

Lava Lamps

Materials

- Clean, plastic soda bottle (16 oz size works well)
- Soda bottle cap
- Vegetable oil (the cheaper the better)
- Food coloring
- Alka-Seltzer tablet
- Water

- 1) Fill the bottle 3/4 full with vegetable oil.
- 2) Fill the rest of the bottle with water (almost to the top but not overflowing).
- 3) Add about 10 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. Hmm...
- 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. It's just like a lava lamp!
- 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 more dense 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! Your own homemade lava lamp... groovy baby!