MA.K.NSO.2.2

Overarching Standard:
MA.K.NSO.2 *Recite number names sequentially within 100 and develop an understanding for place value.*

Benchmark of Focus

MA.K.NSO.2.2: Represent whole numbers from 10 to 20, using a unit of ten and a group of ones, with objects, drawings and expressions or equations.

Example

The number 13 can be represented as the verbal expression "ten ones and three ones" or as "1 ten and 3 ones."

Related Benchmark/Horizontal Alignment

- MA.K.NSO.1.1
- MA.K.NSO.3.1

Vertical Alignment

Previous Benchmarks	Next Benchmarks
VPK	MA.1.NSO.1.3

Terms from the K-12 Glossary

- Equation
- Expression

Purpose and Instructional Strategies

The purpose of this benchmark is to help students build the foundation of place value. By decomposing and viewing a number as its 10s and 1s students can begin to use strategies for adding and subtracting in later benchmarks and grade levels as the scale increases.

- Instruction helps students develop the meaning of numbers beyond the conventional names.
- Instruction focuses on multiple ways to represent numbers. *(MTR.2.1)*
- Instructions build the foundation for expanded form and decomposing numbers, which can be used as a strategy for operations later. *(MTR.5.1)*

Common Misconceptions or Errors

- Students may attach too much meaning to certain number names. Example: sixteen linguistically makes sense as six and teen, or six and ten, while eleven and twelve do not have linguistic cues.
- Students may think there is only one way to represent numbers with tens and ones.

Strategies to Support Tiered Instruction

- Teacher provides opportunities to count collections of objects that contain sets with quantities between 11 and 20, using one ten frame to isolate the idea that the quantity contains "ten and some more."
  - For example, students can count the objects that are placed in the ten frame with a "count on" strategy, "10…11, 12, 13, 14." Using a ten frame reinforces the idea that 10 is a benchmark number and that "10 and more" can be counted additively (10+1+1+1+1) rather than by single units. Students can communicate their thinking by drawing representations of their counts and explaining each drawing. Instruction should emphasize that the "1" in teen numbers means "10," and language support can include students rephrasing teen number words, for example, "16 is the same as 10 and 6."

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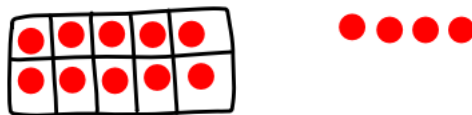
Questions to ask students:

- Ask: *How did you decompose 18 into a ten and some ones?*
  - Sample answer that indicates understanding*: I created 18 with a tens rod and 8 ones. I took away and ten and still had 8 ones left. I decomposed 18 into a ten and 8 ones.*
- Ask: *How can you compose 12 into a ten and some ones.*
  - Sample answer that indicates understanding: *I have a ten, then counted on with ones until I got to 12. It took one ten and 2 ones to compose 12.*
- Ask: *Can you create a model that shows how you decomposed 15?*
  - Sample answer that indicates understanding: *Students correctly represents 1 tens rod and 5 ones units. Possibly on a place value chart.*
- Ask: *How does the equation 10+6 relate to your model of 16?*
  - Sample answer that indicates understanding: *The digit 1 in 16 represents one ten. The 6 in 16 represents six ones. So I used one tens rod and six ones.*

Instructional Tasks

Instructional Task 1

Materials: Counters and ten frames

Task: Give students two ten frames and a number of counters between 11 and 19. Students will fill a 10 frame, and fill the second with the left over counters. Have students record the number of tens and ones like the example below. This task can be done in a small group, providing opportunities for discussion and collaboration.
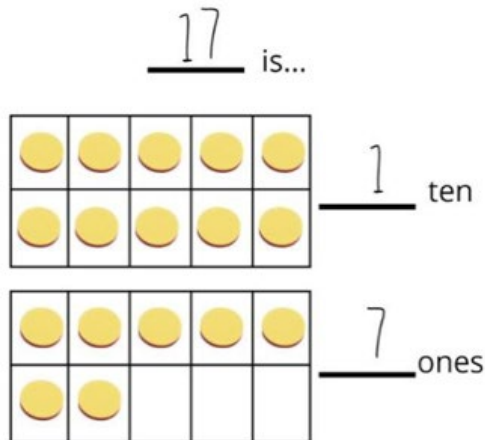
The purpose of this task is to provide students with the opportunity to discover rather than to provide them with a system or rule. Allow explorations with various addends and sums, drawing comparisons and conclusions through discussion.

Instructional Items

Instructional Item 1

Given the following, fill in the blanks. For the first two, have students provide a different way to fill in the blanks. Students should give more than one answer when possible.

16 is the same as __ *ten(s) and* __*ones.*

12 is the same is__*ones and* __*ten(s).*

__is the same as 1 *ten and* 5 *ones.*

__is the same as 9 *ones and* 1 *ten.*

5 is the same as__*ten(s) and* __*ones.*

Additional Resources:

- CPALMS Resources: <u>MA.K.NSO.2.2</u>
- Video: <u>Learn Numbers 10 to 19</u>

Resources/Tasks to Support Your Child at Home:

- Give your child a set of objects from 11-19, such as straws. Have them group ten objects together and place a rubber band around it. It went from being 10 ones to one ten. When they count the rubber banded group of straws the should say "ten" instead of counting each straw by ones. Have them count on by ones with the other objects to determine how many total objects they have. Ask them, "How many tens did you have? How many ones did you have?" Then extend to record the equation that is represented, such as: 10+6=16.