

Names:

Penny Lab

Have you ever saved pennies, nickels, or dimes? If you have, you probably took them to the bank in paper wrappers provided by the bank. Tellers at the bank could take the time to open each roll and count coins to determine their dollar value. However, counting is not necessary because tellers use a better system. They use the properties of the coins instead.

A penny, a nickel, and a dime each have a particular mass and thickness. Therefore, a roll of coins will have a certain mass and length. These two properties - mass and length of a roll of coins – are often used to determine the dollar value of the coins in the roll.

Objectives

- In this experiment, you will
- Develop measuring skills using a balance and metric ruler
- Use graphing skills to make interpretations about your data

Equipment

- 10 coins (all the same type)
- balance
- metric ruler

Procedure

1. Using the balance, determine the mass of 1 coin, 2 coins, 3 coins ... and so on... to the nearest 0.1g. Record the masses in Table 2-1.
2. Measure the thickness of 1 coin, 2 coins, 3 coins,...and so on...to the nearest 0.5 mm. Record the values in table 2-1.

Table 2-1

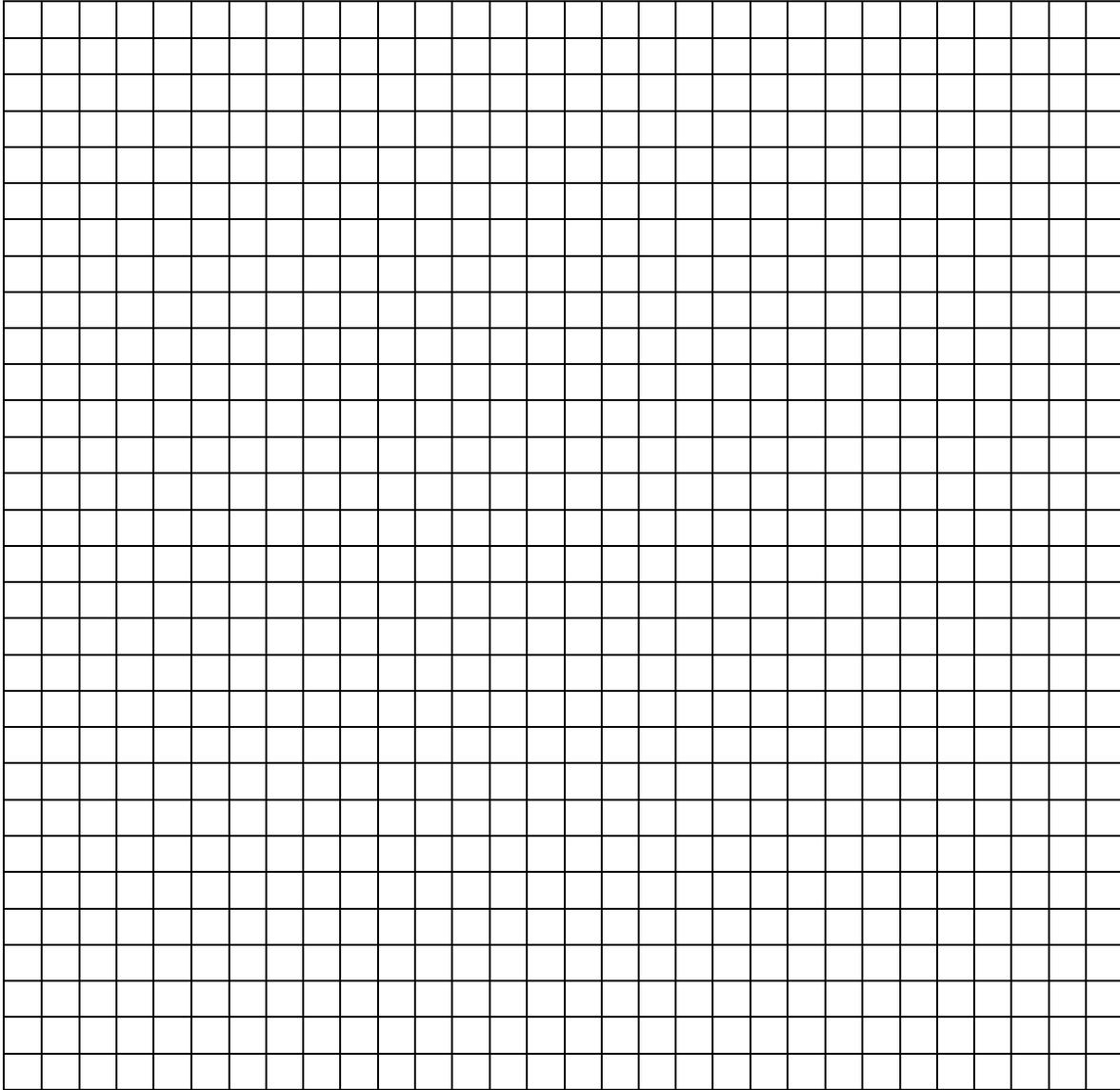
Number of coins	Mass (g)	Thickness (mm)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Analysis:

1. What would be the mass of a roll of pennies? Ignore the mass of the wrapper.

2. What would be the thickness of a roll of pennies? Again, ignore the mass of the wrapper. _____
3. **Make two graphs** of the information in Table 2-1. On the first graph, show the number of coins on the x axis and the mass of the coins on the y axis. (graph 2.1) The second graph should compare the number of coins (x axis) to the total thickness of the stacked coins (y axis). (graph 2.2) Draw a line connecting the points in each graph. **Don't forget to label the axis of each graph.**
4. Describe the appearance of the curve or line in each graph.

Graph 2.1



Graph 2.2

