

Name: Adeel Rehman

Class: AP Physics II

Period: 1

Lab # and Title: 1 – Mass vs. Volume

Laboratory Report

Purpose

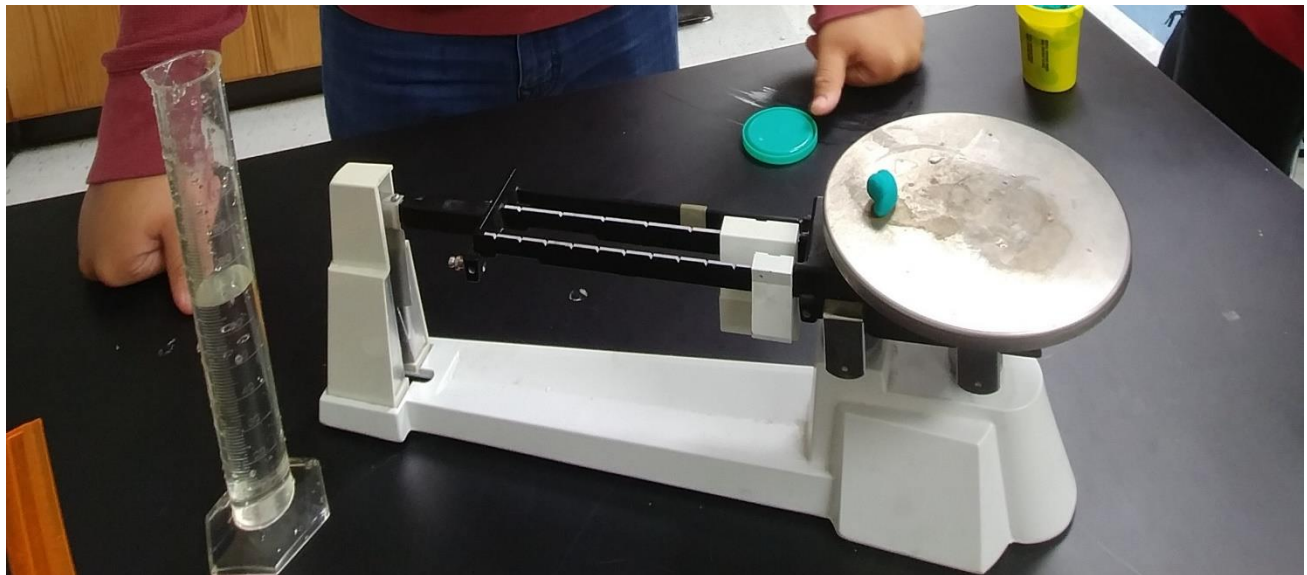
We are trying to find a graphical relationship between the mass of an object, and its volume. Therefore, we will be measuring the mass and volume of our selected objects. We are trying to answer, "What is the graphical relationship between the mass and volume of an object."

Equipment Used

A full list of our materials includes a triple beam balance, a graduated cylinder, tap water, and yellow play dough

Procedure

We started our lab by selecting small chunks of play dough, each varying in approximate size, but not too large to fit in the graduated cylinder, and light enough for us to measure the mass on our triple beam balance. We started by soaking the chunk of play dough in our tap water. We did this by filling the graduated cylinder, putting the dough in, and then draining the cylinder and removing the dough. We then measured exactly 50 mL of water in the graduated cylinder, and placed in the dough again. We then subtracted 50 mL from the new reading, to calculate the volume of our sample object. We then removed it from the cylinder once again, did not allow for it to dry, and placed it on the triple beam balance. The mass of our sample was then measured.



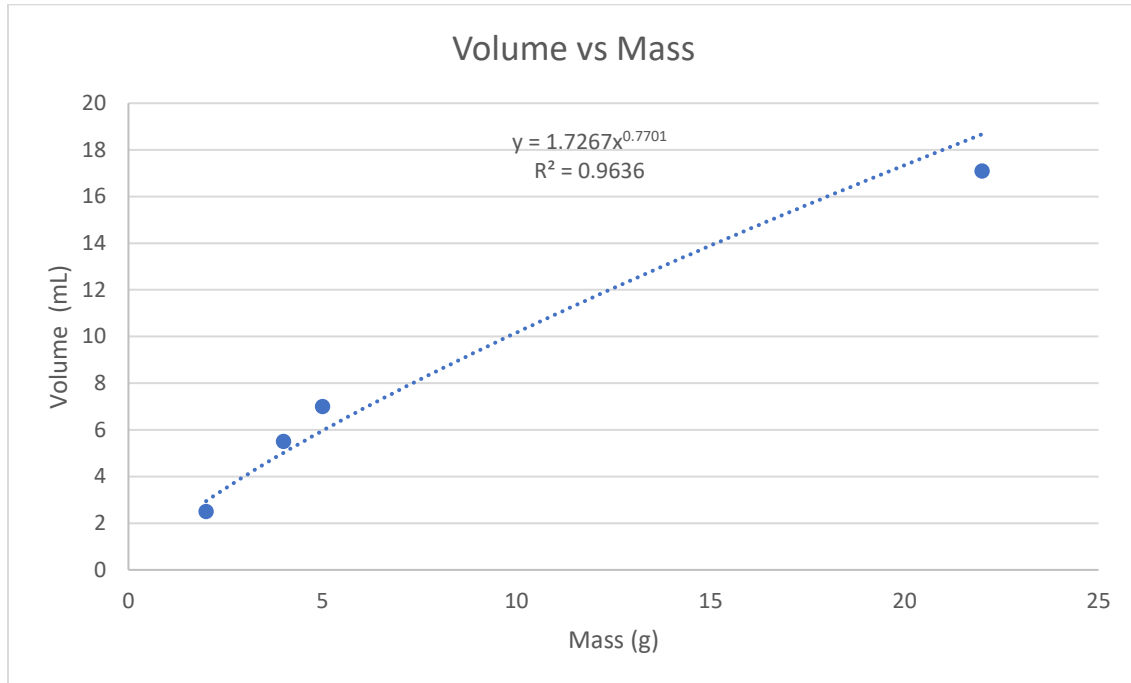
Finally, repeat for 4 different chunks of play dough, each varying in approximate size. Data was then analyzed, by plotting volume as a function of mass.

Data

Here is a table of our data:

Mass	Volume
2	2.5
5	7
22	17.1
4	5.5

And here is our graph:



Conclusion

Our conclusion supports that the relationship between the mass and volume of an object is linear. Our measurements were made using a triple beam balance, that can only measure to the closest tenth of a gram, and a graduated cylinder that measures to the closest milliliter. While this is accurate enough to prove a linear relationship, it is not accurate enough, and we did not have enough data points, to write an equation relating the two. Our main source of error was the inaccuracy of our measurements, and while we tried to be as accurate as possible, our measurements were done manually, not by computer, and are therefore not 100% accurate. In addition, the moisture of our dough must have varied from sample to sample. We tried to soak it for the same amount of time, and to the point where it felt just as moist as the other samples, but again, we did not measure the moisture of each sample. And without measuring it, we can't be sure that all our samples were identically damp play dough.