


# Egg Density Experiment

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# Scientific Method



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# Step 1. Research Question

- ▶ Can an egg float in saltwater?

# Step 2. Research

- ▶ **Density** is **a measure of mass per volume**. Density is a measure of how compact the mass in a substance or object is.
- ▶ **Mass** is how much stuff something is made of (Kg, g)
- ▶ **Volume** is how much space an object takes up (L, ml)
- ▶ Water density: 1 g per mL (ocean water: salt makes the water denser)
- ▶ Egg density: 1.03 g/mL
- ▶ Oil density: 0.93g/cm<sup>3</sup>
- ▶ Wood density: about 1.5 g/cc
- ▶ Rock density: 3.7g/cm<sup>3</sup>
  
- ▶ **"the density of the egg is higher than the density of fresh water"**

**MASS**

**DENSITY**

**VOLUME**



# Step 3. Hypothesis

- ▶ The egg will float in saltwater. (imagine ocean!)

# Step 4. Experiment

- ▶ **Supplies Needed:** 3 eggs, 3 tall drinking glasses, salt, 1 Tablespoon
- ▶ **Step 1.** Fill a tall glass about  $\frac{2}{3}$  full of water and carefully place the egg
- ▶ **Step 2.** Fill another glass about  $\frac{2}{3}$  full of water and add 1 Tablespoon (T) of salt to the water and stir until it is completely dissolved. Then place the egg carefully
- ▶ **Step 3.** Add one more T of salt to the water. Then stir until it is completely dissolved.
- ▶ **Step 4.** Fill another glass about  $\frac{1}{2}$  full of water and add 2 T of salt and stir. Then place the egg carefully. Next, add water to the top of the floating egg

# Step 5. Observation

Fresh water



Adding 1 T of salt





# Step 5. Observation

Adding 2 T of salt



Adding fresh water again



# Step 6. Results

- ▶ When an egg is placed in fresh water, it sinks to the bottom of the glass it is placed in because the egg density is higher than water density
- ▶ When you add salt to the water, the egg floats because you are increasing the density of the water
- ▶ **Water density < Egg density : the egg sinks**
- ▶ **Water density > Egg density : the egg floats**
- ▶ **Water density = Egg density : the egg stays in the middle**

# Step 7. Share my results

Take it further:

Instead of egg, you can use oil, pencils, rock, bread, etc., and see if they sink or float in fresh water/saltwater