

Lava Lamp

Objectives

- ❖ Observe solid, liquid and gas matter
- ❖ Recognize the density of water vs. oil and the impact of gasses on a solid

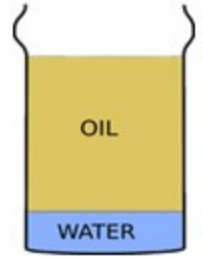
Duration

- ❖ 30 min

Material	Quantity
Alka-Seltzer Tablet (original)	1 per child
Vegetable Oil	1 cup per child
Water	tap water (¼ cup per child)
Clear plastic cups	1 per child

Procedure:

1. Have your child fill their plastic cup ¼ full of water. Then, fill the rest of the cup with oil.
2. Once their solution looks like the image to the right, place an alka seltzer tablet in.
3. Allow them to observe.
4. Consider the following questions: What did they notice? What changes occurred? Why do they think this happened?
5. Explain the science behind the experiment to your child:



a.) The bubbles form a foam which will float in water and also in the oil, however water and oil are immiscible- they won't mix together- so the foam stays in large lava lamp like blobs and floats to the surface, where the bubbles pop and then remaining water sinks again rejoining the water at the bottom.

b.) Also explain why water and oil do not mix. Water Molecules are polar- they have a small positive charge at one end and a small negative charge at the other end, and they stick to each other. Oil molecules are non-polar- they have no charge. Because of this, oil molecules are more attracted to each other than to water molecules, and water molecules are more attracted to each other than oil molecules.

c.) The oil floats on top of the water because it is less dense (a spoonful of oil weighs less than a spoonful of water).

