



EXPLORE BUOYANCY WITH FOIL BOATS



In this experiment, kids will learn that sometimes it's good to rock the boat

Will it float? You might have heard your kids ask this question as they held your keys over the toilet. So put that curiosity to work with this fun project that uses foil "boats" to teach them about buoyancy without sacrificing your prized possessions.

Using foil and some common household containers, your little sea captain will learn about buoyancy by investigating relationships between surface area, volume, weight, and displacement. No keys will be harmed in the conducting of this experiment.

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GATHER THIS:

- Aluminum foil (heavy duty works best)
- Empty containers in different shapes, such as bowls, cups, yogurt tubs, tennis ball tubes, small boxes, etc.
- A large tub of water
- Small weights (marbles, nuts, bolts, and washers)

THEN DO THIS:

1. Rip off a square of foil. You can use more or less if you want.
2. Form the foil over one of your shapes.
3. Pull the foil from the container so that it maintains its new shape.
4. Float your foil like a boat in the tub of water!
5. Add weights slowly to your boat to find out how much it can support before it sinks.
6. Try different shapes, or try creating a boat without a mold!

ASK THIS:

- How do you make a boat that holds up the most weight?
- Is it better to have a small bottom and tall sides, or a wide bottom and small sides?
- Does a sheet of aluminum foil float if you don't shape it? What if you crumple it up, or fold it up into a tiny square?

WHAT IS HAPPENING?

Buoyancy is a net upward force caused by displacement. A boat displaces a certain amount of water based on its weight and shape. If the weight of the boat is less than the weight of the water it displaces, it floats! If the boat weighs more than the water it displaces, it will sink.

+ WHAT THIS TEACHES:

Skills: Observation, experimentation, engineering design process, measuring
Themes: Measuring, forces, buoyancy

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