WATER

Grades K–2

Sink or Float?

Objective: Ptudents will get their hands wet and discover what types of objects sink or float in water during a hands-on experiment.

Materials:

- A large, watertight container filled with at least 4 inches of water
- A variety of objects to test in the water (coins, beads, feathers, plastic or wooden toys, rock, paperclip, spoon, eraser, sponge, etc.)
- **Remember, do not put any electrical items in the water!**
- Supplemental materials for older students: square of tinfoil and coins or beads to place on the tinfoil
- Sink or Float Chart

Method:

- Gather your container with water, objects to test and chart together.
- Predict and record which objects will sink and which will float.
    - What objects have students seen sink or float?
- Test each object by gently placing it on the surface of the water.
    - Record if the object sinks or floats.
    - What happens if you try placing the object a different way on the surface of the water?

- Supplemental Experiment:
    - Take a square of tinfoil, shape it however you would like and float it on the surface of the water.
    - One by one, place a coin or bead onto the tinfoil.
    - Continue to place coins one by one onto the tinfoil until the tinfoil sinks to the bottom of the container.
    - How many coins were you able to place on the tinfoil?
    - How many coins can you get if you place the coins differently on the tinfoil?
    - How many coins can you get if you change the shape of your tinfoil float?

Conclusions:

- Look at the list of objects that sank. Do they have anything in common with one another?
- What about the pile of objects that floated? What do they have in common with one another?

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Buoyancy is the tendency of a body to float or rise when placed in water (or another fluid). It depends on two factors:

- The amount of water an object displaces
- The density of an object

Water and the object cannot be in the same space, so the object pushes the water aside, which is called **displacement**.

- If the object is denser than the water, it will sink.
- If the object is less dense than the water, it will float.

Floating and sinking isn't all about weight; a small rock will sink because it is dense and displaces very little water, but a large boat will float because it displaces a lot of water.

What might happen if you change the density of the water by adding salt?
Will your objects still sink or float like they did in plain water?

Tools:

- Reading:
  - The Magic School Bus Ups and Downs: A Book About Floating and Sinking by Joanna Cole
  - Who Sank the Boat? by Pamela Allen
  - Things That Float and Things That Don't by David Adler
- Video:
  - https://www.youtube.com/watch?v=eQuW8G2QV_Q

PA Academic Standards:
PA 3.2.K. A1, 3.2.1. A1, 3.2.2. A1 PA 3.5.K. A5, 3.2.1.A5, 3.2.2. A5

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Object	Prediction Circle Your Answer	Result Circle Your Answer
	Sink / Float	Sink / Float
	Sink / Float	Sink / Float
	Sink / Float	Sink / Float
	Sink / Float	Sink / Float
	Sink / Float	Sink / Float
	Sink / Float	Sink / Float