



A Fraction of the Cost

MATH

3-4



BIG QUESTION

How can the value of coins be written and visualized as fractions?



TIMING

60-90 minutes



SUMMARY:

Students will use various coin denominations to explore the concept of fractions.

LEARNING OBJECTIVES:

- Students will identify coins as parts of a dollar.
- Students will use coins to start to combine fractions.



MATERIALS:

- A Fraction of the Cost worksheet
- Scissors
- Brads (to assemble spinner) (1 per pair)



PROCEDURE:

Discuss Coins as Fractions (30 minutes)

1. Distribute the "Fraction Circles" pages of the Fraction of A Cost worksheet to each student.
2. Review with the students the value of each coin, from the nickel to the dollar. Write each coin's value on the board as it is discussed.
3. Explain to students that coins and their values can be expressed as fractions. Since "cents" are units that make up a dollar, the portion of one whole dollar that any coin represents can be written as a fraction. For example, five cents is equal to $\frac{5}{100}$.
4. Referencing the fraction circles, hold up the whole circle and compare it to one dollar. Ask the students to locate the image of the dollar coin and cut it out. On the back, direct them to write this coin's value.
5. Hold up the image of a half dollar and ask the students to locate and point to this coin on their worksheet. Ask the students to cut out the image of the coin and write its value on the back.
6. Ask students how many fifty-cent coins are needed to make one whole dollar. On the back of the half-dollar image, direct the students to write the fraction represented by this coin.
7. Ask the students to locate and cut out the circle that shows this fraction. On each of the coin halves, the students should write "50¢."
8. Repeat steps 5 through 7 for each of the other coins.

Cut Fractions and Play Coin Spinner Game (30 minutes)

1. Instruct the students to cut their fraction circles into the pie shapes that represent the particular fraction (the halves fraction circle will be in two parts, etc.). Tell them to make piles for the four different types of fractions as they cut.
2. Place students in pairs. Model the instructions to the game:
 - Students will assemble the "Coin Value Spinner."
 - The object of the activity is to see who can create a whole unit or \$1.00 first.
 - Students place their whole circle in front of them and take turns spinning the coin value spinner.
 - They then place the corresponding fraction piece onto their whole piece if they can. Players should trade for equal fraction parts—2 dimes (two one-tenths) and a nickel (a twentieth) for a quarter (a fourth), 2 quarters (fourths) for a half dollar (a half), etc.
 - The next player then spins and repeats the process detailed above.
 - Students take turns spinning, and the first person to create a whole unit or full dollar wins.

ASSESSMENT:

Observe and discuss the activity and how students played the game to determine if they met the lesson objectives.



DIFFERENTIATE:

- Divide the class into two teams and alternate asking fraction-related math questions (decide whether students can work as a group or can only answer if it's their turn) allowing them to use the chalkboard to figure the problem. When a team gets an answer correct, they can spin/roll and add to their team's fraction circle. Make sure that "trading down" becomes a part of the process: if a team fails to do so, the other team gets the turn.
- For an optional activity players start with a whole unit (\$1.00) and subtract the amount that they spin. This forces them to trade in larger fractions for smaller ones ($1/2$ for $5/10$). This may be more appropriate for fourth graders.
- Student can also estimate and then check how many different combinations can make a whole unit (\$1.00.)



RELATED:

- [Circulating Coins information for kids](#)
- [Cents-able Shopping Activity](#)



STANDARDS:

Common Core Standards

[CCSS.MATH.CONTENT.3.NF.A.1](#)

Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.

[CCSS.MATH.CONTENT.3.NF.A.3](#)

Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

[CCSS.MATH.CONTENT.3.NF.A.3.A](#)

Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.



A Fraction of the Cost Worksheet

Fraction Circles (Part 1)

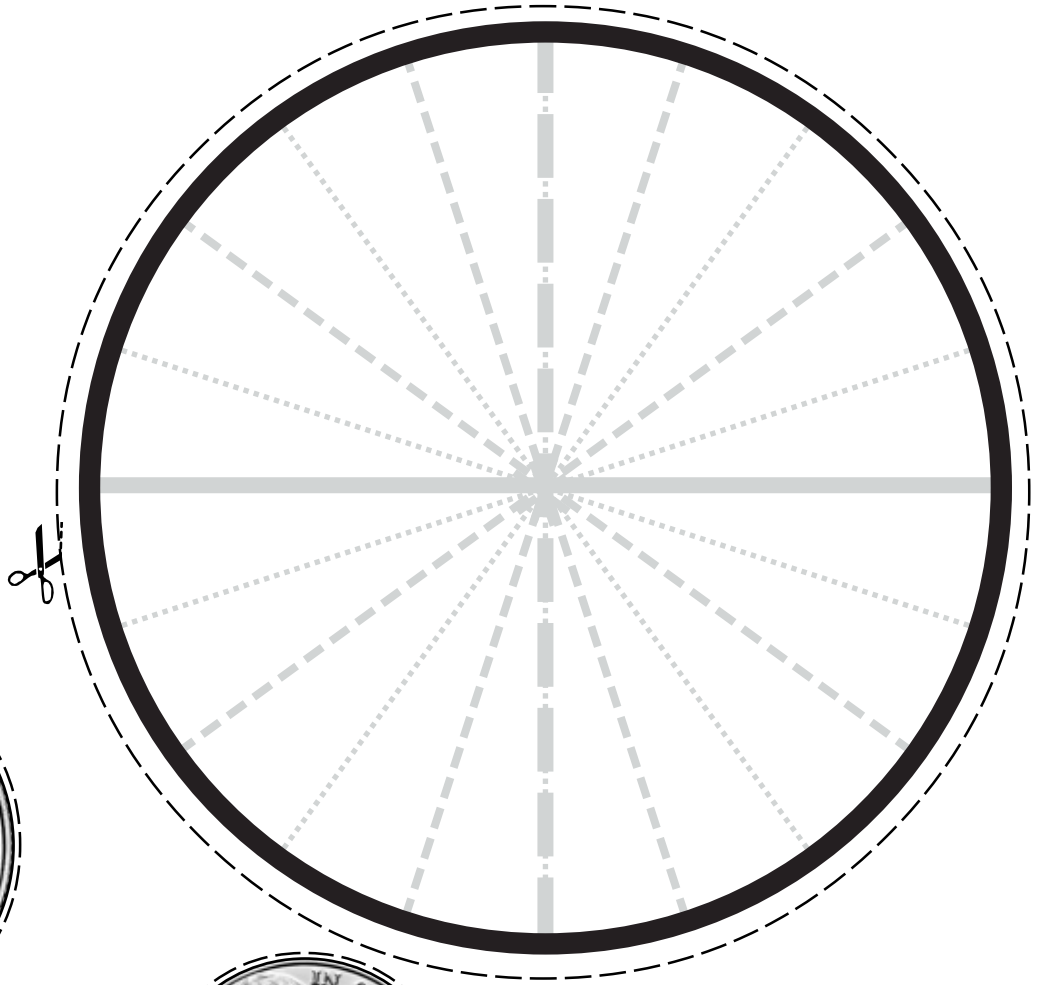
Name: _____

Date: _____

Step 1: Cut out each coin and write the value of the coin on the back.

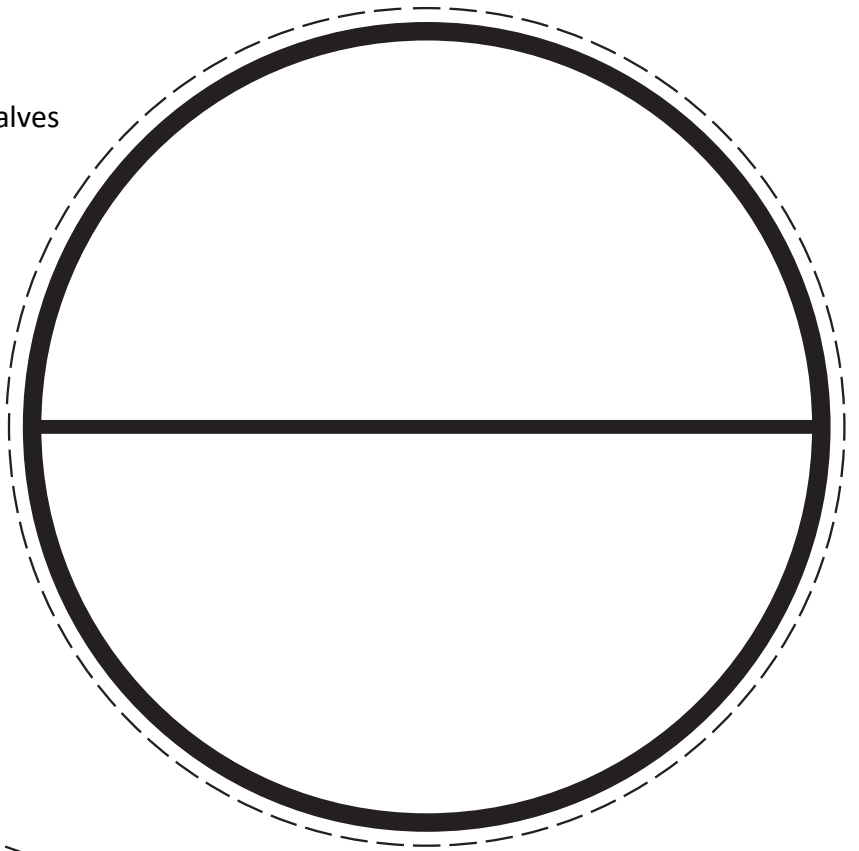
Step 2: Cut out the fraction pieces on the following pages. Keep each part together in a pile.

Step 3: Cut out and assemble your spinner on the last page. Play the Fraction of the Cost spinner game!

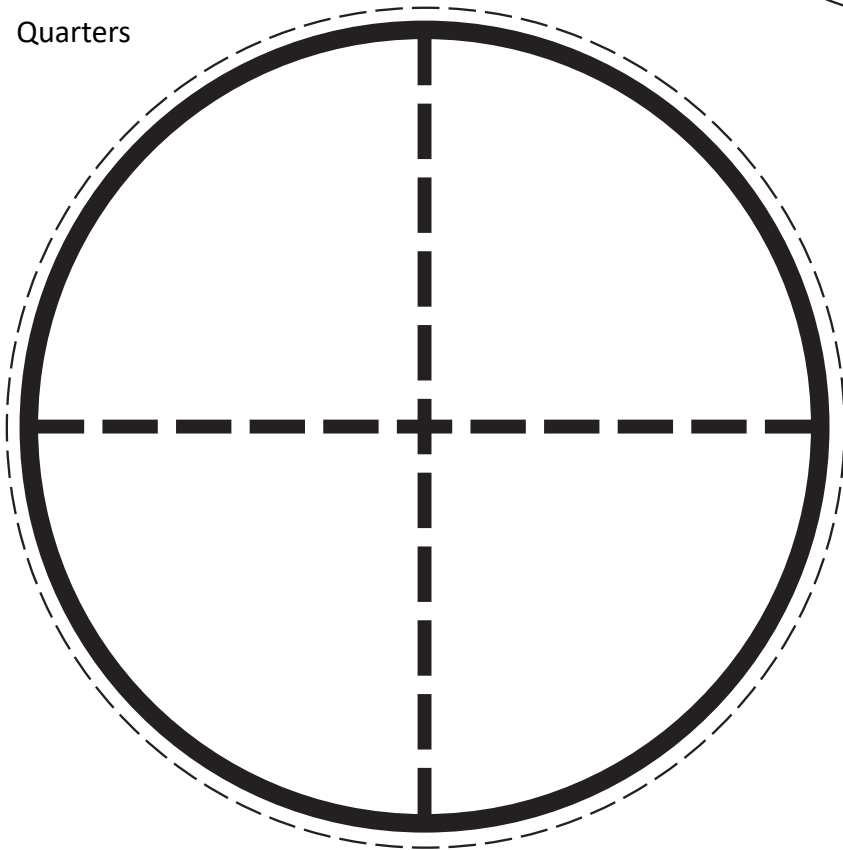


A Fraction of the Cost Worksheet:
Fraction Circles (Part 2)

Halves

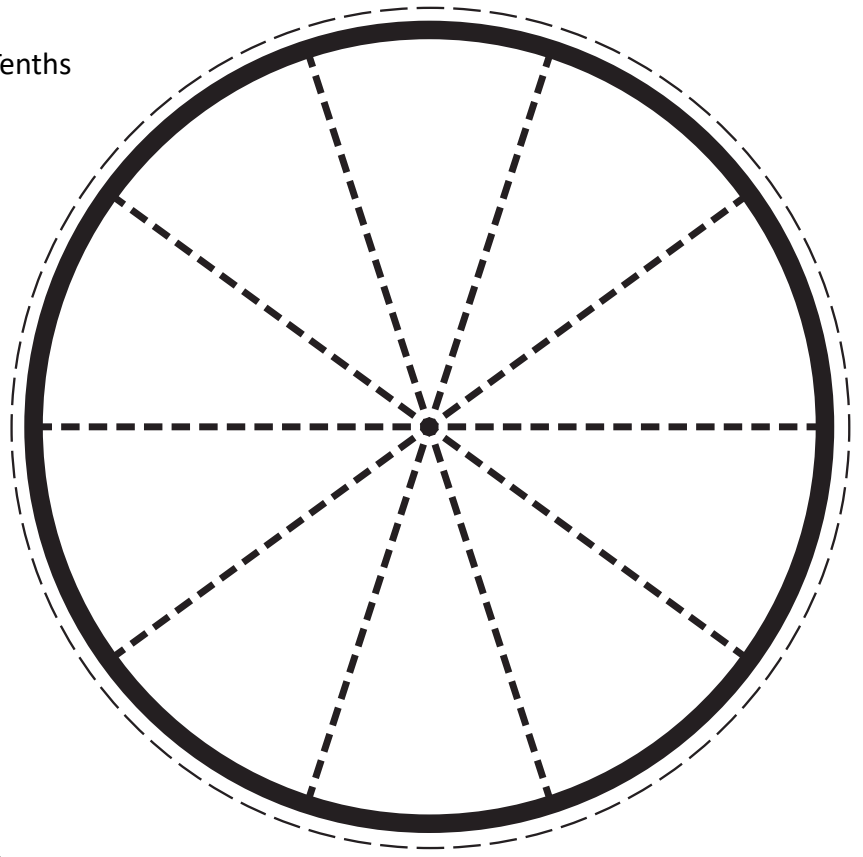


Quarters

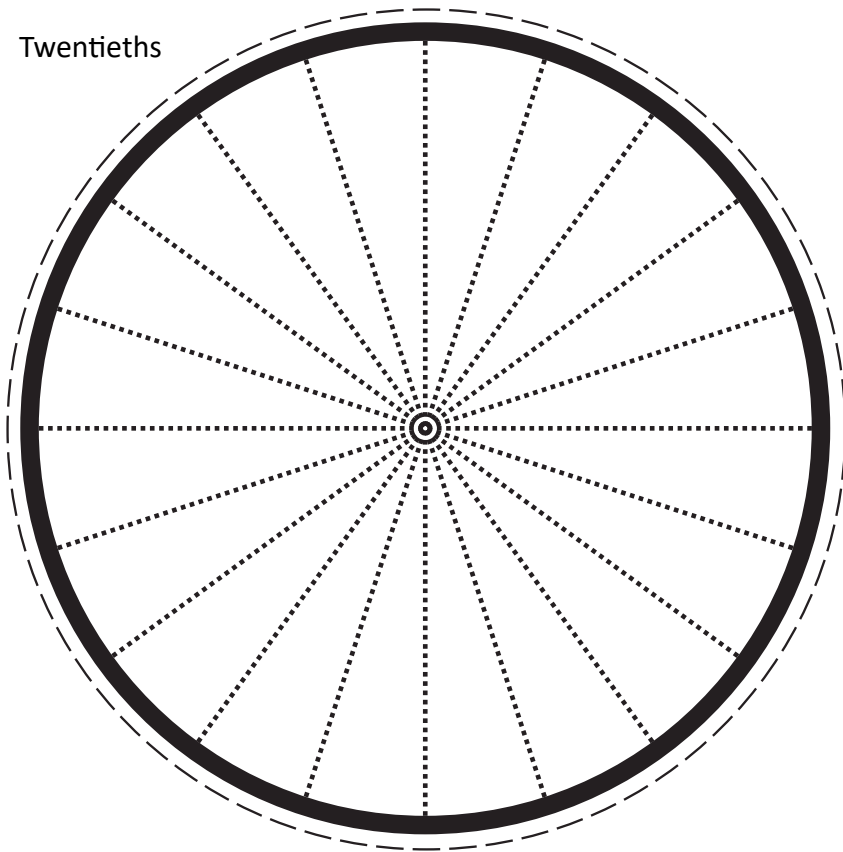


A Fraction of the Cost Worksheet: Fraction Circles (Part 3)

Tenths



Twentieths



A Fraction of the Cost Worksheet: Coin Value Spinner

