



SINK OR FLOAT

OVERVIEW

Description

Participants will explore density by comparing how items float in salt water versus tap water.

Learning Outcomes

- Learn about density of lakes compared to oceans.
- Distinguishing the difference between the density of certain liquids.

Outline

1. Sink or float? (15 mins)
 - a. Procedure
 - b. What is density?

Materials

Item	Quantity Per Child/Group	Quantity Per Class
• Clear plastic cups	• 2	• NA
• Table salt	• 2 Tbsp	• NA
• Shaving foam	• NA	• 3 cans
• Food colouring	• 6 drops	• NA
• Popsicle Sticks	• 1	• NA
• Tablespoon measuring spoon	• N/A	• 1 spoon

KEY INFORMATION

Topic 1: Density is the amount of matter that is contained in a given space or volume. An object is considered to be more dense when there is a larger amount of matter in a given space or volume. Objects that are less dense will float on top of objects that are more dense. This being said salt water is therefore going to have a higher density because of its larger amount of matter and therefore objects will float easier in salt water rather than fresh water. The formula for density is: $D = m/v$ where D is density, m is mass and v is volume. Therefore, the same volume (amount) of two liquids with different masses (such as salt water and fresh water) would have different densities.

LESSON PLAN & PROCEDURE

Sink or Float?

1. Procedure
 - a. Each pair will receive 2 clear plastic cups full of tap water. In one cup add two tablespoons of salt and stir until dissolved. Then add shaving foam to the top of each cup, and a few drops of food colouring to each cup on top of the foam.
 - b. The campers will be able to observe the differences that will happen in each of their cups. What they will see is that the food colouring will sink in the tap water but it won't sink in the salt water.
2. What is Density?
 - a. Density is the amount of matter that is contained in a given space or volume.
 - b. Saltwater is more dense than freshwater because it contains salt! That is why the food colouring has a tougher time sinking in the salt water cup than in the freshwater cup.

Debrief

- Have a discussion on the different densities of each of the materials used
- How is this used in real life? When you swim in the ocean do you float?