# Salinity, Density, Buoyancy

Density refers to the amount of mass contained in an object's volume, or space. Though two objects may be the same size, if one has more mass than the other, it will have greater density. Density affects objects' ability to float, and differences in density make it easier or less easy to float. Have you been to the ocean? You may have noticed that it is much easier to float in salt water than fresh water. This is because salt water is much denser than fresh water, and objects float when they are less dense than the substance that they are floating in.

Make an Egg Float

1. Fill a glass with fresh tap water.
2. Carefully drop a raw egg into the water. Does the egg float or sink?
3. Remove the egg from the glass.
4. Measuring a tablespoon of salt at a time, pour the salt into the glass of water and stir until the salt dissolves. Continue adding salt until it no longer dissolves in the water.
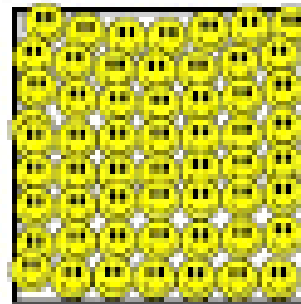5. Replace the egg in the water and observe any changes.

Materials

- Drinking Glass or Bowl
- Water
- Salt
- Tablespoon measure
- Raw Egg (make sure it's not expired!)
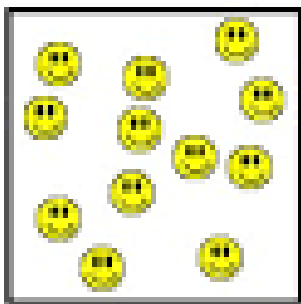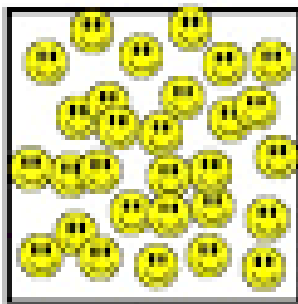
| Tap Water | Raw Egg | Salt Water |

Less dense ⟶ **More dense**

What's Happening?

Less dense substances will always float on top of more dense liquids. At first, the egg sinks to the bottom of the glass of regular tap water because a raw egg is more dense than fresh water. That is, the egg has more matter stuffed into a specific area (volume) than the same volume of water. When you add salt to the water, it dissolves, and increases the amount of matter in the water without increasing its volume, causing the water's density to increase. With enough salt added to the water, the density of the water is greater than the egg, allowing the less dense egg to float.