

What the Standards Mean (Kindergarten to Grade 6):

An Interpretative Guide to the *Common Core State Standards for Mathematics*

(Version 2, revised 4/7/2011)



Interpretations by:

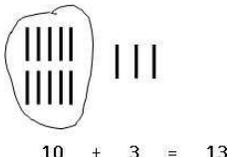
YUUREKA Mathematics

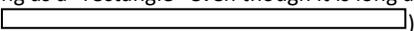
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NOTE: The interpretations of the Common Core State Standards for Mathematics reflect the thoughts of Wesley Yuu (Owner, YUUREKA Mathematics). The interpretations have not been reviewed, endorsed, or vetted by any experts or specialists. While this document may help educators by giving them one perspective of what the standards mean, readers/users are encouraged to engage in professional dialogue with their colleagues to build their own understanding of the Standards. Should you have suggestions for revisions, please contact Wesley Yuu via email at wesleyyuu@yuureka.com. Thank you.

Common Core State Standards for Mathematics	This means that the student can...
Domain: Counting and Cardinality	
Know number names and the count sequence.	
<p>K.CC.1: Count to 100 by ones and by tens.</p>	<ul style="list-style-type: none"> Say the number names in sequence to 100 by ones and tens, without repeating or skipping over a number. This is performed without objects to count.
<p>K.CC.2: Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</p>	<ul style="list-style-type: none"> Say the number names in sequence beginning from any number, without having to begin at 1. This is performed without objects to count.
<p>K.CC.3: Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).</p>	<ul style="list-style-type: none"> Write the numbers from 0 to 20 in order. Write the number to match the name of number (from 0 to 20) that is said aloud. Count the number of objects (limited to 0 to 20 objects) shown, and then write the number that represents how many there are.
Counting to tell the number of objects.	
<p>K.CC.4: Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <p>a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.</p> <p>b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.</p> <p>c. Understand that each successive number name refers to a quantity that is one larger.</p>	<ul style="list-style-type: none"> Say the number names in standard order as each object is counted. Keep track of the objects as they are counted so that no objects are skipped or double-counted. After counting the objects, when asked “how many object are there?” the student responds correctly without having to go through the counting sequence again. After counting the objects, when one more object is added to the set and when asked “how many are there now?” the student responds correctly without having to count the set.
<p>K.CC.5: Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.</p>	<ul style="list-style-type: none"> Say how many objects there are as a result of counting them (objects are limited to 20 things arranged in a line, in a rectangular array (in rows), or in a circle) (objects scattered in a random configuration are limited to 10). Count out a given number of objects (e.g., when given a tub of jelly beans, the student can take out the number of jelly beans that he is told to take out).
Comparing numbers.	
<p>K.CC.6: Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Note: Include groups with up to ten objects.)</p>	<ul style="list-style-type: none"> Tell which group has more (or less or the same number of) objects than the other by... <ul style="list-style-type: none"> Comparing one group to the other by sight (and not counting them) when it is obvious that one group has more (e.g., one group has 2 objects and the other has 8); Comparing one group to the other by strategically arranging the objects so that they can be compared by sight; Using other comparison strategies such as removing one object from each group, and then removing another object from each group, and then continuing until only one group has leftovers; Counting the number of objects in one group, then counting the number of objects in the other group, and then saying which has more.
<p>K.CC.7: Compare two numbers between 1 and 10 presented as written numerals.</p>	<ul style="list-style-type: none"> Say which number is more (or less) than the other when show a pair of written numbers between 1 and 10.

Common Core State Standards for Mathematics	This means that the student can...
Domain: Operations and Algebraic Thinking	
Understanding addition as putting together and adding to, and understanding subtraction as taking apart and taking from.	
<p>K.OA.1: Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (Note: Drawings need not show details, but should show the mathematics in the problem -- this applies wherever drawings are mentioned in the Standards.)</p>	<ul style="list-style-type: none"> • Represent addition in the following ways: <ul style="list-style-type: none"> ○ Using fingers, objects, manipulatives, sounds, or people to represent what is being added together (or represent one quantity being to another), and then determining the total/sum. ○ Drawing pictures of the objects to represent what is being added together (or represent one quantity being to another), and then determining the total/sum. ○ Verbally explaining the how to find the answer to the addition problem. ○ Writing an addition expression (e.g., $4 + 3$). ○ Writing an equation (e.g., $4 + 3 = 7$). • Represent subtraction in the following ways: <ul style="list-style-type: none"> ○ Using fingers, objects, manipulatives, or people to represent the starting amount in a subtraction problem, and physically taking away or removing what is supposed to be subtracted, and then counting what's leftover to determine the difference. ○ Drawing pictures of the objects to represent the starting amount in a subtraction problem and crossing out or separating what is supposed to be subtracted, and then determining the difference. ○ Verbally explaining the how to find the answer to the addition problem. ○ Writing a subtraction expression (e.g., $7 - 3$) ○ Writing a subtraction equation (e.g., $7 - 3 = 4$)
<p>K.OA.2: Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.</p>	<ul style="list-style-type: none"> • Recognize whether the word problem requires addition or subtraction and uses objects or drawings to model the problem and find the solution.
<p>K.OA.3: Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).</p>	<ul style="list-style-type: none"> • Start with x number of objects ($x \leq 10$) and show different ways to separate them into two quantities (e.g., the student starts with 7 tiles and then separates them into a set of 4 and a set of 3, 5 and 2, and 6 and 1). • For each decomposition, draw the two sets of objects and write an equation that represents the decomposition. <div data-bbox="1247 1241 1442 1486" style="border: 1px solid black; padding: 5px; text-align: center;"> </div>
<p>K.OA.4: For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.</p>	<ul style="list-style-type: none"> • Add enough objects to make 10 when given 1-9 objects/manipulatives to start with. • Draw enough objects to make 10 when given a picture of 1-9 objects to start with. • Say what number is needed to make 10 when given any number from 1 to 9. • Complete a missing addend equation when one of the given addends is 1 to 9, and the sum is 10. (e.g., $8 + \underline{\quad} = 10$, and the student fills 2 into the blank).

Common Core State Standards for Mathematics	This means that the student can...
<p>K.OA.5: Fluently add and subtract within 5.</p>	<ul style="list-style-type: none"> • Effortlessly add any pair of numbers who sum is 5 or less. • Effortlessly subtract any pair of numbers whose starting number is 5 or less (of course, the second number not greater than the first number). <p>NOTE: Proficiency of this standard should come as a result of development of number sense over time, and NOT through memorization via flash cards.</p>
<p>Domain: Number and Operations in Base Ten</p>	
<p>Working with numbers 11 – 19 to gain foundations for place value.</p>	
<p>K.NBT.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.</p>	<ul style="list-style-type: none"> • Represent numbers 11-19 with ones units (e.g., represent 13 with 13 square tiles or 13 straws or 13 ones units). • Associate the number 10 with a collect of ten ones (e.g., 10 square tiles stacked together or 10 straws banded together or a tens unit). • When representing numbers 11-19 with ones units, compose ten ones units into a bundle of 10 so that the student sees a bundle of 10 with some ones units. • Draw a picture representing the numbers 11-19 that shows a bundle/group of 10 units with further units to represent the ones (e.g., represent 13 with a drawing of 10 sticks circled with 3 more sticks, and write an equation for the drawing (e.g., $13 = 10 + 3$). <div style="text-align: right;">  <p>$10 + 3 = 13$</p> </div>
<p>Domain: Measurement and Data</p>	
<p>Describe and compare measurable attributes.</p>	
<p>K.MD.1: Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.</p>	<ul style="list-style-type: none"> • Look at an object and describe what is measurable about it (e.g., for a pencil, the student says he can measure its length (or how long it is) and weight (or how heavy it is)).
<p>K.MD.2: Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. <i>For example, directly compare the heights of two children and describe one child as taller/shorter.</i></p>	<ul style="list-style-type: none"> • When presented with two objects that have a common measurable attribute, compare the objects according to the attribute, and make a statement about the comparison. For example... <ul style="list-style-type: none"> ○ If length is the common attribute: Place the objects side-by-side to see which one is longer/shorter, and make a statement about the comparison (e.g., the pencil is longer than the crayon). ○ If height is the common attribute: Stand the objects side-by-side to see which one is taller/shorter, and make a statement about the comparison (e.g., Molly is taller than Jake). ○ If weight is the common attribute: Hold/carry/pick up each object to see which one is heavier/lighter, and make a statement about the comparison (e.g., the dictionary is a lot heavier than this book). ○ If capacity is the common attribute: Fill one object and pour the contents into the other object to see which one holds more, and make a statement about the comparison (e.g., the red cup holds more water than the blue cup).
<p>Classify objects and count the number of objects in each category.</p>	
<p>K.MD.3: Classify objects or people into given categories; count the numbers in each category and sort the categories by count. (Note: Limit category counts to be less than or equal to 10.)</p>	<ul style="list-style-type: none"> • Take a collection of objects or people and decide in which category (among categories provided) the object belongs; • Count the total for each category (NOTE: limit the count of each category to 10 or less); and • Say which category has the most, second most, etc.

Common Core State Standards for Mathematics	This means that the student can...
Domain: Geometry	
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	
<p>K.G.1: Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above</i>, <i>below</i>, <i>beside</i>, <i>in front of</i>, <i>behind</i>, and <i>next to</i>.</p>	<ul style="list-style-type: none"> Name an object and say what shape it resembles, and can give clues to its location by using terms such as <i>above</i>, <i>below</i>, <i>beside</i>, <i>in front of</i>, <i>behind</i>, and <i>next to</i>.
<p>K.G.2: Correctly name shapes regardless of their orientations or overall size.</p>	<ul style="list-style-type: none"> Say or write the name of shape that they see (e.g., circle, square, rectangle, triangle, hexagon, trapezoid, cube). Give the name of shapes regardless of their orientation. (e.g., names the following as a “rectangle” even though it is tilted... ) (e.g., recognizes the following as a “triangle” even though it is “upside down”... ) Give the name of shapes regardless of their size (e.g., recognizes the following as a “rectangle” even though it is long and thin”... )
<p>K.G.3: Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).</p>	<ul style="list-style-type: none"> Look at a shape and say whether it is two-dimensional or three-dimensional.
Analyze, compare, create, and compose shapes.	
<p>K.G.4: Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).</p>	<ul style="list-style-type: none"> Compare and contrast given shapes and say/write what is similar about them (e.g., they both have 3 sides, or they both have sides of that are all equal), what is different about them (e.g., one has 4 sides, but the other has 3 sides).
<p>K.G.5: Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.</p>	<ul style="list-style-type: none"> Draw shapes to model objects/shapes that they see (e.g., draws a car with a rectangle body and circles for wheels). Build shapes out of everyday materials (such as straws, toothpicks, sticks, paper, raw spaghetti noodles).
<p>K.G.6: Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”</p>	<ul style="list-style-type: none"> When using Pattern Blocks: <ul style="list-style-type: none"> Use the smaller shapes to overlap perfectly onto the hexagon. Use the smaller shapes to overlap perfectly onto the trapezoid. Use the smaller shapes to overlap perfectly onto the blue parallelogram. When using cut-out shapes, join smaller shapes to form larger shapes so that the sides that are joined together lie up perfectly. For example: <ul style="list-style-type: none"> Form a rectangle out of two right triangles. Form rectangles out of other squares or rectangles. Form a square out of 4 same-size squares.

