Just in Time Quick Check

Standard of Learning 3.NS.4

Strand: Number and Number Sense

Standard of Learning 3.NS.4

The student will solve problems, including those in context, that involve counting, comparing, representing, and making change for money amounts up to $5.00.

Students will demonstrate the following Knowledge and Skills:

a) Determine the value of a collection of bills and coins whose total is $5.00 or less.

b) Construct a set of bills and coins to total a given amount of money whose value is $5.00 or less.

c) Compare the values of two sets of coins or two sets of bills and coins, up to $5.00, with words (*greater than, less than, equal to)* and/or symbols (>, <, =) using concrete or pictorial models.

d) Solve contextual problems to make change from $5.00 or less by using counting on or counting back strategies with concrete or pictorial models.

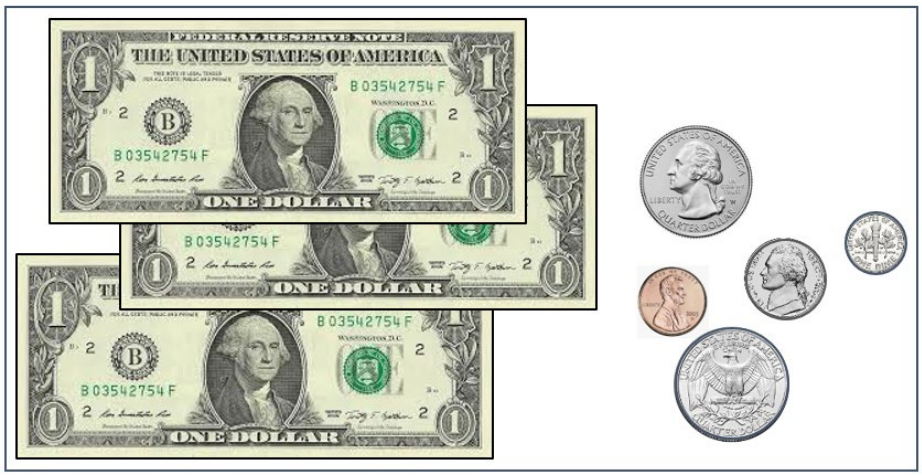
Just in Time Quick Check

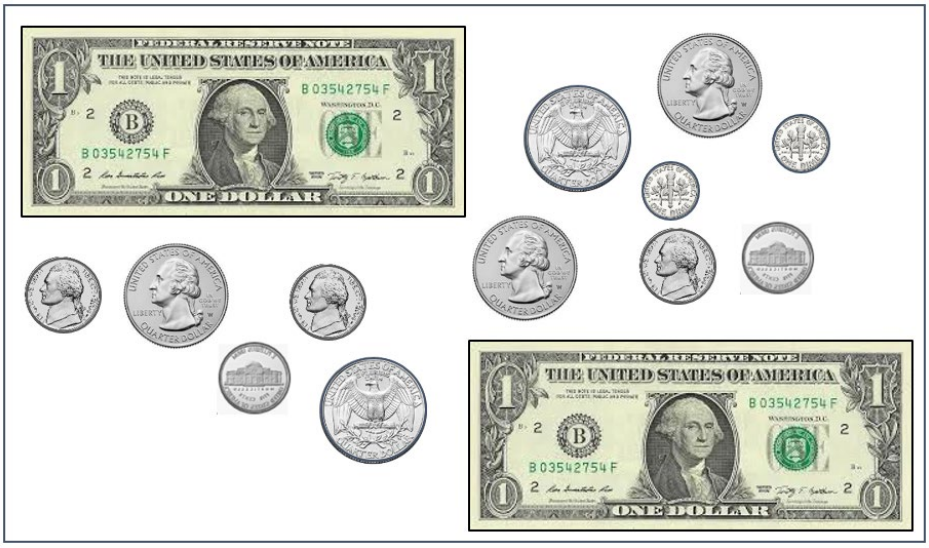
Just in Time Quick Check Teacher Notes

Supporting and Prerequisite SOL: 2.NS.4

Just in Time Quick Check 3.NS.4

1. Write the value next to each set of money.





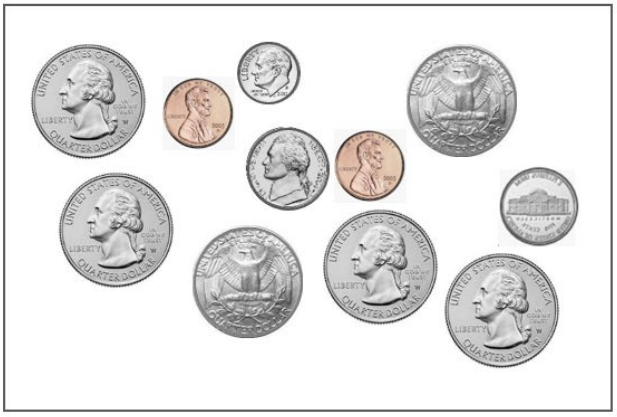
2. Using the symbols in the key, draw a set of money with a total value of $4.87.

KEY:

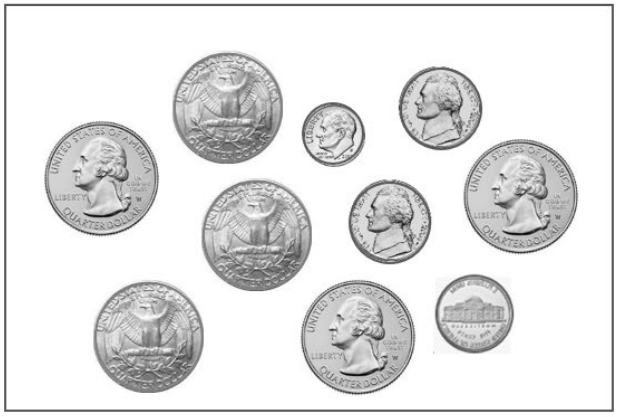
$1 = one dollar	Q = quarter	P = penny	D = dime	N = nickel

3. Circle the words to compare the sets of money shown.

Set Y



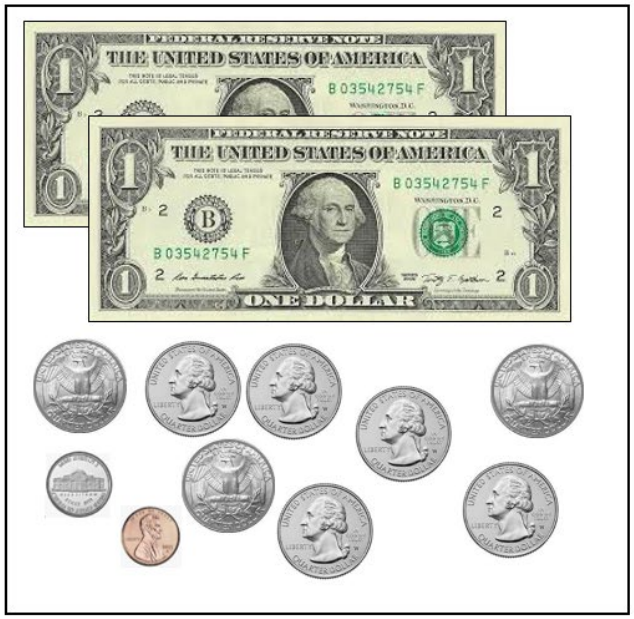
Set M



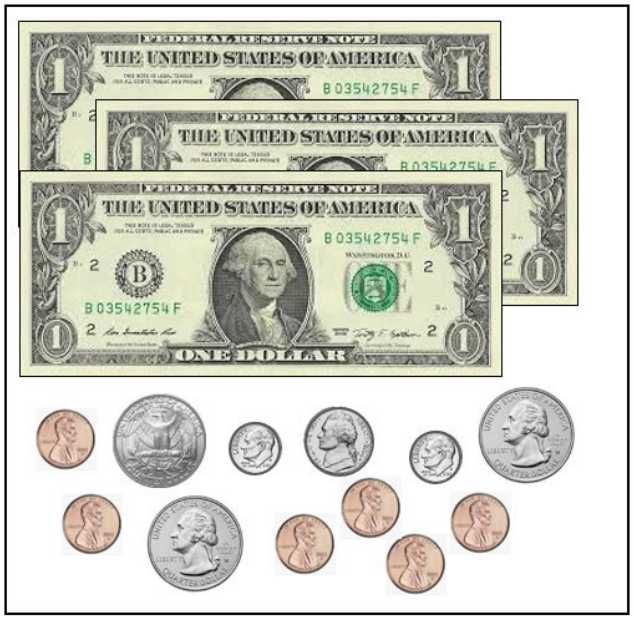
The value of Set Y is **greater than** / **less than** / **equal to** the value of Set M.

4. Circle the words to compare the sets of money shown.

Set T

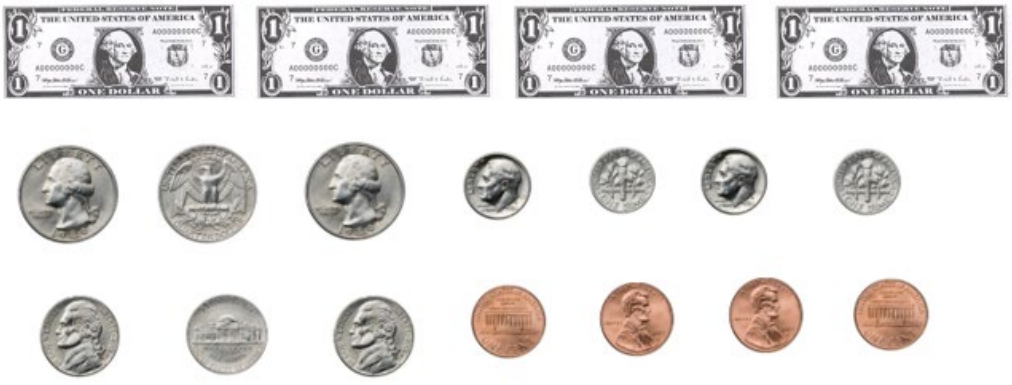


Set X



The money in Set T has a total value **greater than** / **less than** / **equal to** the total value of Set X.

5. Alex is buying an ice cream cone for $1.73. He gives the clerk a five-dollar bill.
   How much change should Alex receive?
   Circle bills and coins to show the amount of change Alex should receive.



6. Luke is buying a candy bar that costs $1.29. He gives the clerk the amount of money shown.

How much change should Luke receive?

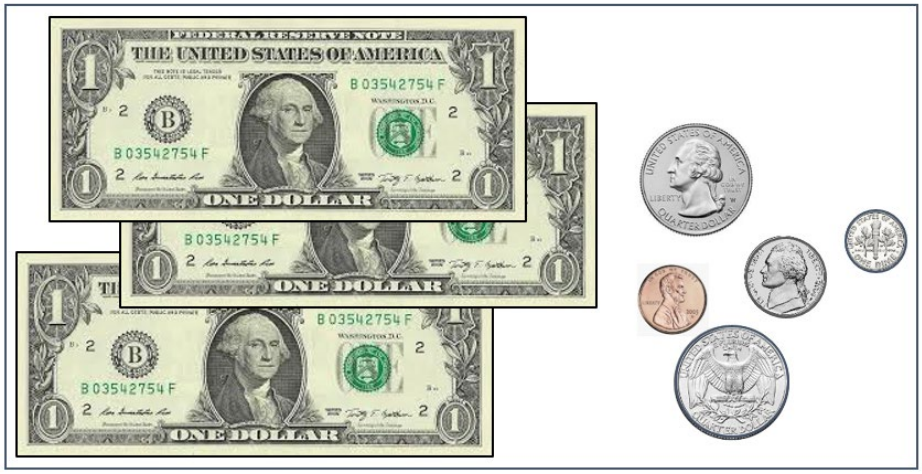
7. Naomi bought a gallon of milk at the store. She gave the clerk $3.00. The picture shows the change she received.

How much did this gallon of milk cost?

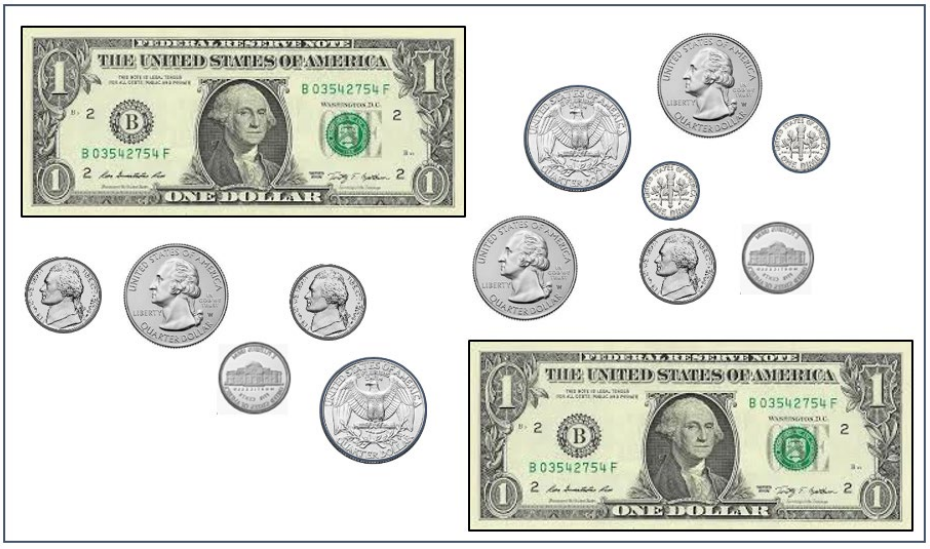
3.NS.4 Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

1. Write the value next to each set of money.



Students may be unable to recognize the backs of coins, or they may be unable to determine how to count a set of coins in which like coins are not grouped or ordered (e.g., the quarters in this set are not together, and the coins are not arranged from the greatest value to the least value). These students will benefit from more practice counting physical sets of coins to allow them to develop strategies for grouping and/or counting on. Opportunities to share and practice strategies with peers may also help students develop efficient methods for counting sets of money.



Students may have difficulty counting the change and crossing over to the next dollar amount. Students may also have difficulty because the coins have not been grouped or ordered according

to value. Opportunities to share and practice strategies for counting sets of coins and bills, first using manipulatives and later moving to pictorial representations, may be helpful. More experiences with skip counting by the values of coins and keeping track with a hundreds charts or number line, may also be beneficial.

2. Using the symbols in the key, draw a set of money with a total value of $4.87.

KEY:

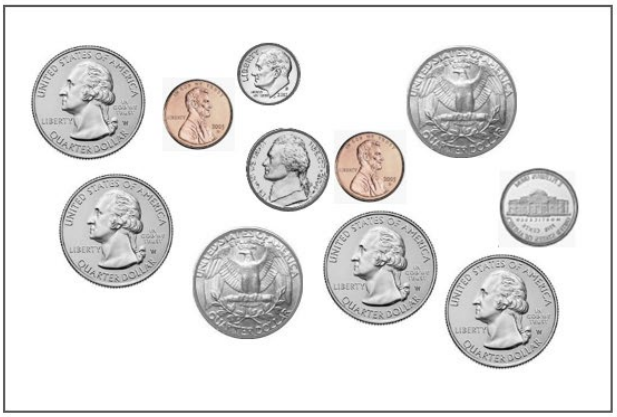
$1	= one dollar	Q	= quarter	P	= penny	D	= dime	N	= nickel

Students who are unable to represent the correct value need more experience with lesser amounts of money. Exposure to peers' strategies may be helpful.

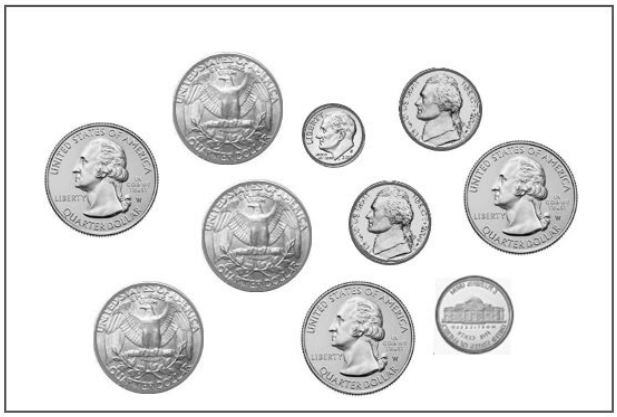
A variety of correct responses should be expected but sets of money that do not reflect an understanding of the values of the different coins available should be investigated further (e.g., using 87 pennies to represent the 87 cents rather than a combination of coins). If this occurs, the teacher could ask, "Can you draw another set of money using fewer coins that has the same total value?"

3. Circle the words to compare the sets of money shown.

Set Y



Set M

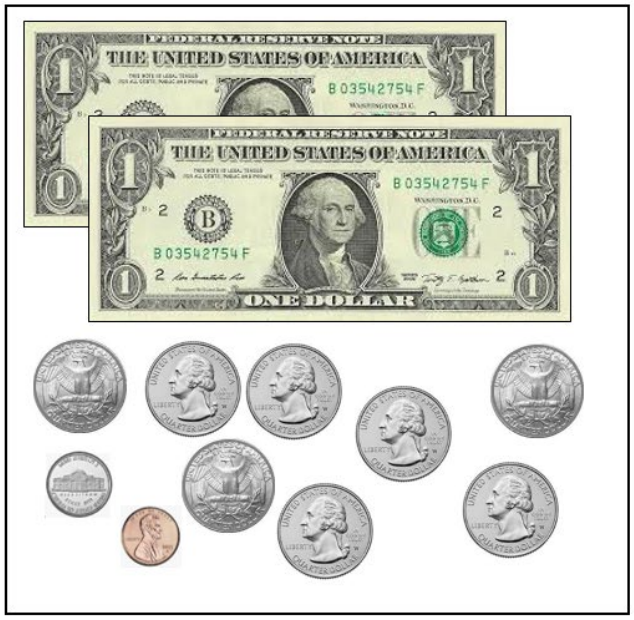


The value of Set Y is **greater than** / **less than** / **equal to** the value of Set M.

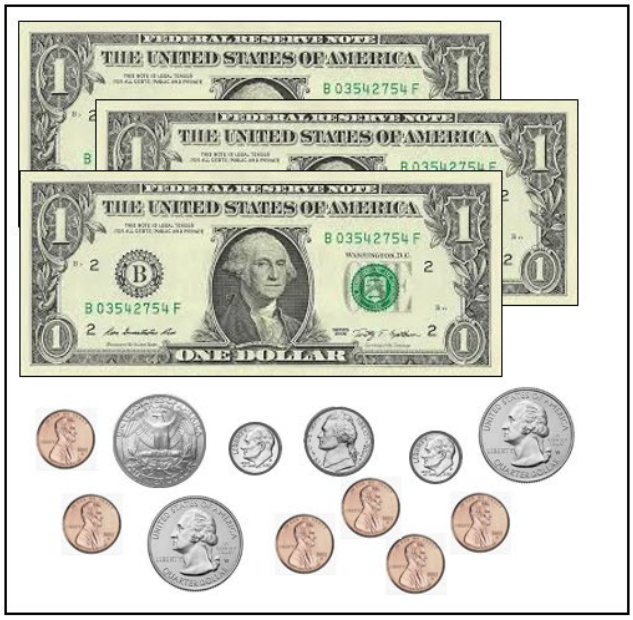
Students may believe that Set Y has greater value because it has more coins than Set M. These students would benefit from exposure to more strategies for comparing sets of money. Determining the numbers of like coins among the sets may help students decide which set of money has a greater value. For example, Set Y and Set M have the same number of quarters. Also, Set Y and Set M each have exactly one dime. Set Y has 2 nickels, but Set M has 3 nickels. Set Y has 2 pennies, but there are no pennies in Set M. Opportunities to share and practice different methods for comparing the values of sets of coins and bills help students develop strategies that are both flexible and efficient.

4. Circle the words to compare the sets of money shown.

Set T



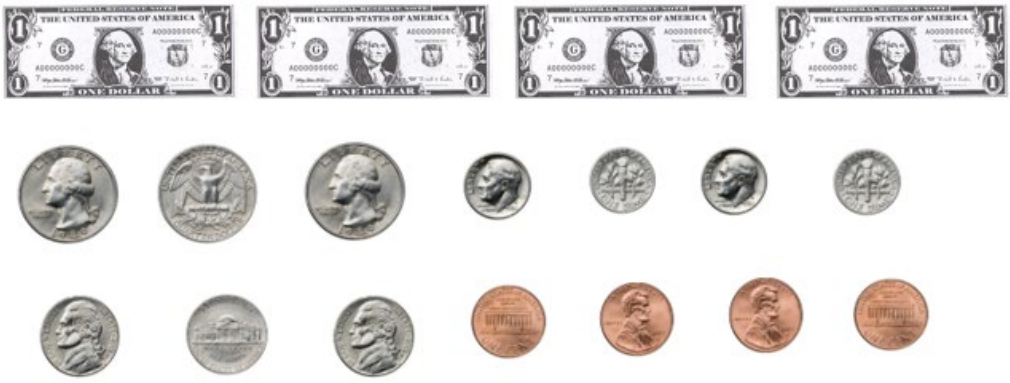
Set X



The money in Set T has a total value **greater than** / **less than** / **equal to** the total value of Set X.

Students who do not recognize that these sets of money have the same value may be relying on the number of one-dollar bills in each set, focusing only on the largest denomination in each set. In this example, students may think that since Set T has 2 one-dollar bills and Set X has 3 one-dollar bills, Set X must have the greater value. Students may ignore all the coins in the sets since each individual coin has a value less than one dollar. Other students may believe that Set T has greater value because it has more quarters than Set X, or they may believe Set X has lesser value because it has more pennies than Set T. Students who demonstrate these misconceptions would benefit from more experiences comparing sets of coins and bills. Hearing peers' strategies for comparing sets of money in which the coins have not been arranged or ordered by value helps students consider different efficient methods. Note that at this grade level, computation is not used to determine the values of sets of money and should not be a focus of instruction.

5. Alex is buying an ice cream cone for $1.73. He gives the clerk a five-dollar bill.
   How much change should Alex receive?
   Circle bills and coins to show the amount of change Alex should receive.



Students may circle bills and coins with a value of $1.73, the cost of the ice cream cone. This indicates that students can count coins and bills to represent a given amount of money, but it also indicates a lack of understanding of the concept of change or of the question itself. Students who struggle with making change may benefit from more experiences starting with the cost and counting forward to the next dollar, then counting forward by dollar bills to reach the amount paid.

Students may circle bills and coins having a value of $4.37, which may indicate an attempt to calculate the difference without regrouping. Note that computation with money is not part of this standard. Teachers are encouraged to provide opportunities for students to make change using the strategies above.

6. Luke is buying a candy bar that costs $1.29. He gives the clerk the amount of money shown.

How much change should Luke receive?

Students may add the amount of money given in the problem to the amount of money shown by counting on, resulting in an incorrect answer of $2.79. This error may indicate a lack of understanding of the question and/or the "making change" context described. These students would benefit from additional experiences in which they act out the context to develop understanding.

Students may recognize this as a subtraction situation and make a calculation mistake when subtracting $1.29 from $1.50. As noted above, computation with money is not part of this

standard. Teachers are encouraged to provide opportunities for students to make change using the strategies described in question 5.

Students who have difficulty counting a set of money or counting up to make change would benefit from hands-on practice using coins and bills.

If students can count coins and bills but struggle with making change, they may benefit from more experiences counting forward from the cost to the next dollar, then counting forward by dollar bills to reach the amount paid.

7. Naomi bought a gallon of milk at the store. She gave the clerk $3.00. The picture shows the change she received.

How much did this gallon of milk cost?

Students may add on the amount of money shown to $3.00, resulting in an incorrect answer of $3.44. This error may indicate that students may not understand what to do when given the change received instead of the original cost of the item(s). These students would benefit from experience acting out different contexts that involve making change.

Students who can count coins and bills but struggle with using the change given to find the original cost may benefit from more experiences counting forward from the change received to the next dollar, then counting forward by dollar bills to reach the amount paid.