



## METAL BOAT

### Can you make metal float?

#### WHAT DO YOU NEED?

- A plastic pop bottle with the top part removed
- Water
- A bunch of pennies
- A 12 x 12 inch square of aluminum foil



#### WHAT DO YOU DO?

1. Fill your bottle three-quarters full with water.
2. Drop one of the pennies into the bottle. Notice that a penny sinks; it doesn't float. (Take the penny out and dry it off.)
3. Take your aluminum foil square and fold all four corners into the center. Then fold the corners in again.
4. Mold the foil into a boat shape, making the sides high.
5. Place the boat on the water. It should float.
6. Take the penny that sank and place it in the boat. It should still float!
7. How many more pennies can you add before the boat sinks?

#### WHAT'S GOING ON?

You've just observed one of nature's most mysterious forces – the buoyant power of water. Buoyancy is an upward force that causes objects to float and keeps things from sinking down into water. Not *all* objects, obviously. A boat that's been overloaded with pennies, or a boat that gets swamped with water, will sink. The power of buoyancy has limits. Often it is overwhelmed by another powerful force, the force of gravity, which pulls objects downward.

Source: Brunelle, Lynn. Pop Bottle Science. New York: Workman Publishing Company, Inc., 2004.

