

# LESSON 9

## Objective

Know the relationships between the penny, nickel, and dime.

## Common Core State Standards

- **2.MD.8** Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.  
*Example: If you have 2 dimes and 3 pennies, how many cents do you have?*

## Measurement and Data

# Penny, Nickel, and Dime

With an understanding of the penny and the nickel and the relationship between them, children expand their work with money to include the dime. They perform counting, exchanging, and adding operations with all three coins. Coin Tiles can help children visualize these operations.

**Try It!** Perform the Try It! activity on the next page.

## Talk About It

Discuss the Try It! activity.

- **Ask:** How many pennies equal a dime? How many dime tiles do we have on the Hundred Board? On the board, write  $10 + 10 + 10 + 10 = 40$ .
- **Ask:** How many pennies equal a nickel? How many nickel tiles do we have on the Hundred Board? On the board, write  $40 + 5 = 45$ .
- **Ask:** How many penny tiles do we have on the Hundred Board? Can you trade 3 pennies in for any other coin? On the board, write  $45 + 3 = 48¢$ .

## Solve It

With children, reread the problem. Have children use dime, nickel, and penny tiles to find a different way to make 48¢, and draw the coins that Chelsea can trade her pennies for. Have children write the value of the coins as a number sentence.

## More Ideas

For other ways to teach about the relationships between pennies, nickels, and dimes—

- Give pairs an assortment of Coin Tiles. Have one child take the penny tiles and trade as many as possible for nickel tiles. Have the other child take the remaining nickel tiles and trade as many as possible for dime tiles. Have the pair determine the combined value of their tiles.
- Have pairs number a Four-Section Spinner (BLM 14) 1–4. Have them spin it three times to determine the numbers of penny, nickel, and dime Coin Tiles to take from a pile. Then have children place the tiles on a Hundred Board and tell how much money they have. Have them write a number sentence to represent the coins.

## Formative Assessment

Have children try the following problem.

*How many dimes can be traded for 6 nickels?*

- A. 2      B. 3      C. 12

**Try It!** 30 minutes | Pairs

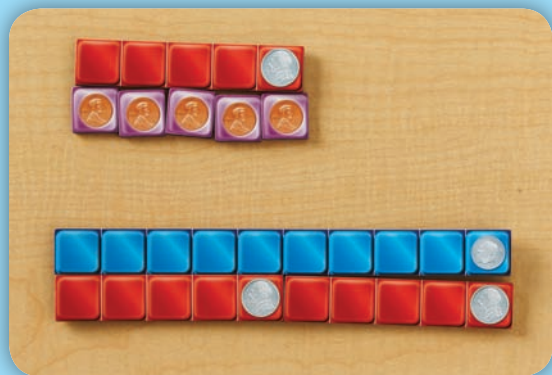
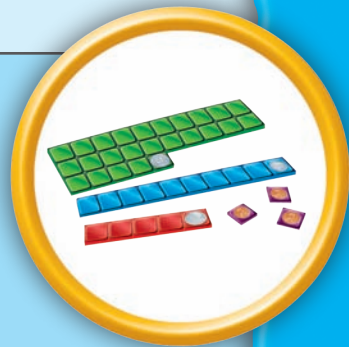
Here is a problem about the relationships between pennies, nickels, and dimes.

*Chelsea emptied her coin bank and sorted the coins. She had 48 pennies. She wants to exchange the pennies for nickels and dimes so she will have fewer coins. How many pennies will she have after the trade? If she wants the least possible number of coins, how many nickels and dimes will she get in the trade?*

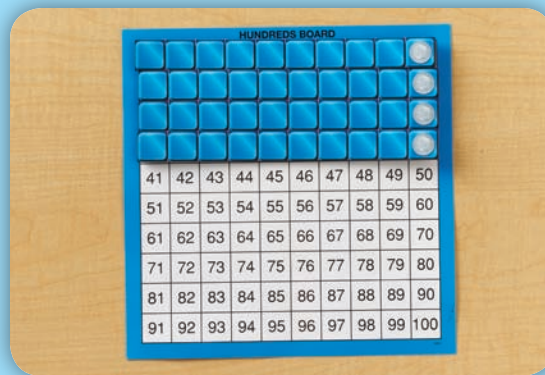
Introduce the problem. Then have children do the activity to solve the problem. Distribute Coin Tiles, Hundred Boards, paper, pencils, and crayons to children.

**Materials**

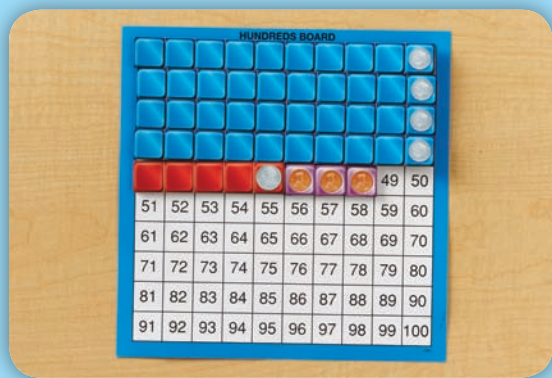
- Coin Tiles (1 set per pair)
- Hundred Boards (1 per pair)
- paper (1 sheet per pair)
- pencils (1 per child)
- crayons (1 set per pair)



**1. Say:** We know that there are 5 pennies in 1 nickel. **Ask:** How much is 1 dime worth? **Say:** Show how many pennies equal 1 dime by placing penny tiles next to a dime tile. Show how many nickels equal 1 dime by placing nickel tiles next to a dime tile.



**2. Say:** Chelsea wants to trade 48 pennies for nickels and dimes. Find 48 on the Hundred Board. Pretend that each square is a penny. **Ask:** How many pennies can Chelsea trade for a dime? **Say:** Take 1 dime tile and place it over 10 pennies. Repeat this until you don't have enough pennies to trade for another dime.



**3. Ask:** How many pennies are left? Can you trade any pennies for a nickel? **Say:** Place a nickel tile and penny tiles on the spaces that are left. **Ask:** How many pennies, nickels, and dimes can Chelsea trade her 48 pennies for?

**Look Out!**

Watch for children who are struggling with seeing the type of coin that pennies can be traded for. Explain that trading for the greatest coins possible makes carrying and counting the coins easier. Remind them that each row on the Hundred Board is worth 10 cents and that counting dimes is like counting by tens.

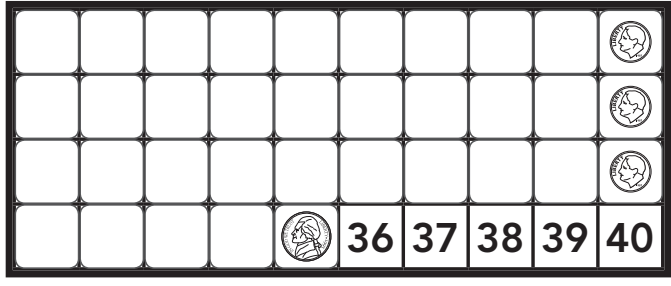
**Use Coin Tiles and a Hundred Board. Build the model. Circle the coins you can trade for.**

(Check students' work.)

1. 35 pennies



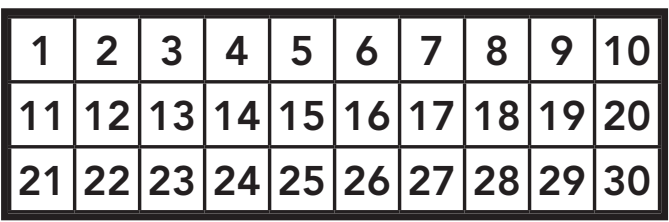
3 dimes, 1 nickel



**Use Coin Tiles and a Hundred Board. Build a model. Draw the model. Circle the coins you can trade for.**

2. 3 nickels and 12 pennies

2 dimes, 1 nickel



**Circle the coins you would use to pay for the item.**

3. an apple that costs 34¢

4. a cookie that costs 27¢



3 dimes and 4 pennies, or 2 dimes, 2 nickels, and 4 pennies

2 dimes, 1 nickel, and 2 pennies

**Write the total amount.**

5.

6.

## Answer Key

**Challenge!** Hoda has 8 coins that equal 43 cents. She has 3 pennies. What are her other coins? Use the Hundred Board and Coin Tiles. Draw or write the 8 coins she has.

Challenge: 3 dimes, 2 nickels, and 3 pennies

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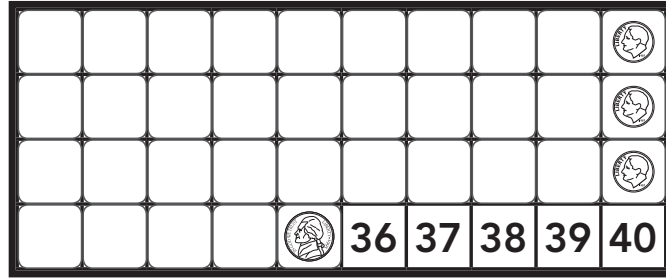
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**Use Coin Tiles and a Hundred Board. Build the model. Circle the coins you can trade for.**

1. 35 pennies



**Use Coin Tiles and a Hundred Board. Build a model. Draw the model. Circle the coins you can trade for.**

2. 3 nickels and 12 pennies



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

**Circle the coins you would use to pay for the item.**

3. an apple that costs 34¢



4. a cookie that costs 27¢



**Write the total amount.**

5.



6.



Name \_\_\_\_\_

**Challenge!** Hoda has 8 coins that equal 43 cents. She has 3 pennies. What are her other coins? Use the Hundred Board and Coin Tiles. Draw or write the 8 coins she has.

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