

# Egg Floatation in Different Liquids



**Grade:** 5th Grade | **Measurement:** US Customary (cups, ounces, inches, etc.)

## Purpose

To investigate how the density of a liquid affects whether an egg sinks or floats. To understand how adding substances like salt or sugar changes water density.

## Hypothesis

If an egg is placed in liquids with different densities, then it will float in the denser liquids and sink in the less dense liquids.

## Materials

- 1 raw egg
- 3 clear cups (about 8 ounces each)
- 1 cup water
- 1 cup water mixed with 1/4 cup salt
- 1 cup soda (any clear soda like lemon-lime or club soda)
- 1 spoon for stirring
- Paper and pencil for notes

## Procedure

1. Label the three cups as 'Plain Water', 'Salt Water', and 'Soda'.
2. Pour 1 cup of plain tap water into the first cup.
3. In the second cup, mix 1 cup of water with 1/4 cup salt. Stir until the salt dissolves.
4. Pour 1 cup of soda into the third cup.
5. Gently place the egg into the first cup of plain water and observe if it sinks or floats. Write down your observation.
6. Remove the egg and place it gently in the salt water cup. Observe and record whether it sinks or floats.
7. Remove the egg and place it gently in the soda cup. Observe and record whether it sinks or floats.
8. Compare the results and discuss what you observed.

## Results

The egg sinks in plain water because it is denser than water. The egg floats in salt water because adding salt makes the water denser than the egg. The egg may sink or float in soda depending on the soda's density, but usually it sinks because soda's density is close to or less than plain water.

## Conclusion

The experiment shows that the density of a liquid affects whether objects float or sink. Adding salt to water increases its density, allowing heavier objects like an egg to float. This demonstrates how density is an important factor in buoyancy.

## Learning Objectives

- Learn about density and buoyancy.
- Observe how different liquids affect the floating of objects.
- Practice making hypotheses and recording observations.
- Understand how dissolved substances change liquid properties.

**Teacher Notes:**

**Key Concept:** Density is how much mass is packed into a volume. Objects float or sink depending on whether they are less dense or more dense than the liquid they are in. Adding substances like salt increases the density of water, changing how things float.

**Answer/Explanation:** The egg sinks in plain water because it is denser than water. When salt dissolves in water, it increases the water's density, allowing the less dense egg to float. Soda usually has a density similar to water, so the egg behaves similarly in it.

**Teaching Tips:**

- Remind students to be gentle with the egg to avoid breaking it. 2. Encourage students to make predictions before testing each liquid. 3. Use clear containers so students can easily see the egg. 4. Discuss real-life examples of density, such as why people float more easily in the ocean than in a swimming pool.

**Relevant Standards:** NGSS 5-PS1-3, CCSS.ELA-LITERACY.RI.5.3, NGSS 3-5-ETS1-1



Name: \_\_\_\_\_

Date: \_\_\_\_\_

Experiment Title:

Purpose: *(I wonder...)*

Hypothesis: *(I think...)*

Materials:

Procedure:

Results: *(What happened?)*

Conclusion: *(I learned...)*