Experiment 3: Diving Egg

Materials needed:

- **1 egg at room temperature**
- **1 tall glass or container**
- **Salt**
- **Spoon for stirring and egg rescue**

1. **Fill a tall glass with tap water and gently place the egg in the water.**
2. **Write your observations of what the egg does in the water?**
3. **Use the spoon to extract the egg.**
4. **Now add 2 spoon fulls of salt into the water and stir to dissolve the salt.**
5. **Gently place the egg back into the water and write you observation.**
6. **Repeat steps 3-5 for 6 trials, making sure write your observations down.**

What causes the egg to behave differently as the experiment progresses?
What is the independent variable, dependent variable and control variables?

Explanation

If you put an egg in a cup of tap water, it will sink to the bottom. Why is this? Because the density of the egg is higher than the density of tap water, so it sinks. Density is the mass of a material per unit volume. For example, the density of freshwater under standard conditions is approximately one gram per cubic centimeter.

But, if you add enough salt to the water, the egg will actually float back up to the surface! Adding salt to the water increases the density of the solution because the salt increases the mass without changing the volume very much.

When enough salt is added to the water, the saltwater solution's density becomes higher than the egg's, so the egg will then float! The ability of something, like the egg, to float in water or some other liquid is known as buoyancy. But just how much salt is needed to make an egg float? In this science activity you'll figure that out by making solutions with varying concentrations of salt in them.

This experiment was adapted from https://www.scientificamerican.com/article/salty-science-floating-eggs-in-water/