U.S. MINT COIN CLASSROOM

Great Coin Graph

MATH | 2-3

BIG QUESTION

How can we tell which coins or groups of coins are greater than, less than, or equal to each other?

TIMING

45 minutes

SUMMARY:

Students will compare sets of coins and determine which group is greater than, less than, or equal to the other according to the number and value of each set. Students will read and interpret a simple bar graph to answer questions.

LEARNING OBJECTIVES:

- Students will practice comparing the value of coins and groups of coins.
- Students will demonstrate understanding of greater than, less than, and equal to.
- Students will demonstrate how to use a bar graph.

MATERIALS:

- Great Graph worksheet
- Set of edible items (e.g., mints, hard candies, fruit snacks)
- Calculators (optional)

PROCEDURE:

Review what students already know about comparing quantities (10 minutes)
1. Start this lesson by comparing different quantities of the same items in your room (e.g., pencils, crayons, markers) 2. Use a set of edible treats (e.g., mints, hard candies, fruit) and place them into groups of varying quantities. Ask students to identify how many items are in each group. Write these numbers on the board. If teaching virtually, use a virtual whiteboard. 3. Tell students that there is a way to show which group or number is larger. Ask them which group of items a hungry person would pick. 4. After students correctly identify the larger group, draw the greater than (or less than) symbol between the two numbers written on the board. Point out to students how the symbol resembles the mouth of a hungry person gobbling up the largest amount. 5. Do several more sets of numbers for practice, varying the use of the "greater than" and "less than" symbols (also incorporate "equal to"). Tell students that almost anything can be compared using this method—even money, specifically coins.
Review value of coins and complete worksheet (30 minutes)
6. Review the value of a cent (penny), nickel, dime, and quarter as a class. 7. Introduce the "Great Coin Graph!" worksheets. Review the directions with the class, explaining that first, everyone has to count the numbers of coins and draw a bar graph. • If you would like to use coins or paper coins, you can give each student or group of students 23 pennies, 19 nickels, 20 dimes, and 13 quarters. • The worksheet includes coins for students to count out. • The worksheet answer key works assuming you use 23 pennies, 19 nickels, 20 dimes, and 13 quarters. 8. Then, model using coins to determine the value of the penny column. 9. Pass out coins or paper coins and ask students to continue completing the worksheet in small groups or individually as modeled. *Note: The teacher answer key is on the last page of the Great Coin Graph worksheet.*

ASSESSMENT:

Use the students' participation in the discussion, ability to differentiate between the greater than, less than and equal to, and their answers on their worksheet to assess whether they have met the lesson objectives.

DIFFERENTIATE:

- Have students orally answer and discuss the questions on the worksheet.
- Allow students to use play money to represent the amounts in the graph.
- Add sublines to the "Great Coin Graph" worksheet to help students better read the graph.

RELATED:

- U.S. Mint Online Game Counting with Coins
- Mint Minute video
- About the Mint page and Circulating Coin pages:
  - Penny
  - Nickel
  - Dime
  - Quarter
  - Half Dollar
  - Dollar
- Coin Glossary
- Coin Specification Table

STANDARDS:

Common Core Standards

CCSS.MATH.CONTENT.1.MD.A.1
Order three objects by length; compare the lengths of two objects indirectly by using a third object.

CCSS.MATH.CONTENT.2.MD.A.1
Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

CCSS.MATH.CONTENT.2.MD.A.2
Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

National Standards

Principles and Standards for School Mathematics, National Council of Teachers of Mathematics

Discipline: Mathematics
Domain: K-2 Number and Operations
Grade(s): Grades K–2

Great Coin Graph Worksheet

Name: _____ Date: _____

Part 1: Peter the Eagle has a lot of change in his store's cash register.
First, count how many of each coin type he has. Then, write the number of each coin in the space below.

Pennies: _____ Dimes: _____

Nickels: _____ Quarters: _____

Great Coin Graph Worksheet

Name: _____ Date: _____

Part 2: Now that you have counted how many coins Peter the Eagle has in his store's cash register, you can make a bar graph!
Using the space below, draw one bar for each coin based on the numbers you counted on page 1. Then, under each bar, write the total amount the coins are worth.

30
25
20
15
10
5
0

$ ____.____ $ ____.____ $ ____.____ $ ____.____

Great Coin Graph Worksheet

Name: _____ Date: _____

Part 3: Use your graph to answer the questions below.

1. What is the total amount of money that Peter has in the register?

_____

2. Which type of coin does Peter have the most of?

_____

3. How many does Peter have of that coin?

_____

4. Which type of coin adds up to the greatest value?

_____

5. What is the greatest value?

_____

6. How many more dimes would Peter need to make the dimes add up to the greatest value?

_____

Great Coin Graph Worksheet

Part 3 (Continued): Use your graph to answer the questions below.

7. In the blanks below, write the number of each kind of coin. Write the "greater than," "less than," or "equal to" symbol in the space between the pairs to compare the numbers. For example, pennies 12 [>] 3 nickels.

a. pennies _____ [ ] _____ nickels
b. nickels _____ [ ] _____ quarters
c. dimes _____ [ ] _____ nickels
d. quarters _____ [ ] _____ dimes

8. In the blanks below, write the total value of each kind of coin that Peter has in the register. Write the "greater than," "less than," or "equal to" symbol in the space between the pairs to compare the values. For example, pennies $0.12 [>] $0.05 nickels.

a. pennies $__ __.__ __ [ ] $ __ __.__ __ nickels
b. nickels $__ __.__ __ [ ] $ __ __.__ __ quarters
c. dimes $__ __.__ __ [ ] $ __ __.__ __ nickels
d. quarters $__ __.__ __ [ ] $ __ __.__ __ dimes

9. What did you notice about your answers to the questions above?

_____

_____

_____

10. How many more nickels would Peter need to equal the value of the dimes?

_____

Great Coin Graph Worksheet Answer Key:
Answers reflect 23 pennies, 19 nickels, 20 dimes, and 13 quarters.

Graph Values:
Pennies: $0.23
Nickels: $0.95
Dimes: $2.00
Quarters: $3.25

1. $6.43
2. Penny
3. 23
4. Quarters
5. $3.25
6. 13 dimes

7. a. 23>19
   b. 19>13
   c. 20>19
   d. 13<20

8. a. $0.23<$0.95
   b. $0.95<$3.35
   c. $2.00>$0.95
   d. $3.25>$2.00

9. Student answer might comment on relationship between the quantity / number of coins compared to the value or how much coins are worth.

10. 21 nickels