PRACTICE TASK: One More/Less Than Dominoes

Approximately one day (Adapted from Van de Walle's Make Sets of More/Less/Same activity 2.10)

STANDARDS FOR MATHEMATICAL CONTENT

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

MCCK.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.

MCCK.CC.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

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 KNOWLEGDE

When children count, they have no reason to reflect on the way one number is related to another. The goal is only to match number words with objects until they reach the end of the count. To learn that 6 and 8 are related by the twin relationships of "two more than" and "two less than" requires reflection on these ideas within tasks that permit counting. Counting on (or back) one or two counts is a useful tool in constructing these ideas. (Van de Walle, 2006, p.44)

ESSENTIAL QUESTIONS

- How can you explain how one end of a domino connects to another?

- How do you know which side of the domino is more?
- How do you know which side of the domino is less?

MATERIALS

- Dominoes

GROUPING

Small Groups/Work Stations

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Part I
In this task, students match ends of the domino to a domino with one less. Use the dot-pattern dominoes or a standard set to play "one-less-than" dominoes. Play in the usual way, but instead of matching ends, a new domino can be added if it has an end that is one less than the end on the board. As students are playing they should explain and justify their reasoning as to how they know a number is greater or less than another. (Example: *1 less than 6 is 5 OR I know that 5 is one less than 6 because I need 2 hands to count 6 and only one hand to count to 5)*

Part II
A similar game can be played for two less, one more, or two more.

FORMATIVE ASSESSMENT QUESTIONS

- How do you know you have more/less?
- What is the difference between more and less?
- What does equal mean?

DIFFERENTIATION

Extension
- Have students order the dominoes by the using the total amount of pips on each domino. Some dominoes will have an equal amount of pips which is an opportunity to observe how students organize them.

Intervention
- Allow students to use a double ten frame to model 2 quantities less than ten. Example: if the domino in play was a 5, the students would model a 5 in one ten frame and model one less than 5 in the next 10 frame.