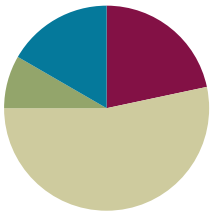
Lesson 23

Objective: Count on using pennies from any single coin.

Suggested Lesson Structure



Fluency Practice	(13 minutes)
Application Problem	(5 minutes)
Concept Development	(32 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (13 minutes)

- Core Fluency Differentiated Practice Sets **1.OA.6** (5 minutes)
- Standards Check: Subtraction Within 20 **1.OA.6** (8 minutes)

Core Fluency Differentiated Practice Sets (5 minutes)

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

Note: Give the appropriate Practice Set to each student. Students who completed all questions correctly on their most recent Practice Set should be given the next level of difficulty. All other students should try to improve their scores on their current levels.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or have them practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Sets completed within the allotted time.

Standards Check: Subtraction Within 20 (8 minutes)

Materials: (S) Personal white board

Note: This fluency activity shows which strategies students are using to subtract within 20. Students may show their work with a number bond, the arrow way, multi-step equations, or listing numbers to show how to count on.

Write the following list of strategies:

1. Count on or back.
2. Think of the addition problem.
3. Take from ten.
4. Use place value and a helper problem.

Say a subtraction expression. Students use their personal white boards to solve. Choose students who used different strategies to share what they did, or instruct students to share their strategies with a partner.

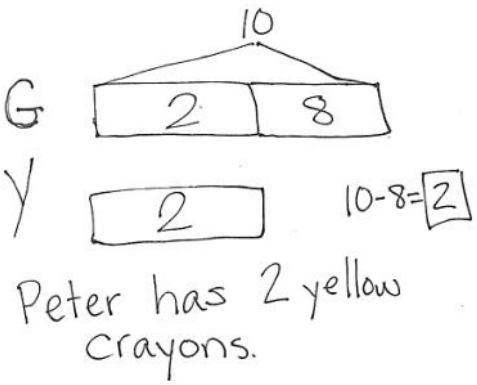
Suggested sequence:

- 15 – 1, 18 – 2
- 18 – 4, 19 – 7
- 12 – 3, 11 – 2
- 15 – 9, 17 – 8
- 16 – 14, 18 – 15

Application Problem (5 minutes)

Peter has 8 more green crayons than yellow crayons. Peter has 10 green crayons. How many yellow crayons does Peter have?

Note: Today's problem is a *compare with smaller unknown* where the problem suggests the wrong operation. Students are expected to have worked with these problems in Grade 1, but mastery is not expected until the end of Grade 2. Consider scaffolding such as, "Set up your tape diagram to first show the same number of green crayons and yellow crayons. Does Peter have more green crayons or yellow crayons? Add another section of tape (the *more* tape) to the green crayons. How many more green crayons does he have than yellow crayons?"



Concept Development (32 minutes)

Materials: (T) 1 quarter, 3–5 dimes, 2–4 nickels, 15 pennies (plastic or real), projector (S) 1 quarter, 3–5 dimes, 2–5 nickels, 25 pennies (plastic or real), 1 die per pair of students

Gather students in the meeting area with personal boards. Coins and dice are not needed until students play the game toward the end of the Concept Development.

T: (Project 1 quarter.) What is the name of this coin?
S: A quarter!
T: What is its value?
S: 25 cents.
T: (Add 1 penny to the quarter being projected.) How much money is shown now?
S: 26 cents!
T: How do you know?
S: You added one penny. That's one cent more.
T: What is 1 quarter plus 1 penny, a quarpenny? No such thing! But we can add their *values*! Let's try.

T: Tell me an addition sentence that puts together the value of the quarter and the value of the penny.
S: 25 + 1 = 26.
T: Tell me an addition sentence that puts together the value of a dime and the value of 3 pennies.
S: 10 + 3 = 13.
T: So, a dime and 3 pennies would be how much money?
S: 13 cents.
T: Try some more!

Repeat the process by projecting the following sequence of coins:

- 1 quarter, add 3 pennies
- 3 dimes, add 6 pennies
  (Use 5-group formation to show the 6 pennies. Discuss why the 5-group formation helps students know the total amount of pennies without counting.)
- 1 nickel, add 4 pennies
- 4 pennies, add 1 nickel
  (Have students explain which coins they counted first and why. Accept both preferences.)

Practice counting on pennies using the following sequence:

- 3 pennies, 1 nickel
- 3 pennies, 1 quarter
- 4 pennies, 1 quarter

T: (Show 1 penny, 1 dime, 4 pennies.) How can we group these to make it easier to count?
S: Put all the pennies together!
T: Great! Which will we be starting with, the dime or the pennies?
S: The dime!
T: That is just easier; I agree. So, let's move all the pennies together and place them after the dime. (Move the first penny next to the 4 pennies.)
T: Tell me an addition sentence that puts together the value of a dime, the value of 4 pennies, and the value of 1 penny.
S: 10 + 4 + 1 = 15.

NOTES ON MULTIPLE MEANS OF EXPRESSION:

Some students may have difficulty keeping track of counted and uncounted coins. Invite students to place their own coins out to match the teacher's set of coins. Using these coins, students may rearrange the coins or slide the coins over as they count.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Have students, who may have difficulty keeping track of their total coin values between turns, use their boards to keep track of their totals as they play.

Continue to practice counting on pennies, regardless of the order of the coins using the following sequence:

- 2 pennies, 1 dime, 2 pennies
- 2 pennies, 1 quarter, 3 pennies
- 1 quarter, 7 pennies
  (Be sure to use the 5-group formation when presenting the 7 pennies. Discuss how the formation can help students use the make ten strategy to add.)

Note: If time permits, have partners play First to 50 Cents (a version of Coin Exchange). The objective of the game is to be the first player with 50 cents.

First to 50 Cents

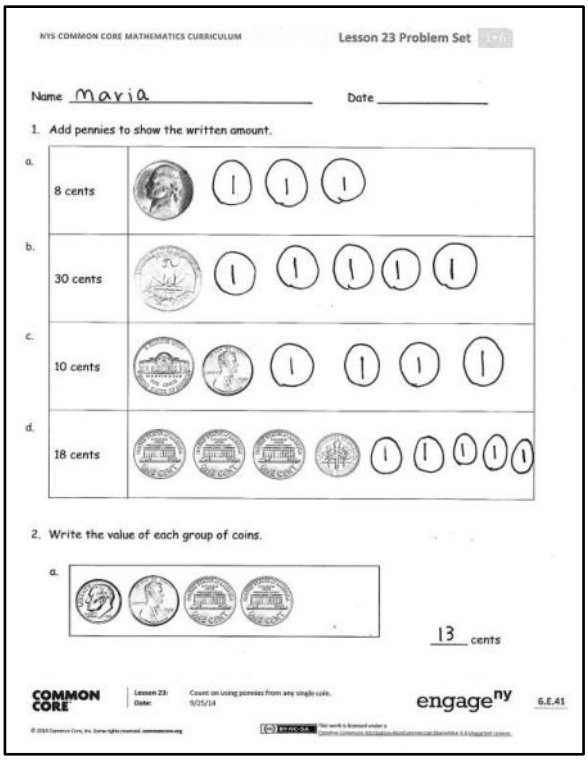
Players A and B each begin with 1 quarter.

1. Player A rolls the die and adds that many pennies to his quarter.
2. Player B rolls the die and adds that many pennies to her quarter.
3. Players continue to take turns until someone has at least 50 cents, trading pennies for nickels or dimes. No player who has 25 pennies can win!

Players might trade pennies for nickels, dimes, and finally a quarter as they play.

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.


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 23 Problem Set

Name Maria Date

1. Add pennies to show the written amount.

a. 8 cents

b. 30 cents

c. 10 cents

d. 18 cents

2. Write the value of each group of coins.

a. 13 cents

COMMON CORE Lesson 23: Date: 9/25/14 Count on using pennies from any single coin. engage^ny 6.E.41

Student Debrief (10 minutes)

Lesson Objective: Count on using pennies from any single coin.

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.

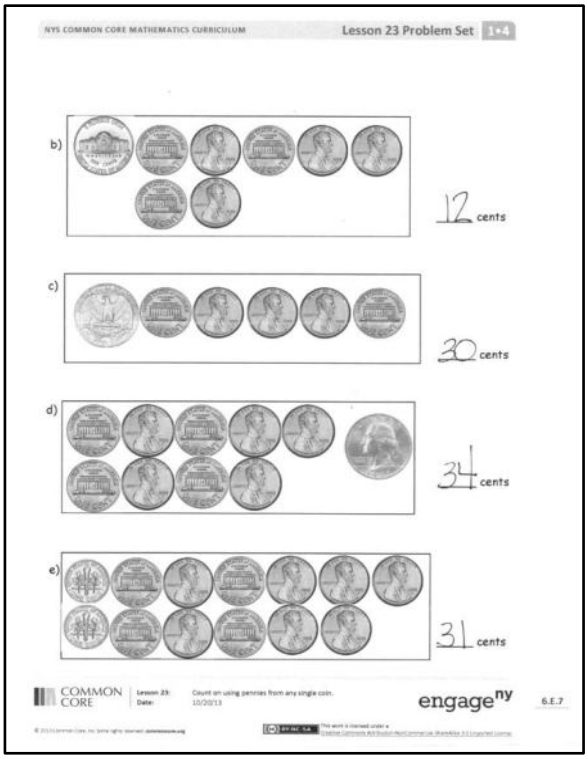
Any combination of the questions below may be used to lead the discussion.

- Look at Problem 2. How do 5-group formations help you count coins quickly?
- Three dimes and 1 dime is 4 dimes. Three pennies and 1 penny is 4 pennies. Why is it that 3 dimes and 1 penny don't equal 4 cents? What do we need to do in order to add dimes and pennies together? What is our label, or unit, to add 3 dimes and 1 penny in a number sentence? (30 cents + 1 cent = 31 cents. We change the unit to cents so that they have the same unit, which can be added together.)

- Look at Problem 2(b). How many cents are there? Look at Problem 2(c). How many cents are there? Why is the value of the coins in Problem 2(c) greater than the value of the coins in Problem 2(b) even though there are more coins in Problem 2(b)?

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.



Name _____ Date _____

1. Add pennies to show the written amount.

a.	8 cents	
b.	30 cents	
c.	10 cents	
d.	18 cents	

2. Write the value of each group of coins.

a.  _____ cents

b.

_____ cents

c.

_____ cents

d.

_____ cents

e.

_____ cents

Name _____ Date _____

Add pennies to show the written amount.

a.	9 cents	
b.	29 cents	

Name _____ Date _____

1. Add pennies to show the written amount.

a.	15 cents	
b.	28 cents	
c.	22 cents	
d.	32 cents	

2. Write the value of each group of coins.

a.  _____ cents

b.

_____ cents

c.

_____ cents

d.

_____ cents

e.

_____ cents