What the Standards Mean (Kindergarten to Grade 6):

An Interpretative Guide to the

Common Core State Standards for Mathematics

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Interpretations by:

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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: Operations and Algebraic Thinking	
Represent and solve problems involving addition and subtraction.	
1.OA.1: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. (Note: See Appendix, Table 1.)	When presented with a word problem involving addition or subtraction within 20: • Represent the problem with an addition or subtraction equation using a symbol (such as a blank or empty box or question mark) to represent the unknown value; and • Use objects or drawings to model the problem and find the solution (i.e., the missing number).
1.OA.2: Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	When presented with a word problem involving addition of three whole numbers within 20: • Represent the problem with an addition equation using a symbol (such as a blank or empty box or question mark) to represent the unknown value; and • Use objects or drawings to model the problem and find the solution (i.e., the missing number).
Understand and apply properties of operations and the relationship between addition and subtraction.	
1.OA.3: Apply properties of operations as strategies to add and subtract. (Note: Students need not use formal terms for these properties.) *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*	• Give the answer to *b* + *a* if the student already knows the answer to *a* + *b* (e.g., if the student already found 9 + 2 = 11 by using a counting-on strategy ("9…10…11"), then the student automatically gives the answer to 2 + 9 without having to use a counting or adding strategy). • Strategically group addends (such as using commutative and associate properties to pair two addends that make 10) in order to make it easier to add three numbers (e.g., for 3 + 9 + 7, the student adds the 3 and 7 first to make 10).
1.OA.4: Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.*	When given two numbers to subtract: • Explain why solving "*a* – *b* = ___" is the same is solving "*b* + ___ = *a*" (or "___ + *b* = *a*"); and • Write an addition equation with a symbol for the unknown addend, and then find the missing number using an appropriate strategy such as counting on or adding on.
Add and subtract within 20.	
1.OA.5: Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	• Use counting-on as a strategy for adding on a smaller number to a larger number, and use counting back as a strategy for subtracting a smaller number from a larger number.
1.OA.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).	• Use mental strategies to quickly add two numbers whose sum is within 10, especially those numbers that add up to 10. • Use mental strategies to quickly subtract two numbers in which the starting number is 10 or less. • Add within 20 using a variety of strategies (e.g., counting on, making ten, decomposing a number and recomposing numbers to make 10, adding doubles, adding doubles plus 1) and most importantly, picking and using strategies that efficiently lead to the sum. For example, when adding 3 + 9, the student might: o Think of 3 + 9 as 2 + (1 + 9) or 2 + 10. o Start with 9 and count on 3 ("9, 10, 11, 12"). o Already know that 9 + 3 = 12 and uses commutative property to know that 3 + 9 is also 12. • Subtract within 20 using a variety of strategies (e.g., counting back, decomposing, turning the subtraction problem into a missing addend

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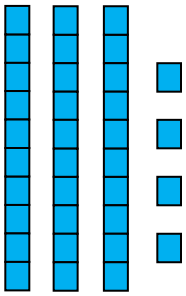
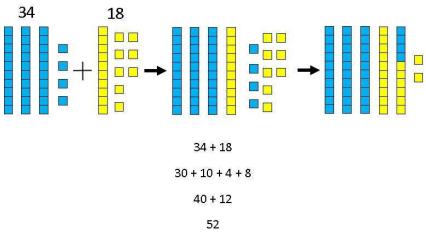
	problem), and most importantly, picking and using strategies that efficiently lead to the sum. For example, when subtracting 15 – 7, the students might: o Think of 15 – 7 as 15 – 5 – 2 or 10 – 2. o Think of 15 – 7 as 17 – 7 – 2. o Already know that 7 + 8 = 15, and relate this to 15 – 7 = 8 (fact family). NOTE: The ability to quickly add or subtract should NOT result from flash cards and memorization as the primary learning strategies.
Work with addition and subtraction equations.	
1.OA.7: Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*	• Say whether an equation is true or false based on the values on both sides of the equal sign being equal. For example, the student is able to identify the following as true equations: o 6 = 6 o 6 = 5 + 1 o 1 + 5 = 4 + 2 (NOTE: A student who thinks this equation is false is probably thinking that the number after the equal sign should be 6 instead of 4.)
1.OA.8: Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ? – 3, 6 + 6 = ?.*	• Determine the unknown number in an addition equation, in the form *a* + *b* = *c*, in which two of the values are given and the missing value is what needs to be found. • Determine the unknown number in a subtraction equation, in the form *a* – *b* = *c*, in which two of the values are given and the missing value is what needs to be found.
Domain: Number and Operations in Base Ten	
Extend the counting sequence.	
1.NBT.1: Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	• Say the number names to 120 in sequence beginning from any number, especially the numbers after 99. • Write the numerals to match the name of number (up to 120) that is said aloud. • Read and say the numerals to 120. • Write the numeral to match the number of objects in a given set.
Understand place value.	
1.NBT.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).	• Represent two-digit numbers with manipulatives or drawings that consist of tens (such as ten-strips) and ones, and more importantly, the student automatically knows that the tens digit indicates how many ten-strips (or other units of ten) are needed and the ones digit indicate the remaining units that are needed. For example, these base-10 tiles represent 34.  • Verbalize the number of tens and ones that represent two-digit numbers (e.g., for 34, the student says, "Thirty-four is composed of three tens and four ones.").

Common Core State Standards for Mathematics	This means that the student can…
1.NBT.3: Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	• Say which of two two-digit numbers is greater (or less) than the other by first looking at their tens digit: o If the tens digits are different, the student says which is greater (or less) without having to look at the ones digit. o If the tens digits are the same, the student compares the ones digits to make the decision. • Write an equation or an inequality (with the < or > sign) to report the results of the comparison.
Use place value understanding and properties of operations to add and subtract.	
1.NBT.4: Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	• Add a two-digit number and a one-digit number. • Add a two-digit number and a multiple of 10. • Add a two-digit number and a two-digit number. • Represent the addition by using concrete models, especially base-10 manipulatives (for example, ten-strips and ones units)… o to group together all the ten-strips to show the adding of the tens of one number with the tens of the other number; o to group together all the ones units to show the adding of the ones digit of one number with the ones digit of the other number; and o when necessary, compose ten ones into a ten-strip; • Represent the addition by using drawings, especially drawings that depict base-10 manipulatives. • Use numbers/symbols and/or a written explanation to explain the reasoning behind the strategy that is used. For example, when adding 34 + 18, the student might first model the adding with base-10 manipulatives, and then write addition expressions that match what was modeled. 
1.NBT.5: Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	When given a two-digit number: • Tell you what number is 10 more or 10 less, through a quick mental calculation (i.e., by adding or subtracting one from the tens digit).
1.NBT.6: Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	• Subtract a two-digit multiple of 10 from a two-digit multiple of 10; • Represent the subtraction by using concrete models (e.g., ten-strips) with a taking away strategy (e.g., if the problem is 90 – 30, the student starts with 9 ten-strips and them takes away 3 of them and reports that 60 (or 6 ten-strips) remain); • Represent the subtraction with pictures that depict ten-strips (e.g., if the problem is 90 – 30, the student draws 9 ten-strips and then crosses off 3 of them); and • Use numbers/symbols and/or a written explanation to explain the reasoning behind the strategy that is used. For example, when subtracting 80 – 30, the student might first model the adding with base-10 manipulatives, and draw a picture of it, and explain in words that he started with 8 ten-strips and took away 3 ten-strips to be left with 5 ten-strips which is 50.

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	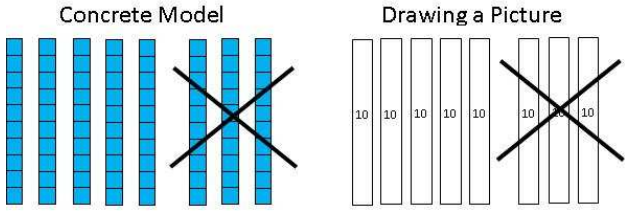
Domain: Measurement and Data	
Measure lengths indirectly and by iterating length units.	
1.MD.1: Order three objects by length; compare the lengths of two objects indirectly by using a third object.	• Directly compare object A to object C, and directly compare object B to object C, and make a statement comparing the length of object A and B. • Place three objects in order from longest to shortest.
1.MD.2: Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*	• Choose an object (such as a paper clip) to serve as a length unit. [NOTE: the length unit should be shorter than the object the student is trying to measure.] • Line up multiple copies of that object with no gaps or overlaps to span the length of an object. • Count the number of units it takes to span the object whose length the student is measuring. • Expresses the length of the object in terms of the length unit (e.g., reports that the length of a pen is 5 paper clips long).
Tell and write time.	
1.MD.3: Tell and write time in hours and half-hours using analog and digital clocks.	• Read the time on a digital clock when it displays xx:00 and xx:30 (e.g., sees "7:30" and says "seven thirty") • Read the time on an analog clock when the minute hand points to 12 and 6. • Write the time in the format xx:xx (e.g., for "seven thirty" the student writes 7:30).
Represent and interpret data.	
1.MD.4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	• Take raw data (the data can be given or be collected by the student) and represent the data in an organized way into up to three categories (e.g., list each raw datum in a table under its appropriate category, or represent each datum as a tally mark under its appropriate category). • Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another, and phrase the questions in the context of the problem. For example, if the data collected was about each student's favorite fruit among the choices of apple, orange or banana, the student would ask questions like: o How many students liked apples the best? o How many students liked oranges the best? o How many students liked bananas the best? o How many students answered the question? o Which fruit did more students like?

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Domain: Geometry	
Reason with shapes and their attributes.	
1.G.1: Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	• When given an attribute of a shape, say whether that attribute is a defining attribute or a non-defining attribute. • When given a defining attribute (or a set of defining attributes), build and/or draw a shape that possesses the attribute(s).
1.G.2: Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Note: Students do not need to learn formal names such as "right rectangular prism.")	• Compose Pattern Blocks or other cut-out shapes to create a new shape, and then use that new shape as part of another new shape. • Compose three-dimensional shapes to create a new shape, and then use that new shape as part of another new shape (e.g., the student places a pyramid on top of a cube to form a "house").
1.G.3: Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	• Fold a circle or rectangle in half and cut along the fold to form two equal halves, and: o Refer to each piece as "half of" the circle or rectangle; o Refer to both pieces as "halves"; and o Refer to the whole circle/rectangle as being composed of "two of the halves. • Fold each of the halves of the circle/rectangle and cut along the fold to form four equal quarters, and: o Refer to each piece as "quarter of" the circle or rectangle; o Refer to all four pieces as "fourths" or "quarters"; and o Refer to the whole circle/rectangle as being composed of "four of the quarters" or "four of the fourths." • Explain that there are more quarters than halves that make up the whole, and explain that you need more quarters/fourths than halves to make up a whole because the quarters/fourths are smaller pieces than the halves.