Aluminum Foil Submarine

Try this experiment to learn about density and buoyancy!

AGE: 8–14 | **ESTIMATED TIME:** about 1 hour

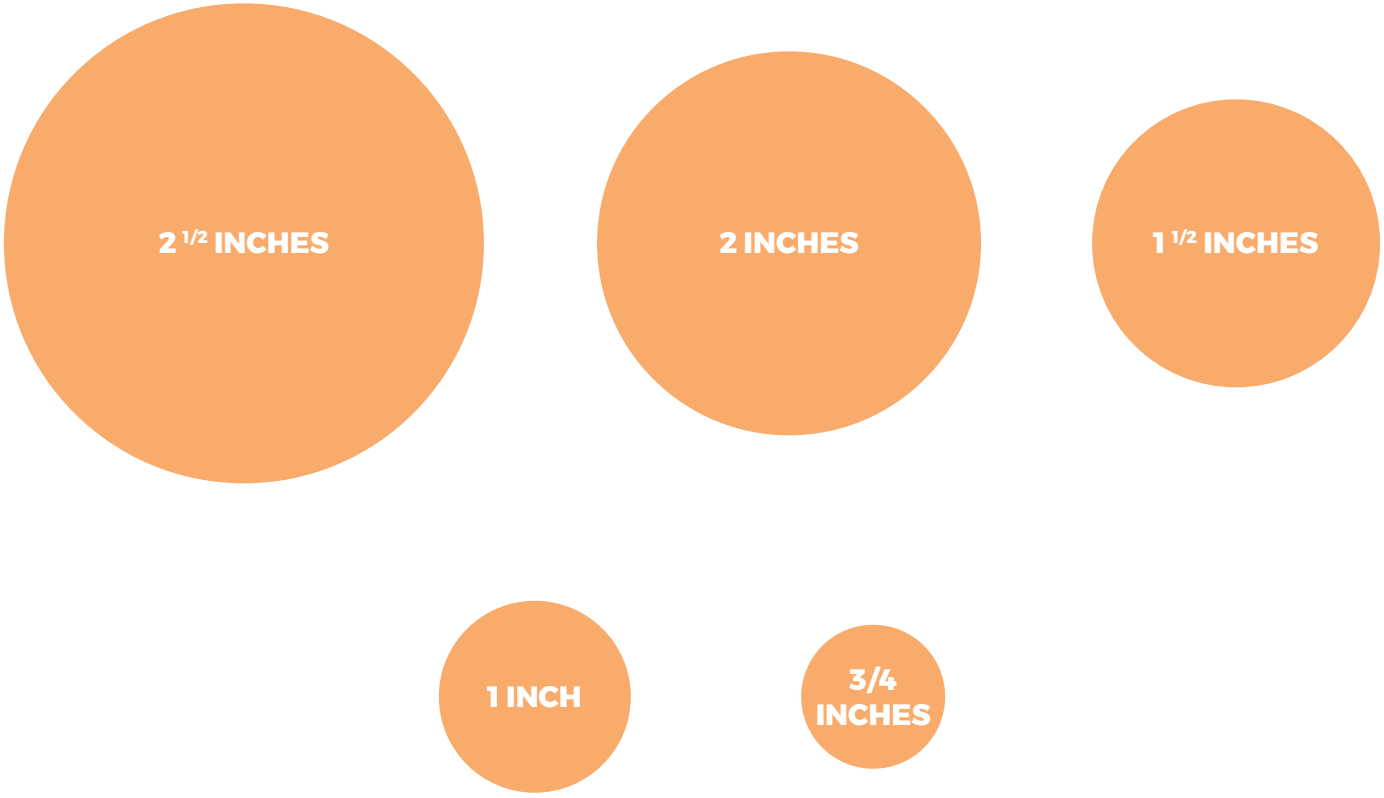
WHAT YOU'LL NEED

- Water
- Towel or paper towels
- Large clear container or bowl
- Heavy-duty aluminum foil
- Ruler and scissors
- Pen and permanent marker
- Hammer

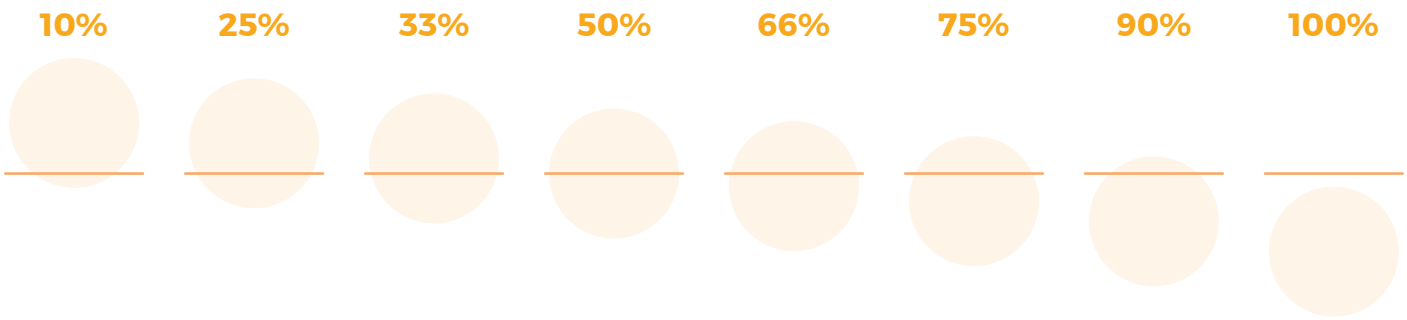
HOW IT'S DONE

1. Spread a towel (or paper towels) out on your kitchen counter to minimize the mess.
2. Fill a large clear container or bowl with water (about 2/3 full) and place it on the towel.
3. Measure and cut out a 10x10 inch aluminum foil square.
4. Use the permanent marker to mark the corners of your aluminum foil square and carefully crumple it to a ball the size of the first circle on page 2 of this worksheet (2 1/2 inches diameter). Make sure the marked edges are brought together during crumpling!
5. Carefully place your ball with the marked edges facing up in the water.
6. Get on eye level with the water level and determine how much of the ball is submerged. You can use the table on page 3 of this worksheet for reference. Record that percentage in your chart.
7. Keep crumpling up the ball tighter and find out how each size listed on the worksheet acts when you place it in water.
8. To get the aluminum ball as dense and small as possible, carefully use a hammer to shape it. Will the small aluminum foil ball sink?

Use these circles to slowly crumple your aluminum foil into smaller balls.



Use this chart to determine how much of your ball is underwater.



Track your findings in this data table.

DIAMETER OF THE BALL	DOES IT SINK OR FLOAT?	HOW MUCH OF THE BALL IS UNDER WATER?
2 1/2 INCHES		
2 INCHES		
1 1/2 INCHES		
1 INCH		
3/4 INCHES		