

At Home Science - Buoyancy

Science for Families: using what you have at home

Buoyancy

Just like Finley, and the bone, Some objects float while others sink? Why? Does size matter?

Buoyancy is the opposite of gravity and is the force pushing objects up. Gravity pulls objects down while buoyancy forces objects up. When an object sits on water, the water pushes underneath creating an upward force.

Finley is much bigger than the bone! So why does he float and the bone sink? What makes Finley buoyant?



Fun With Learning

Sink or Float

Check out the [Let's Get Outside](#) activity in this weeks' Be Outside with Brevard Zoo. After finding objects on your nature walk, separate into those you think will float and those you think will sink. Test to see if you were right. If you were incorrect, discuss why.

Brain Teaser

How about a grain of sand? Sink or Float? Give it a try! Hint: It's all about density.



Challenge: Using a lemon or an orange, place them in a clear bowl full of water. What happens? Your challenge is to make the lemon or orange sink! If you are successful, what was it that changed? How did you change the buoyancy?

Cool Science

Buoyancy and Density

We've learned about buoyancy and you've played with density. What is density? Some objects are tightly packed with molecules while others are loosely packed with molecules. Tightly packed objects are dense and will sink in water and loosely packed are not dense and will float in water. Otter fur is super dense, but it allows air to be trapped within the fur. Due to this air and their lung capacity they are extremely buoyant. The size does not matter. So, the question to ask, is can buoyance change due to the liquid we use?

Give it a try!

Materials: the objects you collected on your nature walk, water, salt water, oil, milk, or other liquids you'd like to try. Pour liquids into separate glasses. Try your objects. Which ones floated? Which one's sank. Make a chart to compare the buoyancy of the different liquids.



Simple Science – Density Rainbow Water

Materials: 4 clear glasses, food coloring, water, sugar, ¼ measuring cup, 1 Tbl measuring spoon, tall clear jar or glass, squirt bottle (optional).

Add ¼ C water to each container (#1 – 4). Keep these containers in a line.

Containers:

1. Add 4 Tbl sugar and stir to dissolve. You may need to zap it in the microwave for 15-20 seconds to dissolve. Add 2 drops of green food coloring
2. Add 3 Tbl sugar and dissolve. Add only 1 drop of yellow food coloring.
3. Add 2 Tbl sugar and dissolve. Add 2 drops of blue food coloring
4. Add 1 Tbl sugar and dissolve. Add only 1 drops of red food coloring
5. Starting with #1 water, slowly add each color to a tall clear container. If you have a squirt bottle this will work best. If not, pour slowly, using the back of a spoon to slow the pour into the container.

