CONSTRUCTING TASK: How Many Are in the Bag (0-9)

STANDARDS FOR MATHEMATICAL CONTENT

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

MCC.K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

MCC.K.CC.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

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

a. 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.
b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
c. Understand that each successive number name refers to a quantity that is one larger.

MCC.K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

(For descriptors of standard cluster please see the Grade Level Overview)

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

We want to help students relate a given number to other numbers, specifically to 5 and 10. These relationships are especially useful in thinking about various combinations of numbers.

(Example: students need to recognize that 8 is not a number in isolation. 8 is 3 more than 5 and 2 less than ten). This understanding of number and relationships has a tremendous impact on a student's ability to mentally compute in the later years as opposed to rote memorization. (Van de Walle, p45)

ESSENTIAL QUESTIONS

- How can we use counting in our everyday life?
- How can numbers be represented?
- Why do we need to be able to count objects?
- How do we use numbers every day?
- Why would we need to be able to read number words?
- How can we record what we count?
- How do we use counting in our everyday life?
- What is a numeral?

MATERIALS

- *How Many Are in the Bag?* Recording Sheet
- Small bags
- Small items to place in each bag

GROUPING

Students can work in small groups if you aren't using this as a performance task, individually (each child would need 3 bags with objects in each bag), or this can be placed in a work station for students to visit with recording done individually as a performance task.

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Comments

Prepare and label three bags A, B, and C filled with 0-10 objects for each group of 3 students. You can put any small object in the bags (e.g. beans, counting cubes, small centimeter blocks, paper clips, crayons, pencils, etc.) Be sure each bag has the same item in it. There should only be one kind of manipulative per bag, i.e. Bag A could be filled with butter beans, Bag B could be filled with pennies and Bag C could be filled with paperclips.

Task Directions

Instruct students to look in each bag, count the number of objects and record it on their recording sheet. They should also be able to answer the questions below in order to show understanding.

While students are working, ask questions such as:

- Which bag had the most? Least?
- Which bag contained the least amount of objects?
- Did either of the bags have the same amount?
- Which bag had an amount closest to 10? Closest to 20?

Comment

Students have a difficult time determining which benchmark number the quantity is closer to (anchoring 5 & 10). **DO NOT TELL STUDENTS A MNEMONIC or RYHME THAT MAKES NO SENSE CONCEPTUALLY!** Instead, have student locate the number on a number line and compare which anchor it is closer to. For this, incorporate a 0-10 number line to lead the discussion. Students need to see and recognize that zero is a number. The number "0" needs to be recognized as part of the set.

0	1	2	3	4	5	6	7	8	9	10

If a 0-10 number line is used students can conceptually begin to see that 3 and 7 are both closer to 5 than to 10. A 0-9 and 1-10 number line are both composed of 10 numerals meaning there is no defined middle. **Using a 0-10 line will help students see that the number 5 falls exactly in the middle of 0 and 10. Using a 0-9 or 1-10 number line will cause confusion and many students will not be able to make sense of benchmarks.**

Once in first grade, students will benchmark numbers to the nearest ten. It is strongly encouraged that students use a 0-99 chart to understand rounding.

FORMATIVE ASSESSMENT QUESTIONS

- What are some of the different ways you can represent numbers?
- How did you decide which benchmark number your quantity was closest to?
- If you had 1 more in your bag, how many would you have? If you had 1 less?

DIFFERENTIATION

Extension

- Provide students with bags that have 11-19 items and have them create quantity drawings using their own drawing of a ten frame.

Intervention

- Allow students to use ten frames to place the small items on once they take them out of the bag. Have number words displayed in the room to assist with spelling.
- If you hear them skipping numbers, assist by giving them a number line or another counting device (number chart with numbers and words along with illustrations).

Name:_____

Bag	Quantity	Number word	Ten frame	How many more to 10?	Number	
A					5	10
B					5	10
C					5	10

Which bag has the most?	A	B	C
Which bag has the least?	A	B	C
Which bag was closest to 5?	A	B	C
Which bag was closest to 10?	A	B	C