SCIENCE

DOUBLE DENSITY

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DESCRIPTION

Can you guess which household liquids sink and which ones float? Play along with the A-TV science team and see if you're right!

DO LIQUIDS MIX?

- food coloring
- water
- glass beaker or jar
- spoon
- dropper
- cooking oil

HYDROMETER

- hydrometer
- 4 drinking glasses or jars
- oil
- water
- corn syrup
- dish washing liquid
- modeling clay
- straw
- piece of paper and pen

HOW TO LAYER LIQUIDS

- food coloring
- water
- corn syrup
- vegetable oil
- large clear container
- things to float: penny, macaroni noodle, cherry tomato, dried bean, or anything else you can find

DIRECTIONS

1. Do Liquids Mix Experiment: First thing you are going to do is take a glass beaker and pour some water into it. If you don't have a glass breaker, you can use a glass jar. Pour about a cup and a half of water into the beaker—but it doesn't have to be exact.
2. Once you've poured your water into the beaker, add about a cup of oil to the water. See how the oil and water have formed two distinct layers? That's because the water is more dense then the oil and they don't mix.
3. Now that we have our oil and water in our beakers, it's time to add a few drops of food coloring to the beaker. Slowly add about 3 or 4 drops of food coloring into the beaker. See how the drops are floating around in the oil? The food coloring is more dense than the oil so it won't mix with it.
4. The last step to this experiment is to take a spoon and push the drops of food coloring into the water. The color mixes with the water because they have the same density level.

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5. Hydrometer experiment: A hydrometer measures density in liquids. The first thing you need to do is take your clay and roll it into a ball. After you've made your clay ball, make a small hole in the top of it. To make the hole, use your pinky finger or a pencil, and then put your straw in the whole. Smooth the clay around the straw so that there are no open spaces between the straw and the clay.

6. We are going to test out our hydrometers in 4 different liquids; dish soap, oil, water, and corn syrup. Remember…the higher your hydrometer floats the denser the liquid.

7. Insert your hydrometer into water, corn syrup, dish soap and oil. When you place your hydrometer into each liquid, observe how it floats and write down how high its floats or if it sinks to the bottom. The higher your hydrometer floats the denser the liquid.

8. Three Liquids Experiment: You are going to test out three liquids; colored water, vegetable oil, and corn syrup. The first thing we need to do is to add our liquids to our beakers. Start by Pouring about a cup of syrup into your beaker first. The next liquid that you should pour in to your beaker is the oil. You should add about a cup of the oil and then add a cup of the colored water.

9. Now that you've poured all three liquids into your beakers…what's happening to them? Are they separated into three layers? The layers tell us which liquid is the densest and which is the least dense.

10. The last part of this experiment is to test how solid objects match up in the density test with our liquids. The objects that we are going to use are a metal nut, an olive, and a piece of a plastic straw or a pen top. Take each object and drop it in your beaker.

11. Each object will sink down until it finds a liquid that has a higher density than it has. And you can tell how dense the object is by looking at which liquids it passed through. The nut should sunk all the way to the bottom of the beaker. The olive should sink all the way to the syrup. And the straw should sink down to the water.