

Core Content

Cluster Title: Understand place value.

Standard: 2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

- a. 10 can be thought of as a bundle of ten ones — called a “ten.”
- b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
- c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

MASTERY Patterns of Reasoning:

Conceptual:

Understand that 10 can be represented as a bundle of ten ones-called a “ten”.

Understand that in place value a specific digit represents how many tens or how many ones compose the number.

Procedural: These objects can be used for the following activities: Unifix cubes, counters, straws, beans, kids, links, candy or set of any classroom objects.

Look at a group of tens and ones and write the associated number.

Identify the amount of tens in a number and ones in the number by looking at or hearing a number.

Look at a number and represent it with sets of tens and ones.

Write a given number in expanded form.

Write the numbers when given the expanded form.

Organize objects into sets of tens and ones.

Representational:

Represent a number in all of the following ways:

- Numeral - 25
- Picture - II.....
- Value of each digit - 2 tens 5 ones
- Expanded form - $20+5$

Supports for Teachers

Critical Background Knowledge

Conceptual:

Understand that numbers can be composed and decomposed.
Understand the counting sequence and patterns.

Procedural:

Count to 99 and represent numbers in this sequence.
Identify numbers and write the numerals associated with them.
Say the name of the number when shown the number.
Write numbers to 20 in order.

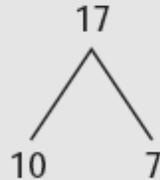
Representational:

Draw a circle around a set of 10 objects and identify a teen number as a ten and some ones.

Academic Vocabulary and Notation						
Compose, Decompose, Digit, Making Tens, Number, Numeral, One, Place Value, Sequence, Tens						
Instructional Strategies Used	Resources Used					
<p>Race to 100 variations:</p> <ul style="list-style-type: none"> • Students need beans, cups, place value mats and number cubes. Students take turns rolling a number cube and adding that amount of beans to a place value mat. Each time a ten is made, the beans are transferred to a cup and moved to the tens place. Play alternates until one student passes one hundred and wins the game. • Students need base ten blocks, abacus or base ten manipulatives and 2 different colored number cubes. One cube represents tens and the other represents ones. Students take turns rolling both number cubes at the same time. The student states the number that has been rolled and adds that to their current amount. When ten or more ones are collected the students exchange ten ones for a ten. Play continues until a student passes one hundred, becoming the winner of the game. Alternate ending: The student who reaches exactly 100 first wins. <p>Use place value cards to help students identify the value of the number in the tens place and the value of the number in the ones place and represent it in expanded form.</p> <div style="text-align: center;"> <p>Place value cards</p> <p>layered separated</p> <p>front: <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 5px; text-align: center;">1</td><td style="border: 1px solid black; padding: 5px; text-align: center;">7</td></tr></table> <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 5px; text-align: center;">1</td><td style="border: 1px solid black; padding: 5px; text-align: center;">0</td><td style="border: 1px solid black; padding: 5px; text-align: center;">7</td></tr></table></p> </div> <p>Taken from the Common Core Progressions http://commoncoretools.me/</p>	1	7	1	0	7	<p>Van de Walle, John A. and Lovin, LouAnn H. <i>Teaching Student-Centered Mathematics Grade K-3 (P 123-140)</i>. Allyn & Bacon. 2005</p> <p>Math Their Way http://www.center.edu/MathTheirWay.shtml</p> <p>Common Core Progressions with illustrations Number and Operations in Base Ten Domain http://commoncoretools.me/</p> <p>Learning Teen Numbers Rap http://www.youtube.com/watch?v=S5eaBjKl8xQ</p>
1	7					
1	0	7				

Use number bond diagrams to decompose numbers to 99 using sets of tens and ones.

Number-bond diagram and equation



$$17 = 10 + 7$$

Decompositions of teen numbers can be recorded with diagrams or equations.

Taken from the Common Core Progressions

<http://commoncoretools.me/>

Give pairs of students random number cards ranging between 0-99 and Unifix Cubes, base ten blocks, abacus, or other base ten manipulatives. The first student gives the other student clues about the number by telling how many tens or ones are in the number. The second student uses tens and ones to create the number. When that student identifies the number they both look at the card and objects to make sure the numbers match. Switch roles each time.

Assessment Tasks Used	
<p>Skill-based Task: Students will be able to show teen numbers with objects in tens and ones.</p> <p>Students will explain that teens are made of a ten and some ones and identify the patterns in the words.</p> <p>Students draw a picture of a two-digit number showing tens and ones.</p> <p>Students will be able to look at a two-digit number and identify which number is in the tens place and which number is in the ones place.</p>	<p>Problem Task: Give students a set of beans and ask them how many there are. Ask students how they figured this out. Listen to many different strategies.</p> <p>Give students a paper with many pictures of the same small object. Ask the students to circle sets of ten (these are not organized on the paper), find how many objects there are and represent the number in expanded form.</p>