**UMBC S.T.A.R PROGRAM**

**2018 PROJECT SYMPOSIUM CHEMISTRY PROHECT**

**How to Make a Homemade Lava Lamp**

**Materials:**

🡪Flask or bottle

🡪Vegetable oil

🡪Water

🡪Food coloring

🡪Alka-seltzer

**Procedure:**

🡪Fill the flask most if the ay with vegetable oil.

🡪Fill the rest of the flask with water. The water will sink to the bottom under the oil.

🡪Add a few drops of food coloring; your choice of color. The food coloring is water-based, so it will also sink and color the water that is now at the bottom of the flask.

🡪Break an alka-setlzer tablet into a few small pieces, and drop them in the flask one at a time.

🡪Watch your lava lamp erupt into activity! As the reaction slows, simply add more alka-seltzer.

**Scientific Importance:**

A lava lamp works because of 2 different scientific principles, density and polarity.

Density: The measure of how compact a substance is or how much of it fits in a certain space. Density = mass/volume. Water is denser than oil (because it particles are held more tightly than those of oil). That is why water sinks to the bottom of the container.

Polarity: Water is polar (ie it has negatively charged oxygen and positively charged hydrogen atoms and due to the polarity, it reacts with alka-setzler to release carbon dioxide. The vegetable oil is a non-polar solvent.