Mrs. Roberge

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Period 1

**Count Your Pennies**

**Introduction**

Pennies are part of the United States currency. In 1793, when first minted, pennies were made purely of copper (www.usmint.gov). Throughout the years, the composition of the penny changed. Currently, the penny is mainly made of 97.5% zinc (www.usmint.gov).

**Purpose**

To determine the mass of a roll of pennies by estimation techniques.

**Materials and Methods**

* Pennies
* Triple beam balance

1. Find the mass of 1 penny using the triple beam balance.
2. Record the data.
3. Repeat for 2, 3, 4, 5 8, and 50pennies.
4. Graph data.

[](http://www.google.com/imgres?q=mass+of+pennies&sa=X&biw=1440&bih=805&tbm=isch&tbnid=wl7LcVd96Xq2KM:&imgrefurl=http://fphoto.photoshelter.com/image/I0000ZI2479VtFS0&docid=nKmHDHmP4H-DVM&imgurl=http://cdn.c.photoshelter.com/img-get/I0000ZI2479VtFS0/s/860/860/Fphoto-52430111A-2RM.jpg&w=860&h=687&ei=ovQ5UtOWC7ao4AO75IDQAw&zoom=1&ved=1t:3588,r:26,s:0,i:167&iact=rc&page=2&tbnh=188&tbnw=218&start=25&ndsp=25&tx=91&ty=73)

**Results**

|  |  |
| --- | --- |
| **Number of Pennies** | **Mass of Pennies (g)** |
| **1** | **2.6** |
| **2** | **5.3** |
| **3** | **7.4** |
| **4** | **10.1** |
| **5** | **12.6** |
| **8** | **20.3** |
| **10** | **25.6** |
| **50** | **128.2** |

**Discussion**

This lab showed that estimation techniques can be used to find the mass of a roll of pennies. The mass of one penny was found to be 2.6g, while the mass of fifty pennies was found to be 128.2g. When the mass of one penny is multiplied by 50, the acquired mass is 130g. It was found that the estimated and calculated results are quite similar, only different by 1.8g.

Error that could have occurred during the lab includes the difference in the mass of the pennies. Depending on when the pennies were minted, the composition of the pennies changed, which could change the mass. The most recent change in composition occurred in 1982 and it was found that 12 of the pennies that were used in the lab were minted before 1982, therefore affecting mass.

**Conclusion**

The mass of 50 pennies can be estimated by knowing the mass of only a few pennies.

**Work Cited**

The United States Mint · About The Mint. (n.d.). *The United States Mint*. Retrieved September 18, 2013, from http://www.usmint.gov/about\_the\_mint/fun\_facts/?action=fun\_facts2.