Number of the Day Stretch

Standards

- Understands that numerals are symbols used to represent quantities or attributes of real-world objects
- Understands symbolic, concrete, and pictorial representations of numbers
- Understands basic whole number relationships
- Adds and subtracts whole numbers
- Counts whole numbers

Overview

With the Number of the Day Stretch, students are asked to represent a teacher-selected "number of the day" in multiple ways that may include, but are not limited to, composing a problem to represent the number, drawing objects to represent the number, and demonstrating an understanding of place value through the representation of the number. Teachers determine the number based on the grade-level curriculum and knowledge of their students.

Materials

🕲 chart paper

🕙 markers

> assortment of manipulatives for counting

Warming Up for the Stretch

Introduce students to the Number of the Day activity during Calendar Board instruction. Teachers should model how to find alternate ways of expressing a "number of the day." This is best done through a think-aloud. Since some students may need to work with manipulatives to complete this task independently, teachers should demonstrate how to use manipulatives (base ten blocks, linking cubes, or place value boards) to create models of the number that then can be expressed with words, numerals, symbols, or pictures.

In subsequent days, repeat the task during Calendar Board using other numbers of the day and with increased student involvement in suggesting ways to represent the number. Display the Number of the Day charts created by the class during these lessons in the classroom for student reference when the activity becomes a Math Stretch to be completed by students independently. Teachers should determine the number of the day for this task based on the grade-level curriculum and the needs of their students.

Stretch Procedures

- **1** Display the Number of the Day chart. For nonreaders, designate a reader or use an audio recording of the directions.
- 2. Have students record with words, numerals, symbols, or pictures a representation of the number of the day. Then students add their initials. Students should choose a way to represent the number that is different from their classmates' responses. Manipulatives may be used to help students discover alternative representations of the number.
- Once all students have contributed to the Number of the Day chart, call the class together for a Math Huddle to discuss the representations of the number that are displayed on the chart. Use the questions below to aid in this discussion.

Suggested Questions for Informal Assessment: Math Huddle

$^{\textcircled{}}$ Did you notice all the different ways we have represented the number of Level of the day? Can you show us a representation using manipulatives? Is there a Teacher representation that you wonder about? Support W Why do you wonder about that representation? Do you think it accurately represents the number of the day? Why? Does anyone else question that representation? $^{\textcircled{}}$ Who would like to tell us about your mathematical thinking in coming up with your choice? Do others agree or disagree? Why? How does understanding place value help us create representations of numbers? How does understanding addition and subtraction help us? What connections do you make when you think of today's number? (Answers might include, "That's my age," "That's how much money I have in my piggy bank," "That's how many students are in the class," or "That's how many fingers and toes I have.") $^{\textcircled{}}$ Why do you think it is important to be able to represent numbers in different ways? When do we usually use number words to represent numbers? When do we use numerals? When do we use pictures or diagrams? When do we use number sentences? Why do we sometimes choose one method of representation rather than another?

What It Looks Like: Stretch Snapshot

The Number of the Day Stretch offers teachers an easy way to assess both their students' number sense as well as their ability to represent numbers in multiple ways. Assessing students solely on the representations they create for the Number of the Day may prove to be misleading. Especially with young children, errors in actual representation may occur even when conceptual understanding exists. Since young students are easily distracted, especially in completing independent work, it is essential to engage in conversation with those who have minor errors to determine the causes of the errors.

The kindergarten class in this Stretch Snapshot is focusing on numbers up to ten. The teacher has encouraged students to use 5 and 10 as benchmark numbers. These students are beginning to see that 3 is two less than 5, and that 7 is two more than 5 or three less than 10. In this Math Stretch, the Number of the Day was 8.

At the start of the Math Huddle, the teacher noticed that Michael had drawn seven pennies on the chart in his attempt at representation. However, during previous observations of Michael as he counted objects, the teacher noted that Michael understood one-to-one correspondence and could count well beyond 10. He even seemed to understand the concept of using benchmark numbers. His teacher wondered whether his error in this task was due to a lack of understanding or was, instead, a careless error.

Teacher:	Young mathematicians, I am amazed by your work! Look how
	many ways you found to represent the number 8! Take a few minutes
	to look at our chart. (The teacher gives students an opportunity to
	examine the many representations created by the class.) Some of you
	chose to express the number 8 by drawing eight objects. Who chose
	to show the number this way? Let's seeMeagan, can you tell us
	about your work?

Meagan: I drew a pizza with eight slices. I counted each one as I drew it, so I know I have eight. See... 1, 2, 3, 4, 5, 6, 7, 8. (She carefully points to each slice as she counts.)

Teacher: Class, can you count with Meagan to be sure that she has eight slices?

The class counts with Meagan as she points to each slice. The teacher is watching Michael to see if he is participating and counting each time a slice is touched, or instead is just rote counting. He appears to be correctly counting one-by-one as Meagan points to each slice.)

Teacher: Michael, do you agree with Meagan?

What It Looks Like: Stretch Snapshot (cont.)	
Michael	Ves. We just counted them, so we know there are eight—just like
wichael.	my eight pennies.
Teacher:	You drew pennies! That makes me think of a connection. We've been talking about making trades with coins, haven't we? If I wanted to make a fair trade with you by giving you a nickel, how many pennies would you have to give me?
Michael:	Five of them.
Teacher:	Okay. Will you draw a circle around five of your pennies to show how many you could trade for a nickel? (Michael counts five pennies and draws a circle around them. Then, he looks puzzled.)
Teacher:	What's the matter, Michael? (The teacher provides wait time as Michael looks back at his work.)
Michael:	This isn't right. Eight is three more than five, but when I circled the five pennies, there are only two left.
Teacher:	How can you figure out what's wrong?
Michael:	I can count again. 1, 2, 3, 4, 5, 6, 7. That's only seven! I need to draw another penny.
Teacher:	How do you know?
Michael:	First, I knew that 8 was three more than 5. That didn't work—there were only two left after I circled the 5. So, I counted all of them again. I needed one more.

In this Snapshot, the dialogue with Michael confirmed the teacher's earlier assessment that Michael understood one-to-one correspondence and, furthermore, is capable of using benchmark numbers.



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Sample Chart

