



Cashier Challenge

Mission: It's your first shift at the register and the change machine is broken! Make exact change by counting up with bills and coins, just like real cashiers do.

Big question: How can counting up help us subtract decimals?

★ Warm-up: Number talk

Solve mentally. Show your jumps.

\$13.47 → \$13.50 is how much? ✓ **3 cents.**

\$13.50 → \$14.00? ✓ **50 cents.**

Key vocabulary

Difference	The result of subtraction.
Counting up	Adding on from the smaller number to reach the larger number.
Change	Money given back when someone pays more than the price.
Friendly number	An easy number to jump to, like a whole dollar.

1 Box 1

Why count up?

Why is counting up easier than subtracting $20.00 - 13.47$ on paper?

- ☐ You avoid regrouping across zeros, using friendly jumps instead ☐ It isn't easier
☐ You don't need to know place value

✓ **You avoid regrouping across zeros, using friendly jumps instead**

2 Box 2

Customer 2

In the simulator: Make exact change for \$6.82 paid with \$10.

Change?

Answer: _____ \$ ✓ **3.18**

Show your thinking:

3 Box 3

Customer 3

In the simulator: Make exact change for \$28.35 paid with \$50.

Change?

Answer: _____ \$ ✓ **21.65**

Show your thinking:

4 Box 4

Customer 4

In the simulator: Make exact change for \$4.09 paid with \$5.

Change?

Answer: _____ \$ ✓ **0.91**

Show your thinking:

5 Box 5

Error detective

How can you tell it is wrong using counting up?

☐ \$6.82 + \$4.28 = \$11.10, not \$10.00 ☐ It is right ☐ You can't check subtraction

✓ **\$6.82 + \$4.28 = \$11.10, not \$10.00**

6 Box 6

Legend: fewest pieces Legend only

What is the FEWEST number of bills and coins to make \$6.53 in change?

Answer: _____ pieces ✓ **7**

Show your thinking:

7 Box 7

Train a new cashier

Explain to a new cashier how to count up change for a \$13.47 purchase paid with \$20.

Look for: Jumps to a friendly number; Counts up to \$20; a number from the simulator

Exit ticket: answer the big question in your own words

How can counting up help us subtract decimals?

Look for: You can subtract decimals by counting up from the price to the amount paid: first to the next dime or dollar, then by bigger jumps. The coins and bills you hand back add up to the difference.

Completion codes

Students see a code like **ABC-I3** when they finish. The first part must match below. The letter is the level (E = Explorer, I = Investigator, L = Legend), and the number at the end is how many stars they earned.

Level	Code starts with
 Explorer	1IJ-E
 Investigator	PMP-I

 Watch for these misconceptions

- "Longer decimals are bigger." 0.45 is less than 0.5.
- "Line up the digits on the right when adding." Line up the decimal points.
- "Multiplying always gives a bigger answer." Multiplying by a decimal less than 1 gives a smaller answer.