

The Penny Lab

By Drew Collinet

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5th Period Science

1. Problem

Can we determine if U.S. mints changed the composition of the penny between 1976-1985?

2. Background Knowledge

Copper has become an increasingly valuable metal. During World War II, for example, pennies had no copper in them due to the need for bullets for the war. While the penny used to be made out of solid copper, U.S. mints now coat them with copper and they have a cheaper metal inside. With the huge increase in electronics, the cost of copper has risen drastically. We also know that different metals have different weights or masses.

The control in this experiment is going to be that we are only measuring pennies. The independent variable is the different years of the pennies. The dependent variable is the mass of the pennies.

3. Hypothesis

___If pennies made between 1976-1985 were made from different metals, than we will find out that the need for a certain type of metal was in high need for some other product to produce because mints would stop making pennies out of that metal so other manufacturers could use it or mints were just experimenting on which metal would work best for pennies to be made.

4. Materials

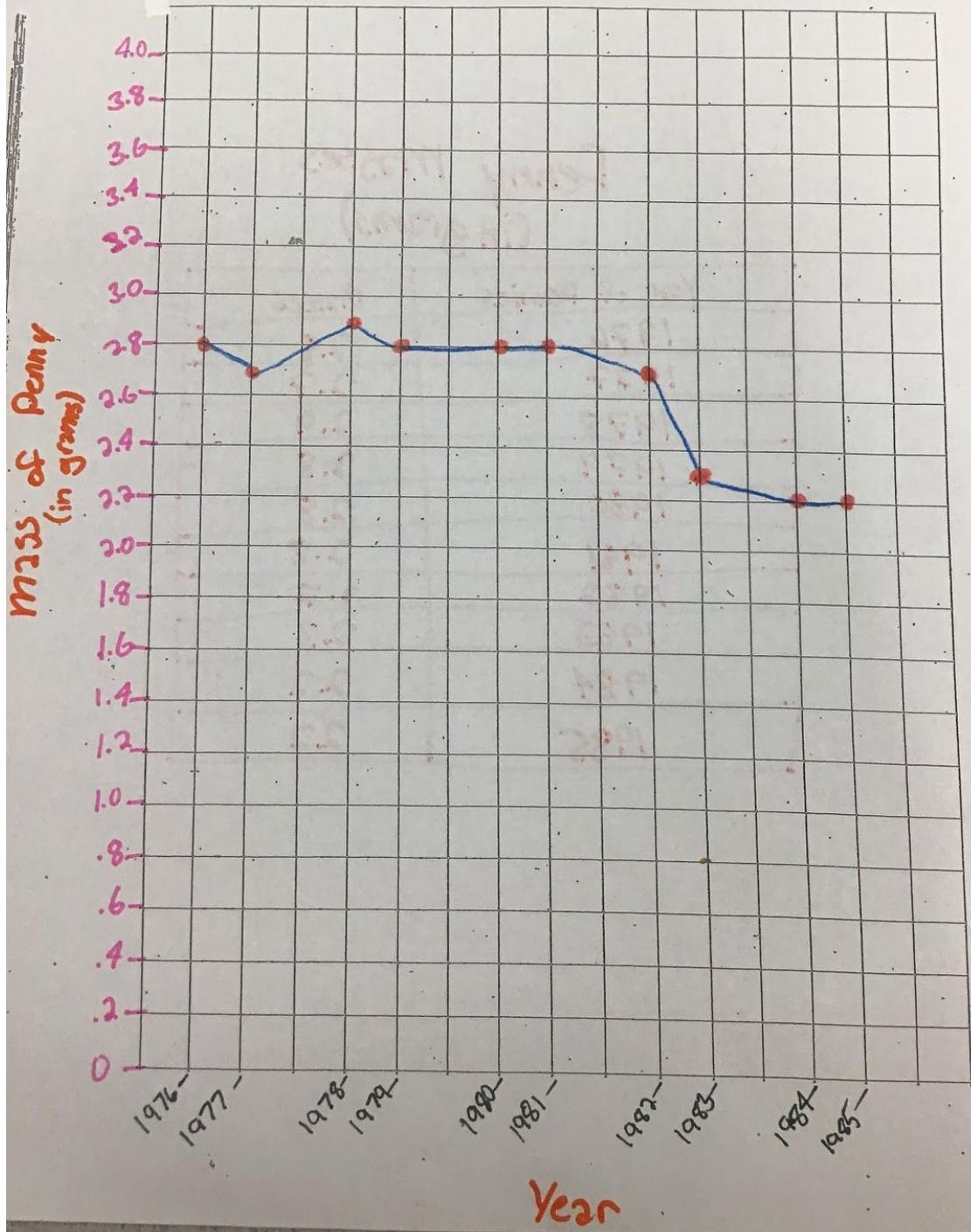
1. pennies made between 1976 and 1985
2. 1 triple beam balance
3. Magnifying glass

5. Procedures

1. Gather pennies from the years 1976-1985
2. Weigh each penny, in order. Record data.
3. Try to get more than one set of pennies, if possible so you have more than one trial

6. Data Collection & Observation

Penny Masses Between 1976-1985



Penny Masses (in grams)

Year of Pennies	Masses
1976	2.8
1977	2.7
1978	2.9
1979	2.8
1980	2.8
1981	2.8
1982	2.7
1983	2.3
1984	2.2
1985	2.2

7. Data Analysis

During this experiment, we did find out that between 1976 and 1985 the masses of pennies did change. There were a few two to three year spans of where the mass of the penny stayed the same; but in the long run the masses did change.

One possible error site would have been that the shape of the pennies could have changed the mass of the pennies because some of them were dented, chipped or rusted.

8. Conclusion

For this experiment we were testing the masses of pennies between the years 1976 and 1985. I found out that the masses of the pennies changed, but not drastically.

My hypothesis, which said that 'If pennies made between 1976-1985 were made from different metals, than we will find out that the need for a certain type of metal was in high need for some other product to produce because mints would stop making pennies out of that metal so other manufacturers could use it or mints were just experimenting on which metal would work best for pennies to be made', was proven to be right. The pennies that I collected the data for were different in masses, which is good to know because you don't want to assume that pennies were always, and will always be, made of the same metals.

