



RAINBOW DENSITY TOWER EXPERIMENT

MATERIALS:

Water
Vegetable Oil
Clear Corn Syrup
Empty Clear Cups
Tall Clear Glass

Food Coloring
Blue Dish Soap
Rubbing Alcohol
Popsicle Sticks
Red Lamp Oil

VOCABULARY:

Density Mass Weight Sink Float
Chemistry Matter Molecules Gravity

DIRECTIONS:

1. Add some clear corn syrup to a clear cup. Add purple food coloring and mix.
2. Add some water to a cup and dye it green.
3. Add some rubbing alcohol to a cup and dye it orange.
4. Pour approximately $\frac{1}{4}$ of a cup of the purple corn syrup into the tall glass.
5. Pour approximately $\frac{1}{4}$ of cup of the blue dish soap into the tall glass.
6. Pour approximately $\frac{1}{4}$ of cup of the green water into the tall glass.
7. Pour approximately $\frac{1}{4}$ of cup of the yellow vegetable oil into the tall glass.
8. Pour approximately $\frac{1}{4}$ of cup of the orange rubbing alcohol into the tall glass.
9. Pour approximately $\frac{1}{4}$ of cup of the red lamp oil into the tall glass.
10. Tip: try to pour into the middle of the glass so you don't have drips down the sides. The liquids will need to settle but will separate into different layers in rainbow order.



THE STEAM BEHIND THE EXPERIMENT:

The ability to sink or float is dependent upon the density of an object and it is the way the molecules are packed in an object that creates the opportunity to float or sink. Gravity plays a major role in whether an object will sink or float. Molecules make up everything and if the molecules are tightly packed together in an object, the density will be greater. These are the items that are so dense, they will sink.

MAKE IT AWESOME:

Try dropping different small objects in the glass to see which items sink and which float. Examples: dice, popcorn kernels, soda bottle caps, bolts, ping pong ball, marble, etc.

EXTENSIONS:

1. What happens when you use different types of liquids?
2. What happens if you change the amounts of each liquid?
3. What other changes can you come up with for this experiment?

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(239)406-3243

MakeBakeandDestroy@gmail.com

www.MakeBakeandDestroy.com