

LAB 1

Hypothesis: (What you think will happen)

If an egg is added to fresh water what will happen to it? Will it **sink** or **float**? (Circle one)

If a second egg is added to saltwater, what will happen to it? Will it **sink** or **float**? (Circle one)

LAB DIRECTIONS:

- Add 4 tablespoons of water to one of the glasses. Stir until the salt is dissolved.
- When the salt is dissolved, very gently, put an egg in each glass.
- When the eggs settle, draw the position of each egg.
- Were your hypothesis' correct? **Yes** **No**

Fresh Water



Saltwater



Don't dump out the water when you are finished! The same water will be used for all 4 labs!

Can you guess which water has more density? Hint: Density can cause buoyancy!

Salt water is more dense so the egg, **sank** or **floated**. (Circle one)

LAB 2, Part A

For this lab you can use the same cups of fresh and saltwater that you used from the last lab.

Gently remove the eggs, rinse, and return to the egg carton. Follow the directions for Part A.

- Place an ice cube in each glass. (Colored cubes should have been prepared ahead of time.)
- Using a marker or tape, draw a line where the water level is.
- You will need a colored pencil, preferably the color of your ice cubes.
- Draw the ice cubes floating in the water. Pay attention to how much ice is above or below the waterline?

Fresh Water

Mark the water level line only after you have added the ice cube!

You can draw a line on scotch tape, use painter tape or use a marker on a plastic glass.



Saltwater



Just like icebergs, you should notice that most of the ice cube is submersed below the water line.

- *Observe the ice cubes as they melt in the water. What is happening to the coloring?
- *Do you notice that the coloring in the fresh water is sinking to the bottom and then slowly moving around?
- *The sinking motion will spread the color in the fresh water. Can you guess what is driving this energy?

Fresh Water

Fresh water allows cold water to sink and warm water to rise. This creates the movement that colors the water!



Salt water

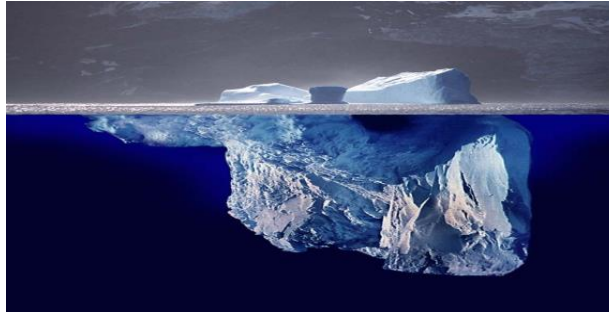
Saltwater ice melts slower than freshwater ice!

Why?
Because the density prevents the movement of sinking cold water and rising warm water.



Notice that the fresh water has turned to the color of your ice, while the dye in the salt water sits on top.

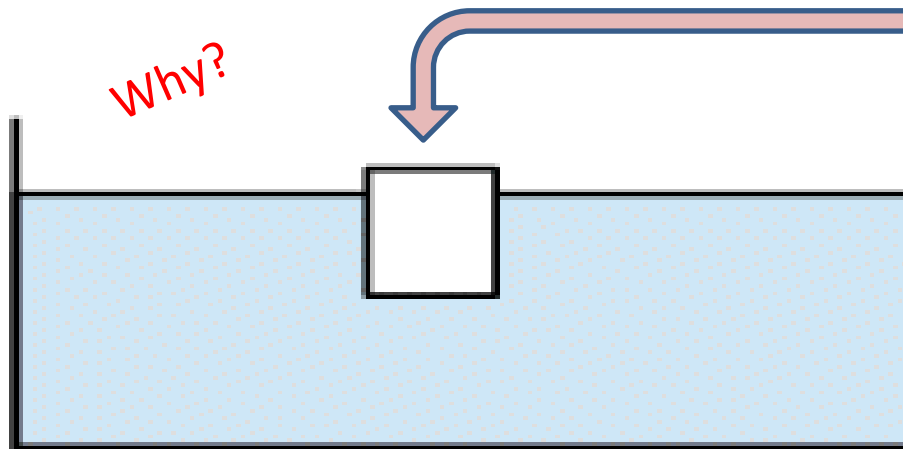
The density of the salt water is keeping the freshwater ice cube from sinking. Fresh water is less dense!



90% of the iceberg is below water.

Now that the ice cubes in both cups have melted, look at the water line, has it changed?

As long as you didn't add water, the water line, even after the iceberg melted, should not have changed.



When the ice cube melted, it didn't add to the water level. Instead, the meltwater filled up the area where the ice cube originally took up space!

This is called *water displacement*.

LAB 4

Land Ice Experiment

www.movingmountainsdaily.com



If snow and ice melts and the runoff flows out to the ocean, what happens to sea level?

Directions:

Take one of your cups, either fresh or saltwater, it doesn't matter.

Turn on the faucet and add some water.

What happens? Does the level rise about the line?

Unless your aim is bad, it does raise the level!

Melted land ice adds to the water level, but melted icebergs do not.

