Eureka Math

4th Grade
Module 6
Lesson 15

At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this project!

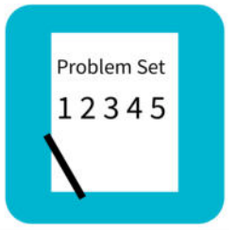
Directions for customizing presentations are available on the next slide.

Icons

Read, Draw, Write

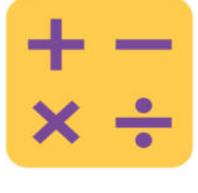
Learning Target

Personal White Board



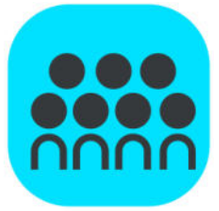
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

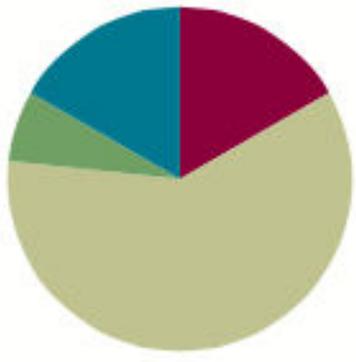
Small Group Time

Lesson 15

Objective: Express money amounts given in various forms as decimal numbers.

Suggested Lesson Structure

Fluency Practice	(10 minutes)
Application Problem	(4 minutes)
Concept Development	(36 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Express money amounts given in various forms as decimal numbers.

Add Fractions

$90 + 7 = \_\_\_\_\_$ Say the addition sentence in unit form.

9 tens + 7 ones = 97 ones.

$\frac{9}{10} + \frac{7}{100} = \frac{\quad}{100}$ Say the addition sentence in unit form.

9 tenths + 7 hundredths = 97 hundredths.

Add Fractions

70 + 18 = _____

Say the addition sentence in unit form.

7 tens + 18 ones = 88 ones

$\frac{7}{10} + \frac{18}{100} = \frac{\quad}{100}$

Say the addition sentence in unit form.

7 tenths + 18 hundredths = 88 hundredths.

State the Value of the Coins

10¢ = 1 dime _____ What coin has a value of 10 cents?

90 cents is the same as how many dimes? 9

25¢ = 1 quarter _____ What coin has a value of 25 cents?

50 cents is the same as how many quarters? 2

75 cents is the same as how many quarters? 3

100 cents is the same as how many quarters? 4

State the Value of the Coins

What is the value of 2 quarters? 50 cents

What is the total value of 2 quarters and 2 dimes? 70 cents

What is the total value of 2 quarters and 6 dimes? 110 cents

What is the total value of 3 quarters and 2 dimes? 95 cents

What is the total value of 3 quarters, 2 dimes and 1 penny? 96 cents

Application Problem

At the end of the day, Cameron counted the money in his pockets. He counted 7 pennies, 2 dimes, and 2 quarters. Tell the amount of money, in cents, that was in Cameron's pockets.

Express pennies, dimes, and quarters as fractional parts of a dollar.

How many pennies are in 1 dollar? *100 pennies*

$\frac{1}{100}$ dollar is equal to how many cents? *1 cent*

$1¢ = \frac{1}{100}$ dollar. We can write 1 hundredth dollar using a decimal.

Write $\frac{1}{100}$ in decimal form. *0.01*

Place the dollar sign before the ones. *$0.01 = 1 cent*

Express pennies, dimes, and quarters as fractional parts of a dollar.

7 pennies are how many cents? *7 cents*

What fraction of a dollar is 7 cents? $\frac{7}{100}$ dollar.

Write a number sentence to show the value of 7 pennies as cents, as a fraction of a dollar, and in decimal form.

$$7¢ = \frac{7}{100} \text{ dollar} = \$0.07$$

Express pennies, dimes, and quarters as fractional parts of a dollar.

A dime also represents a fractional part of a dollar. How many dimes are in a dollar?

10 dimes

Draw a tape diagram to show how many dimes are needed to make 1 dollar

What fraction of a dollar is 1 dime? $\frac{1}{10}$ dollar.

$\frac{1}{10}$ dollar is equal to how many cents? *10 cents*

$$10¢ = \frac{1}{10} \text{ dollar}$$

Write $\frac{1}{10}$ dollar as an equivalent decimal using the dollar sign to tell the unit.

$$10¢ = \frac{1}{10} \text{ dollar} = \$0.10$$

Express pennies, dimes, and quarters as fractional parts of a dollar.

With your partner, draw a tape diagram to show how many quarters equal 1 dollar. Write a number sentence to show the equivalence of the value of 1 quarter written as cents, as a fraction of a dollar, and as a decimal.

$$25¢ = \frac{25}{100} \text{ dollar} = \$0.25$$

Express the total value of combinations of pennies, dimes, and quarters in fraction and decimal form.

7 dimes 2 pennies

What is the value of 7 dimes 2 pennies expressed in cents?

72 cents

What number sentence did you use to find that value?

What fraction of a dollar is 72 cents?

$\frac{72}{100}$ dollar.

Show $\frac{72}{100}$ in decimal form, using the dollar sign.

$0.72

Express the total value of combinations of pennies, dimes, and quarters in fraction and decimal form.

2 quarters 3 dimes 6 pennies What is the value expressed in cents?

115 cents

Explain how you found the value.

Do we have more or less than a dollar? *More than*

What fraction of a dollar is 115¢? $\frac{115}{100}$ dollars. → $1\frac{15}{100}$ dollars

Express $1\frac{15}{100}$ dollars as a decimal, using the dollar sign to express the unit.

$1.15

Find the sum of two sets of bills and cents using whole number calculations and unit form.

6 dollars 1 dime 7 pennies + 8 dollars 1 quarter.

Rewrite each addend as dollars and cents.

6 dollars 17 cents + 8 dollars 25 cents.

Add like units to find the sum.

Write the complete number sentence on your board.

6 dollars 17 cents + 8 dollars 25 cents = 14 dollars 42 cents.

Write the sum in decimal form using the dollar sign to show the unit.

$14.42

Find the sum of two sets of bills and cents using whole number calculations and unit form.

5 dollars 3 dimes 17 pennies + 4 dollars 3 quarters 2 dimes

Work with your partner to write an expression showing each addend in unit form as dollars and cents.

5 dollars 47 cents + 4 dollars 95 cents

Add dollars with dollars and cents with cents to find the sum.

Compare these two solutions with your solution.

Solution A

5 dollars 47 cents + 4 dollars 95 cents

= 9 dollars 142 cents

100 42

= 10 dollars 42 cents

= $10.42

Solution B

5 dollars 47 cents + 4 dollars 95 cents

= 9 dollars 47 cents + 95 cents

42 5

= 10 dollars 42 cents

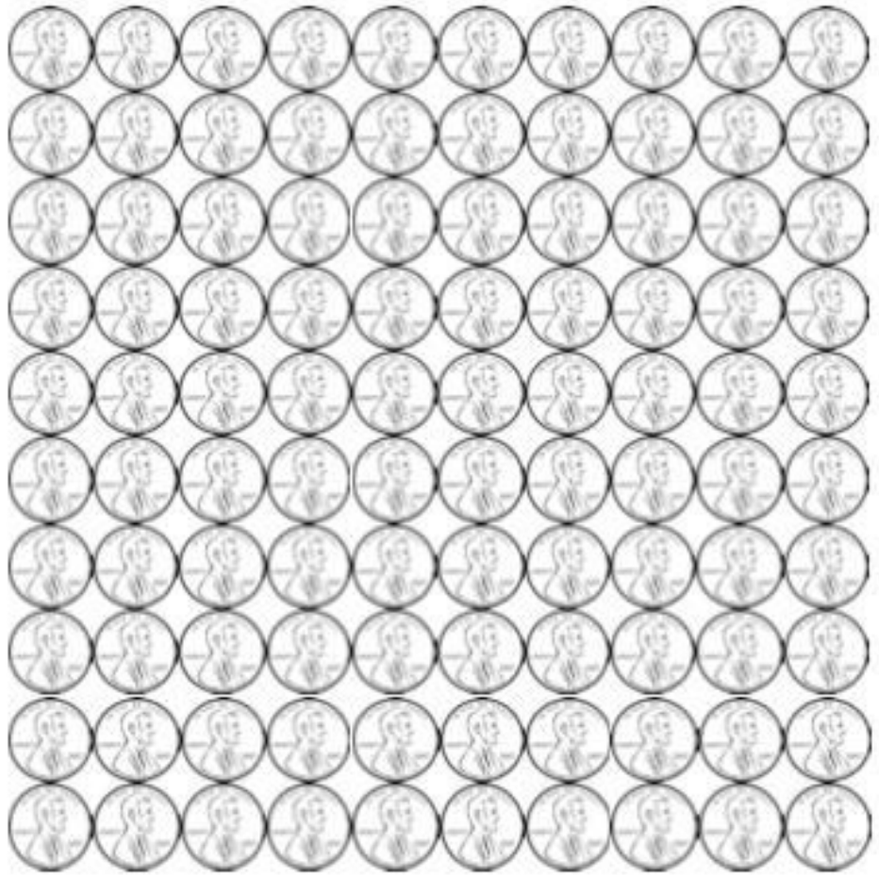
= $10.42

Problem Set

1 2 3 4 5

Problem Set

Name _____ Date _____



1. 100 pennies = $___.____ 100¢ = $\frac{\quad}{100}$ dollar

2. 1 penny = $___.____ 1¢ = $\frac{\quad}{100}$ dollar

3. 6 pennies = $___.____ 6¢ = $\frac{\quad}{100}$ dollar

4. 10 pennies = $___.____ 10¢ = $\frac{\quad}{100}$ dollar

5. 26 pennies = $___.____ 26¢ = $\frac{\quad}{100}$ dollar

Debrief

- How is money related to decimals and fractions? How is it different? Think about why we would write money in expanded form.
- I have $\frac{2}{5}$ dollar in my pocket. Use what you know about equivalent fractions to determine how many cents I have. What are some possible combinations of coins that may be in my pocket? Do not forget about nickels!

- Are \$1 and \$1.00 equal? Are \$0.1 and \$0.10 equal? Are all these forms correct? Which form may not be used frequently and why?
- How did the Application Problem prepare you for today's lesson?
- How might dimes be expressed as fractions differently than as tenths of a dollar? Use an example from Problems 6–10.
- How can the fraction of a dollar for Problem 13 be simplified?
- When adding fractions and whole numbers, we sometimes complete the next whole or the next hundred to simplify the addition. How, in Problem 20, could you decompose 8 dimes to simplify the addition?

Exit Ticket

Name _____ Date _____

Solve. Give the total amount of money in fraction and decimal form.

1. 2 quarters and 3 dimes

2. 1 quarter 7 dimes and 23 pennies