

# WHAT FLOATS AND WHAT SINKS?

## BUOYANCY EXPERIMENT

You probably know that if you drop something heavy in water (like a penny), it sinks. And if you put in something light (like a ping pong ball), it floats.

When Alyssa drops her ice cream in the lake, the kids expect it to float—they certainly didn't guess that a fish would eat it! And when Little Eddie drops his Papa's medal in the fountain, he expects it to sink—he didn't count on a magical fish catching it.

It doesn't always take magic for a heavier object to float. Try this experiment to see if you can make a little science magic.

### MATERIALS

- clear plastic or glass container like a pitcher or vase
- water
- vinegar (white vinegar works best)
- baking soda
- food coloring (any color, although blue is nice)
- small objects such as rice, uncooked macaroni noodle, raisins

### DIRECTIONS

Fill the container with 3 parts water and 1 part vinegar (for example, if you use 3 cups of water, you'll need one cup of vinegar). Be sure to leave some room at the top of the container.

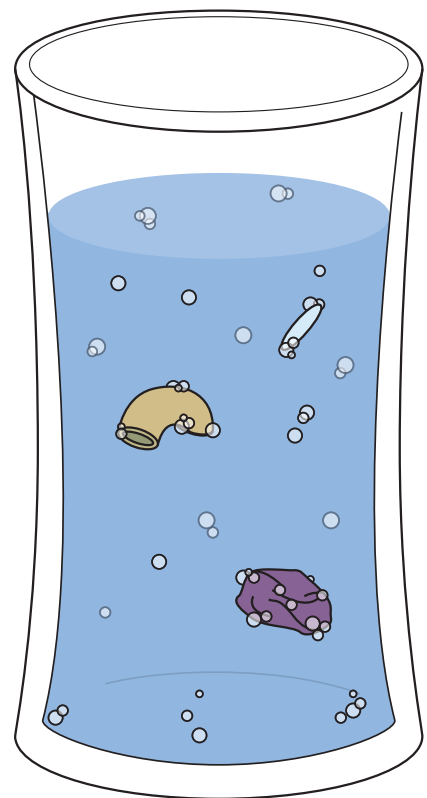
Very slowly add one teaspoon of baking soda. The vinegar and baking soda will react and create bubbles. Have towels handy in case the container overflows.

When the bubbles settle down, slowly add a second teaspoon of baking soda.

Once you see fewer bubbles, add a few drops of food coloring. This helps you see what's happening in the container. You might notice the liquid moving.

Drop in a few of the small objects, one at a time.

Observe. Do they sink? Wait a few minutes and continue observing. Soon they will rise to the surface, then sink again. Small objects like grains of rice might look like they're dancing!



### DISCUSSION QUESTIONS

**Q:** Why does adding baking soda make the water and vinegar solution bubble?

*A: Vinegar is an acid and baking soda is a base. When they combine, they react and create carbon dioxide, so the bubbles you see are made up of trapped carbon dioxide.*

**Q:** Why do some items sink and some items float?

*A: Floating and sinking is a result of buoyancy. Buoyancy is a force applied by a fluid on a body immersed in the fluid.*

Activity based on [http://www.sciencekidsathome.com/science\\_experiments/buoyancy.html](http://www.sciencekidsathome.com/science_experiments/buoyancy.html)