

Name: Nicki Reeder

Mathematics: The Language of STEM 2016-2017
"What's My Place?"

CONTENT AND TASK DECISIONS

Grade Level(s): 1st

Description of the Task: Students will discover how counting by tens is related to place value.

Indiana Mathematics Content Standards: 1.NS.6 Show equivalent forms of whole numbers as groups of tens and ones, and understand that the individual digits of a two-digit number represent amounts of tens and ones.

Indiana Mathematics Process Standards: (PS.2) Students will reason abstractly and quantitatively.

Mathematics Content Goals: Students will understand place value of the tens and ones, be able to identify the place (tens or ones) given a two digit number, and represent a number with linking cubes (or rods and cubes).

Language Objectives: Students will verbally identify the number in the tens and ones place, given a two-digit number.

Materials: linking cubes, or rods and cubes, paper and/or math mat for modeling thinking

THE LESSON

Before:

- **Student Actions**

Students will count by 10s from 0 to 120.

Students will listen to instructions on what they are going to do, preparing to explore.

- **Teacher Actions**

Activate prior knowledge by saying, "Do we know how to count by ten? Of course, we do! Let's count by 10s to 120 together."

Ask: Why do we count by 10s? How does that help us as mathematicians?

Say: Today we are going to see how counting by tens can help us as we look at two-digit numbers. We are also going to see how tens are related to ones.

During:

- **Student Actions**

Students will discuss with their elbow partner how tens are related to ones, and show their thinking using cubes.

Students will discuss, model, and share the following problem on the math mat provided.

Are 3 tens the same as 30? How do you know? Use cubes to show your thinking.

- **Teacher Actions**

Walk around, noticing students thinking and interactions.

Ask questions to extend thinking or offer support based on conversations and modeling, as well as take note of students that you would like to share, and in what order their sharing should take place.

How can the thinking and modeling of one partner group relate to that of another to promote understanding of the concept?

After:

- **Student Actions**

Students will transition to the carpet/meeting area for Math Congress.

Students (chosen as you walked around and noticed thinking) will verbally explain and model their thinking from the work on the math mat for the class; explain and model why they do or do not think 3 tens is the same as 30.

Students will ask questions of their peers to gain understanding of their thinking and the concept.

- **Teacher Actions**

The teacher will encourage respect and active listening as peers present their thinking and learning.

The teacher will ask questions to extend thinking, promote discussion, and segue into the next partner group explanation/modeling.

The teacher will take from the group discussion to begin a formal lesson on place value.

Say: "Boys and girls, I want to show you how understanding our tens and ones places can help us as mathematicians."

Pour out a bag of beans (real beans, counting beans, counters, pennies, etc.). I'd begin with less than 30. Say, "How can we count these beans?" Allow for discussion.

Model counting the beans one-by-one. Say, "Whew, that took a lot of time, didn't it?"

Today, I want to show you another way we can do this."

Show the Ten Frame mat. Ask, "How could these ten frames help me to count these beans?" Allow a student or two to model their thinking.

*You will want to get to the point where you model (if a student did not) placing the same group of beans that you counted one-by-one onto the ten frame.

Say: "Boys and girls, remind me, how many beans did we have when we counted our beans one-by-one? How many do we have now in our ten frames?"

Ask: "Do we need to count our beans one-by-one in the ten frame? Why?"

Say: "You're right, we don't! Now that we have them in a ten frame, we can count by tens and ones. We can count...ten, twenty, twenty-one, twenty two, twenty three, etc."

Ask: "So, how many tens do we have?" (2 groups of ten, 2 tens). "How many ones?"

(3)

Repeat the exercise one or two more times with a different number of beans.

ASSESSMENT

Assess: Students will complete an "Exit Ticket" to show their initial understanding of the concept of place value in the tens and ones places. The "Exit Ticket" will have two different sets of ten frames with a varying number of beans shown. The student will write down how many tens and how many ones, as well as the whole number.