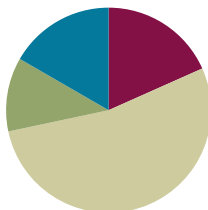


## Lesson 6

**Objective:** Recognize the value of coins and count up to find their total value.

### Suggested Lesson Structure

|                     |                     |
|---------------------|---------------------|
| Fluency Practice    | (11 minutes)        |
| Concept Development | (32 minutes)        |
| Application Problem | (7 minutes)         |
| Student Debrief     | (10 minutes)        |
| <b>Total Time</b>   | <b>(60 minutes)</b> |



### Fluency Practice (11 minutes)

- Grade 2 Core Fluency Differentiated Practice Sets **2.OA.2** (5 minutes)
- Decomposition Tree **2.NBT.5** (6 minutes)

### Grade 2 Core Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Core Fluency Practice Sets (Lesson 1 Core Fluency Practice Sets)

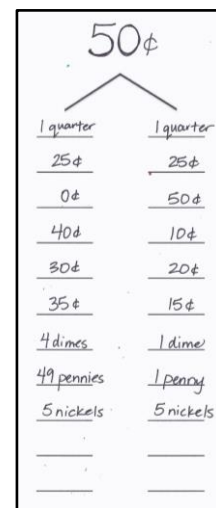
Note: During Topic B and for the remainder of the year, each day's Fluency Practice includes an opportunity for review and mastery of the sums and differences with totals through 20 by means of the Core Fluency Practice Sets or Sprints. The process is detailed and Practice Sets are provided in Lesson 1.

### Decomposition Tree (6 minutes)

Materials: (S) Decomposition tree (Fluency Template)

Note: Students are given 90 seconds to decompose a specified amount in as many ways as they can. This fluency activity allows students to work at their own skill level and decompose amounts in a multitude of ways in a short amount of time.

- T: (Post a blank Deco Tree.) I'm going to think of a way to break 50 cents into two parts. I know 2 quarters makes 50 cents, and each quarter is worth 25 cents.
- T: Watch me as I track our thinking on this Deco Tree. It is called a Deco Tree because we are decomposing the number at the top. The tree is like a number bond because the sum of the two parts is equal to the whole.



- T: Raise your hand when you have another way to break 50 cents into two parts.
- S: 0¢ and 50¢. → 40¢ and 10¢. → 30¢ and 20¢. → 35¢ and 15¢. → 4 dimes and 1 dime. → 49 pennies and 1 penny. → 5 nickels and 5 nickels.
- T: (Write each correct student response on the posted Deco Tree.)
- T: Great! You are on a roll! Now, let's see what you can do on your own. (Distribute tree Template.)
- T: You are going to break apart 60¢ on your own tree for 90 seconds. Make as many pairs as you can. Go!
- S: (Work for 90 seconds.)
- T: Now, exchange your tree with your partner, and check each other's work. (Allow students 30–45 seconds to check.)
- T: Return each other's papers. Did you see another way to make 60¢ on your partner's paper? (Allow students to share for another 30 seconds.)
- T: Turn your paper over. Let's break apart 60¢ for another minute.

### Concept Development (32 minutes)

Materials: (T/S) Personal white board, bag with the following play money coins: 4 quarters, 20 nickels, 10 dimes, 10 pennies

Note: Call students to sit in a circle in the communal area. This Concept Development assumes that students know the names of coins and their values based on lessons taught in Grade 1. If this is not the case, add time in the beginning of the lesson to review the names and values of the coins, and omit the Application Problem.

#### Part 1: Count coins in isolation.

- T: Let's count some money!
- T: (Hold up a penny.) This coin is called a...?
- S: Penny!
- T: What is its value?
- S: 1 cent!
- T: (Hold up a nickel.) This coin is called a...?
- S: Nickel!
- T: What is its value?
- S: 5 cents!
- T: (Hold up a dime.) This coin is called a...?
- S: Dime!
- T: What is its value?
- S: 10 cents!
- T: (Hold up a quarter.) This coin is called a...?
- S: Quarter!



#### NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Support English language learners by highlighting the names and values of the coins. Post a chart with a picture, the name, and the value of the coins for reference. Practice saying the names and the values of the coins with them. Students who need more practice can use interactive technology such as the one found at <http://www.ixl.com/math/grade-2/names-and-values-of-common-coins>.

T: What is its value?

S: 25 cents!

T: Use your personal white board to write an addition sentence that shows the value of 3 nickels. (Pause.) Tell me the number sentence.

S:  $5 + 5 + 5 = 15$ .

T: What coin do each of the fives represent in your number sentence?

S: A nickel!

T: Let's do the same with these 3 dimes.

T: Use your personal white board to write an addition sentence showing the value of 3 dimes. (Pause.) Tell me the number sentence.

S:  $10 + 10 + 10 = 30$ .

T: What coin do each of the tens represent in your number sentence?

S: A dime.

T: (Show 3 quarters.) Use your personal white board to write an addition sentence showing the value of 3 quarters. (Pause.) Tell me the number sentence.

S:  $25 + 25 + 25 = 75$ .

T: Let's look at our number sentences. (Point to  $5 + 5 + 5 = 15$ ,  $10 + 10 + 10 = 30$ , and  $25 + 25 + 25 = 75$ .) Each shows the value of 3 coins. Which coin is being counted for each number sentence? Review with your partner.

S: The 5s are counting nickels. → The 10s are counting dimes. →  $25 + 25 + 25$  is counting quarters.

T: Take out 10 nickels. Use skip-counting to find the value of the nickels.

S: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50.

T: Combine your nickels with your partner. Together, skip-count to find the value of your nickels.

S: 5, 10, 15... 100.



$$5 + 5 + 5 = 15$$



$$10 + 10 + 10 = 30$$



$$25 + 25 + 25 = 75$$

Support students, and listen for misconceptions. Repeat process with dimes.

T: Take out 1 nickel and 5 dimes. Skip-count starting with the value of the nickel.

S: 5, 15, 25, 35, 45, 55.

T: Exchange your nickel for a quarter. Skip-count starting with the value of the quarter.

S: 25, 35, 45, 55, 65, 75.

Listen carefully to students as they skip-count by 10 starting from a number other than zero. Provide additional examples as needed to solidify understanding.

**Part 2: Count mixed groups of coins starting with the largest value coin.**

T: (Take 2 dimes and 3 pennies out of your bag, and lay them down on a personal white board for the students to see.)

T: Turn and talk: What is the total value of my coins?

S: 23 cents!

T: When we write the total value of coins, we use this symbol, which means cents. (Write 23¢ on the board.)

T: Let's count the money together. Start with the dimes.

S: 10, 20, 21, 22, 23.

T: Let's count again. This time, start with the pennies.

S: 1, 2, 3, 13, 23.

T: Which was easier? Why?

S: Counting the dimes first. → If we count the dimes first, we can count by tens. Then, we add the ones.

T: So, it was easier to start with the largest coin value. Let's try that with the next problem.

T: (Take out 1 quarter, 1 nickel, and 1 penny.) Turn and talk: What is the total value of my coins, and how do you know?

S: 25 cents plus 5 more is 30 cents, plus 1 more is 31. → The quarter and the nickel make 30, plus the penny is 31.

**MP.4**

T: Write a number sentence to show the value of 1 quarter, 1 nickel, and 1 penny.

S: (Write  $25 + 5 + 1 = 31$ .)

T: It's so much easier to add 5 to 25 than to add 6 to 25. That's why I generally start counting the total value of coins from the largest coin.

Give students time to practice counting mixed groups with the following amounts:

- 1 quarter, 1 dime, 1 penny
- 1 quarter, 2 nickels, 1 dime
- 1 quarter, 2 pennies, 1 dime
- 1 quarter, 2 dimes, 1 nickel
- 2 quarters, 2 dimes, 1 nickel
- 2 quarters, 3 dimes
- 2 quarters, 5 dimes

Note: For the last amount in the sequence, explain to students that we can write 100 cents as 100¢ or \$1. (Write 100¢ and \$1 on the board.)



**NOTES ON  
MULTIPLE MEANS  
OF ACTION AND  
EXPRESSION:**

Challenge students working above grade level by asking them to assist by writing a few strings of different amounts using combinations of coins and to provide equations showing the values of those amounts.

**Part 3: Count mixed groups of coins by making ten.**

- T: (Take out 1 quarter, 3 dimes, 1 nickel, and 2 pennies.) Turn and talk: How much money do we have here, and how do you know?
- S: 25, 35, 45, 55, 60, 61, 62. → 25 cents plus 30 more is 55 cents, plus 5 more is 60, plus 2 more is 62. → 25, 30, 40, 50, 60, 61, 62. → The quarter and the nickel make 30. Then, I add 30 for the dimes to get 60. Then, add the pennies:  $60 + 2 = 62$ .
- T: Count the value of the coins for me from largest to smallest.
- S: 25, 35, 45, 55, 60, 61, 62.
- T: Did anyone count a different way?
- S: Yes! I added the quarter and nickel first. Then, I added the dimes. The pennies were last.
- T: You made ten first. Try counting that way.
- S: 25, 30, 40, 50, 60, 61, 62.
- T: For me, it is easier to make ten first by adding the nickel to the quarter. See if you agree using the following sets of coins. Try finding the total value of the coins by making a ten first and then by not making a ten first.

Write the following amounts on the board:

- 1 quarter, 2 pennies, 1 nickel, 2 dimes
- 1 quarter, 1 penny, 3 nickels, 1 dime

**Problem Set (10 minutes)**

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students should solve these problems using the RDW approach used for Application Problems.

**Application Problem (7 minutes)**

Note: This Application Problem follows the Concept Development because it provides practice for material taught during the Concept Development.

Sarah is saving money in her piggy bank. So far, she has 3 dimes, 1 quarter, and 8 pennies.

- How much money does Sarah have?
- How much more does she need to have a dollar?



30¢



25¢



8¢



$$30 \xrightarrow{+25} 55 \xrightarrow{+5} 60 \xrightarrow{+3} 63$$

a) Sarah has 63 cents.

$$b) 63 \xrightarrow{+7} 70 \xrightarrow{+30} 100$$

Sarah needs 37 cents to have 1 dollar.

## Student Debrief (10 minutes)

**Lesson Objective:** Recognize the value of coins and count up to find their total value.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at the first page of your Problem Set. Tell your partner about how the coins are laid out in each row. Where did you start counting? Why did you start there? (Some students might count left to right or right to left, save the dimes for last, or count randomly.) Tell your partner your counting path and why it is a good way to find the total value of the coins.
- Look at the second page. Tell your partner about how the coins are laid out in each box. How is it different from the first page? Which one was the easiest to find the value for? Why?
- Did anyone use an addition equation to find the value of the coins? Did skip-counting help you to add faster?
- How can we use what we know about sorting to help us find the value of coins? Could we use a table to help us find the value of a group of coins?

## Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 6 Problem Set 2•7

Name Henry Date \_\_\_\_\_

Count or add to find the total value of each group of coins.  
Write the value using the ¢ or \$ symbol.

|    |            |
|----|------------|
| 1. | <u>84</u>  |
| 2. | <u>14¢</u> |
| 3. | <u>25¢</u> |
| 4. | <u>19¢</u> |
| 5. | <u>31¢</u> |
| 6. | <u>36¢</u> |
| 7. | <u>52¢</u> |

COMMON CORE Lesson 6: Recognize the value of coins and count up to find their total value. engage<sup>ny</sup> 7.B.10

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 6 Problem Set 2•7

|            |            |
|------------|------------|
| 8.         | 9.         |
| <u>20¢</u> | <u>12¢</u> |
| 10.        | 11.        |
| <u>27¢</u> | <u>37¢</u> |
| 12.        | 13.        |
| <u>70¢</u> | <u>56¢</u> |
| 14.        | 15.        |
| <u>41</u>  | <u>95¢</u> |

COMMON CORE Lesson 6: Recognize the value of coins and count up to find their total value. engage<sup>ny</sup> 7.B.11

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Name \_\_\_\_\_

Date \_\_\_\_\_

Count or add to find the total value of each group of coins.

Write the value using the ¢ or \$ symbol.

|    |                                                                                      |       |
|----|--------------------------------------------------------------------------------------|-------|
| 1. |     | _____ |
| 2. |     | _____ |
| 3. |     | _____ |
| 4. |    | _____ |
| 5. |   | _____ |
| 6. |   | _____ |
| 7. |  | _____ |

|                                                                                                             |                                                                                                              |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <p>8.</p>  <p>_____</p>    | <p>9.</p>  <p>_____</p>    |
| <p>10.</p>  <p>_____</p>   | <p>11.</p>  <p>_____</p>   |
| <p>12.</p>  <p>_____</p>  | <p>13.</p>  <p>_____</p>  |
| <p>14.</p>  <p>_____</p> | <p>15.</p>  <p>_____</p> |

Name \_\_\_\_\_

Date \_\_\_\_\_

Count or add to find the total value of each group of coins.

Write the value using the ¢ or \$ symbol.

|                                                                                                           |                                                                                                            |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <p>1.</p>  <p>_____</p>  | <p>2.</p>  <p>_____</p>  |
| <p>3.</p>  <p>_____</p> | <p>4.</p>  <p>_____</p> |

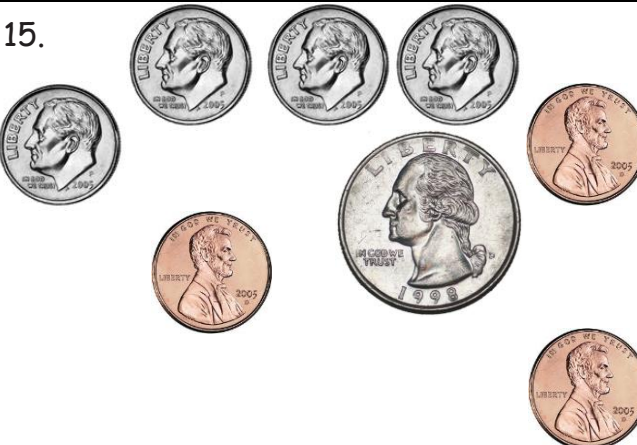
Name \_\_\_\_\_

Date \_\_\_\_\_

Count or add to find the total value of each group of coins.

Write the value using the ¢ or \$ symbol.

|    |                                                                                      |       |
|----|--------------------------------------------------------------------------------------|-------|
| 1. |     | _____ |
| 2. |     | _____ |
| 3. |     | _____ |
| 4. |    | _____ |
| 5. |   | _____ |
| 6. |   | _____ |
| 7. |  | _____ |

|                                                                                                             |                                                                                                              |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <p>8.</p>  <p>_____</p>    | <p>9.</p>  <p>_____</p>    |
| <p>10.</p>  <p>_____</p>   | <p>11.</p>  <p>_____</p>   |
| <p>12.</p>  <p>_____</p>  | <p>13.</p>  <p>_____</p>  |
| <p>14.</p>  <p>_____</p> | <p>15.</p>  <p>_____</p> |

[illegible]

decomposition tree