

## Grade K • Module 5

# Numbers 10–20 and Counting to 100

## OVERVIEW

Students have worked intensively within 10 and have often counted to 30 using the Rekenrek during Fluency Practice. This sets the stage for Module 5, where students clarify the meaning of the 10 ones and some ones within a teen number and extend that understanding to count to 100. In Topic A, students start at the concrete level, counting 10 straws.

T: Count straws with me into piles of ten.

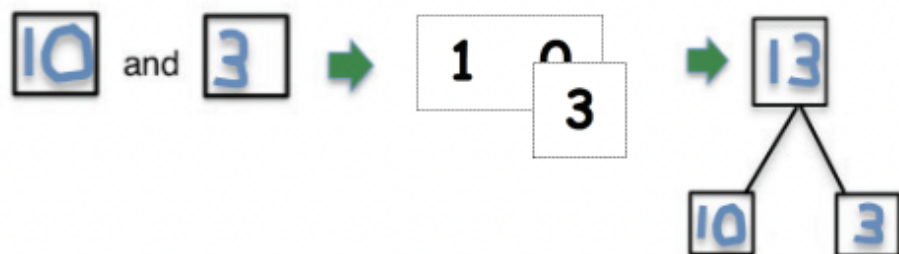
S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. 1, 2, 3, ..., 8, 9, 10. 1, 2, 3, ..., 8, 9, 10.

T: Let's count the piles!

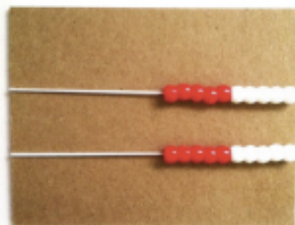
S: 1 pile, 2 piles, 3 piles, 4 piles.

Thus, Kindergarten students learn to comfortably talk about 10 ones, setting the foundation for the critical Grade 1 step of understanding 1 ten. They next separate 10 objects from within concrete and pictorial counts up to 20, analyzing the total as 10 ones and no ones or 10 ones and some ones (**K.CC.1**, **K.NBT.1**). They see two distinct sets which are then counted the Say Ten way: ten 1, ten 2, ten 3, ten 4, ten 5, ten 6, ten 7, ten 8, ten 9, 2 tens. Students hear the separation of the 10 ones and some ones as they count, solidifying their understanding as they also return to regular counting: eleven, twelve, thirteen, ..., etc. (**K.CC.5**)

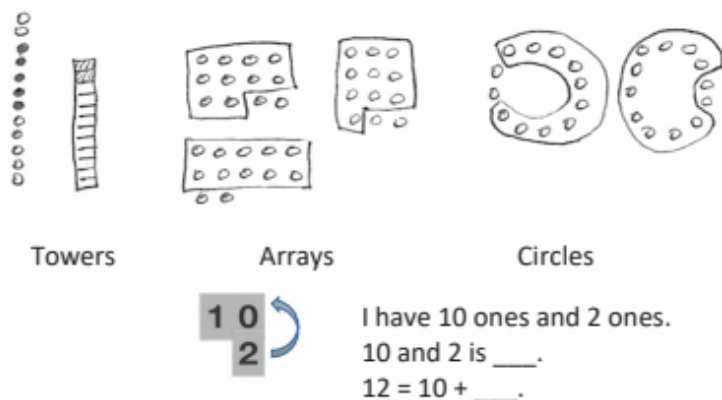
In Topic B, the two distinct sets of ones are composed, or brought together, through the use of the Hide Zero cards (pictured below) and number bonds. Students represent the whole number numerically while continuing to separate the count of 10 ones from the count of the remaining ones with drawings and materials (**K.NBT.1**). Emerging from Topic B, students should be able to model and write a teen number without forgetting that the 1 in 13 represents 10 ones (**K.CC.3**).



Topic C opens with students making a simple Rekenrek to 20 (pictured below) and modeling numbers thereon. The tens can be seen both as two lines with a color change at the five or two parallel unicolor fives.



In Topic C, the focus is now on the decomposition of the total teen quantity so that one part is ten ones. This is what makes Topic C a step forward from Topics A and B. Previously, the ten and ones were always separated when modeled pictorially or with materials. Now, the entire teen number is a whole quantity represented both concretely and pictorially in different configurations: towers or linear configurations, arrays (including the 10-frame or 5-groups), and circles. Students decompose the total into 10 ones and some ones. Through their experiences with the different configurations, students have practice both separating 10 ones within teen numbers and counting or conservation as they count quantities arranged in different ways and, as always, use math talk to share their observations (**K.CC.5**). They also come to know each successive teen number as one larger than the previous number (**K.CC.4a**).



In Topic D, students extend their understanding of counting teen numbers to numbers from 21 to 100. They first count by tens both the Say Ten way—1 ten, 2 tens, 3 tens, 4 tens, etc.—and the regular way: twenty, thirty, forty, etc. They then count by ones to 100, first within a decade and finally across the decade (**K.CC.1**, **K.CC.2**). Topic D involves the Grade 1 standard **1.NBT.1** because students also write their numbers from 21 to 100.

The writing of larger numbers has been included because of the range of activities they make possible. The writing of these numbers is not assessed nor emphasized, however. Topic D closes with an optional exploration of numbers on the Rekenrek, bringing together counting with decomposition and finding embedded numbers within larger numbers. This lesson is optional because it does not directly address a particular Kindergarten standard.

In Topic E, students apply their skill with the decomposition and composition of teen numbers. In Lesson 20, they represent both compositions and decompositions as addition statements (**K.NBT.1**). In Lesson 21, they

model teen quantities with materials in a number bond and hide one part. The hidden part is represented as an addition sentence with a hidden part (e.g.,  $10 + \underline{\quad} = 13$  or  $13 = \underline{\quad} + 3$ ). The missing addend aligns Lesson 21 to the Grade 1 standard **1.OA.8**. In Lesson 22, students decompose two different teen numbers each into ten ones and some remaining ones. They observe that the group of 10 ones is the same for each number, thus allowing students to compare two teen numbers by comparing the remaining ones. They *stand* on the structure of the 10 ones and use what they know of numbers 1–9 to compare (MP.7). Comparison of numbers 1–9 is a Kindergarten standard (**K.CC.6**, **K.CC.7**).

In Lesson 23, students reason about situations to determine whether they are decomposing a teen number (as 10 ones and some ones) or composing 10 ones and some ones to find a teen number. They analyze their number sentences that represent each situation to determine if they started with the total or the parts and if they composed or decomposed, for example,  $13 = 10 + 3$  or  $10 + 3 = 13$  (**K.NBT.1**). Throughout the lesson, students draw the number of objects presented in the situation (**K.CC.5**).

The module closes with a culminating task, wherein students integrate all the methods they have used up until now to show decomposition. For example, they are instructed, “Open your mystery bag. Show the number of objects in your bag in different ways using the materials you choose” (MP.5). This experience also serves as a part of the End-of-Module Assessment, allowing students to demonstrate skill and understanding using all they have learned throughout the module.