ACTIVITY AT HOME

PINK PALACE MUSEUM

Chemistry

FLOATING ICE

Discover how materials can behave differently when their state of matter changes.

Materials

2 tall clear containers

Cooking oil

Water

Ice cube

Note: Try adding food coloring to the ice and water for easy viewing.

Procedure

- Pour about 1/2 of a cup of oil into one of your containers followed by about 1/2 of a cup of water. Give the liquids time to settle. Where is the oil? Where is the water?
- In the other container, add another 1/2 cup of oil and carefully place the ice cube on top of the oil. Did it float or sink?
- Wait for the ice cube to melt. What do you think will happen to the ice cube when it melts? Where will it go?

Results

The oil floated on top of the water, and the ice cube floated on top of the oil. When the ice cube melted, it sank below the oil.

Why?

The liquid water is denser than the oil, so it sank below the oil. Ice is solid water, but it doesn't sink below the oil because solid water is less dense than oil. The ice cubes and water in the glass are both water, but they are in two different states of matter. The ice is a solid, and the water is a liquid.The ice and the liquid water behave differently because they have different properties when they are in different states of matter. When the ice melted and became liquid water, its properties changed and it behaved like liquid water.

To learn more about density, check out the Pink Palace Museum's *Fun with Physical Science Program*.

This activity was adapted from the Royal Society of Chemistry's "Suspended Ice" activity. You can find more activities on their website, edu.rsc.org