

## WEIGHING PENNIES

### Teaching Guidelines

**Subject:** Mathematics

**Topics:** Measurement, Decimals

**Grades:** 4 - 5

**Knowledge and Skills:**

- Can use a small scale to measure weight in ounces
- Can quickly divide decimal numbers by powers of ten

**Materials (for each team):**

- Kitchen scale
- 100 pennies
- 10 nickels and/or dimes

**Procedure:** This activity is best done in teams of two.

Distribute the handout, and ensure that students understand what they are being asked to do. Circulate and assist as needed while students carry out the instructions.

Note that steps #2 and #3 provide an opportunity to review or practice the procedure of “shift the decimal point to the left” for dividing by powers of ten (10, 100, 1000, etc.).

Students will find that it is difficult to determine the weight of a single coin on the scale because they are limited by the precision\* of the scale. Finding ways to explain this will give them valuable practice at communicating mathematical ideas.

\*The precision of a measurement is represented by the number of decimal places used to state the measurement. If a weight is given as “1.2 ounces”, then the precision is given to the nearest tenth of an ounce (the actual weight could be anywhere from 1.15 ounces to 1.24 ounces). If that same weight were measured on a more precise scale, its weight might be reported to the nearest hundredth of an ounce as “1.23 ounces”, meaning that it is somewhere between 1.225 and 1.234 ounces.

# Weighing Pennies



1. Use a scale to find the weight of 10 pennies, in ounces.

Weight of 10 pennies: \_\_\_\_\_

2. Now use that information to find the weight of 1 penny, and explain how you found that answer.

Weight of 1 penny: \_\_\_\_\_

Explanation: \_\_\_\_\_

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3. To check your answer, find the weight of 100 pennies, and use that information to find the weight of one penny, again.

Weight of 100 pennies: \_\_\_\_\_

Weight of 1 penny \_\_\_\_\_

4. Try to measure the weight of 1 penny alone. What did you find?

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5. Which method (measuring 10 pennies, 100 pennies, or 1 penny) do you think gives you the best answer?

Why? \_\_\_\_\_

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6. Find the weight of a nickel and the weight of a dime.