Submit comments on the draft NYS Grade 2 Mathematics Learning Standards

NYS Pre-Kindergarten to Grade 2 Mathematics Learning Standards					
Grade 2 **Operations & Algebraic Thinking**					
		Standard Code	**Current Standard**	**Revised Standard Recommendation for 2018-19**	**Additional Information/Notes**
Clusters	A. Represent and solve problems involving addition and subtraction.	2.OA.A.1	1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. Explanations may be supported by drawings or objects.	1. 1a. Use addition and subtraction within 100 to solve one-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). Explanations may be supported by drawings or objects. (See Table 2 Addition and Subtraction Situations, pg. 9 of https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf) 1b.Use addition and subtraction within 100 to develop an understanding of solving two-step problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	**We would like embedded within the grade 1 standards documents the Addition and Subtraction situations by grade level from page 9 of the Draft K-5 progression on counting and cardinality and operations and algebraic thinking.** **Clarification of language and expectation using the Progression documents.**
	B. Add and Subtract within 20.	2.OA.B.2	2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	2a. Fluently add and subtract within 20 using mental strategies. Strategies could include 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). **Note:** Fluency involves a mixture of just knowing some answers, knowing some answers from patterns, and knowing some answers from the use of strategies. 2b. By end of the year, know from memory all sums within 20 of two one-digit numbers.	**Clarification** **Separate distinct skills.**

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Clusters	C. Work with equal groups of objects to gainin foundations for multiplication.	2.OA.C.3	3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	3a. Determine whether a group of objects (up to 20) has an odd or even number of members (e.g., by pairing objects or counting them by 2's). 3b. Write an equation to express an even number as a sum of two equal addends.	**Clarify and separate distinct skills.**
		2.OA.C.4	4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	4. No Change	

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Grade 2 Number & Operations in Base Ten					
		Standard Code	**Current Standard**	**Revised Standard Recommendation for 2018-19**	**Additional Information/Notes**
Clusters	A. Understand place value.	2.NBT.A.1	1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones: e.g. 706 equals 7 hundreds, 0 tens, and 6 ones.	1. No Change	
		2.NBT.A.1a	1a. 100 can be thought of as a bundle of ten tens, called a "hundred".	1a. No Change	
		2.NBT.A.1b	1b. Then numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	1b. No Change	

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Grade 2 Number & Operations in Base Ten					
		Standard Code	**Current Standard**	**Revised Standard Recommendation for 2018-19**	**Additional Information/Notes**
Clusters	A. Understand place value.	2.NBT.A.2	2. Count within 1000; skip-count by 5s, 10s, and 100s.	2. Count within 1000; skip-count by 5s, 10s, and 100s. Note: Begin sequence with a multiple of 5, 10, or 100.	**Clarification**
		2.NBT.A.3	3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. Expanded form in Grade 2 should take the form of : 237=200+30+7.	**Clarification**
		2.NBT.A.4	4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.	4. No Change	

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Clusters	B. Use place value understanding and properties of operations to add and subtract.	2.NBT.B.5	5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	5a. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; illustrate or explain the strategy and reasoning used. Note: Fluency involves a mixture of just knowing some answers, knowing some answers from patterns, and knowing some answers from the use of strategies. 5b. Understand that in adding or subtracting two-digit numbers, one adds or subtracts tens and tens, ones and ones, and sometimes it is necessary to compose or decompose tens.	**Clarify and separate distinct skills.** **Absorbed 2.NBT.9 into 5a.**
		2.NBT.B.6	6. Add up to four two-digit numbers using strategies based on place value and properties of operations.	6. No Change	
		2.NBT.B.7	7. Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	7a. Add and subtract within 1000, 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. A written method is any way of representing a strategy using pictures or numbers. Note: Fluency not expected until grade three. 7b. Understand that in adding or subtracting up to three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones, and sometimes it is necessary to compose or decompose tens or hundreds.	**Clarify and separate distinct skills.**

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Clusters	B. Use place value understanding and properties of operations to add and subtract.	2.NBT.B.8	8. Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	8. No Change	
		2.NBT.B.9	9. Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects.)	9. Remove	**This can be accomplished through 2.NBT.B.5a.**

NYS Pre-Kindergarten to Grade 2 Mathematics Learning Standards					
Grade 2 Measurement & Data					
		Standard Code	**Current Standard**	**Revised Standard Recommendation for 2018-19**	**Additional Information/Notes**
Clusters	A. Measure and estimate lengths in standard units.	2.MD.A.1	1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	1. Measure the length of an object to the nearest whole by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	**Clarification**
		2.MD.A.2	2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	2. Measure the length of an object twice, using different "length units" for the two measurements; describe how the two measurements relate to the size of the unit chosen.	**Clarification**
		2.MD.A.3	3. Estimate lengths using units of inches, feet, centimeters, and meters.	3. No Change	
		2.MD.A.4	4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard "length unit".	**Clarification**

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Grade 2 Measurement & Data					
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Clusters	B. Relate addition and subtraction to length.	2.MD.B.5	5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.	5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	**Clarification**
		2.MD.B.6	6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, … , and represent whole-number sums and differences within 100 on a number line diagram.	6. No Change	
	C. Work with time and money.	2.MD.C.7	7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. Develop an understanding of common terms, such as, but not limited to, quarter past, and quarter to.	**Clarification - use specific language to guide teachers**
		2.MD.C.8	8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ (dollars) and ¢ (cents) symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?	8a. Count a mixed collection of coins that equals up to a dollar. 8b. Solve real world and mathematical problems within 1 dollar involving, quarters, dimes, nickels, and pennies, using ¢ (cents) symbols appropriately, (e.g., If you have 2 dimes and 3 pennies, how many cents do you have?).	**Students are not introduced to decimals until Grade 4. Linked to addition and subtraction fluency within 100. Supports natural progression from 2nd through 4th grade.**

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Grade 2 Measurement & Data					
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Clusters	D. Represent and interpret data.	2.MD.D.9	9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	9. Generate and present measurement data in a line plot where the horizontal scale is marked off in whole-number units, by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object.	**Clarification**
		2.MD.D.10	10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in graphs.	**Clarification**

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Grade 2 Geometry					
		Standard Code	**Current Standard**	**Revised Standard Recommendation for 2018-19**	**Additional Information/Notes**
Clusters	A. Reason with shapes and their attributes.	2.G.A.1	1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (Sizes are compared directly or visually, not compared by measuring.)	1. Classify two-dimensional figures as polygons or non-polygons.	**Assists in progression from grades 2-5 (See 3.G.A.1).** **Closes gap in skills.**
		2.G.A.2	2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	2. No Change	
		2.G.A.3	3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	3. No Change	