

# Classroom Experiment: BUOYANCY

**Objective:** Introduce students to light and buoyancy using **action-focused language** to increase their engagement and persistence, and confidence in doing science.

**Materials needed to do science:**

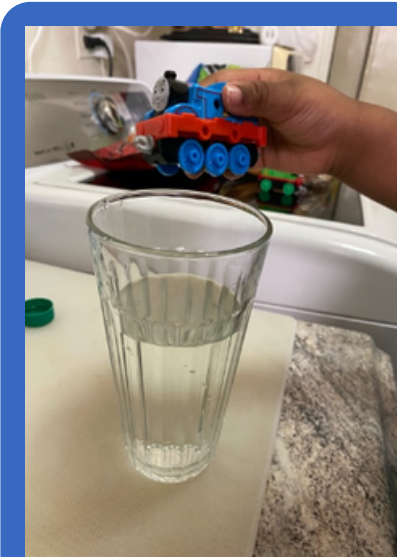
- Tub, sink or large bowl to partially fill with water
- Assorted objects to test such as: coin, paper clip, Lego, shell, balloon (inflated or deflated), pencil, tangerine (to test both with peel on and without), pinecone, sponge

**\*IMPORTANT NOTE\***

Students will benefit most if action focused language is repeated throughout the science lesson. Introduce each step by saying "We're going to do science and..." and explain to students that "Doing science means learning about the world." You can incorporate action focused language into any science lesson, so feel free to change the experiment as you see fit. Have fun doing science!

## Introduce new concept "Today we will be doing science!"

Begin by explaining to students that they will be "doing science to learn about buoyancy." Ask your students about swimming, bath time, etc., and make sure that they understand that when something goes to the bottom, it is sinking.



When it stays on the top, it floats. "An object has buoyancy if it floats and does not have buoyancy if it sinks." Ask students if they can think of any examples of things that float or examples of things that sink. Explain that usually heavier objects will sink, but sometimes this isn't the case. A big boat can float because it is filled with air, which floats above water. You can finish the introduction by explaining to students that we know these things because people did science to learn about the world and about buoyancy.

### Have students do science by **observing**

Explain to your students that "part of doing science is observing!" Have your students use their senses to observe the first object they will drop into the water. Is the object heavy or light? Is it full of air or solid?

### Have students do science by **predicting**

Explain to students that "part of doing science is predicting!" Usually heavy and solid objects sink in water, but sometimes this isn't the case. A big boat can float and has buoyancy because it is filled with air, which is lighter than water. Have the class do science and guess what will happen to the first object. Will it sink or float? Is the object buoyant or not buoyant?

### Have students do science by **checking their guesses**

Explain to students that "part of doing science is checking your guesses!" Allow students to continue doing science and test their predictions by dropping the first object into the water. Does the object sink or float? Is the object buoyant? Was their prediction correct?

Our research has found that action focused language can increase science engagement, persistence, and confidence in kids from diverse backgrounds. It is our goal to increase the amount of action focused language children hear about science to reduce disparities in STEM. We know how hard teachers work, so we wanted to ensure that implementing action focused language in the classroom was as easy as possible. If you have any questions, comments, or concerns, please contact us at [www.kidconcepts.org](http://www.kidconcepts.org). Thank you for reading!

Best,  
NYU Science Initiative

#### **ACTION-FOCUSED LANGUAGE EXAMPLES**

- "Today, we're going to do science"
- "Doing science is the process of discovering new things"
- "If we practice, we will get better at doing science."



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