LIGHT ICE
HEAVY
WATER

Next:
Materials and Explanations

EXPERIMENT

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HOW DOES IT WORK?

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Then:
Step-by-Step Photo Sequence
LIGHT ICE, HEAVY WATER

Water floats when it's frozen, but what happens after it melts? Did you know that you can change the density of some materials? We'll show you a cool way to see a change of density in action with the Light Ice, Heavy Water experiment.

Materials
• Baby oil
• Vegetable oil
• Ice cubes
• Food coloring
• Clear, empty container (a drinking glass will work great)

EXPERIMENT
1. Add two drops of food coloring to a clear, empty container.
2. Fill half of the container with vegetable oil and fill the remainder of the container (leave just a little bit of space) with baby oil.
3. Take a moment to notice how the two oils mix together. It may be hard to tell, but the vegetable oil settles below the baby oil.
4. Once you're ready, gently drop an ice cube into the container. It sits right in the middle of the container without sinking to the bottom or floating to the top!
5. Now you've come to the tough part... waiting. You need to be patient to observe the magic of the experiment. Trust us... it's definitely worth it.
6. After a little while, you'll see a single drop begin to melt away from the ice cube. It looks like it is frozen in time as it clings to the ice cube until the very end.
7. Unlike the ice cube itself, the drop of water eventually sinks straight to the bottom of the glass.
8. As the ice cube melts, drop after drop of water head to the bottom of the container, mixing with the food coloring.

HOW DOES IT WORK?
The basis of the Light Ice, Heavy Water experiment relies on density. Density = mass ÷ volume, which essentially equates to how many atoms are within a certain space. It is tough to see, but when you add baby oil to the vegetable oil in the container, the baby oil settles on top of the vegetable oil. This is because baby oil is a less-dense liquid than vegetable oil. That's where water comes in to the picture.

As you likely know, ice cubes are frozen bricks of water. What you may not know, is that water reacts unlike almost every other material on earth when it freezes - it becomes less dense. That's right! Other than water and some types of rubber, materials become more dense when they cool and freeze. As you can see in the Light Ice, Heavy Water experiment, however, ice is actually less dense than water and vegetable oil. Pretty, cool, and pretty cool!
HERE IS WHAT YOU NEED

BABY OIL
MYSTERY LIQUID
ICE CUBES
FOOD COLORING
EMPTY CONTAINER
1. Add two drops of food coloring to the glass.

2. Fill the cup about half full with the mystery liquid.

3. Fill the rest of the glass with baby oil.
4
Gently drop the ice cube into the glass and observe.
WHY DOES THE ICE CUBE FLOAT AND THE WATER SINK?