# Solve Problems Involving Coins

## Objective

Solve problems involving pennies, nickels, dimes, and quarters.

## 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?*

An understanding of the relationships between pennies, nickels, dimes, and quarters is essential to solving problems involving coins, such as the problems that children will encounter in real life. Practice with Coin Tiles can help children build confidence in handling money. And with sufficient confidence, children will be able to use mental math to find solutions to problems involving coins.

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

## Talk About It

Discuss the Try It! activity.

- **Ask:** *How much money did Jextin pay with? How can you find the total without using the Hundred Board? How much are 2 quarters worth? 4 dimes?* **Say:** *We can write this as 50 + 40 = 90¢.*
- **Ask:** *How much did the card cost? How much change did Jextin get?*
- **Say:** *When you find change, you are finding the difference between what is paid and the cost. You can "count up" from the cost to the amount paid to find the change. Jextin paid 90¢, and his card cost 83¢. To find his change, you count up from 83 to 90: 84, 85, 86, 87, 88, 89, 90. Since you counted out 7 ones, or pennies, the change is 7¢.*
- **Say:** *We also can find the amount of change by subtracting.* **Ask:** *How much is 90 minus 83? What coins can you use to make 7¢ change?*

## Solve It

With children, reread the problem. Have children draw the coins Jextin started with and write the total amount. Then have them draw and write how much change Jextin received.

## More Ideas

For another way to teach solving problems involving pennies, nickels, dimes, and quarters—

- Have pairs use Coin Tiles with the blank side of the Hundred Board. One child places Coin Tiles on the board. The other tells how many cents there are. The first child checks his/her partner's answer. Partners can double-check by placing the same Coin Tiles on the other side of the Hundred Board.

## Formative Assessment

Have children try the following problem.

*If you have 2 quarters, 2 dimes, 2 nickels, and 2 pennies, how much money do you have?*

**A.** 72¢    **B.** 82¢    **C.** 87¢

## Try It! 30 minutes | Pairs

Here is a problem involving pennies, nickels, dimes, and quarters.

*Jextin went to the card store. He found a card that cost 83¢. He paid for the card using 2 quarters and 4 dimes. How much change did Jextin receive?*

Introduce the problem. Then have children do the activity to solve the problem. Distribute Coin Tiles, Hundred Boards, paper, pencils, crayons, and markers 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)
- dry erase markers (1 set per pair)
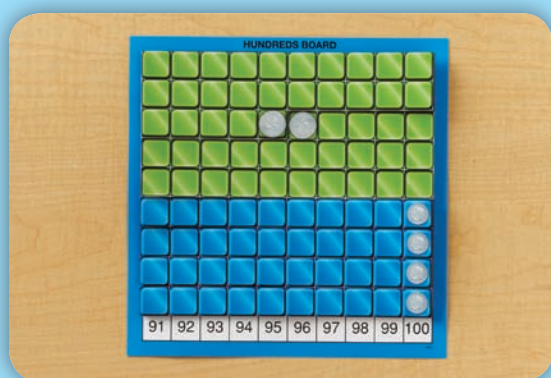


**1. Say:** *First let's put all the coins Jextin paid with on the Hundred Board. Start with the quarters, then add the dimes.* **Ask:** *How much money did Jextin pay?* Have children remove the tiles and circle 90 using a red crayon or dry erase marker.
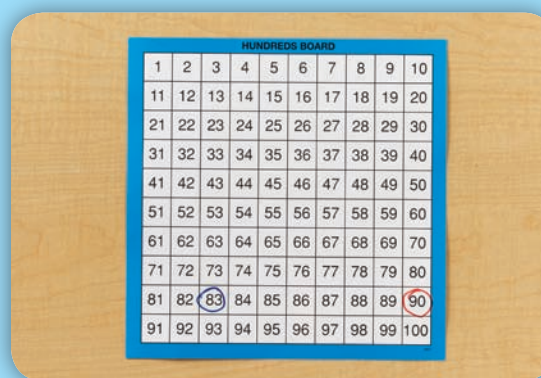


**2. Ask:** *How much did Jextin's card cost?* Have children circle 83 on the Hundred Board using a blue crayon or dry erase marker.
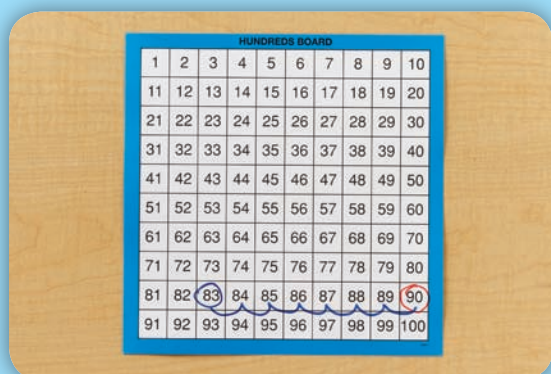


**3. Say:** *The change Jextin received is the difference between the amount he paid and the cost. You need to count from the cost, 83¢, to the amount Jextin paid, 90¢. This is called "counting up." Find out how much change Jextin received.*

## ⚠ Look Out!

Watch for children who don't count the number of squares past the cost of the card. Remind them that the change is the extra that was paid, which is represented on the Hundred Board by the distance from the cost to the amount paid.

## Use Coin Tiles and a Hundred Board. (Check students' work.)

**1.** Devin and Kevin want to buy a gift for their dad. Devin has 3 dimes, 1 nickel, and 3 pennies. Kevin has 1 quarter, 1 dime, 3 nickels, and 4 pennies. How much do they have together for the gift?

_____38_____ + _____54_____ = _____92¢_____

## Circle the price. Color the amount paid. Find the change.

**2.** Price 57¢; amount paid 75¢.

57 circled, 75 colored, change: 18¢

change: _____¢

| 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 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

**3.** Price 72¢; amount paid 80¢.

72 circled, 80 colored, change: 8¢

change: _____¢

| 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 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

**4.** Write the change for each row.

| Price | Paid | Change |
|-------|------|--------|
| 55¢ | 🪙🪙🪙 | 20¢ |
| 63¢ | 🪙🪙🪙🪙 | 7¢ |
| 94¢ | 🪙🪙🪙🪙🪙 | 1¢ |
| 33¢ | 🪙🪙🪙🪙🪙 | 17¢ |

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**Challenge!**   Phillip has 2 dimes, 4 nickels, and 3 pennies. Lauren has 1 quarter, 1 nickel, and 9 pennies. How much does each person have? Who has more money?

Challenge: Phillip: 43¢, Lauren: 39¢; Phillip has more money than Lauren.

_____

_____

_____

_____

_____

_____

Name _____

## Use Coin Tiles and a Hundred Board.

**1.** Devin and Kevin want to buy a gift for their dad. Devin has 3 dimes, 1 nickel, and 3 pennies. Kevin has 1 quarter, 1 dime, 3 nickels, and 4 pennies. How much do they have together for the gift?

_____ + _____ = _____

## Circle the price. Color the amount paid. Find the change.

**2.** Price 57¢; amount paid 75¢.

| 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 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

change: _____¢

**3.** Price 72¢; amount paid 80¢.

| 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 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

change: _____¢

**4.** Write the change for each row.

| Price | Paid | Change |
|-------|------|--------|
| 55¢ | (3 quarters) | |
| 63¢ | (2 quarters, 2 dimes) | |
| 94¢ | (3 quarters, 2 dimes) | |
| 33¢ | (5 nickels) | |

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**Challenge!** Phillip has 2 dimes, 4 nickels, and 3 pennies. Lauren has 1 quarter, 1 nickel, and 9 pennies. How much does each person have? Who has more money?

_____

_____

_____

_____

_____

_____