Money

Grade 2 – 3

California Content Standards:

Grade 2 – NS 5.0 Students model and solve problems by representing, adding, and subtracting amounts of money:

NS 5.1 Solve problems using combinations of coins and bills.

NS 5.2 Know and use the decimal notation and the dollar and cent symbols for money.

Grade 3 – NS 3.0 Students understand the relationship between whole numbers, simple fractions, and decimals

NS 3.3 Solve problems involving addition, subtraction, multiplication, and division of money amounts in decimal notation and multiply and divide money amounts in decimal notation by using whole-number multipliers and divisors.

Common Core Content Standards:

2.MD.8 Solve word problems involving combinations of dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.

Objectives:

Students will be able to count a dollar using different combinations of coins.
Students will be able to add amounts of money using decomposition and the traditional algorithm.
Students will be able to subtract amounts of money using a number line and the traditional algorithm.
Students will be able to give change back using manipulatives and a number line.

Introduction:

Understanding the concept of money is a key foundation in transitioning students to the understanding of decimals. We can use money to help students conceptualize the place values of tenths and hundredths.

In this lesson, students will use different combinations of coins to build a value in the Making a Dollar activity. Students will then transition from using coins to adding money using Base Ten Blocks. This allows students to see the transition from dimes and pennies to tenths and hundreds. Students will also use decomposition and number line to add decimals.

Students will be introduced to subtracting decimals by connecting to making change. Using word problems and scenarios can help students visualize the regrouping of dollars to change, which will transition from whole to decimals. Students will learn to make change/subtract decimals using Base Ten Blocks, decomposition, and number line.

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Making a Dollar

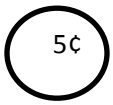
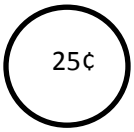
Students will create combinations of coins that will make $0.50. They will first start off with $0.50, than they will move on to finding combinations of $1.00.

You can have students build the different combination of coins if they are available to you. If you do not have the manipulatives, have students draw out the coins.

Have students come up with as many combinations as they can and log it on their table. Enhance the activity by giving them part of the combination and have them come up with the rest. For example, they have to use two nickels for their combination.

Students will add up the amount of pennies, nickels, dimes, and quarters they used to check if they have reached $0.50. Enhance this by having students write out the equation.

How many combinations of $0.50 can you make?

Pennies	Nickels	Dimes	Quarters	Total
				5¢ $0.05 20¢ $0.20 +25¢ +$0.25
	5¢ Or $0.05	20¢ Or $0.20	25¢ Or $0.25	50¢ $0.50

5¢ + 20¢ + 25¢ = 50¢

$0.05 + $0.20 + $0.25 = $0.50

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How many combinations of $_____ can you make?

Pennies	Nickels	Dimes	Quarters	Total

Pennies	Nickels	Dimes	Quarters	Total

Pennies	Nickels	Dimes	Quarters	Total

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Adding Money:

Students will add money using Base Ten Blocks, Decomposition, and Number Line.

Base Ten Blocks:

Help students make the connection of using Base Tens to represent money.

T: "How many pennies make a dollar?"
S: "100 pennies"
T: "How many ones are in this flat?"
S: "100 ones"
T: "Since there are 100 ones in this flat, we are going to use this to represent a dollar. So now this flat becomes ones. How many pennies make a dime?"
S: "10 pennies"
T: "How many ones are in this stick?
S: "10 ones"
T: "Since there are 10 ones in this stick, we are going to use this to represent a dime. So now this stick becomes tenths. How many dimes make a dollar?"
S: "10 dimes"
T: "So how many sticks will we need to make a flat?"
S: "10 sticks"
T: "Now if the flat is a dollar and the stick is a dime, what do you think the one cube will represent?" (Have students pair and share)
S: "Penny"
T: "So now this one cube becomes hundredths. How many pennies make a dime?"
S: "10 pennies"
T: "So how many ones will make a stick?"
S: "10 ones"
T: "How many pennies make a dollar?"
S: "100 pennies"
T: "So how many ones will make a flat?"
S: "100 ones"

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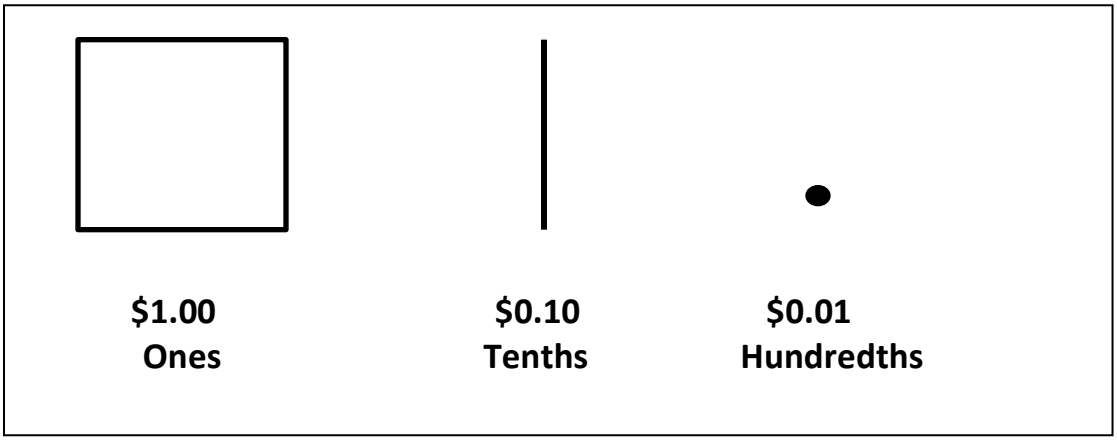
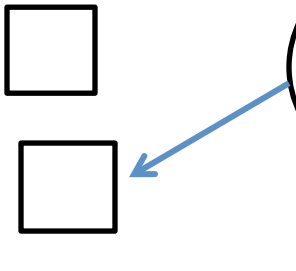
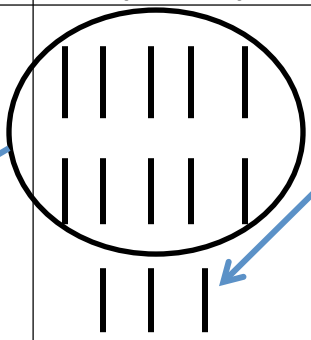
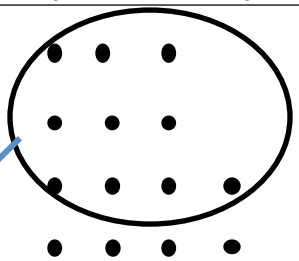


Dollars (Ones)	Dimes (Tenths)	Pennies (Hundredths)	
			$\overset{1}{\$}1.5\overset{1}{6}$ $+\$0.78$
$2.00 2 ones	$0.30 3 tenths	$0.04 4 hundredths	$ 2 . 3 4

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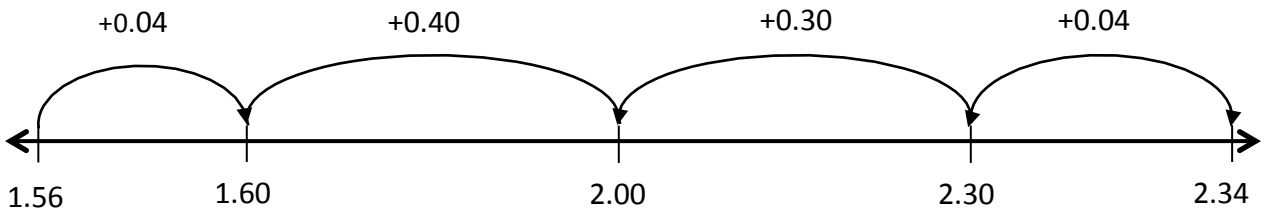
Decomposition:

$1.56 + $0.78
= 100¢ + 50¢ + 6¢ + 70¢ + 8¢
= 100¢ + 50¢ +50¢ + 20¢ + 6¢ + 8¢
= 200¢ + 20¢ + 14¢
= 200¢ + 34¢
= $2.34

Number Line:



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Giving Change: (Connect to Subtraction)

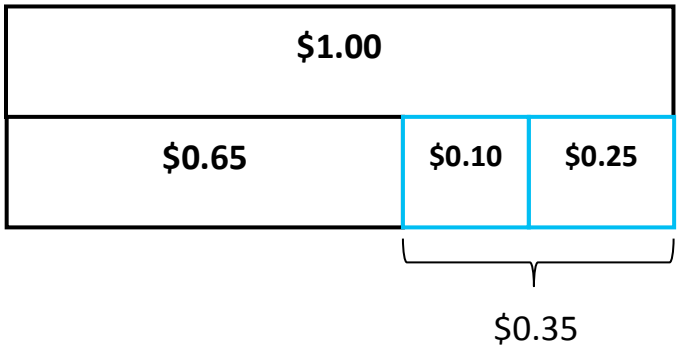
Students will connect making change with subtracting money using Bar Model, Base Ten Blocks, Decomposition, and Number Line

Charlie goes into a store with one dollar. He buys a Dr. Pepper for 65 cents. How much money will Charlie get back?

Show on an overhead how to exchange coins.

- I have one dollar. I know that one dollar is the same as 100 cents or ten dimes. So I am going to exchange my $1.00 for ten dimes. I am going to give 65 cents for my drink. Count the dimes 10, 20, 30, 40, 50, 60… I now have to trade a dime for nickels. I know that two nickels equal 1 dime… Now I can give five more cents. How much money do I have left? 35 cents.

Bar Model:



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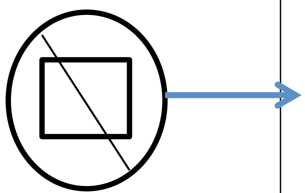
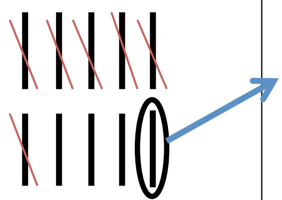
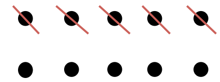
Base Ten Blocks:

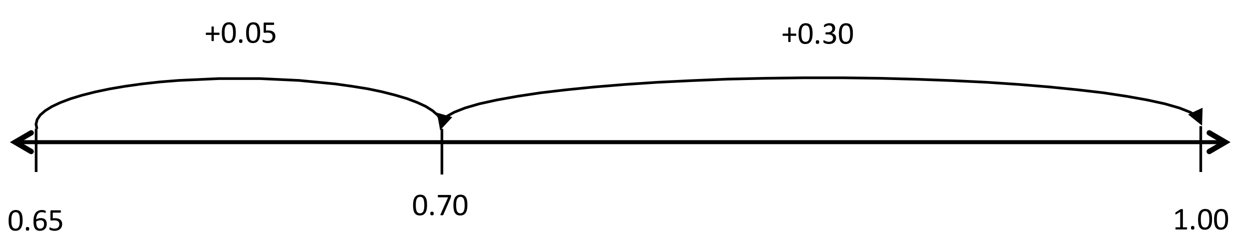
Review the money representation of each base ten blocks.

Dollars (Ones)	**Dimes (Tenths)**	**Pennies (Hundredths)**	
			$\overset{0}{\$1}.\overset{\overset{9}{10}}{0}\overset{10}{0}$ $-\$0.65$
	\$0.30 3 tenths	\$0.05 5 hundredths	\$0.35

Decomposition:

$$\begin{aligned} \$1.00 &\rightarrow \quad \$0.99 + \$0.01 \\ -\$0.65 &\rightarrow -\$0.65 \\ \hline &= \$0.34 + \$0.01 \\ &= \boxed{\$0.35} \end{aligned}$$

Number Line:



$$0.05 + 0.30 = 0.35$$