

## Core Content

**Cluster Title:** Work with numbers 11-19 to gain foundations for place value.

**Standard 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.

### **MASTERY Patterns of Reasoning:**

#### **Conceptual:**

- Students will understand that numbers 11-19 can be represented by a group of ten ones and some more ones.
- Students will understand that numbers 11-19 have one group of ten and some more ones.
- Students will understand that the numbers 11-19 are made up of two digits.
- Students will understand that numbers can be written in an equation.

#### **Procedural:**

- Students can represent a number from 11-19 using objects, such as linking cubes.
- Students can represent a number from 11-19 by drawing a picture.
- Students can compose and decompose numbers from 11-19.
- Students can organize objects into a group of ten and some more ones to show a given number from 11-19.

#### **Representational:**

- Students can write the numbers 11-19.
- Students can represent the concept of place value with a picture for a given number from 11-19.
- Students can write an equation for a given number from 11-19.
- Students can write the numbers 11-19.
- Students can represent a number from 11-19 using objects, such as linking cubes.
- Students can represent a number from 11-19 with a drawing.

## Supports for Teachers

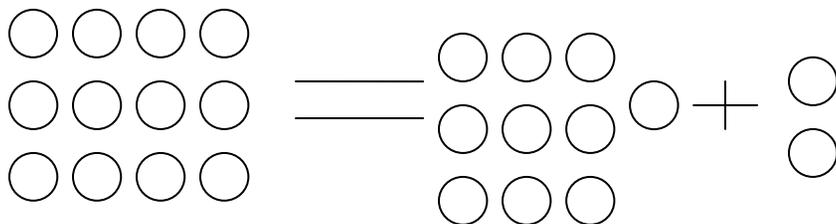
<b>Critical Background Knowledge</b>
<p><b>Conceptual:</b>                      Students will have an understanding of the numbers 1-10.                      Students will have an understanding of counting and one-to-one correspondence.</p> <p><b>Procedural:</b>                      Students can count to 20.                      Students can write the numbers 1-10.                      Students will understand that the last number name said tells the number of objects counted.                      Students can count objects with one-to-one correspondence.                      Students can identify the numbers 1-10.                      Students can compose and decompose numbers from 1-10.</p> <p><b>Representational:</b>                      Students can count orally from 1-10.                      Students can write the numbers 1-10.                      Students can correctly count a given set of objects ranging from 1-10.</p>
<b>Academic Vocabulary and Notation</b>
<p>place value, tens, ones, digits, number, decompose, compose, equation, equal, plus, number words 1-19, grouping</p>

<b>Instructional Strategies Used</b>	<b>Resources Used</b>
<p>Teacher will have students use manipulatives to build representations of numbers from 1-10.</p> <p>Teacher will introduce the numbers 11-19.</p> <p>Teacher will model how to use manipulatives to build representations of the numbers 11-19. Students will make each number after the teacher.</p>	<p>Manipulatives (use objects that can and cannot be linked), ten frames</p> <p><a href="http://nlvm.usu.edu/en/nav/category_g_1_t_1.html">http://nlvm.usu.edu/en/nav/category_g_1_t_1.html</a></p> <p><a href="http://www.ictgames.com/placeValue.htm">http://www.ictgames.com/placeValue.htm</a></p>

Teacher will focus on organizing objects into a group of ten ones and some more ones.

The teacher will next need to transfer the skill of building numbers to drawing pictures of the numbers 11-19. Teacher will model how to group pictures by circling a group of 10. Pictures can also be used to show how to compose and decompose the numbers 11-19.

Lastly, the teacher will take the pictorial representations of the numbers and help students write an equation for the given number.  
For example:



$$12 = 10 + 2$$

Tang, Greg. *Math Fables: Lessons That Count*. Scholastic Press, 2004.

Assessment Tasks Used	
<p><b>Skill-Based Task:</b>                      Students will correctly model the numbers 11-19 using objects and pictorial representations.</p> <p>Students will write an equation for a given number from 11-19.</p> <p>Students will be able to count from 1-19.</p>	<p><b>Problem Task:</b>                      Draw a circle around ten Xs. Write the total number of Xs.</p> <p>X X X X X X                                X                                X       _____</p> <p>X X X X</p> <p>Notice how the student counts, circles, and writes the number. Does the student correctly circle a group of ten Xs? Does the student write the correct number? Does the student find the total by (1) counting by ones, (2) counting on from ten (10, 11, 12, ...), (3) counting the four “extras” and writing 14, or (4) writing 14 by visualizing 10 and 4 (no counting)?</p> <p>Sue has 16 teddy bears. Draw a picture to represent the number 16. Circle the group of 10. Write an equation representing your picture.</p> <p>Randy has 13 cars. Show the number of cars Randy has using the base ten blocks.</p>