Layering Liquids: Explore Density Science

Density—or mass per volume—of a liquid is an important scientific concept that can be viewed with the naked eye. We see it all the time with oil and water. Oil has a different density than water so the two liquids do not mix. In this liquid density experiment your child will look at a number of liquids with different densities and compare them all to water. She'll build her science skills and learn a fundamental scientific concept she'll use for years to come.

What You Need:

- Light corn syrup
- Water
- Vegetable oil
- Dawn dish soap (blue, and the brand is important)
- Rubbing alcohol
- Honey
- Large clear glass
- Food coloring
- Turkey baster
- Plastic cups

What You Do:

1. Help your child put some rubbing alcohol into one of the plastic cups and drop some blue food coloring into it until the alcohol becomes dark blue. In a separate plastic cup, do the same with the water except add green coloring to it. In another cup, add orange food coloring to some corn syrup.
2. Squeeze some honey into the bottom of your large glass. Just enough to give a thin layer; keep in mind that your glass will need to hold 6 different layers of liquid.
3. Next have your child add the corn syrup. Pour this from the cup and try to pour it slowly and into the middle of the large glass.
4. Have your child pour the dish soap in next, remembering to pour it into the middle of the glass.
5. Use your baster to add water to the next level.
6. Pour in vegetable oil next.
7. Finally, help your child use the baster to add the rubbing alcohol.
8. Now you should have 6 layers of density.

What's Going On?

Why don't the liquids all blend together? It's because each of the liquids has a different density! Karo syrup = 1.33. Water with food coloring = 1.00. Vegetable Oil = 0.91. Dish soap = 1.03. Honey = 1.36. Rubbing alcohol = 0.87. The various densities allow you to "stack" liquids on top of each other, resulting in an experiment that is both visually stunning and informative!