DIY SCI: Lav-A Good Lamp? Get it?

What is it?

Have you ever noticed oil floating in water? This is because of density! Water, which is more dense will sink to the bottom while oil floats to the top! Lava lamps, which typically use two liquids with close densities, are a great example of density at work. The slightly heavier liquid sinks to the bottom and absorbs the heat from the light bulb. As it expands from the heat, the liquid becomes less dense and begins to float, leaving the other liquid to sink and absorb heat. This continues and what you see are the blobs moving throughout the lamp!

What you need

- Cooking oil
- Water
- A tall and clear container (bottle or vase)
- Effervescent antacid tablet
- Food coloring (neon works best)

How to make it:

1. Fill the container about ⅔ full with oil
2. Add water and food coloring but don't completely fill the container
3. Wait for the droplets of water and food coloring to set then add the antacid tablet

What do you notice?

The water molecules and oil molecules don't mix because they aren't attracted to one another. You can see this when the water moves through the oil. The water molecules are attracted to other water molecules which is why it moves in blobs through the oil.

Initially, the water sinks to the bottom because it's more dense. When the antacid is added it mixes with the water and food coloring being to float. What do you think happened?

Quick Tip: Put a light underneath the container for a cool effect!