

SAMPLE LAB NOTEBOOK

Recently, while at the beach with my nephew, he wondered if it was easier for things to float on the ocean than on a lake.

Questions: Do things float differently in salt water? Do some things float in salt water that don't float in fresh water? Is the density of salt water different than that of fresh water?

Title: Salt Water Density

Hypothesis: Salt water and fresh water have different densities.

Description: I want to see if some things will float in salt water that don't float in fresh water. To prove this, I will use two containers of water, one fresh and one salt water. I will collect several objects and try floating them in fresh water first and then in salt water and compare the results.

Materials: 2 containers, water, 3/4 cup salt, objects: leaf, grape, penny, egg, etc.

Methods: I filled each container with plain water. I added the salt to one container and stirred until the salt dissolved. I put each object in the fresh water first, then in the salt water, and recorded what happened.

Data and Observations: I made a table listing each object. Then I made a column labelled fresh water and a column labelled salt water. I wrote S for sink or F for float as I tested each object.

Object	Fresh water	Salt water
leaf	F	F
grape	S	F
penny	S	S
egg	S	F

Conclusions: Objects that floated in fresh water also floated in the salt water. However, the grape and the egg didn't float in fresh water, but did float in the salt water. Since the density of the egg and the grape didn't change, that tells me that salt water has a different density than fresh water. Since the egg and the grape floated on the salt water, that means the salt water is denser than the fresh water.

More Questions: Would adding more salt to the water show the difference in density more clearly? Is there another way I could compare the density of fresh and salt water? For the objects that float in both, is there a difference in how they float? Is there a way that I could measure that difference?