2015

Understanding U.S. Coins to Spend and Save (1st grade)

Jordan E. Taylor
Trinity University, jordantaylor4@gmail.com

Eloisa Perez
Trinity University

Rebecca Zelaya
Trinity University, rebecca.zelaya@gmail.com

Follow this and additional works at: http://digitalcommons.trinity.edu/educ_understandings

Part of the Education Commons

UNDERSTANDING BY DESIGN

Unit Cover Page

Unit Title: Understanding U.S. Coins to Spend and Save

Grade Level: 1st Grade

Subject/Topic Area(s): Math

Designed By: Rebecca Zelaya, Eloisa Perez, Jordan Taylor

Time Frame: 10 days

School District: NISD, HISD

School: Ellison Elementary, Allen Elementary, Walnut Bend Elementary

Brief Summary of Unit (Including curricular context and unit goals):
This unit was designed for first grade to teach the value and relationships of U.S. coins. Students will be using their knowledge about coins to count money and make decisions about spending and saving.

UbD Template 2.0

Stage 1 – Desired Results

<table>
<tr>
<td rowspan="4">
Established Goals
(e.g., standards)

(4) Number and operations. The student applies mathematical process standards to identify coins, their values, and the relationships among them in order to recognize the need for monetary transactions. The student is expected to:

(A) identify U.S. coins, including pennies, nickels, dimes, and quarters, by value and describe the relationships among them;

(B) write a number with the cent symbol to describe the value of a coin; and

(C) Use relationships to count by twos, fives, and tens to determine the value of a collection of pennies, nickels, and/or dimes.

(9) Personal financial literacy. The student
</td>
<td colspan="2">Transfer</td>
</tr>
<tr>
<td colspan="2">
Students will independently use their learning to… decide whether they want to spend or save their money in order to buy from the class store, using their understanding of the value and relationships of U.S. coins
</td>
</tr>
<tr>
<td colspan="2">Meaning</td>
</tr>
<tr>
<td>
Understandings
Students will understand that….

Coins are related to each other and help you find the value of a group of coins.

Money is used as a tool to spend, save, and earn income.
</td>
<td>
Essential Questions

☐   How do I know how much money I have?

☐   How do I decide what to do with my money?
</td>
</tr>
</table>

Acquisition	
Knowledge *Students will know…* -The value of U.S. coins and the relationships among them The cent symbol is one notation used to name the value of a coin or a collection of coins. Each U.S. coin is identified by specific attributes such as color, shape, size, etc. Skip counting patterns can be used to determine the value of a collection of coins *(coin collection up to 120 cents)*. -Know and understand the following	Skills *Students will be able to…* -Count the value of a group of coins by 2s, 5s, and 10s -sort coins into groups -use content vocabulary

| applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:

(A) define money earned as income;

(C) distinguish between spending and saving; | vocabulary:
-Cent symbol (¢)
-Dime = a coin worth 10 cents or 10¢
-Equal to= same as
-Exchange= a Fair Trade of value
-Greater than= more than
-Less than=fewer than
 -Nickel = a coin worth 5 cents or 5¢
 -Penny = a coin worth 1 cent or 1¢
- Quarter = a coin worth 25 cents or 25¢
-value = how much a coin is worth
-Heads
-Tails

Students will be familiar with the terminology of "attributes" (a word that describes something) and "relationship" (how two things are connected) | |

Stage 2 – Evidence

CODE (M or T)	Evaluative Criteria (for rubric)	
T	-Identify how many of each coin they have. -Identify the total value of the group they have. -Determine whether they have enough money to purchase their desired item. -Determine whether they want to spend or save their money and be able to explain	Performance Task(s) *Students will demonstrate meaning-making and transfer by…* -Present the students with the following situation: "Now that we know how to identify and count coins, I will be giving you the opportunity to earn coins during the next three days for doing different jobs. You will use what you have learned about coins to count the coins you earn and make decisions about spending and saving. We will have a classroom store where you can purchase different items. " As a class, brainstorm different classroom tasks or jobs (i.e. attendance, being on time, homework submission, raising hand, walking appropriately in line, etc.). Designate the amount you will be paying for each task. Write the information on chart paper so the students can refer to it as they are earning money. Students will earn coins for three days and continuously count and make decisions on how they will use their money for the classroom "store." Students can use empty milk cartons to keep their money. -- Other Evidence (e.g., formative) ⬚ Graph ⬚ Ticket out the door: Project a certain amount of coins on the overhead. Have students write the amount on a sticky note on their way out the door.

	why.	▢ Ticket out the door: For students to be able to line up, they should be able to identify the coin you present to them and its value.
		▢ Problem solving: Kayley wants to buy a vanilla ice cream cup that costs 56¢.
		a) Name two different combinations of dimes, nickels, and/or pennies that Kayley could use to buy the ice cream cup.
		b) Orally explain the counting strategy used to determine the two different collections of coins.
		c) Orally explain and justify why both collections of coins equal the same amount.

Stage 3 – Learning Plan

CODE (A, M, T)	Pre-Assessment *How will you check students' prior knowledge, skill levels, and potential misconceptions?* See attached pre-assessment	
	Learning Activities	Progress Monitoring (e.g., formative data)
A, M	Day 1 <u>Hook</u>- something with a piggy bank and real coins… Students will each bring one coin (any type of coin) to school. As they put each coin into the piggy bank, the class will count all the coins. At the end, say "Ok class, we now have ___ cents, right?" Some students will know that one coin does not equal one cent, but others will not. Begin by explaining that since all the coins put into the piggy bank are different, we do not know the sum of the piggy bank contents. Tell students that each coin has a different value or worth, and we are going to learn about coins to help us know how much money we have in the piggy bank. - Administer Pre-assessment	Students will give a thumbs up, down, or to the side if they agree that the value in the piggy bank is based on the one-to-one correspondence of coins.
M	Day 2 <u>What attributes can be used to identify each coin?</u> Bring students to the carpet to introduce each coin. Use real coins to pass out and give students the opportunity to look and feel each coin. As you are presenting each coin, have students describe them. Students should use complete sentences to describe each coin. Provide the following sentence stem: One attribute for _____ is _____. Make an anchor chart including a picture of the coin, its value (in numbers), and the name. Teach the "Coin Poem" (see appendix). Introduce the cent symbol as the symbol we use to describe a monetary amount less than one dollar.	

M	Day 3 What attributes can be used to identify each coin? Think pair share: In pairs, students will describe the attributes of a dime, a nickel, and a penny. After they finish discussing, review the coin anchor chart and have students work independently to make the coin foldable (see appendix). Students will have the foldable in their journal to reference. After all are done, come back to the carpet to read A Dollar, A Penny, How Much and How Many? Students will go back to centers/tables/stations to work on a coin game. Game: "Two turns to win: count & compare" (see pg. 17 of Bridges Blackline master)	Day 3 Ticket out the door: For students to be able to line up, they should be able to identify the coin you present to them and its value.
M, T	Day 4 How can I count coins? Sort and count- students will work in pairs to sort a group of coins (distribute play money). They will determine which coins they should count first (quarters or dimes, depending on your curriculum), then make rows to count coins. Model the format for GoMath (placing in order from greatest value to least) and use dry erase markers to write on tables. Repeat this activity 2 more times, checking for understanding and correcting students. Play "Two Turns to win: count & Compare" (see Appendix)	Day 4 Ticket out the door: Project a certain amount on coins on the overhead. Have students write the amount on a sticky note on their way out the door.
T, A	Day 5 How can I count coins? Sort and graph- students will work in pairs to sort a group of coins (play money). They will graph the dimes, nickels, and pennies on a graph with a partner, then count the total amount (See Appendix). *Lots of demonstration* Show the students how to count the highest value coins first then work down. Count by 10s, then 5s, then 1s. Students will turn in their coin graph for a grade. Come back to the carpet to sing the Coin Poem.	Day 5: turn in coin graph for a grade
M, T	Day 6 Equivalent Relationships Give students a group of coins and ask the following question: Is it possible to use pennies to make a nickel? Have students try it and observe student work. Discuss. Then ask: Is it possible to use nickels and pennies to make a dime? Observe students as they work. Then say: Today we are going to learn about the relationship between coins. When I say the word relationship, I mean how they connect to each other, like when we saw that five pennies can make a nickel (or how I am connected to my	

	mom because we are *related*). Visually represent equivalent relationships and ways to make a dollar by making another anchor chart- how many pennies make a nickel? How many pennies and nickels make a dime? What coins can make a quarter (optional)? Introduce problem solving whole group: - John goes to the store and wants to buy a harmonica that costs 38 cents. What are two groups of coins John could have? - Marcella is saving her money to buy a new doll. She earns 7 cents for making her bed every day. After one week she has enough money to buy her new doll. What combinations of coins could she have? - Ryland and his brother want to buy a basketball. They have 75 cents all together. How much money could each brother have? What coins could each brother have? **Create chart with class indicating ways to earn money for the class store. Put chart up on the board for students to reference.** Day 7	
T, A	Equivalent Relationships: Dollars *Begin lesson by administering Day 7 Formative Assessment (students should solve problem independently)* Pose the following question at the beginning of the lesson: (Hold up 5 pennies in one hand and 1 nickel in the other and ask: Which group is greater?) Have discussion again about one to one correspondence. Is it possible that different groups of coins equal the same amount? Give students the opportunity to discuss with their partner. Once students are done discussing, have them share their explanations with the class. Then say: How many different ways do you think there are to make a dollar? Ask the students to think of all the ways to make a dollar- they might have ideas about coins, but may not know the exact relationship (keep a class chart or log of all the different ways they can make a dollar. Throughout the week students can keep adding to the class chart or log. At the end of the week, tell the kids that there are 242 ways to make a dollar!). Connect students' thinking between skip counting and coin value (students may be familiar with skip count patterns by this point in the school year) for example, counting by 10s is the same as counting dimes. How many dimes, or 10s, does it take to get to a dollar, or 100? Use manipulatives, magnets, or virtual tools to visually represent 100 cents with dimes, nickels, and pennies (can include quarters or not). Teach the Dollar Song (See Appendix) Extension: students can make foldables about "ways to a dollar" (see appendix)	Day 7: Problem solving Kayley wants to buy a vanilla ice cream cup that costs 56¢. a) Name two different combinations of dimes, nickels, and/or pennies that Kayley could use to buy the ice cream cup. b) Orally explain the counting strategy used to determine the two different collections of coins. c) Orally explain and justify why both collections of coins equal the same amount.

M, T, A	Day 8 *Daily Dollar-* as a warmup, have students write down one way to make a dollar on a post-it note and add to the bottom of the equivalent relationships anchor chart (i.e.: 2 quarters and 5 dimes; 10 dimes; 10 nickels and 5 dimes; 100 pennies, etc.) Play "One turn to win" (less/more- see pg. 6 of blackline master) whole group. Discuss how whenever wanting to make a purchase, we have to make sure we have more money or the same amount as the object's value. Read *A Chair for my Mother* (Vera B. Williams) and discuss how the main characters made financial decisions. What would you do with your money in this situation? Start Performance Task - start giving out coins based on successful completion of tasks - have students go to math centers/complete math worksheets independently while calling small groups to fill out the 1st day's performance task worksheet (*you will need to meet with each students all 3 days to complete the performance task in order for them to have the opportunity to either spend or save)	Ticket in the door- dollar post it Performance Task worksheet
M, T, A	Day 9 *Daily Dollar-* have students find a partner and think of one more way to make a dollar and write on a post-it note. Remind them that they can use any combination of coins. Discuss how some people like to spend all their money right away to buy things they kind of want, and some people like to save and save until they can buy things they really want (like in *A Chair for my Mother*). Read *Alexander, Who Used to be Rich Last Sunday* (Judith Viorst) and discuss Alexander's financial decisions. What did he do with his dollar? How is he feeling now that his dollar is gone and his brother still has money? What would you do in this situation? Play "Race to a Quarter" whole group, then in pairs. Continue Performance Task - start giving out coins based on successful completion of tasks - have students go to math centers/complete math worksheets independently while calling small groups to fill out the 1st day's performance task worksheet (*you will need to meet with each students all 3 days to complete the performance task in order for them to have the opportunity to either spend or save)	ticket in the door- dollar post it Performance Task worksheet

M, T, A	Day 10 *Daily Dollar-* students work together in table groups to think of one more way to make a dollar that has not been put on the chart yet. They will write on a post-it note and add to anchor chart. Administer post-assessment. Play any of the three games ("Two Turns to Win" "One Turn to Win" "Race to a Quarter") in pairs. Continue Performance Task - start giving out coins based on successful completion of tasks - have students go to math centers/complete math worksheets independently while calling small groups to fill out the 1st day's performance task worksheet (*you will need to meet with each students all 3 days to complete the performance task in order for them to have the opportunity to either spend or save) Read *Those Shoes* (Maribeth Boelts) and discuss a time when you wanted something you couldn't buy. What did the main character do? What would you do? Why did he give his shoes away? Extension: introduce the Financial Literacy TEK of charitable giving and discuss scenarios in which a student would consider donating. Are there needs for the school that students would donate to or raise money for? Is there a family that needs help buying groceries? Does the community need a new garden? Etc.	ticket in the door- dollar post it Performance Task worksheet

	Approaches Expectations	Meets Expectations	Exceeds Expectations
Count the groups of coins and identify total worth.	Student does not accurately count the value of coins (needed help all 3 days).	Students will sort coins into groups then count by 10, 5, and 1 to find total value by the third day (with some help on first and second day).	Student uses multiple strategies to count total value of coins independently for all 3 days.
Identify coins and value	Student does not know the name or value of coins.	Student can correctly and consistently identify name and value of all 4 coins all 3 days.	N/A
Spending vs. Saving	Student is not able to distinguish between spending and saving	Student is able to distinguish between spending and saving to make a decision about earned income	Student decides to spend or save money and explains why.

Performance Task Checklist (for students):

I know the names of all 4 coins.

I know how much each coin is worth.

I can skip count or count on to find how much money I have in all.

I can explain why I want to spend or save my money.

APPENDIX

Skip Counting songs:
- Jack Hartmann "Moving to Math" on YouTube
- "Skip Counting" on gonoodle.com

Books:

A Chair for my Mother by Vera B. Williams

A Dollar, A Penny, How Much and How Many? by Brian P. Cleary

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

Money Mama and the three little pigs by Lori Mackey, Nicole Lomonaco

Poems:

Coin Poem: http://www.busyteacherscafe.com/themes/money.html

Penny, penny
easily spent
Copper brown and
Worth one cent

Nickel, Nickel
Thick and fat
you're worth five cents
I know that!

Dime, dime
little and thin
I remember
you're worth ten

Quarter, quarter
Big and bold
you're worth twenty-five
I am told!

Dollar Song (same website as coin poem)

10 little, 20 little, 30 little pennies
40 little, 50 little, 60 little pennies

70 little, 80 little, 90 little pennies
100 pennies make one dollar!

2 small, 4 small, 6 small nickels
8 small, 10 small, 12 small nickels
14 small, 16 small, 18 small nickels
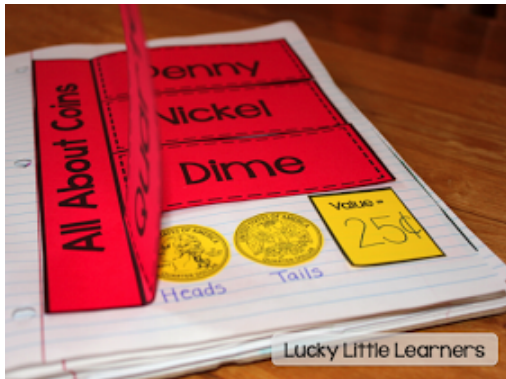20 nickels make one dollar!

1 tiny, 2 tiny, 3 tiny dimes
4 tiny, 5 tiny, 6 tiny dimes
7 tiny, 8 tiny, 9 tiny dimes
10 dimes make one dollar!

1 big, 2 big, 3 big quarters
4 big, 4 big, 4 big quarters
1 big, 2 big, 3 big quarters
4 quarters make one dollar!

Coin Foldable Ideas:

*note: students can bring real coins from home and tape them in their journal for their foldable

(See sheet on next page for this foldable)

Ways to Make a Dollar: http://stepintosecondgrade.blogspot.com/2011/05/show-me-money.html

Use pennies, nickels, dimes, and quarters (optional), do not need to introduce half dollars until 2nd grade.

Name: _____

Value: _____

Color: _____

President: _____

Tally Marks: _____

Name: _____

Value: _____

Color: _____

President: _____

Tally Marks: _____

Name: _____

Value: _____

Color: _____

President: _____

Tally Marks: _____

Name: _____

Value: _____

Color: _____

President: _____

Tally Marks: _____

Name: _____

Value: _____

Color: _____

President: _____

Tally Marks: _____

Name: _____

Value: _____

Color: _____

President: _____

Tally Marks: _____

Worksheets:

Count Collections of Coins

9.2 Count Collections of Coins

HANDS ON

Count. Write the total value.

1. _____ ¢ _____ ¢ _____ ¢ _____ ¢ _____ ¢   _____

2. _____ ¢ _____ ¢ _____ ¢ _____ ¢ _____ ¢   _____

3. _____ ¢ _____ ¢ _____ ¢ _____ ¢ _____ ¢   _____

Problem Solving Real World

Draw and label coins to solve.

4. Ellie has 5 nickels and 6 pennies.
   Show the same amount with fewer coins.

Make It Equal (pg. 43)

NAME _____   DATE _____

Make It Equal

Draw an arrow to show which coin to move. Color the ten-strips to show that both groups of money are equal.

Example

Money Games:

Two Turns to Win: Count & Compare (pg. 17)

http://www.nsbsd.org/cms/lib01/AK01001879/Centricity/Domain/41/Bridges%201%20Blacklines/GR1%20Number%20Corner%20Overheads.pdf

Two Turns to Win Count & Compare record sheet

Teacher

Students

Spinner: 2, 3, 4, 5, 6, 1

Total

Total

Instructions:

Materials: paperclip, pencil, red crayon, blue crayon, green crayon.

1. Use a paperclip and a pencil for both spinners.
2. The teacher goes first to demonstrate: spin Spinner 1 to determine how many coins you get. Spin Spinner 2 to determine which coin (i.e. 2 dimes).
3. Keep a tally in the box under each coin to indicate how many times it has been chosen
4. Repeat steps 2 & 3
5. Color in the value of your 2 turns on the hundreds grid. Use blue for dimes, green for nickels, red for pennies (i.e. color in 2 columns blue if you draw 2 dimes to indicate the total value of 20 cents) *Be sure to color in coins of higher value first
6. Repeat the above steps for the students' turn
7. Determine which player had more/less money, how much more each player needed to read 100

One Turn to Win: Less and More (pg. 6)

http://www.nsbsd.org/cms/lib01/AK01001879/Centricity/Domain/41/Bridges%201%20Blacklines/GR1%20Number%20Corner%20Overheads.pdf

One Turn to Win gameboard
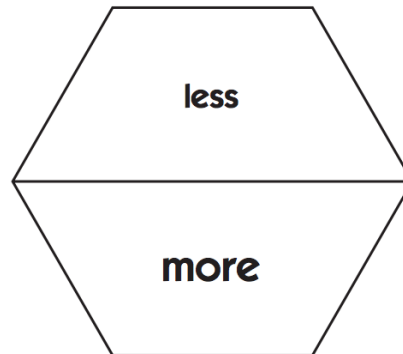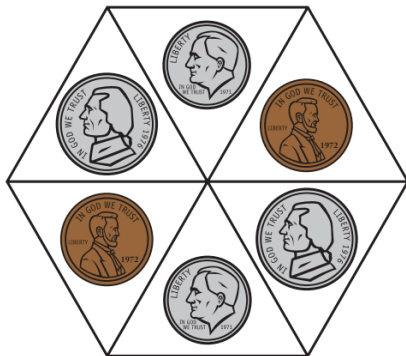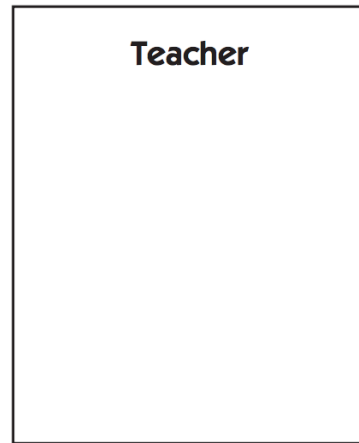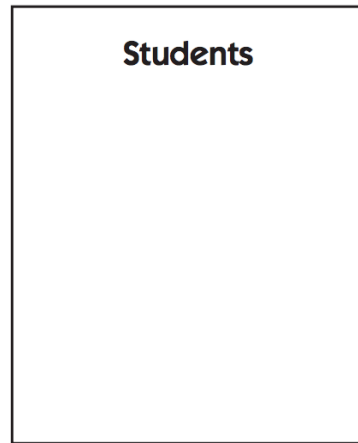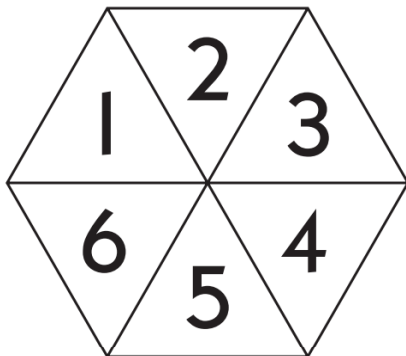
Instructions:

Materials: paperclip, pencil, assortment of real coins

1. Use a paperclip and a pencil for all 3 spinners.
2. The teacher goes first to demonstrate: spin Spinner 1 to determine how many coins you get. Spin Spinner 2 to determine which coin (i.e. 2 dimes).
3. Place real coins inside designated teacher box
4. Choose a student to come up to Elmo and do steps 2 & 3 for the Students' team
5. Count how much money each team has as a class
6. Discuss which team has more/ which has less
7. Choose a student to spin Spinner 3 to determine whether the team with more money or less will win the game
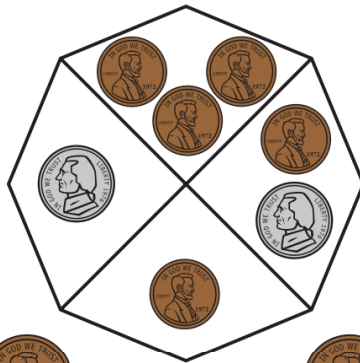
Race to a Quarter (pg. 22)

http://www.nsbsd.org/cms/lib01/AK01001879/Centricity/Domain/41/Bridges%201%20Blacklines/GR1%20Number%20Corner%20Overheads.pdf

Race to a Quarter gameboard

Teacher

Students

Instructions:

Materials: paperclip, pencil

1. Use a paperclip and a pencil for the spinner
2. Teacher spins to determine how much money his/her turn is worth
3. Cross out the corresponding number of pennies on the Teacher side
4. Choose a student to complete steps 2 & 3 for the Student team
5. Continue to take turns spinning and crossing out pennies
6. First team to reach 25 cents wins

Coin graph:

Coin Grab Graph

penny 1¢	nickel 5¢	dime 10¢	quarter 25¢

How many pennies? _____

How many nickels? _____

How many dimes? _____

How many quarters? _____

Name _____

1. Sort your coins.

How many quarters?	How many dimes?	How many nickels?	How many pennies?

2. Count the value:

3.   How much money do you have in all? _____

4.   What do you want to buy? _____

        How much does it cost? _____

        Do you have enough money to buy it? _____

5. What are you going to do with your money? (respond in writing or orally)

Name _____

      1. Sort your coins.

How many quarters?	How many dimes?	How many nickels?	How many pennies?

2. Count the value:

3.   How much money do you have in all? _____

4.   What do you want to buy? _____

      How much does it cost? _____

      Do you have enough money to buy it? _____

5. What are you going to do with your money? (respond in writing or orally)

Performance Task Day 3

Name _____

      1. Sort your coins.

How many quarters?	How many dimes?	How many nickels?	How many pennies?

2. Count the value:

3.   How much money do you have in all? _____

4.   What do you want to buy? _____

      How much does it cost? _____

      Do you have enough money to buy it? _____

5. What are you going to do with your money? (respond in writing or orally)

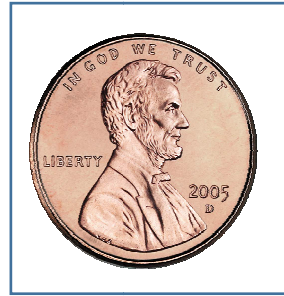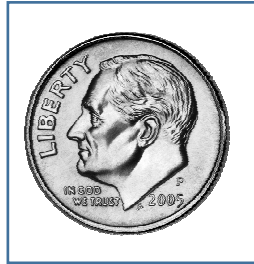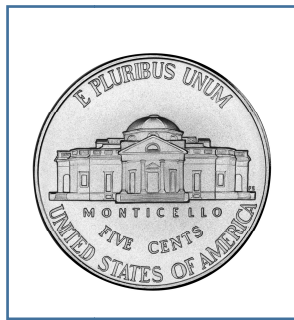Cut, match, and glue onto the chart!
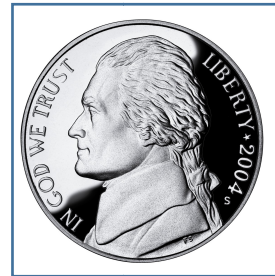
| 5¢ | 25¢ | 10¢ | 1¢ |

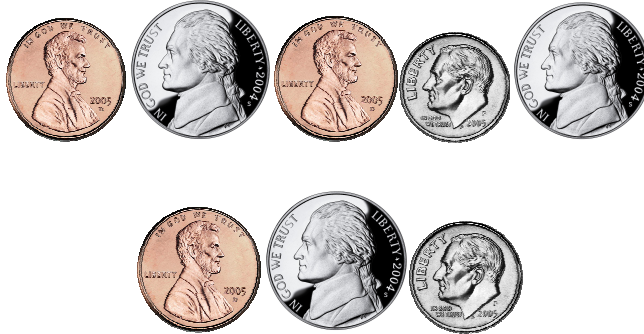| QUARTER	DIME	NICKEL	PENNY

Count a group of mixed coins. Write the total. Color in the 100s chart to show your total, using blue for dimes, green for nickels, and red for pennies.

I have _____ ¢

Susie went to the candy store to look at peppermint sticks. She brought 15 cents with her. Susie saw a pink peppermint stick that costs 25 cents. Susie took her money home and went to play jump rope.

What did Susie do with her money?
Spend   Save