# Making Change - Estimates and Calculations (Subtraction)

Suggested time: 45 minutes

**What's important in this lesson:**
It is important for you to be able to create different combinations of bills and coins that represent the same dollar value. You will need to remember both the estimation skills and calculations skills that you have already covered in this course.

**Complete these steps:**

1. Read through the Lesson portion of the package independently.
2. Complete the required 'Practice' questions.
3. Seek assistance from teacher as needed. If you have questions about the examples or the 'Practice' questions.
4. Use 'Practice' Answer Keys to check their answers as they work through the package. If you are making errors, have your teacher review these questions with you.
5. Complete the Making Change Assignment.

**Hand-in the following to your teacher:**

1. Practice Problems from the Student Handout
2. The Making Change Assignment

**Questions for the teacher:**

# Making Change
## Estimates and Calculations (Subtraction)

Part A - Change It!

Example

1. How many different ways can a cashier give $5.00 in change?

   a. 1 five dollar bill
   b. 2 toonies and 1 loonie
   c. 5 loonies
   d. 4 loonies and 4 quarters

   Give 3 other ways to make $5 below:

   1. _____
   2. _____
   3. _____

**If you were the CASHIER, which of these would you prefer to give as change?**

*Probably the 1 five-dollar bill, since it is the least number of coins/bills*

**If you were the CUSTOMER, which of these would you prefer to give as change?**

*Probably the 1 five dollar bill, unless you need the coins for something.*

Example

2. What is the LEAST number of coins that you can use to make $3.45?

   Count these:
   a) using 12 coins - 3 loonies, 4 dimes, 5 pennies
   b) using 7 coins - 3 loonies, 1 quarter, 1 dime, 2 nickels
   c) using 5 coins - 1 toonie, 1 loonie, 1 quarter, 2 dimes

**Although all 3 of these add up to $3.45, we can see that 5 is the least number of coins that we can use to make $3.45!**

Practice Problems

For each amount below, write out the LEAST number of coins/bills possible to make that amount:

(You can use PENNIES, NICKELS, DIMES, QUARTERS, LOONIES, TOONIES, $5 BILLS, $10 BILLS and $20 BILLS)

1. $7.50 - _____

   (_____coins/bills)

2. $2.95 - _____

   (_____coins/bills)

3. $12.63 - _____

   (_____coins/bills)

4. $9.87 - _____

   (_____coins/bills)

5. $28.48 - _____

   (_____coins/bills)

6. $31.77 - _____

   (_____coins/bills)

*** Check the answers to these questions before moving on to part B!**

Part B - Estimating and Making Change

**For this lesson, sales taxes do not need to be calculated!**

Example

1. a. ESTIMATE and CALCULATE the answer: **20 - 3.90**

| Estimation | Calculation |
|---|---|
| Round 3.90 to 4<br>then 20 - 4 = 16 | 20 - 3.90 = 16.10 |

a. Are the estimate and answer close? **Yes, 16 and 16.10 are very close!**

b. Why is the ESTIMATION LOWER than the exact answer?

**When we rounded 3.90 to 4, we rounded UP, so it looked like we were subtracting MORE!**

c. How is this useful to us?

**If we have to pay for a $3.90 item, and we only have a $20 bill, we can estimate how much change we will get - about $16.**

2. Imagine that you wish to buy the following items:

shirt - $21.95
socks - $3.95
hat - $12.85

a. You only have $40 cash on you. ESTIMATE if you can buy all 3 items:

**Round the items to the nearest DOLLAR - shirt: $22, socks: $4, hat: $14**

**The ESTIMATED TOTAL is $22 + $4 + $13 = $39**

b. So, will you have enough money?

**Since you rounded all prices UP, it looks like you will have enough money.**

c. ESTIMATE the change that you will receive from your $40.

**$40 - $39 = $1 (change)**

d. CALCULATE the exact COST and CHANGE that you will receive from $40.

**COST = $21.95 + $3.95 + $12.85 = $38.75**

**CHANGE = $40 - 38.75 = $1.25**
*A little more than our estimate of $1!*

Practice Problems

1. ESTIMATE and CALCULATE how much change you will get when you use a $20 bill to pay for an item costing $11.89.

2. ESTIMATE and CALCULATE how much change you will get from $10 if you buy the following items: pack of gum ($0.87), large bag of chips ($2.99), and a bottle of pop ($2.11).

*** Check the answers to these questions before moving on!**

## Making Change Assignment

1. Write out 3 different ways that you can use coins and/or bills to make $17.43

   a. _____

   b. _____

   c. _____

2. For each amount below, write out the LEAST number of coins/bills possible to make that amount:

   a. $8.98 - _____

      (____coins/bills)

   b. $23.66 - _____

      (____coins/bills)

3. If you use a $20 bill to pay for a CD costing $16.95, ESTIMATE (by rounding) and then CALCULATE the change that you will receive.

| Estimation | Calculation |
|---|---|
| | |

4. Imagine that you have $30 in your wallet, use rounding (to the nearest dollar) to ESTIMATE if you have enough money for the following items:

   movie ticket ($13.05), large popcorn ($7.90), large drink ($5.95), candy ($4.20)

5. ESTIMATE and then CALCULATE the change that you will receive when you use a $20 bill to pay for the following items:

   hot dogs ($2.99), buns ($1.79), ketchup ($2.19), mustard ($1.88)

| Estimation | Calculation |
|---|---|
| | |

6. List the coins that you will most likely get back as change from #5.