

Penny Mass

Summary

Students mass pennies to practice using the balance and see how the mass of pennies has changed over the years.

Time Frame

1 class periods of 60 minutes each

Group Size

Small Groups

Materials

- a variety of pennies, especially some with dates in the 60's and 70's
- a balance
- graphing calculator (optional)
- [student worksheet](#)
attached

Background for Teachers

For teachers you may want to know that pennies vary in mass from 1.5 g to about 3 g. The mass of old pennies is greater than newer ones. In the mid 80's zinc centers were placed in pennies and students will see the mass drop about that time. Do not share this information with students before the activity, allow them to try and figure it out.

Student Prior Knowledge

Students need to know how to use a balance.

Instructional Procedures

You may wish to have students bring pennies from home to mass. Encourage them to bring old ones but not valuable ones.

Each group of students needs 20 pennies, you may wish to count them out in advance and put them in paper cups.

Students may need help scaling their graphs and understanding a line of best fit. Graphing calculators will do this for students if you choose to use them.

Assessment Plan

Scoring Guide

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1. Students collect and graph data.....15 pts
2. Students correctly answer analysis questions...5 pts

Answers:

Pennies drop in mass.

They change because their composition changed,

You could not do this on your bathroom scale because it does not measure in small enough increments.

They wear out or get dirty.

The mass of pennies is affected by the precision of the balance and by how they have been handled.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)