

How to Make a Lava Lamp

Materials: water, funnel, vegetable oil, 20oz or 2 Liter bottle (such as an empty coke bottle), food coloring, alka seltzer tablets

Vocabulary:

- Solution – mixing two or more substances together
- Carbon Dioxide – take a deep breath and exhale. You probably already know that you breath in Oxygen. But did you know when you exhale you are not blowing out oxygen. Instead, you are blowing out a gas called carbon dioxide
- Dense - If something is dense the pieces of it are close together, or there is a lot of material in a small space. Dense things are usually heavy and often hard. A rock is very dense but a sponge is not dense at all.

Directions:

1. Using a funnel fill your bottle $\frac{3}{4}$ full with vegetable oil.
2. Using your funnel fill the remaining ($\frac{1}{4}$) of the bottle with water.
3. What happens? Does the water and oil mix to form a solution? Why or why not?
4. Add 5-10 drops of food coloring to your bottle (red works the best). Does the oil mix with the oil or water? Why do you think this happens?
5. Break the Alka Seltzer tablets in half until you have 6-8 pieces. Drop the pieces into the bottle and observe.

The Science....

Oil and water do not mix. They have different densities. Oil is less dense (less heavy) than water. Even if you try to really shake-up the bottle, the oil breaks up into small little drops, but the oil doesn't mix with the water. Food coloring only mixes with water. That's why it does not color the oil. In addition, the Alka-Seltzer reacted with the water to make tiny bubbles of carbon dioxide gas. These bubbles attached themselves to the blobs of colored water and cause them to float to the surface. When the bubbles popped, the color blobs sank back to the bottom of the bottle.