Constructing Task: Race to 100 Pennies (Revisited)

STANDARDS FOR MATHEMATICAL CONTENT

Work with numbers 11-19 to gain foundations for place value.

MCCK.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

MCC.K.CC.1 Count to 100 by ones and by tens.

MCCK.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.

b. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

MCCK.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Students must see teen numbers as 1 group of ten and "some more". Students must also be able to see that the 1 group of ten is composed of ten groups of 1. This task allows students to unitize 10 groups of 1 group of ten as a dime. This will allow students to build the understanding that although a ten can be seen as one unit, it can also be decomposed into ten groups of one. This is called *"unitizing"*. As students begin to unitize quantity they begin to develop an understanding that the unit ten is the whole but it is composed of ten parts.

ESSENTIAL QUESTIONS

- How can we use counting in our everyday life?
- Why is counting very important?
- Why do I need to be able to count objects?
- What is an efficient way to count an amount great than ten?

MATERIALS

- Piggy Bank Recording Sheet
- 20 pennies, 4 nickels and 20 dimes

GROUPING

Whole group/Partner

TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION

Part I
Give each student a ten frame piggy bank sheet. Model for the students how you can fill the ten-frames with up to twenty pennies. Show the students that this is equal to two dimes (entertain conversation about this also being equal to four nickels). Play "Roll for a Dime" with a partner. Students take turns rolling two 1-6 number cubes. After each roll, the player takes the number of pennies to match the number on the cube and places them on his/her ten frames. If a player already has 8 pennies in their ten-frame and rolls a 5, they add 2 to make a ten, trade it in for a dime, place the dime in the piggy bank and add the addition 3 pennies to the ten frame. After the additional pennies have been added to the ten-frame the player must skip count by tens to determine the total quantity of pennies in the piggy bank. The first player to have 100 cents (10 dimes) in their piggy bank wins.

FORMATIVE ASSESSMENT QUESTIONS

- How do you know that you counted correctly?

DIFFERENTIATION

Extension

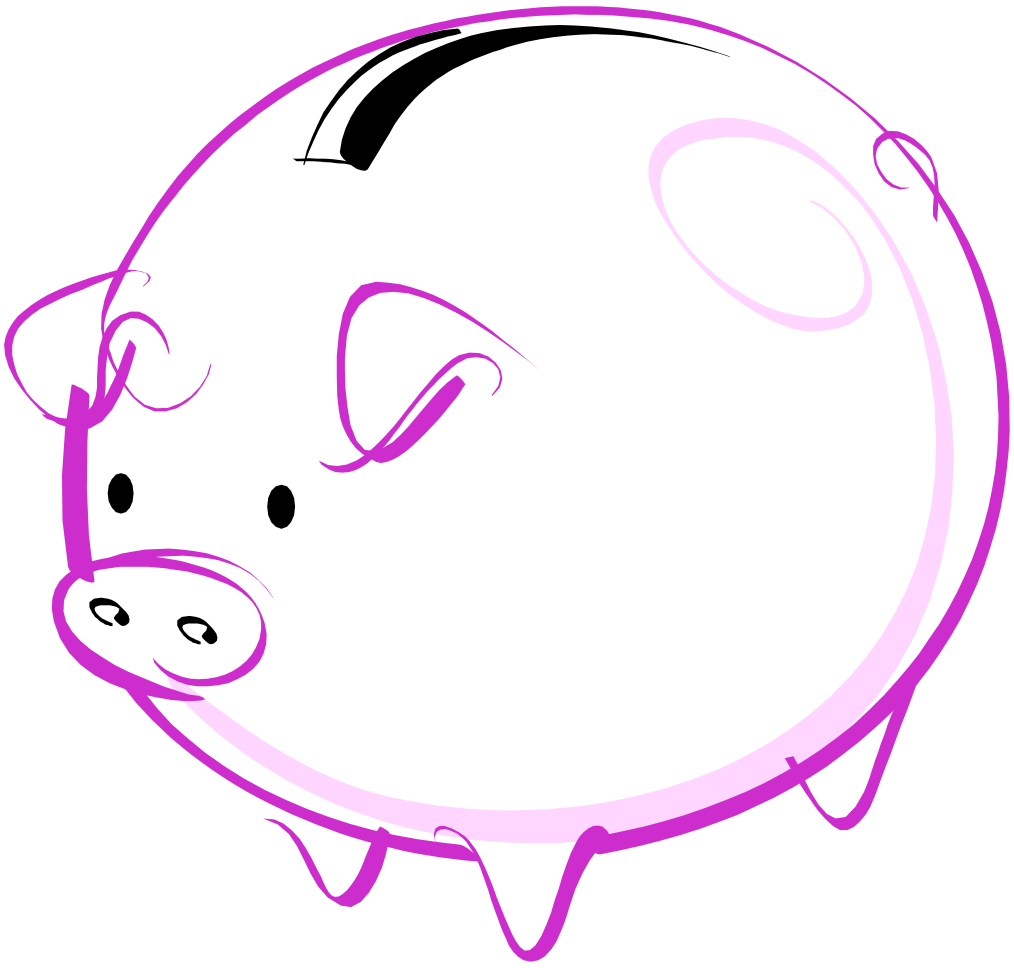
- Give each student a five frame piggy bank sheet. Model for the students how you can fill the five-frame with five pennies. Show the students that this is equal to one nickel. Play "2 Nickels for a Dime" with a partner. Students take turns rolling a number cube. After each roll, the player takes the number of pennies to match the number on the cube and places them on his/her five frame. If the player rolls a 6 they will fill in the five-frame and trade in for a nickel and add the extra 1 to their five frame. Once five pennies is

traded in for a nickel it is placed on the nickel spot on the recording sheet. After each turn, the player must skip count by tens to determine the total quantity of pennies in the piggy bank. The first player to have 100 cents (10 dimes) in their piggy bank wins.

Intervention

- Use "Math Talk" Cards to verbalize the amount. "I have _____ pennies. I can trade_____ pennies for a _____.
  I won the game because I had _____ more.

Roll for a Dime



2 Nickels for a Dime