



FLOATING IN SALTY WATERS

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ABOUT THIS TOPIC

- We are surrounded by saltwater
- We naturally float in the ocean rather than fresh water
- How density increases as salinity rises



PROBLEM

- How much will an object float as salinity rises?
 - What causes this?

Science Concept

- As glaciers melt, the salinity in the water decreases.
 - It changes the density of the water and the rotation of the salinity.
 - The saltwater sinks to the bottom as freshwater rises.
 - Therefore, this changes the currents.



HYPOTHESIS

- The higher the salinity, the more buoyancy increases.

Materials

- Salt
- 500 mL of water
- Straw with a clay plug (buoy)
- Ruler
- Golf ball
- Graduated cylinder
- Beaker
- Plastic egg with pennies



METHOD

- Fill a container with 500 mL of water
- Put the object into the water and measure the distance from the bottom of the container to the highest part of the object in centimeters.
- Remove the object and place it in the container.
- Add 30 mL of salt to the water and stir
- Gently put the object in the saltwater and measure the highest part of the object
- Repeat the steps using a total of 30, 60, 90, 120, 150 mL of salt



DESIGN OF THE EXPERIMENT

- Independent Variable
 - Amount of salt
- Dependent Variable
 - Height of the object
- Constants (controlled variable)
 - 500 mL of freshwater
 - 10 seconds submersion



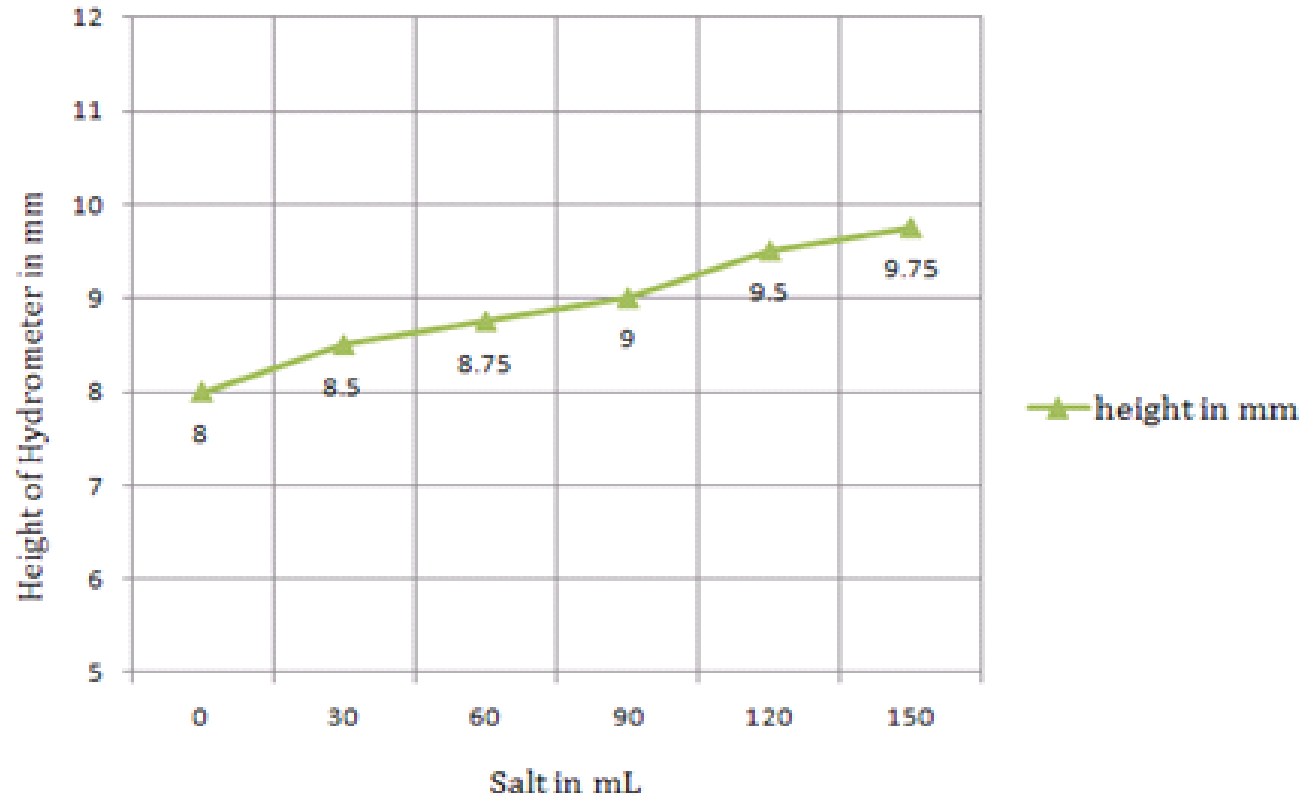
ANALYZING THE DATA

- Results are charted:

<i>Amount of Salt (mL)</i>	<i>Height of Top of Hydrometer</i>
0	7.5 mm
30 mL	8.5 mm
60 mL	8.75 mm
90 mL	9 mm
120 mL	9.5 mm
150 mL	9.75 mm



Result of Buoyancy Experiment



DISCUSSION/CONCLUSION

- The more salt that was added to the beaker, the higher the object rose.
 - Findings: Salt sinks to the bottom as freshwater stays on top, making the object float in the middle

Suggested Improvements

- Salt needs to be the right consistency.
 - Smaller crystals (sea salt/aquarium salt)
- Warmer water



POTENTIAL APPLICATIONS

- We can apply this to real-life by teaching kids how to take care of our planet (global warming)
- Different salt content can affect the environment that surrounds it
 - Animals, reefs can be affected
- Children can learn that salinity differs in different parts of the world

