

# Counting to 100 and Representing Quantities to 20

## Key Content from This Unit:

*In this unit, kindergarteners rote count to 100 by ones. They count forward from any given number. Students write numerals 0–20 and represent a number of objects with the numeral. They work toward understanding relationships between numbers and quantities and connect counting to cardinality. Students count to answer “how many?” up to as many as 20 arranged or 10 scattered objects.*

*In this unit, students compare two numerals between 1 and 10 (not just groups of objects).*

## What came before this:

Early in the year, kindergarteners develop their counting and cardinality skills as they rote count to 50 by ones. They write numerals 0–10 and represent a number of objects with the numeral. Students count to answer “how many?” for up to 10 arranged or 10 scattered objects. In Unit K.2.1, they identify the number of objects as greater than, less than or equal to another quantity of objects.

## What comes after this:

Later in the year, students rote count to 100 by tens. They also count to answer how many for up to 20 arranged and 20 scattered objects.

## Vocabulary to Know:

**Cardinality:** knowing that the number word said tells the quantity you have and that the number you end on when counting represents the entire amount counted.

**Number:** describe quantities or values, i.e., 4 is a number that is one less than 5, but one more than 3.

**Numeral:** symbols used to represent numbers, the shape itself without value, i.e., the numeral 1 is formed with a straight line down.

**Quantity:** the amount or number

**Rote count:** counting by memory, does not require an understanding of quantity, but is an important first step.

*When learning to count, it is important for kindergarteners to connect the collection of items (6 bears), the number word (“six”), and the numeral (6).*

## Common Core Focus:

- Count to 100 by one from any given number.
- Write numerals 0–20.
- Represent up to 20 objects with a numeral and given a number 1–20, count that many objects.
- Understand that the last number named in a count represents the total quantity of objects counted.
- Count to answer “How many?” questions about 20 objects in an arranged configuration or as many as 10 objects in a scattered configuration.
- Compare two numbers, 1–10, presented as numerals.

K.CC.1, K.CC.2, K.CC.3, K.CC.4, K.CC.5, K.CC.7

## Spotlight on the Math Practices

### ***Make Sense of Problems and Persevere in Solving Them***

*Mathematically proficient students can monitor their progress and change course if necessary and use concrete objects or pictures to help conceptualize and solve a problem.*

In this unit, students *persevere* when they:

- Use a number line to try to guess an undisclosed number, given clues of “greater than” or “less than” for each of their guesses.
- Develop strategies to match various quantities with various numerals.

## How Can You Help?

- Have your child count object as often as possible – the number of cups in the stack, the number of clips in a pile, the number of hops on the sidewalk.
- Practice writing numerals 0-20 in tactile ways – shaving cream, sand, in a baggie of paint or gel.
- Ask your child count, starting from a different number each time.
- Have your child compare two numerals (0 to 10). Have objects available if they need to build each number.

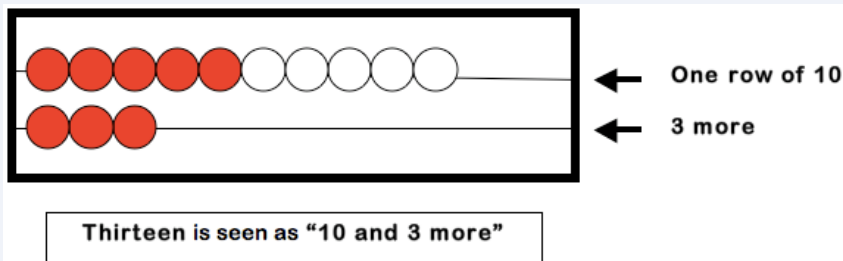
## KEY MATHEMATICAL MODELS of the COMMON CORE

### Rekenrek

Rekenreks are also known as a counting frame or an arithmetic rack. It was developed in the Netherlands, although many variations are found in other cultures around the world. It is a great tool that allows children to develop number sense and visualize the explanations of others. With a structure anchored in 5 and 10, the rekenrek helps children build number relationships that lead to more advanced strategies. It can be used to help students see numbers within other numbers, recognize combinations of 5 and 10, build powerful strategies for addition and subtraction and memorize addition facts with meaning.

It combines features of the number line, counters and base-10 models.

In kindergarten, students use a rekenrek up to 20. In later grades, they use the rekenrek to add, subtract and even multiply up to 100.



## Some Resources to Help at Home

- Ten-frame games from NCTM (note options on the left) <http://illuminations.nctm.org/Activity.aspx?id=3565>
- Information and activities for counting <http://www.k-5mathteachingresources.com/Counting-Activities.html>
- Interactive counting games <http://www.topmarks.co.uk/maths-games/5-7-years/counting>
- Count Your Chickens [http://pbskids.org/curiousgeorge/games/count\\_your\\_chickens/count\\_your\\_chickens.html](http://pbskids.org/curiousgeorge/games/count_your_chickens/count_your_chickens.html)
- Counting by 1s to 100 <http://www.schooltube.com/video/7502b16ceeca2a1fc4d2/Counting-By-Ones-Song>