

Girl Scout Cookies: Sink or Float?

By: Kate Streitenberger
[Video Introduction](#)



Abstract

I decided to research Girl Scout Cookies because I am a Girl Scout and I have been selling cookies. I was curious if the cookies would sink or float in milk. My hypothesis was that the Smores Cookies would sink, but that all of the other cookies would float. For the experiment, I first had to purchase all of the cookies. I floated each cookie in milk for 20 seconds and recorded the outcome. I did this for each cookie two times. The outcome was that all of the cookies floated.

Procedures

I measured 8 ounces of milk in a measuring cup. I poured the milk into a glass cup. I used the same cup each time. We tested each cookie two times.

I placed each cookie into the glass of milk and waited for 20 seconds. After 20 seconds, I recorded if the cookie sank or floated.

Experiment

I dropped each cookie into the cup of milk two times. I waited for 20 seconds to see if each cookie sank or floated. We tested each cookie twice just to make sure there was nothing wrong with that particular cookie. The outcome was that all of the cookies we tested floated.



Conclusions

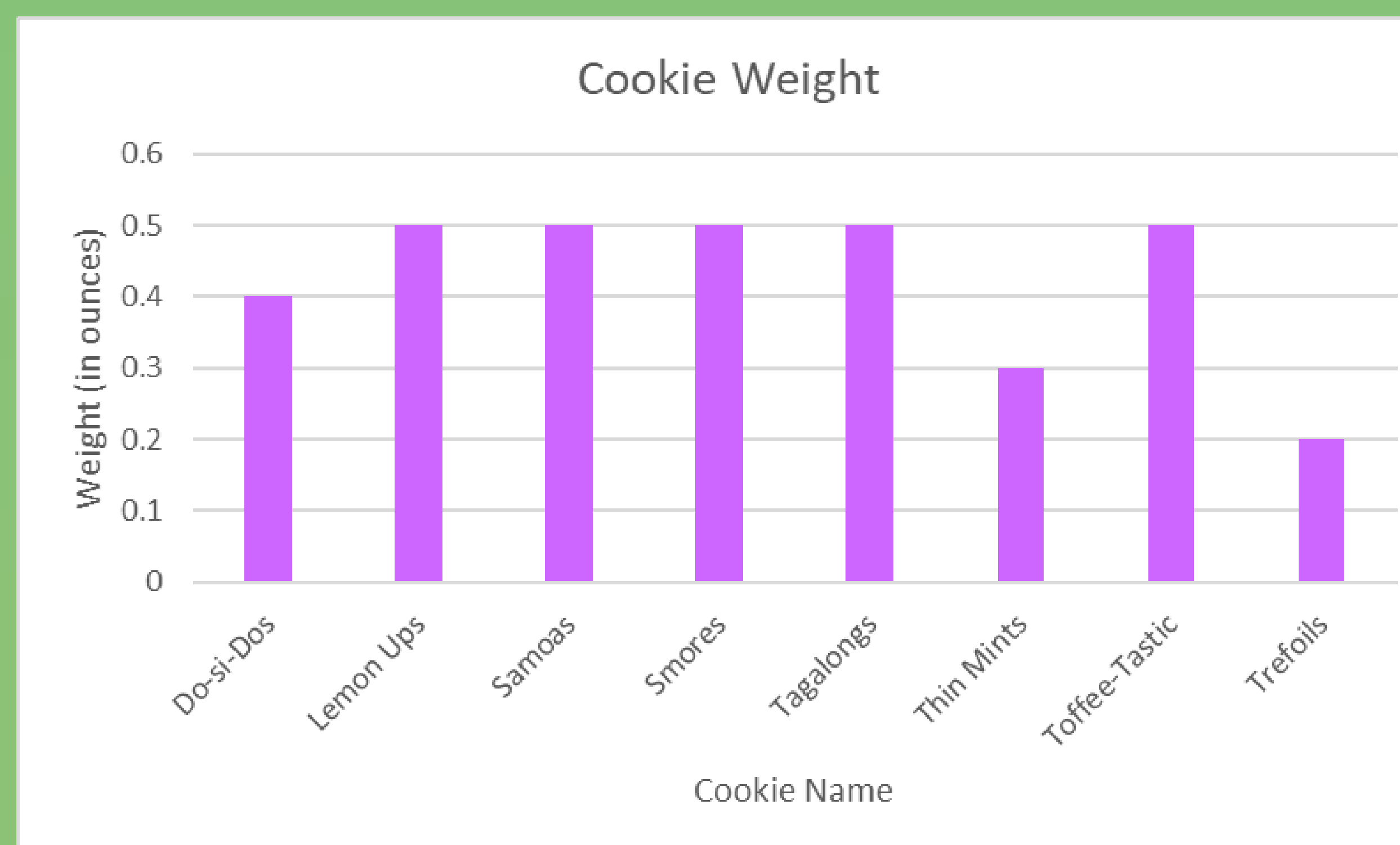
All of the Girl Scout Cookies we tested floated in the milk. This means that the density of each of the cookies was less than the density of the milk.

Background Research

I went to the Girl Scout cookie website and found out what all of the cookies are made out of. I wrote down the main ingredients in each cookie. The most common ingredients are sugar, flour, and oil (vegetable, palm, or soybean oil). I weighed all of the cookies on a food scale. The cookies all weighed between 2 ounces and 5 ounces. I also noticed the size of the cookies. The smallest cookies were the Smores and the biggest are the Lemon-Ups. The size did not necessarily make them weigh more. Some cookies are actually two cookies stuck together and those were the Do-Si-Dos and Smores.

I researched what makes things sink and float. Buoyancy is the force that makes things float and gravity is the force that makes things sink. Buoyancy depends on the amount of liquid the items displaces and the density of the object. If the object has exactly the same density as the liquid then it will not sink or float.

Data Tables



Cookie Name	Hypothesis	Experiment Outcome #1	Experiment Outcome #2
Do-si-Dos	Float	Float	Float
Lemon Ups	Float	Float	Float
Samoas	Float	Float	Float
Smores	Sink	Float	Float
Tagalongs	Float	Float	Float
Thin Mints	Float	Float	Float
Toffee-Tastic	Float	Float	Float
Trefoils	Float	Float	Float

References

- I did research from these websites:
1. Girl Scouts of America Website- Meet the Cookies (<https://www.girlscouts.org/en/cookies/all-about-cookies/Meet-the-Cookies.html>)
 2. <https://easyscienceforkids.com/buoyancy/>
 3. <https://kids.kiddle.co/Buoyancy>

Acknowledgements

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