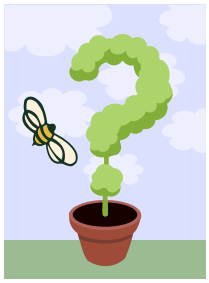

PRACTICE TASK: What's My Number? Revisited

Approximately 2-3 Days

STANDARDS FOR MATHEMATICAL CONTENT

MCC2.NBT.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

MCC2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.

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.

*****Mathematical Practices 1 and 6 should be evident in EVERY lesson. *****

BACKGROUND KNOWLEDGE

This activity helps students build flexibility using language and equivalent representations of numbers. Base-ten manipulatives should be available if students desire to use them to visualize the numbers. Students could also draw pictures to help them make up their clues to find the mystery number. Children may begin with very simple, straightforward clues about their number. But eventually, they will start to try to make up more difficult clues that don't simply give away the answer. They played this game initially in Unit 1, but now they will be working with larger numbers. They will need practice with it, so provide multiple opportunities for this activity. If you have not already done the task, "What's My Number", from Unit 1, then consider completing that task first with your students. A brief review of the rules is provided in the Task description below, but you may want to refer back to the original task in Unit 1.

ESSENTIAL QUESTIONS

- Why should we understand place value?
- What are the different ways we can show or make (represent) a number?
- What is the difference between place and value?
- If we have two or more numbers, how do we know which is greater?

- What happens to the value of a number when we add or subtract 10? What digits change? What digits stay the same? Why?
- What happens to the value of a number when we add or subtract 100? What digits change, what digits stay the same? Why?

MATERIALS

- Math Journals to record/explain concepts (optional)
- Base 10 manipulatives, as needed

GROUPING

Small Group

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

PartI
Review of original "What's My Number" task from Unit 1
Begin the lesson with the following reminder clues for playing "What's My Number"
I am a two digit number
One of my digits is twice as big as the other
I am an even number
I live between 40 and 50 on the number line.
When you add my digits the sum is 6
Who Am I?
(Answer: 42)

Discuss with students what strategies they used to figure out the correct number. Do another example with the whole class if necessary. Then have students work with a partner and together they will choose any two-digit number. After thinking of multiple ways to describe their number, students write down at least 3 clues to help someone else figure out their number. Have each partner set switch with another set of partners to give their hints to so they can try to figure out the number.

Part II
Once students are able to successfully generate clues for a given number then tell them now they will get to choose any 3 digit number to write clues for, but they will now have to write at least six clues for each number they select. Also, they will need to include use at least three of the following statements in their clues:

My number is 10 more than…
My number is 10 less than…
My number is 100 more than…
My number is 100 less than…

Part III
Each child creates their own set of clues. Some children may be able to create more than just one set. All sets could be collected and put together as a class game/book then placed in a center for continued use throughout the year.

Examples of clues that progress from easy to difficult (specific to general):

- I have a 4 in my tens place, a 2 in my ones place, and a 7 in my hundreds place. Who am I?
- I am 1 ten and 2 hundreds less than 490. Who am I?
- I have 1 more ten than the number 14. Add 3 ones and two more hundreds to get my total. Who am I?
- I am 1 ten 5 hundreds, and 29 ones. Who am I?

FORMATIVE ASSESSMENT QUESTIONS

- What is the difference between place and value?
- How did you use your understanding of place value to write clues?
- What are the different ways we can show or make (represent) a number?
- Did you use a strategy for writing clues? If so what was it?
- Did you use a strategy for figuring out someone else's clues? If so what was it?
- What happens to the value of a number when we add or subtract 10? What digits change? What digits stay the same? Why?
- What happens to the value of a number when we add or subtract 100? What digits change, what digits stay the same? Why?

DIFFERENTIATION

Extension

- After a student has guessed the number, challenge them to describe that same number in several different ways.

Intervention

- Students who are still having difficulty with understanding the magnitude of numbers and their place value should continue to work with two digit numbers. They can be given Popsicle sticks to bundle into groups of ten. As they are bundled, the student places the Popsicle sticks in cups or on a mat labeled ones, tens, and hundreds. This is more hands-on for the student who has a difficult time accepting the base 10 rod as a group of ten because it is already together. Have the student stop on occasion and count out what they have on their mat. Add single Popsicle sticks to the mat and ask what number that would make. Have students count the Popsicle sticks in bundles, then take a bundle apart and have the student count it again. This extra practice will help them recognize that the number doesn't change even though the bundle of ten has been taken apart. This can also

be done by using connecting cubes (i.e. Unifix cubes) Finally, the student could trade each bundle of ten or one hundred for the matching base 10 blocks.

- Using pennies, dimes, and dollars may also help students to grasp the idea of regrouping ("changing") ones, tens and hundreds, but still keeping the same total amount.