



Lesson

1-7

Counting Money

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Find the value of money, including \$5 and \$1 bills, half dollars, quarters, dimes, nickels, and pennies.	When counting money, it is often easiest to start with the bills or coins that have the greatest value. You can use skip counting to count money. To write money amounts, we can use a dollar sign and a decimal point.	dollar sign (p. 19) decimal point (p. 19)	Bills and coins or (Teaching Tool 36)



Math Background for Teachers

Since the numeration and currency systems in the United States are both decimal systems (based on ten), skills learned to count and compute in one system can be used to count and compute in the other system.

Counting ten-dollar, five-dollar, and one-dollar bills is the same as counting by 10s, 5s, and 1s. Likewise, counting quarters, dimes, nickels, and pennies is the same as counting by 25s, 10s, 5s, and 1s.

Begin counting with the bill or coin with the greatest value, then the bill or coin with the second greatest value, and so on. A given amount of money can usually be shown with several different combinations of bills and/or coins.

Reading and writing money amounts prepares students for reading and writing decimal amounts later.

Dollars are whole numbers and cents are decimal parts of dollars. For example, \$2.10 is two whole dollars and one tenth of a dollar.

For more information on the value of money, go to pp. 2A–2B

1 Daily Spiral Review

Daily Spiral Review Master

Name _____ Do 5 Spiral Review 1-7

Choose the best answer.

- Which is the standard form of five hundred twenty thousand, two hundred three?
 - 520,200
 - 520,205
 - 102,200
 - 102,203
- What is the place value of the 0 in 410,028?
 - Hundreds
 - Tens
 - Thousands
 - Ten thousands
- Which of the following number sentences belongs in the same fact family as $7 + 5 = 12$?
 - $12 - 5 = 7$
 - $12 + 7 = 5$
 - $7 - 5 = 2$
 - $12 - 7 = 19$
- Which number has the greatest value?
 - 3,674
 - 3,647
 - 3,764
 - 3,474

Use the table to answer 6 and 8.

State	Elevation
Colorado	9,784 feet
Maine	3,347 feet
Mass. (Am.)	3,347 feet
Vermont	4,392 feet

- Circle the state from previous 5b that has the highest elevation. **New York, Maine, Georgia, Vermont**
- One mile is equal to 5,280 feet. How many of the states have an elevation of greater than 1 mile? **1**
- Emily-Lisa had \$15 before going to the movies. The ticket cost \$8. How much money did she have left? **\$7**
- Describe an activity that takes about 1 second.
Sample answer: Jump

Content Reviewed

- Exercise 1 Standard Form
- Exercise 2 Place Value
- Exercise 3 Fact Families
- Exercise 4 Compare Whole Numbers
- Exercise 5 Order Whole Numbers
- Exercise 6 Compare Whole Numbers
- Exercise 7 Subtraction
- Exercise 8 Estimate Time

Problem of the Day

Problem of the Day 1-7

These are Turkish words for some numbers.

- | | |
|---------------|------------------|
| 1 <i>bir</i> | 10 <i>on</i> |
| 2 <i>iki</i> | 11 <i>on bir</i> |
| 4 <i>dört</i> | 12 <i>on iki</i> |

What is the value of *on dört*?

Explain.

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Content Reviewed

- Place Value
- Look for a Pattern

Tip Guide students to notice the existing pattern of naming numbers in Turkish and then to apply that pattern to determine the value of *on dört*.

On dört is 14, because *on* means 10 and *dört* means 4.

2 Develop the Concept: Interactive

Hands-On

10–15 min Interactive Learning

Overview Students find the value of a collection of bills and coins and write the total using a dollar sign and decimal point.

Essential Question How do you count money?

Materials Bill and coins or Teaching Tool 36

Vocabulary **dollar sign, decimal point**



Set the Purpose You know how to count with numbers. Now you will count with money.

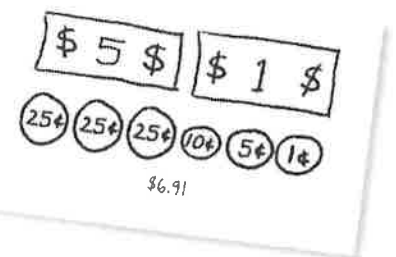
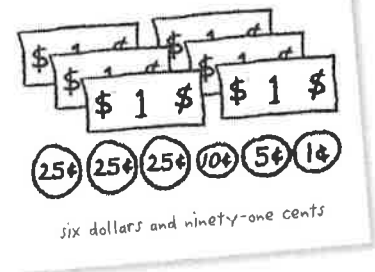
Connect When have you counted money? [Sample answers: to see how much I have saved, to see how much I am spending.]

Pose the Problem Distribute coins and bills. Suppose you want to use the exact amount of money to buy something that costs \$6.91. What could you give the salesperson? Have students work together to record their solutions.

Model/Demonstrate Model the combination of bills and coins that uses the least number of bills and coins. Start with the bill that has the greatest value. Show a \$5 bill. Then show a \$1 bill. How much are these two bills worth together? [6 dollars] Add a half dollar. Now what is the total value? [6 dollars and 50 cents] Add a quarter. What is the total value? [6 dollars and 75 cents] Repeat with the other coins until the models show \$6.91.

Academic Vocabulary Write 6 dollars and 91 cents and \$6.91 on the board. These are two ways to write the total value of the bills and coins. Point to the dollar sign. You have seen a dollar sign before. What does it show? [It shows a money amount.] Point to the decimal point. This is a decimal point. What two things does the decimal point separate? [The dollars from the cents]

Small-Group Interaction Have students work in pairs. One student writes an amount of money less than \$10, using the dollar sign and decimal point. The other student uses the models to show that amount. Students exchange roles.



Write \$7.45 on the board. Have students use their bills and coins to model the money amount in two different ways. [one 5-dollar bill, two 1-dollar bills, 4 dimes, 1 nickel; seven 1-dollar bills, 1 quarter, 2 dimes.]

eTools Money
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Link to Investigations, Second Edition

Joint-Usage Master Plan
Blended Instruction (Plan 1):
Topic 1 and Units 1, 3, and 8

3 Develop the Concept: Visual

Visual Learning

Counting Money

How do you count money?

Here are some familiar bills and coins.



half dollar
50¢ or \$0.50



5 dollars
\$5 or \$5.00



1 dollar
\$1 or \$1.00



quarter
25¢ or \$0.25



dime
10¢ or \$0.10



nickel
5¢ or \$0.05



penny
1¢ or \$0.01

Look at the two bills at the top of the page. How are they different? [Possible response: One is worth 5 dollars and the other is worth 1 dollar. The one-dollar bill has a picture of George Washington on it. The five-dollar bill has a picture of Abraham Lincoln on it.]

1 Visual Learning

Set the Purpose Call students' attention to the **Visual Learning Bridge** at the top of the page. *In this lesson you will learn the values of some common bills and coins, how to read and write money amounts, and how to count money.*

Animated Glossary Students can see highlighted words defined in the Online Student Edition.

dollar sign, decimal point

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Lesson

1-7

Counting Money

How do you count money?

Here are some familiar bills and coins.



half dollar
50¢ or \$0.50



quarter
25¢ or \$0.25



dime
10¢ or \$0.10



nickel
5¢ or \$0.05



penny
1¢ or \$0.01



5 dollars
\$5 or \$5.00



1 dollar
\$1 or \$1.00

Another Example

How can you show the same amount of money in different ways?

You can show money amounts in more than one way. Here are two ways to show \$2.56.

One Way



Another Way



Explain It

1. Could you show \$2.56 without using pennies? Explain. See margin.

2. How could you show \$2.56, using the least number of bills and coins? 2 one-dollar bills, 1 half dollar, 1 nickel, 1 penny

3. How do you use skip counting when you count money? Sample answer: You count by tens with dimes, by twenty-fives with quarters, and by fifties with half dollar coins.

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Another Example

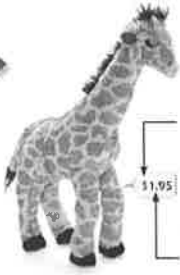
How do you read the money amounts? Call on students to read aloud some of the money amounts. Point out how the word "and" is used to separate the dollars and cents.

Explain It

For Exercise 2, explain to students that to find the least number of bills and coins to make a given amount, they start with the largest coin or bill that can be used to make up part of the amount. *How many \$1 bills can you use to make \$2.56?* [2] *How much money is left after that?* [\$0.56] *What is the largest coin you can use to make \$0.56?* [1 half dollar] *How much money is left after that?* [\$0.06] *What coins can you use to show \$0.06?* [Nickel, penny]

Answer

- No; counting by just half dollars, quarters, nickels, or dimes will not give 56 cents.



This toy costs one dollar and ninety-five cents.

A dollar sign shows money amounts.

A decimal point separates dollars and cents.

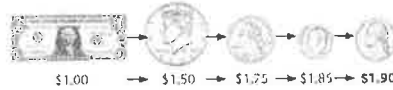
\$1.95

Prevent Misconceptions

Point out that although a decimal point looks like a period, it is called a *decimal point* in math. A period in a sentence signals the end of the sentence. When showing money amounts, a decimal point separates dollars and cents.

Greg has the money shown below. Does he have enough money to buy the toy giraffe?

To count money, start with the bill or coin of greatest value. Then count on to find the total value.

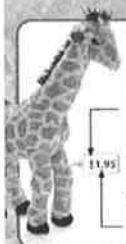


Write: \$1.90

Say: one dollar and ninety cents

No, Greg does not have enough money.

Why is it a good idea to start with the bill or coin of greatest value when you count money? [It is easier to count on when you start with the greatest value.]



This toy costs one dollar and ninety-five cents.

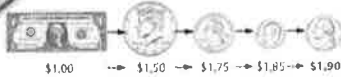
A dollar sign shows money amounts.

A decimal point separates dollars and cents.

\$1.95

Greg has the money shown below. Does he have enough money to buy the toy giraffe?

To count money, start with the bill or coin of greatest value. Then count on to find the total value.



Write: \$1.90

Say: one dollar and ninety cents

No, Greg does not have enough money.

2 Guided Practice

Remind students to place a zero between the dollar sign and the decimal point when the money amount is less than one dollar.

Exercise 4

Error Intervention

If students do not know how to find the least number of bills and coins,

then ask: *What is the largest bill you could use to show part of \$7.95? [A five-dollar bill] How many would you use? [One]* Encourage students to go on solving in this manner, finding the largest bills and coins that can be used to show the amount.

Reteaching For another example and more practice, assign **Reteaching Set E** on p. 29.

3 Independent Practice

Students may have difficulty remembering the value of each bill or coin. Students can write the value of each coin pictured before counting on to find the total value. Use Exercise 8 as an example. *1 half dollar = 50 cents, 1 quarter = 25 cents, 1 dime = 10 cents, 1 nickel = 5 cents, 1 penny = 1 cent. Now count on to find the total amount, "\$0.50, \$0.75, \$0.85, \$0.90, \$0.95, \$1.00, \$1.01"*

Do you know HOW?

Write the total value in dollars and cents.

- \$0.72
- \$1.30
- \$2.45

Do you UNDERSTAND?

- How could you show \$7.95 using the least number of bills and coins? See margin.
- What coins and bills could you use to show \$2.65 two ways? See margin.
- Number Sense: If you have 195 pennies, do you have enough money to buy the toy giraffe shown above? Yes, 195 pennies = \$1.95

Independent Practice

Write the total value in dollars and cents.

- \$0.98
- \$1.01



*For another example, see Set E on page 29.

Answers

- 1 five-dollar bill, 2 one-dollar bills, 1 half dollar, 1 quarter, 2 dimes
- Sample answer: 2 one-dollar bills, 2 quarters, 1 dime, 1 nickel; 2 half dollars, 4 quarters, 6 dimes, 1 nickel

3 Develop the Concept

Problem Solving

Exercise	Content
21	Number Sense
22	Count Money
23	Count Money
24	Count Money
25	Compare Whole Numbers
26	Count Money
27	Count Money
28	Compare Amounts of Money
29	Count Money
30	Count Money

Students use underlying processes and mathematical tools for Exercises 21–30. Remind students to check for reasonableness when solving each problem.

Exercise 22

Discuss the connection between the name of a coin and its value. Remind students that \$1.00 is the same as 100 cents. *Think of 3 quarters, 1 dime, and 1 nickel as $25 + 25 + 25 + 10 + 5$. How much money does Bob have? [90 cents] How many more cents does Bob need to make \$1.00? [10 cents]*

Independent Practice

Write the total value in dollars and cents.



\$1.70

11. 1 one-dollar bill, 1 half dollar, 3 nickels
\$1.65

13. 1 five-dollar bill, 1 one-dollar bill, 2 quarters, 3 dimes, 4 pennies
\$6.84

Compare the amounts. Write $<$, $>$, or $=$.

15. \$1.01 $\textcircled{>}$ 1 one-dollar bill

17. 9 dimes, 2 nickels $\textcircled{>}$ \$0.95

19. 10 quarters $\textcircled{=}$ \$2.50



\$6.86

12. 1 one-dollar bill, 2 half dollars, 1 quarter, 4 dimes, 4 nickels
\$2.85

14. 1 five-dollar bill, 3 quarters, 2 dimes, 2 nickels
\$6.05

16. \$0.83 $\textcircled{<}$ 3 quarters, 1 dime

18. \$1.60 $\textcircled{<}$ 2 half dollars, 3 quarters

20. \$3.15 $\textcircled{>}$ 4 half dollars, 4 quarters

Problem Solving

21. Look at the top of page 19. Keisha says Greg needs 5 more coins to have enough to buy the toy. Reni says he needs only 1 more coin. Explain who is correct. **They are both correct. He needs 5 pennies or 1 nickel.**
22. **Reasoning** Bob has 3 quarters, 1 dime, and 1 nickel. What coin does he need to make \$1.00?
1 dime
23. Show two ways to make \$3.62. Draw rectangles to represent bills. Draw circles with letters to represent coins.
Check students' drawings.
24. Tyler has 5 coins worth \$0.65. All of the coins are either quarters or dimes. How many of each coin does he have?
1 quarter, 4 dimes

25. Use the picture at the right. Each minute, the U.S. Treasury Department produces 30,000 coins. Are more coins or bills produced in 1 minute?
more coins



Use the table for 26–28.

Attraction	Adults (17 and up)	Youth (13–16)	Child (3–12)
Tram Ride	\$10.00	\$7.00	\$3.00
Movie	\$7.00	\$4.00	\$2.50

26. Suppose you had only half dollars and quarters. How many half dollars are needed to buy a child's ticket for the tram ride? How many quarters are needed?
6 half dollars or 12 quarters
27. If you were using quarters only, how many would you need for a child's movie ticket? If you were using dimes only, how many would you need?
10 quarters or 25 dimes
28. Reasoning When the Gateway Arch opened in July 1967, the total cost for 2 adult tram tickets and 1 child's tram ticket was \$2.50. What can you buy at the arch for that amount now?
A child's movie ticket

29. What is the total value of the 6 coins below?



- A \$0.81
B \$0.96
C \$1.21
D \$1.06

30. What is the total value of the 8 coins below?



- A \$1.02
B \$1.20
C \$1.07
D \$ 0.92

Exercise 29

Test-Taking Tip: Gather Information Encourage students to identify all the coins pictured and their values before counting. *In what order will you count the coins?* [The half dollar, the quarter, the dime, the 2 nickels, and the penny] *Why?* [It's easier to count money in order from the coin with the greatest value to the coin with the smallest value.]

See Extensions on p. 29A.

4 Close/Assess and Differentiate



Close

Essential Understanding When counting money, it is often easiest to start with the bills or coins that have the greatest value. You can use skip counting to count money. To write money amounts, we can use a dollar sign and a decimal point. *In this lesson, you learned how to read and write money amounts and how to count money.*

Assess


Use the **Quick Check** to assess students' understanding.

Quick Check Master

Name _____

Quick Check
1-7

1. How much money is on the counter?



A \$7.48
B \$7.55
C \$7.58
D \$7.63

2. Jenna has 1 half dollar, 1 quarter, and 3 nickels. Which coin does she need to have exactly \$1.00?
A a half dollar
B a quarter
C a dime
D a nickel

3. Writing to Explain How could you show \$2.86 using the least number of bills and coins? Draw rectangles for bills. Draw circles with letters for coins. Explain how you do it.

See students' samples at the right.

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Exercises 1 and 2 are worth 1 point each. Use the rubric to score Exercise 3.

Exercise 3

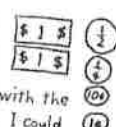
Writing to Explain Students decide how to show \$2.86 using the least number of bills and coins and explain their choice.

ELL: Suggest a Word List Offer these terms students can use to explain how to count money amounts: *coin, bill, value, and count on*

Student Samples


4-point answer The student has correctly drawn and labeled the bill and coin combination that uses the least number of bills and coins to make \$2.86. The student has provided a clear and well thought out explanation.

I had to use 2 one-dollar bills because a five-dollar bill is too much. I started with the greatest coins first. I could only use 1 half dollar because I would make \$3.00. I added a quarter, a dime, and a penny. If I used 2 quarters, that would be \$3.00 and that's too much.



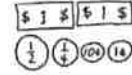
3-point answer The student has correctly drawn and labeled the bill and coin combination that uses the least number of bills and coins, and the student's explanation is adequate.

I had to use 2 one-dollar bills. Then I used the coins of the greatest value because that keeps the number of coins low.



2-point answer The student has correctly drawn and labeled the bill and coin combination, but his or her explanation is vague.

I used 2 dollar bills and then added the coins.



1-point answer The student has given the bill and coin combination that uses the least number of bills and coins, but did not draw them or provide an explanation.

2 dollars, 1 half dollar, 1 quarter, 1 dime, 1 penny

Prescription for Differentiated Instruction


Use student work on the **Quick Check** to prescribe differentiated instruction.

Points	Prescription
0-4	Intervention
5	On-Level
6	Advanced

Differentiated Instruction

Intervention

Counting Money

10 min 

Materials Bills and coins (Teaching Tool 36) (\$1 and \$5 only)

- Have students identify the name and value of each type of coin and bill.
- Ask students to use the coins and bills to show various equivalents for money amounts, such as "Show \$2.00 using quarters," or "Show \$0.50 using dimes."
- Remind students to count money by skip counting by the value of the coin or bill.
- Then have students find the values of various combinations of bills and coins by combining 2 different kinds of coins and/or bills, then combining 3 or more different coins and/or bills.

On-Level



Toss and Talk

10 min  or 

Materials Two number cubes, 10 squares in one color and 10 in another color, Center Activity 1-7 ☆

On each turn, a student or a team of two is given pictures of bills and coins. That student or team explains how to find the total value in dollars and cents.

ELL: Report Back To check understanding, ask a student to repeat and complete this sentence: *To count one dollar, two quarters, and one nickel, we say _____.*
 [One dollar; one dollar and twenty-five cents; one dollar and fifty cents; one dollar and fifty-five cents]

Advanced



Toss and Talk

10 min  or 

Materials Two number cubes, 10 squares in one color and 10 in another color, Center Activity 1-7 ☆☆

On each turn, a student or a team of two reads an amount of money that is represented with a dollar sign and a decimal point. That student or team determines the fewest number of coins needed to display the number of cents written after the decimal point.

Leveled Homework

Reteaching Master

Name _____ **Level** 1-7

Counting Money

1. Repeat the money story with the bills. Count to find the amount for each bill.



Count on \$1.00 \$4.00 \$7.00

\$7.25 \$7.35 \$7.45 \$7.55 \$7.61

2. Write the total value in dollars and cents.

1.  \$2.41

2.  \$8.40

3. Draw a picture showing two ways to make \$2.75 without using a half-dollar or penny.


Possible answers include 3 quarters, 2 quarters, 2 dimes, and 1 nickel, and 7 dimes and 1 nickel. There are others.

Practice Master

Name _____ **Level** 1-7

Counting Money

Write the total value in dollars and cents.

1.  \$2.86

2. 1 one-dollar bill, 2 quarters, 2 dimes, 1 nickel, 3 pennies \$1.78

3. 2 one-dollar bills, 3 quarters, 2 dimes, 2 pennies \$2.97

4. 1 five-dollar bill, one half-dollar, 2 dimes, 1 nickel \$6.30

5. 1 five-dollar bill, 2 one-dollar bills, 2 dimes, 3 nickels \$7.45

6. Skip count the amount. Write in dollars and cents.

6. \$1.00 > 1 one-dollar bill, 2 quarters, 7¢, 31¢ < 8 quarters

7. Reaching \$11.50, I have \$10.00 left. What coins do I need? 2 quarters, 2 nickels, and 1 penny

8. Make 10¢ with 3 coins. What coins do I need? 2 five-dollar bills and 4 one-dollar bills

9. What is the total amount of money you can use to show \$0.37? 4; one quarter, one dime, and 2 pennies

10. What is the total amount of money you can use to show \$1.03?

11. What is equal to exactly \$1.00?

A. 3 quarters and 2 pennies C. 1 half-dollar, 1 dime, and 1 penny
 B. 2 quarters, 2 dimes, and 2 nickels D. 1 half-dollar and 3 dimes

12. Explain how you can \$0.40 to show by different ways using skip counts each time?

1 half-dollar and 2 nickels, 2 quarters and 1 dime

Enrichment Master

Name _____ **Level** 1-7

Count Your Money

1. How much money is in each box? (Use the money in Collection A)

Box A: \$0.50 Box B: \$2.00 Box C: \$0.70

Box D: \$0.15 Box E: \$0.09

2. How much money is in Collection A altogether? \$3.44

3. How much money is in Collection B altogether?

Box A: \$2.00 Box B: \$0.50 Box C: \$0.60

Box D: \$0.25 Box E: \$0.10

4. How much money is in Collection D altogether? \$3.45

5. How much money is in Collections A and B altogether? \$6.89



Lesson
1-8

Making Change

Quick and Easy Lesson Overview

Objective	Essential Understanding	Vocabulary	Materials
Students will use coins and bills to figure out the change they should receive after purchasing an item.	Coins can be used to find the change, starting with the cost, counting on, and stopping at the amount paid.		Bills and coins (Teaching Tool 36)



Math Background for Teachers

Students have learned how to count money by ordering bills and coins and counting on. In this lesson, they learn how to make change. The strategy of counting on, rather than of subtraction, is a common way to make change. Making change can be thought of as a part (price) plus a part (change) equal to the whole (amount paid). To make change, students start with the price. They use coins and count on to the amount paid. The coins that they counted up are the change.

Have students practice the skill by checking their change in their everyday lives. They can estimate the amount before they receive it. Then they can count and check the amount.

For more information on making change, go to pp. 2A–2B.

1 Daily Spiral Review

Daily Spiral Review Master

Name: _____

Choose the best answer.

- Which has the greatest value?
 - A. 7 + 2
 - B. 6 + 5
 - C. 8 + 3
 - D. 11 + 8
- Which addition sentence will help you solve the problem?
 - A. $7 + 9 = 13$
 - B. $7 + 13 = 20$
 - C. $7 + 3 = 10$
 - D. $7 + 8 = 15$
- In the soccer league, 8 teams receive 3 points for a win, 1 point for a tie, and 0 points for a loss. Mario's team has 6 wins, 1 tie, and 2 losses. How many points does Mario's team have?
 - A. 7
 - B. 18
 - C. 19
 - D. 22
- A baseball team has 7 players. How many players in all are on 2 teams?

14
- Jerry works at a gas station and earns \$8 per hour. Jack earns \$6 per hour. How much more does Jerry earn than Jack in 1 hour?

\$3
- How much money will you let me in if you have a \$10 bill, a \$1 bill, 5 dimes, and 2 pennies?

\$11.52
- What digit makes the number sentence below true?

$415 + 4 = \square 6$
- One bus is equal to 12 inches. How many inches long is a string that is 1 foot, 8 inches long?

20 inches
- Lee counted 25 people ahead of him in line. What is the ordinal number for Lee's place in line?

26th

Page 1 101

Content Reviewed

- Exercise 1 Addition
- Exercise 2 Addition
- Exercise 3 Problem Solving
- Exercise 4 Addition
- Exercise 5 Subtraction Facts
- Exercise 6 Value of Coins and Bills
- Exercise 7 Compare Whole Numbers
- Exercise 8 Measurement
- Exercise 9 Ordinal Numbers

Problem of the Day

Problem of the Day 1-8

Jill bought milk, eggs, and bread at the grocery store. The receipt she received was ripped and the total was missing. How much did the three items cost Jill?

Grocery Store	
Milk	\$1.99
Eggs	\$2.99
Bread	\$1.79
Total	_____

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Content Reviewed

- Count Money
- Act It Out

Tips Have students use play money or drawings of the three amounts to find the total. Remind students to start counting with the largest bill or coin.

\$3.97

2 Develop the Concept: Interactive

Hands-On

10–15 min

Interactive Learning

Overview Students use bills and coins to find the change they should get.

Essential Question How do you count on to make change?

Materials Bills and coins (1 five-dollar bill, 3 one-dollar bills, 5 quarters, 5 dimes, 5 nickels, and 5 pennies per group) or Teaching Tool 36



Set the Purpose You have learned to count money. Today, you will learn to find the change you should get when you pay for an item.

Connect When have you received change? [When I bought something] Why did you get change? [I paid more than the item cost.]

Pose the Problem

Suppose you are buying something that costs \$1.40. You pay with 2 one-dollar bills. Work with your partner and use the play money in any way you can to find out how much change you should get. Record your work on a sheet of paper. Give students time to work.

Model/Demonstrate

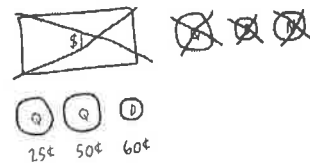
Invite several students to share the strategies they used. Point out that a method many people use to make change is to count up from the cost of an item to the amount paid. Write \$1.40 on the board. *What coin could you add on to \$1.40 that would make it easy to skip count?* [A dime] Draw a dime next to \$1.40. *How much have you shown now?* [\$1.50] Write \$1.50 below the dime. *You could keep using dimes until you got to \$2.00, but what is another coin that might be easier to use?* [A quarter] Continue counting up to \$2.00.

Link to Prior Knowledge

You have found the coins you could get for change. How can you find the amount you should get for change? [Count to find the value of the coins.] Count together. Have students count in unison as you point to each coin, larger coins first. *How much change should you get?* [\$0.60]

Small-Group Interaction

Work with your partner to solve this problem using the steps we just used. You are buying a pen that costs \$2.55. You pay with 3 one-dollar bills. *How much change should you get?* [\$0.45]



Suppose you pay for an item with two \$1 bills. You get at least one but fewer than five pennies as part of your change. What do you know about the cost of the item? [The last digit in the cost is 1, 2, 3, 4, 6, 7, 8, or 9.]

eTools Money
www.pearsonsuccessnet.com

Link to Investigations, Second Edition

Joint-Usage Master Plan
Blended Instruction (Plan 1):
Topic 1 and Units 1, 3, and 8

3 Develop the Concept: Visual

Visual Learning

Making Change

How do you count on to make change?

The Reading Club sold bookmarks at the school book fair. Rodrigo bought one bookmark. He paid with two \$1 bills. How much change should he get?

\$1.25 for each bookmark



Why should Rodrigo get change? [A bookmark costs \$1.25. Rodrigo paid \$2.00, which is more than the cost of the bookmark he bought.]

Step 1

Start with the cost. Count on from the cost to the amount paid. Use coins that will make skip counting easy.

Cost $\$1.25 \rightarrow \$1.50 \rightarrow \$1.75 \rightarrow \2.00 Amount Paid

1 Visual Learning

Set the Purpose Call students' attention to the **Visual Learning Bridge** at the top of the page. *In this lesson, you will learn to use coins, or coins and bills, to count on to find the change you should get when you pay for an item.*

2 Guided Practice

Remind students to start with the cost and stop at the amount paid as they find coins to use to count on.

Exercises 1 and 2

Error Intervention

If students have difficulty finding coins or bills to use when counting on to make change,

then ask: *What coin might you start with to count on from 94 cents? [A penny] You need to count on for a penny. What number do you use? [1] So what number do you get when you count on from 94? [95] What coin might you count on by next? [A nickel] What number would you use? [5] So what number do you get when you count on from 95? [100]*

Reteaching You may wish to have students find coins to count on for these examples: Cost: \$1.99, Amount Paid: \$2.00; Cost: \$1.45, Amount Paid: \$1.50; Cost: \$2.65, Amount Paid: \$2.75. When students have mastered these examples, move on to the examples provided on the student page. For another example and more practice, assign **Reteaching Set E** on p. 29.

3 Independent Practice

Students may have difficulty changing from one kind of coin to another kind of coin as they find change. Remind students to think of the value of each kind of coin and by what number to skip count for each. Use Exercise 5 as an example. *After you count on by 1 penny, what amount do you get? [80 cents] Should you still use a penny to count on, or is there another coin that you can count on by that would be faster? [Another coin; dime]*

Lesson 1-8

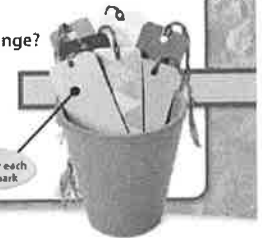
Understand It!
One way to find the amount of change is to count on from the cost to the amount paid.

Making Change

How do you count on to make change?

The Reading Club sold bookmarks at the school book fair. Rodrigo bought one bookmark. He paid with two \$1 bills. How much change should he get?

\$1.25 for each bookmark



Another Example

Paula bought a notebook for \$2.59. She paid with a \$5 bill. How much change should she get?

Cost $\$2.59 \rightarrow \$2.60 \rightarrow \$2.70 \rightarrow \$2.75 \rightarrow \$3.00 \rightarrow \$4.00 \rightarrow \$5.00$ Amount Paid

Paula's change should be \$2.41.

Guided Practice

Do you know HOW?

In 1 and 2, list coins and bills to make the change. Write the amount of the change.

- Cost: \$0.94 Amount paid: \$1.00
- Cost: \$2.35 Amount paid: \$5.00

Do you UNDERSTAND?

- Reasoning** In the notebook example, why does it make sense to start with a penny? See margin.
- Tamara bought some bookmarks for \$3.75. She paid with a \$5 bill. How much change should she get? \$1.25

Independent Practice

In 5–7, list coins and bills to make the change. Write the amount of the change. 5–7 See margin. Sample answers are given.

- Cost: \$0.79 Amount paid: \$1.00
- Cost: \$2.37 Amount paid: \$3.00
- Cost: \$3.21 Amount paid: \$5.00

22

*For another example, see Set E on page 29.

Answers

- Sample answer: 1 penny, 1 nickel; \$0.06
- Sample answer: 1 nickel, 1 dime, 2 quarters, 2 one-dollar bills; \$2.65
- Starting with a penny helps you get from \$0.09 to \$0.10.
- 1 penny, 2 dimes; \$0.21
- 3 pennies, 1 dime, 2 quarters; \$0.63
- 4 pennies, 3 quarters, 1 one-dollar bill; \$1.79



Suppose the cashier did not have 3 quarters. Could the cashier have given Rodrigo other coins? Explain. [The cashier could have given Rodrigo any coins that have the same value as 3 quarters.]

Prevent Misconceptions

Students may have difficulty deciding what coin to start counting on with. Have them experiment by starting from the same amount with different coins to find that there is no one correct coin to start with. However, choosing a certain coin can make the task easier.

Step 2

Find the total value of the coins you counted. There were 3 quarters.

3 quarters = \$0.75
Rodrigo's change should be \$0.75.

How can you check that \$0.75 is a reasonable amount of change? [Sample response: The cost of the bookmark is \$1.25, which is close to \$1. The change is also close to \$1. \$1 + \$1 = \$2, which is the amount Rodrigo paid.]

Step 1

Start with the cost. Count on from the cost to the amount paid. Use coins that will make skip counting easy.



Step 2

Find the total value of the coins you counted. There were 3 quarters.

3 quarters = \$0.75
Rodrigo's change should be \$0.75.

Problem Solving

Exercise	Content
8	Communicate Mathematical Understanding
9	Make Change
10	Make Change
11	Reasonableness
12	Place Value
13	Missing Addend
14	Make Change
15	Make Change

Problem Solving

Use the table at the right for 8–10. 8–10 See margin.

- Writing to Explain** Arun paid for a sticker with a \$1 bill. The change he received was all nickels. How many nickels did he get? Explain how you found your answer.
- Mariko bought a marker. She paid with 2 one-dollar bills. List coins and bills that could be her change.
- Reasonableness** Last year, the store sold 1,421 pencils. Walt said that was more than 14 hundred pencils. Is he correct? Explain. See margin.
- Algebra** Kei bought a pen. She paid with a \$1 bill. This is the change she got. How much did the pen cost?

Item	Price
Sharpener	\$0.67
Eraser	\$1.42
Marker	\$1.38
Pencil	\$0.56
Sticker	\$0.15

- Wally paid for an eraser with a \$5 bill. List coins and bills that could be his change.
- A community collected \$126,578 to help build a garden. What is the value of the 2 in \$126,578? \$20,000
- Rose bought a carton of milk that cost \$2.39. She paid with a \$5 bill. Which should be her change?
A \$7.39 C \$2.61
B \$2.71 D \$2.41



\$0.90

- What are two different ways that \$3.65 could be given as change?
Sample answers: 3 one-dollar bills, 2 quarters, 1 dime, 1 nickel;
3 one-dollar bills, 6 dimes, 1 nickel.

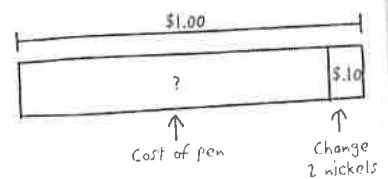
Answers

- 17 nickels. Sample answer: I skip counted by 5s from 15 cents to 1 dollar, 17 times.
- Sample answer: 2 pennies, 1 dime, 2 quarters
- Sample answer: 3 pennies, 1 nickel, 2 quarters, and 3 one-dollar bills; \$3.58
- Yes. Sample answer: One thousand = 10 hundreds, 10 hundreds + 4 hundreds = 14 hundreds, so 1,421 > 14 hundred.

Students use underlying processes and mathematical tools for Exercises 8–15. Remind students to check for reasonableness when solving each problem.

Exercise 13

Use Bar Diagrams Encourage students to draw a bar diagram to help them understand and solve the problem. *What stands for the whole in a bar diagram of this problem?* [The amount paid] *How can you show the 2 nickels in the diagram?* [Show the 2 nickels as part of the whole.] *How does the bar diagram help show what you need to find?* [You need to find the part that is missing.]



Early Finishers Look at Exercise 8. What other coins could make up the same amount as the amount Arun received as change? You can use any kinds of U.S. coins.

See Extensions on page 29A.

4 Close/Assess and Differentiate



Close

Essential Understanding Coins can be used to find the change, starting from the cost, counting on, and stopping at the amount paid. *In this lesson, you learned to use coins and bills to count on to find the change you should get when you pay for an item.*

Assess

Use the **Quick Check** to assess students' understanding.

Quick Check Master

Name _____ Quick Check 1-8

- Bob bought a game that cost \$1.57. He paid with \$2.00. What should he get in change?
 - A \$0.52
 - B \$0.53
 - C \$0.42
 - D \$0.51
- Kim paid \$1.00 for a book. The book cost \$0.85. What should she get in change she should get?
 - A
 - B
 - C
 - D
- Writing to Explain Abby bought a hat that cost \$4.40. She paid with a \$5 bill. Explain how to use coins to find the change. Draw the coins you used. Write the amount of the change.

See students' samples at the right.

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Exercises 1–3 are worth 1 point each. Use the rubric to score Exercise 3.

Exercise 3

Writing in Math Students should draw coins to show the correct change for a cost of \$4.40 and the amount paid of \$5.00.

ELL: Suggest a Word List Students who need additional writing support can use some of these words or phrases in their explanations: *amount paid, change, cost, count on, penny, nickel, dime, quarter, and dollar bill.*

Student Samples

4-point answer Coins are drawn to show the correct change for an item with a cost of \$4.40 and an amount paid of \$5.00. The student writes the change and fully explains how to use coins to find the change.

Cost \$4.40 → \$4.50 → \$4.75 → Amount paid \$5.00

(10¢) (25¢) (25¢)

Start at \$4.40.
Choose a dime and count on 10.
Choose a quarter and count on 25.
Choose a quarter and count on 25. Stop at \$5.00.
1 dime and 2 quarters = \$0.60
Abby's change should be \$0.60.

3-point answer Coins are drawn to show the correct change for an item with a cost of \$4.40 and an amount paid of \$5.00. The student writes the change, but does not fully explain how to use coins to find the change.

\$4.40 \$4.50 \$4.60 \$4.70 \$4.80 \$4.90 \$5.00

(10¢) (10¢) (10¢) (10¢) (10¢) (10¢)

The change is 60c.
Count on with dimes.

2-point answer Coins are drawn to show the correct change for an item with a cost of \$4.40 and an amount paid of \$5.00. The student writes the change, but gives an unclear explanation of how to use coins to find the change.

\$4.40 \$4.45 \$4.50 \$4.75 \$5.00

(5¢) (5¢) (25¢) (25¢)

I used 2 nickels and 2 quarters.

1-point answer Coins are drawn to show incorrect change for an item with a cost \$4.40 and an amount paid of \$5.00. The student gives an incorrect explanation of how to use coins to find the change.

(5¢) (5¢) (10¢) (10¢)

I used 2 nickels and 2 dimes.

Prescription for Differentiated Instruction

Use student work on the **Quick Check** to prescribe differentiated instruction.

Points	Prescription
0–4	Intervention
5	On-Level
6	Advanced

Differentiated Instruction

Intervention

Place Value Through Hundreds

10 min

Materials Bills and coins (Teaching Tool 36), classroom items for sale

- Set up a cashier situation. Model how to make change by displaying coins one-by-one, as students help to count on. The cost of a pen is \$1.20. Janie pays with \$1.50. How can we count on with coins from \$1.20 to \$1.50?
- If students do not suggest it, display a dime. Ask them what number they should count on by for a dime (10). Help students count aloud: \$1.20, \$1.30 (point at the dime). Then display 2 more dimes and count on.
- Then model how a nickel and a quarter also show the correct change.
- Continue with more examples.

On-Level



Display the Digits

10 min or

Materials Number tiles 0-9, Center Activity 1-8 ☆

On each turn, a student reads a question and then counts on to make change given the price of an item and the currency chosen to pay for the item. That student uses one or more number tiles to display the answer.

ELL: Partner Talk Listen for evidence that a student is counting on to make change. For example, a student might say, "If something costs 30 cents, I can pay with a dollar bill; 30 cents, plus two dimes and two quarters, is a dollar because 30 plus 20 plus 50 is one hundred cents. My change should be 70 cents."

Advanced



Display the Digits

10 min or

Materials Number tiles 0-9, Center Activity 1-8 ☆☆

On each turn, a student reads a question, looks at a table that lists the prices for various grocery items, determines the price of the item, and then counts on to make change given the currency used to pay for that item. When every question is answered correctly, each 0-9 tile is displayed exactly once.

Leveled Homework

Reteaching Master

Name _____ Knowledge 1-8

Making Change

Fill in the missing coins to make the change. Write the amount of change. **Sample answers are given.**

\$4.55	\$1.20	\$4.00	\$3.00
\$0.10	\$0.25	\$1.50	

Fill in how much change you received.

1. Paid \$5.10. Amount paid: \$3.00.
2 pennies, 2 dimes; \$2.22
 2. Paid \$4.40. Amount paid: \$5.00.
2 one-dollar bills; \$2.00
 3. Paid \$3.70. Amount paid: \$3.00.
1 penny, 2 dimes, 2 quarters; \$0.71
 4. Paid \$5.91. Amount paid: \$3.00.
4 pennies, 1 nickel, 1 dime, 1 one-dollar bill; \$2.91
5. **Reasoning** Joey and Ross each bought 1 orange for \$0.20 and paid with \$5.00. Joey received only one type of coin for change. How many coins did he receive?
Possible answer: Joey received 3 quarters and Ross received 1 nickel and 7 dimes.

Practice Master

Name _____ Knowledge 1-8

Making Change

Fill in the missing coins to make the change. Write the amount of change. **Sample answers are given.**

1. Cost: \$0.65. Amount paid: \$1.00.
1 penny, 1 dime, 1 quarter; \$0.36
2. Cost: \$1.10. Amount paid: \$2.00.
2 pennies, 1 nickel, 3 quarters; \$0.82
3. Cost: \$0.45. Amount paid: \$2.00.
1 penny, 1 dime, 2 one-dollar bills; \$2.11
4. Cost: \$4.00. Amount paid: \$8.00.
1 penny, 2 dimes, 3 quarters; \$0.96
5. **Reasoning** A newspaper costs \$0.10. How much money did the newspaper cost?
\$0.65
6. **Reasoning** A newspaper costs \$0.10. How much money did the newspaper cost?
\$0.65
7. Explain if it is possible to get 100 cents (1 dollar) with 200 coins.
No. Four quarters are equal to \$1.00 and \$0.26 is greater than a quarter, so four pennies would cost more than a dollar.
8. **Reasoning** A newspaper costs \$0.10. How much money did the newspaper cost?
\$0.65
9. **Reasoning** A newspaper costs \$0.10. How much money did the newspaper cost?
\$0.65

Enrichment Master

Name _____ Knowledge 1-8

What's on the Menu?

Read what each person says. Then find the item on the menu that they want to buy.

\$1.42	\$2.70	\$1.80	\$2.25
\$3.85	\$2.50	\$1.42	\$2.25

1. I paid with a one-dollar bill. I got back \$1.75 in change. What did I buy?
chicken sandwich
 2. I paid with 2 one-dollar bills. I got back 2 pennies, 1 nickel, and 2 quarters. What did I buy?
bottled water
 3. I gave the cashier 2 one-dollar bills and I got back 2 dimes. What did I buy?
orange juice
 4. I gave the cashier 3 one-dollar bills and I got back 2 quarters. What did I buy?
salad
 5. I paid with a five-dollar bill. I got back 1 penny, 2 dimes, and 2 one-dollar bills. What did I buy?
hamburger
 6. I gave the cashier 3 one-dollar bills and I got back 2 quarters. What did I buy?
pizza
7. **Reasoning** How many coins did you have to use to get \$1.00? Possible answers include 5 dimes; 1 nickel, 2 dimes, and 1 quarter

Making Change

List the coins and bills to make the change. Write the amount of change.

1. Cost: \$0.64

Amount paid: \$1.00

2. Cost: \$1.18

Amount paid: \$2.00

3. Cost: \$2.89

Amount paid: \$5.00

4. Cost: \$4.04

Amount paid: \$5.00

5. **Algebra** Alice paid for a newspaper with a \$1 bill. She received \$0.35 in change. How much money did the newspaper cost?

6. **Reasonableness** A new hair clip costs \$1.60. Janice paid with 2 one-dollar bills. She received 3 coins back in change. What were they?

7. **Explain It** If pencils cost \$0.26 each, could you buy four pencils with \$1.00? Explain.

8. Lizzie is going to buy a ruler for \$0.55 with a one-dollar bill. Marcy said Lizzie should get 1 quarter and 2 dimes for change. Patti said Lizzie should get 4 dimes and a nickel for change. Who is correct: Marcy, Patti, both, or neither?

9. Johnny bought a magazine for \$3.24. He paid with a \$5 bill. Which should be his change?

A \$1.76

C \$2.76

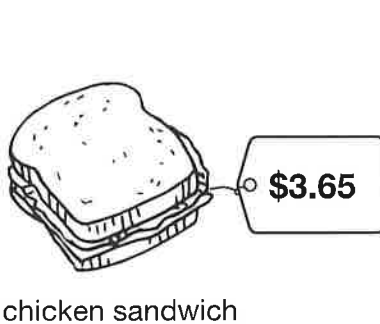
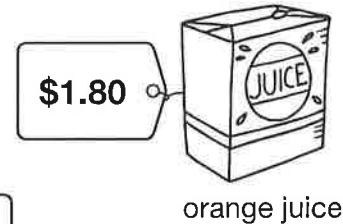
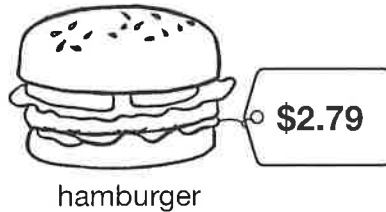
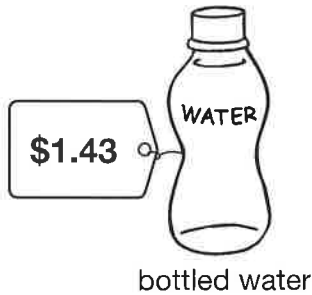
B \$1.86

D \$2.86

What's on the Menu?

Read what each person says. Then find the one menu item that each person bought.

Number Sense



1. I paid with a five-dollar bill. I got back \$1.35 in change. What did I buy?

2. I paid with 2 one-dollar bills. I got back 2 pennies, 1 nickel, and 2 quarters. What did I buy?

3. I gave the cashier 8 quarters and I got back 2 dimes. What did I buy?

4. I gave the cashier 3 one-dollar bills and got back 3 quarters. What did I buy?

5. I paid with a five-dollar bill. I got back 1 penny, 2 dimes, and 2 one-dollar bills. What did I buy?

6. I gave the cashier 3 one-dollar bills and got back 2 quarters. What did I buy?

7. Name two other ways that you could have received change back from giving the cashier 3 one-dollar bills for the pizza.

Counting Money

Write the total value in dollars and cents.

1.



2. 1 one-dollar bill, 2 quarters,
2 dimes, 1 nickel, 3 pennies

3. 2 one-dollar bills, 3 quarters,
2 dimes, 2 pennies

4. 1 five-dollar bill, one half dollar,
3 quarters, 1 nickel

5. 1 five-dollar bill, 2 one-dollar bills,
3 dimes, 3 nickels

Compare the amounts. Write $<$, $>$, or $=$.

6. \$1.55 1 one-dollar bill, 2 quarters 7. \$1.90 8 quarters

8. **Reasoning** Claire has 5 coins worth \$0.61. What coins does she have?

9. Mark has 6 bills worth \$14.00. What bills does he have?

10. What is the least number of coins you can use to show \$0.37?

11. Which is equal to exactly \$1.00?

- A 3 quarters and 2 dimes C 1 half dollar, 1 quarter, and 1 dime
- B 2 quarters, 2 dimes, and 2 nickels D 1 half dollar and 5 dimes

12. **Explain It** How can \$0.60 be shown two different ways using only 3 coins each time?

Counting Money and Making Change

For Exercises 1 through 8, find the change from a \$10 bill.

1. \$6.35 _____ 2. \$1.28 _____ 3. \$9.01 _____ 4. \$3.11 _____
5. \$8.88 _____ 6. \$7.70 _____ 7. \$0.37 _____ 8. \$4.56 _____

For Exercises 9 through 12, find each amount of money.



9. _____ 10. _____ 11. _____ 12. _____

13. Veronica buys a dress for \$45.99. She can pay with a \$50 bill.
What is the amount of money Veronica received in change?

14. Linda spent \$6.64, including tax, on a pair of socks. She paid
with a \$10 bill. What is the fewest number of coins that she
might get back in change?

- A 3 B 5 C 8 D 9

15. **Writing to Explain** Mike's bill for stamps comes out to
\$19.35. He paid with a \$20 bill. He got 8 coins back as
change. Is this possible? Explain.
