Trading Places

Discover how two liquids can look the same, but clearly have different densities.

Materials

- Two clear plastic cups
- Laminated card
- Water
- Vegetable Oil or Rubbing Alcohol
- Food Coloring

Process

1. Fill one glass completely full with water, add two drops of food coloring to the water
2. Fill another glass completely full with Rubbing Alcohol, add two drops of a different color food coloring
3. Tightly hold the card over the top of the water glass, flip it over and put the upside-down, card-covered water glass on top of the other glass
4. Line the glasses up so their edges are even
5. Slide the laminated card out so there is a tiny bit of open space at the edge of the glasses
6. What do you see happen? Why do you think it does that?

So What's Happening?

At the Puget Sound Naval Shipyard it is very important to understand that fluids have different *densities* so they can move and use them safely and efficiently. Imagine trying to pump water down a pipe from one place to another; now imagine pumping ketchup down the same pipe. It's not hard to imagine that water would be easier to move than the thick (more dense) ketchup. In this experiment, you can see how different liquids can have different densities, even if they look the same when you look at them!

Vocabulary

- **Density** - how much something of a set volume (size) weighs

For More Information

Green-Planet-Solar-Energy.com. "A Definition of Density." Last modified 26 May 2011. http://www.green-planet-solar-energy.com/definition-of-density.html