil. When you pour the water into the bottle with the oil, the water sinks to the bottom and the oil floats to the top. This is the same as when oil from a ship spills in the ocean. The oil floats on top of the water. Oil floats on the surface because water is heavier than oil. Scientists say that the water is denser than the oil. Here's the surprising part... The Alka-Seltzer tablet reacts with the water to make tiny bubbles of carbon dioxide gas. These bubbles attach themselves to the blobs of colored water and cause them to float to the surface. When the bubbles pop, the color blobs sink back to the bottom of the bottle. Now that's a burst of color!