SCAFFOLDING TASK: "Teen" Frame Talk-About Continued (13-19)

Approximately 3 days

STANDARDS FOR MATHEMATICAL CONTENT

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

MCCK.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

MCCK.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).

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

b. 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

A set of ten should play a major role in children's initial understanding of numbers between 10 and 20. When children see a set of six with a set of ten, they should know without counting that the total is 16. However, the numbers between 10 and 20 are not an appropriate place to discuss place-value concepts (in kindergarten), children should not be asked to explain the 1 in 16 as representing "one ten. The concept of a single ten is just too strange for a kindergarten or early first-grade child to grasp. (Van de Walle, 2006 p. 54)

ESSENTIAL QUESTIONS

- What is an efficient strategy for counting numbers in the teens?

MATERIALS

- Connecting cubes (2 colors-10 each)
- Double 10-frame

GROUPING

Whole and Individual/Pairs

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

This lesson should be repeated for the following days
Day 1 (13,14)
Day 2 (15,16,17)
Day 3 (18,19, 20)

To prepare for "*Teen-Frame Talk About*": On 2 pieces of chart paper, glue one blank double ten-frame to record your students' thinking for the numbers 13 and 14.

Bring students to a gathering place to explore numbers as a learning community where all ideas are accepted and discussed. The purpose of this task is for students to explore the numbers 13 and 14 and realize that the most efficient way count numbers greater than 10 it is to make a ten and count on.

Give each student a pile of multicolored, unconnected connecting cubes. Students will remind you that you need only 2 colors(10 of each). This is an opportunity to review why making a ten is an efficient way to count numbers greater than 10. Give each student a pile with only 2 colored cubes, with at least 10 cubes of each color.

Show students the numeral "13" and ask them to count out 13 cubes. Discuss the number 13 and have students share what they know about the number 13. After time has been given to the discussion, ask students to build a tower of 13 cubes. Monitor the students who make a tower of ten first with one color and count beyond 10 with another color. Ask the students to

justify/prove the tower is 13 without counting out each individual cube. Take suggestions and allow for the conversation to continue as students share what makes counting difficult and record suggestions.

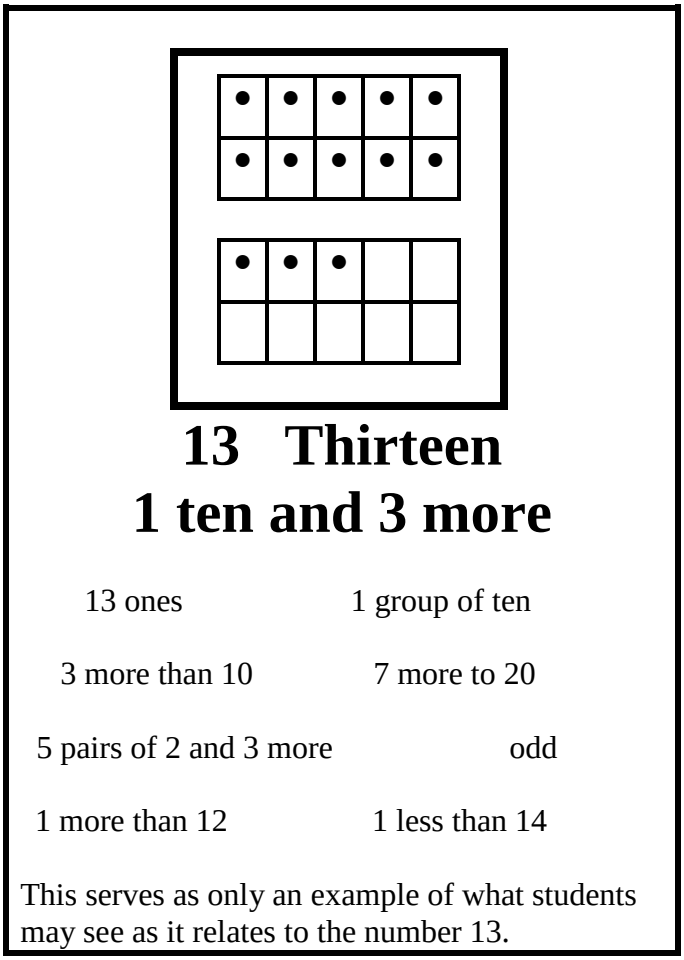
After sharing thoughts about the number 13, show the students the numeral "14". Ask students to make a tower of 14 and repeat the same sequence of questions that were posed for the number 13. Observe which students add 1 cube, the students that keep the tower together and start counting from 1 to 14 and then add one more, and the students that decompose their tower to individual cubes and build up from 1. Allow students to share their strategies for making a tower of 14. Identify the most efficient strategy.

After students share what they know about the number 14, group the students on the floor in pairs and give each pair (2) double ten-frame mats. Have one partner build 13 and the other 14 on the ten-frame mat. Partners should explore and discuss what each number looks like on the double ten-frame and compare both numbers to one another. Some students may not fill a ten-frame first before moving on to the second one. Do not discourage students from building numbers differently. Allow students to share the ways the made 13 and 14 on their ten-frame. Ask the students how they know they have 13 or 14 without counting individual cubes. Focus on the students that made a ten first and have students model this representation of the numbers 13 and 14. After student have explored the numbers 13 and 14 on the ten frame and through building towers, allow the students to model 13 and 14 using the Rekenreks built in unit 2.

Comment: it is critical that students see the group of ten and not just focus on the color. The students need to recognize that using two colors to differentiate tens and ones is an efficient strategy. In addition students need to the students need to understand that making a group of tens first and seeing what "ones" are left over to identify/compose a number is the most efficient strategy?

Draw students focus to the chart paper and double ten-frame created before the lesson. Students should still have the numbers 13 and 14 built on the ten-frames. Have students share what they know about each number and record on the chart paper. Have a student represent the numbers 13 and 14 on the ten-frame by coloring dots. Discuss the most efficient way to represent the numbers on a ten frame (make a 10 first).

Below is a sample of what a *"Teen-Frame Talk About"* anchor chart could look like.



Because students in kindergarten have difficulty with the "teen" numbers, post this anchor chart in the classroom for the remainder of the year. Leave extra space on the chart so that as new concepts and relationship are discovered throughout the year, they can be listed on the chart.

FORMATIVE ASSESSMENT QUESTIONS

- How many groups do you have?
- How many extras?
- How many cubes altogether?

DIFFERENTIATION

Extension

- Stars- students work with a partner. Using a 1-minute sand timer, a partner will time the other students to make as many stars (or other easily drawn shape) as s/he can in one

minute. When s/he's finished, the other partner will count the stars and describe how they counted (did they circle groups of ten first?)

- "Pinch a Ten". Using a bag of kidney beans (popcorn kernels, lima beans, etc.), students will take a "pinch" of kidney beans and count. Did your pinch have fewer than ten, more than ten, or exactly ten? Make a chart similar to the one below:

Fewer than 10	10	More than 10
***Students record their pinches using tally marks**		

Intervention

- For students who have difficulty with organization, offer them a ten frame to use to organize their cubes before connecting them.