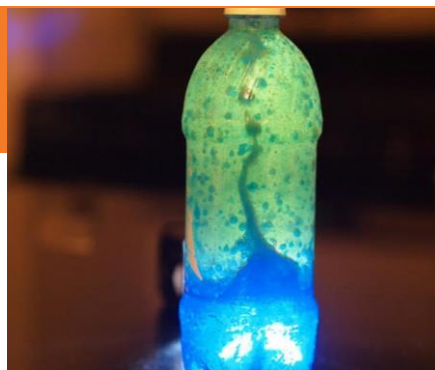


Stay at Home Science



Lava Lamps

What You Need

Empty plastic bottle (preferably clear)
Water
Alka-Seltzer

Vegetable Oil
Food Coloring

What You Do

1. Fill a bottle 2/3 full of vegetable oil. In another container add food coloring to water to achieve your “lava” color.
2. Fill the bottle the rest of the way with colored water, leaving some space at the top. Watch closely to see how the water and oil interact as you fill the bottle.
3. Add 1 – 2 tablets of Alka-Seltzer to the bottle to see your lava lamp bubble into action!

Safety First! Leave the bottle open during this step. If sealed, the bottle could build up pressure and burst.

Questions to ask

- What happens when you pour the water into the oil? Do they mix or remain separated?
- What do you see happen when you add the Alka-Seltzer?
- Why do you think the bubbles rise to the top? Why do they sink back down?

What’s the Science?

Water molecules have one end with a positive charge and a negative charge on the other end. This is called a polar molecule. These charges allow water molecules to bond together. Oil molecules do not have these kinds of charged ends and are called non-polar. Oil molecules only mix well with other non-polar molecules. This is why oil and water do not mix; The molecules aren’t able to bond together. When you mix oil and water, the water molecules attract only each other. The oil molecules all hang out separately. This causes oil and water to form two separate layers. Water molecules pack closer together, so they sink to the bottom, leaving the oil floating on top of the water.

Try This

Science vocabulary: This experiment is a great opportunity to learn together about words such as mixture, liquid, density, volume and carbon dioxide.

Extended your experiments:

- Try adding Alka-Seltzer to oil and water in separate containers. *What do you notice?*
- Use a timer to measure how long your lava lamp bubbles. *Does the time change if you use more Alka-Seltzer? If you use less?*

Keep In Mind

- Children are natural scientists; let them lead the way in their experimentation! Encourage them to ask questions and make suggestions only when they are stuck/discouraged.
- The order suggested is not the only right or perfect way. Adjust the experiment based on the age, ability, and interests of the children.

Additional Resources

Water by Frank Asch

Matter: See It, Touch It, Taste It, Smell It by Darlene R. Stille

Scholastic StudyJams: Properties of Matter

<http://studyjams.scholastic.com/studyjams/jams/science/matter/properties-of-matter.htm>

