



CALIFORNIA STATE SCIENCE FAIR 2017 PROJECT SUMMARY

Name(s) Vivian B. Tien	Project Number J1818
Project Title Salt Content and Buoyancy	
Abstract Objectives/Goals My project aims to use household items to build a device that effectively measures the salt content and buoyant force in a body of water. Using this device, I want to prove that the higher the salt content there is in the water, the more buoyant the objects floating in the water will be. Methods/Materials I created the base of my device with a waterbottle and used rubberbands to attach a metal rod to its side. For the part that was used to measure the buoyant force, I used bent paperclips to attach a bicycle spoke to the metal rod, leaving the rings loose to prevent friction. I used the tip of a syringe to attach a ping pong ball to the bottom of the bicycle spoke. My device measures the salinity and the buoyant force by finding how much weight is required to submerge the ping pong ball just below the surface of the water. The more weight is required, the more salt content is in the water. The salt content causes the buoyant force to be stronger. Results The amount of salt measured by my device stays consistent throughout the ten trials. In a couple of trials, the results did fluctuate, but even then, there was only a difference of 1 gram. The higher the salt content was, the more weight I needed to submerge the ping pong ball, meaning that salt content does boost buoyancy. Conclusions/Discussion The results from my experiment support my hypothesis that the higher salt content there is in the water, the more buoyant the objects floating in the water are. The device is consistent in its data as shown by my ten trials. I succeeded in creating it with household items, without using the total dissolved salts method or the electrical conductivity method. My device can measure the salt content in the water at the source, which makes it easier to track the changing levels of salinity in water.	
Summary Statement I created a device using only household items that effectively measures the salt content and the buoyant force in a sample of water.	
Help Received My father taught me how to use pliers to bend the paperclips around the metal rods. My Science teacher reviewed my report.	