

Tool 1
Mathematics Content
Grades K-5

CCSSM Curriculum Analysis Tool 1—Number and Operations in Base Ten for Grades K-2

Name of Reviewer _____ School/District _____ Date _____

Name of Curriculum Materials _____ Publication Date _____ Grade Level(s) _____

Content Coverage Rubric (Cont)

Not Found (N) - The mathematics content was not found.
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 Marginal (M) - Gaps in the content, as described in the Standards, were found and these gaps may not be easily filled.
 Acceptable (A) - Few gaps in the content, as described in the Standards, were found and these gaps may be easily filled.
 High (H) - The content was fully formed as described in the Standards.

Balance of Mathematical Understanding and Procedural Skills Rubric (Bal):

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CCSSM Grade K				CCSSM Grade 1				CCSSM Grade 2			
K.NBT/CC Counting and Cardinality/ Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	1.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	2.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
	Work with numbers 11-19 to gain foundations for place value					Understand place value					Understand place value.
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.				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).				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. Understand the following as special cases: a. 100 can be thought of as a bundle of ten tens — called a “hundred.” b. The 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).			
Counting and Cardinality				Extend the counting sequence				Understand place value			
1. Count to 100 by ones and tens 2. Count forward beginning from a given number within the known sequence. 3. Write number from 0 to 20. Represent a number of objects with a written numeral 0-20.				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.				2. Count within 1000; skip count by 5s, 10s, 100s. 3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.			

CCSSM Curriculum Analysis Tool 1—Number and Operations in Base Ten for Grades K-2

CCSSM Grade K				CCSSM Grade 1				CCSSM Grade 2			
K.NBT/CC Counting and Cardinality/ Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	1.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	2.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
Work with numbers 11-19 to gain foundations for place value				Understand place value				Understand place value.			
4. Identify whether a number of objects is one group is greater than, less than, or equal to the number of objects in another group. 5. Compare two numbers between 1 and 10 presented as written numerals.				3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.				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.			
Notes/Examples											

CCSSM Curriculum Analysis Tool 1—Number and Operations in Base Ten for Grades K-2

Name of Reviewer _____ **School/District** _____ **Date** _____

Name of Curriculum Materials _____ **Publication Date** _____ **Grade Level(s)** _____

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CCSSM Grade K				CCSSM Grade 1				CCSSM Grade 2			
K.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	1.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	2.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
						Use place value understanding and properties of operations to add and subtract					Use place value understanding and properties of operations to add and subtract
				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.				5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. 6. Add up to four two-digit numbers using strategies based on place value and properties of operations. 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.			

CCSSM Curriculum Analysis Tool 1—Number and Operations in Base Ten for Grades K-2

CCSSM Grade K			CCSSM Grade 1			CCSSM Grade 2		
			Use place value understanding and properties of operations to add and subtract			Use place value understanding and properties of operations to add and subtract		
			5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.			8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.		
			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.			9. Explain why addition and subtraction strategies work, using place value and the properties of operations.		

Notes/Examples

CCSSM Curriculum Analysis Tool 1—Number and Operations in Base Ten for Grades K-2

Overall Impressions:

1. What are your overall impressions of the curriculum materials examined?
2. What are the strengths and weaknesses of the materials you examined?

Standards Alignment:

3. Have you identified gaps within this domain? What are they? If so, can these gaps be realistically addressed through supplementation?
4. Within grade levels, do the curriculum materials provide sufficient experiences to support student learning within this standard?
5. Within this domain, is the treatment of the content across grade levels consistent with the progression within the Standards?

Balance between Mathematical Understanding and Procedural Skills:

6. Do the curriculum materials support the development of students' mathematical understanding?
7. Do the curriculum materials support the development of students' proficiency with procedural skills?
8. Do the curriculum materials assist students in building connections between mathematical understanding and procedural skills?
9. To what extent do the curriculum materials provide a balanced focus on mathematical understanding and procedural skills?
10. Do student activities build on each other within and across grades in a logical way that supports mathematical understanding and procedural skills?

CCSSM Curriculum Analysis Tool 1—Number and Operations for in Base 10 for Grades 3-5

Name of Reviewer _____ School/District _____ Date _____

Name of Curriculum Materials _____ Publication Date _____ Grade Level(s) _____

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CCSS Grade 3				CCSS Grade 4				CCSS Grade 5			
3.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
				Generalize place value understanding for multi-digit whole numbers.				Understand the place value system			
				1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.				1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.			
								2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use exponents to denote powers of 10.			

CCSSM Curriculum Analysis Tool 1—Number and Operations for in Base 10 for Grades 3-5

CCSS Grade 3				CCSS Grade 4				CCSS Grade 5			
3.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.NBT Number and Operations in Base Ten	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
				Generalize place value understanding for multi-digit whole numbers.				Understand the place value system			
				2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.				3. Read, write, and compare decimals to 1000ths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.			
								4. Use place value understanding to round decimals to any place.			
Use place value understanding and properties of operations perform multi-digit arithmetic				Use place value understanding and properties of operations to perform multi-digit arithmetic.				Perform operations with multi-digit whole numbers and with decimals to hundredths.			
2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.				4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.							
3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.				5. Multiply a whole number of up to four digits by a one-digit whole Number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.				5. Fluently multiply multi-digit whole numbers using the standard algorithm.			

CCSSM Curriculum Analysis Tool 1—Number and Operations for in Base 10 for Grades 3-5

Use place value understanding and properties of operations to perform multi-digit arithmetic.	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	Use place value understanding and properties of operations to perform multi-digit arithmetic.	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	Perform operations with multi-digit whole numbers and with decimals to hundredths.	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
				6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.				6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.			
								7. Add, subtract, multiply, and divide decimals to hundredths, 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.			

Notes and Examples

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CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades K-2

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CCSSM Grade K			CCSSM Grade 1			CCSSM Grade 2					
K.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	1.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	2.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
Understand addition as putting together and adding to, and subtraction as taking apart and taking from				Represent and solve problems involving addition and subtraction				Represent and solve problems involving addition and subtraction			
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.				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. <i>Common addition and subtraction situations. Adding To or Taking From situations with result unknown, change unknown, and start unknown. Put Together/ Take Apart with total unknown, added unknown or both addends unknown.</i> 2. Solve word problems that call for addition of three whole numbers whose sum ≤ 20 .				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. 1 Add and subtract within 20. 3. Determine whether a group of objects (up to 20) has an odd or even number of members. Write an equation to express the total as a sum of equal addends.			

CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades K-2

CCSSM Grade K			CCSSM Grade 1			CCSSM Grade 2					
Understand addition as putting together and adding to, and subtraction as taking apart and taking from.	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	Understand and apply properties of operations and the relationship between addition and subtraction	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H		Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
<p>1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.</p> <p>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> <p>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>				<p>3. Apply properties of operations as strategies to add and subtract.3 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.)</p> <p>4. Understand subtraction as an unknown-addend problem.</p>				<p>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.</p>			
				Add and subtract within 20				Add and subtract within 20			
<p>5. Fluently add and subtract within 5.</p>				<p>5. Relate counting to addition and subtraction.</p> <p>6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten; decomposing a number; or using the relationship between addition and subtraction.</p>				<p>2. Fluently add and subtract within 20 using mental strategies. Know from memory all sums of two one-digit numbers.</p>			
Notes/Examples:											

CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades K-2

CCSSM Grade K			CCSSM Grade 1			CCSSM Grade 2				
Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	Represent and solve problems involving addition and subtraction	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	Represent and solve problems involving addition and subtraction	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
			2. Solve addition and subtraction word problems, and add and subtract within 10.				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.			
			Work with addition and subtraction equations							
			7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. <i>For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</i>							
			8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.							

Notes/Examples:

CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades K-2

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CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades 3-5

Name of Reviewer _____ **School/Dist** _____ **Date** _____

Name of Curriculum Materials _____ **Publication Date** _____ **Grade Level(s)** _____

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CCSSM Grade 3

CCSSM Grade 4

CCSSM Grade 5

3.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
Represent and solve problems involving multiplication and division.				Use the four operations with whole numbers to solve problems				Write and interpret numerical expressions			
1. Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each.				1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as equations.				1. Use parentheses, brackets, or braces in numerical expressions and evaluate expressions with these symbols.			
2. Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares or when 56 objects are partitioned into equal shares of 8 objects each.								2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.			
3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.				2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.							

CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades 3-5

CCSSM Grade 3				CCSSM Grade 4				CCSSM Grade 5			
3.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.OA Operations and Algebraic Thinking	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of these equations: $8 \times ? = 48$, $5 = \square \div 3$, $6 \times 6 = ?$.</i>											
Understand properties of multiplication and the relationship between multiplication and division				Gain familiarity with factors and multiples.							
5. Apply properties of operations as strategies to multiply and divide. <i>Examples: Commutative Property of Multiplication; Associative Property of Multiplication; Distributive Property.</i>				4. Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.							
6. Understand division as an unknown-factor problem.											
Multiply and Divide											
7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$). Know from memory all products of 2 one-digit numbers) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit number.											

CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades 3-5

CCSSM Grade 3			CCSSM Grade 4			CCSSM Grade 5					
Solve problems involving the four operations, and identify and explain patterns in arithmetic.	Chap Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	Use the four operations with whole numbers to solve problems	Chap Pages	Cont N-L-M-A-H	Bal N-L-M-A-H		Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.				3. Solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding							
Solve problems involving the four operations, and identify and explain patterns in arithmetic.				Generate and analyze patterns				Analyze patterns and relationships			
9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends</i>				5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</i>				3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on the coordinate plane. <i>For example, given the rule “Add 3” and starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence.</i>			

CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades 3-5

Notes/Examples:

Overall Impressions:

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2. What are the strengths and weaknesses of the materials you examined?

Standards Alignment:

3. Have you identified gaps within this domain? What are they? If so, can these gaps be realistically addressed through supplementation?
4. Within grade levels, do the curriculum materials provide sufficient experiences to support student learning within this standard?
5. Within this domain, is the treatment of the content across grade levels consistent with the progression within the Standards?

Balance between Mathematical Understanding and Procedural Skills

6. Do the curriculum materials support the development of students' mathematical understanding?
7. Do the curriculum materials support the development of students' proficiency with procedural skills?
8. Do the curriculum materials assist students in building connections between mathematical understanding and procedural skills?
9. To what extent do the curriculum materials provide a balanced focus on mathematical understanding and procedural skills?
10. Do student activities build on each other within and across grades in a logical way that supports mathematical understanding and procedural skills?

CCSSM Curriculum Analysis Tool 1—Geometry for Grades K-2

Name of Reviewer _____ **School/District** _____ **Date** _____

Name of Curriculum Materials _____ **Publication Date** _____ **Grade Level(s)** _____

Content Coverage Rubric (Cont):
 Not Found (N) - The mathematics content was not found.
 Low (L) - Major gaps in the mathematics content were found.
 Marginal (M) - Gaps in the content, as described in the Standards, were found and these gaps may not be easily filled.
 Acceptable (A) - Few gaps in the content, as described in the Standards, were found and these gaps may be easily filled.
 High (H) - The content was fully formed as described in the Standards.

Balance of Mathematical Understanding and Procedural Skills Rubric (Bal):
 Not Found (N) - The content was not found.
 Low (L) - The content was not developed or developed superficially.
 Marginal (M) - The content was found and focused primarily on procedural skill and minimally on mathematical understanding, or ignored procedural skills.
 Acceptable (A) -The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, but the connections between the two were not developed.
 High (H) - The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, and the connections between the two were developed.

CCSSM Grade K			CCSSM Grade 1			CCSSM Grade 2					
K.G Geometry	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	1.G Geometry	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	2.G Geometry	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).				Reason with shapes and their attributes				Reason with shapes and their attributes			
1. Describe objects in the environment using names of shapes and describe the relative positions of these objects using terms such as <i>above, below, beside, in front of, behind, and next to.</i>				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.				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.			
2. Correctly name shapes regardless of their orientations or overall size.											
3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").											

CCSSM Curriculum Analysis Tool 1—Geometry for Grades K-2

CCSSM Grade K			CCSSM Grade 1			CCSSM Grade 2					
Analyze, compare, create, and compose shapes	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	Reason with shapes and their attributes	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	Reason with shapes and their attributes	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
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).											
5. Model shapes in the world by building shapes from components (sticks and clay balls) and drawing shapes.											
6. Compose simple shapes to form larger shapes. <i>For example, “Can you join these two triangles with full sides touching to make a rectangle?”</i>				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.				2. Partition a rectangle into rows and columns of the same-size squares and count to find the total number of them.			
				3. Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i> , <i>fourths</i> , and <i>quarters</i> , and use the phrases <i>half of</i> , <i>fourth of</i> , and <i>quarter of</i> . Describe the whole as two of or four of the shares. Understand that for these examples that decomposing into more equal shares creates smaller shares.				3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words <i>halves</i> , <i>thirds</i> , <i>half of</i> , <i>a third of</i> , 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.			
Notes/Examples											

CCSSM Curriculum Analysis Tool 1—Geometry for Grades K-2

Overall Impressions:

1. What are your overall impressions of the curriculum materials examined?
2. What are the strengths and weaknesses of the materials you examined?

Standards Alignment:

3. Have you identified gaps within this domain? What are they? If so, can these gaps be realistically addressed through supplementation?
4. Within grade levels, do the curriculum materials provide sufficient experiences to support student learning within this standard?
5. Within this domain, is the treatment of the content across grade levels consistent with the progression within the Standards?

Balance between Mathematical Understanding and Procedural Skills:

6. Do the curriculum materials support the development of students' mathematical understanding?
7. Do the curriculum materials support the development of students' proficiency with procedural skills?
8. Do the curriculum materials assist students in building connections between mathematical understanding and procedural skills?
9. To what extent do the curriculum materials provide a balanced focus on mathematical understanding and procedural skills?
10. Do student activities build on each other within and across grades in a logical way that supports mathematical understanding and procedural skills?

CCSS Curriculum Analysis Tool 1—Geometry for Grades 3-5

Name of Reviewer _____ **School/District** _____ **Date** _____

Name of Curriculum Materials _____ **Publication Date** _____ **Grade Level(s)** _____

Content Coverage Rubric:
 Not Found (N) - The mathematics content was not found.
 Low (L) - Major gaps in the mathematics content were found.
 Marginal (M) - Gaps in the content, as described in the Standards, were found and these gaps may not be easily filled.
 Acceptable (A) - Few gaps in the content, as described in the Standards, were found and these gaps may be easily filled.
 High (H) - The content was fully formed as described in the Standards.

Balance of Mathematical Understanding and Procedural Skills Rubric:
 Not Found (N) - The content was not found.
 Low (L) - The content was not developed or developed superficially.
 Marginal (M) - The content was found and focused primarily on procedural skill and minimally on mathematical understanding, or ignored procedural skill.
 Acceptable (A) - The content was developed with a balance of mathematical understanding and procedural skill consistent with the Standards, but the connections between the two were not developed.
 High (H) - The content was developed with a balance of mathematical understanding and procedural skill consistent with the Standards, and the connections between the two were developed.

CCSS Grade 3

CCSS Grade 4

CCSS Grade 5

3.G Geometry	Chap .Page s	Content N-L-M- A-H	Bal N-L-M- A-H	4.G Geometry	Chap .Page s	Content N-L-M- A-H	Bal N-L-M- A-H	5.G Geometry	Chap .Page s	Content N-L-M- A-H	Bal N-L-M- A-H
Reason with shapes and their attributes				Draw and identify lines and angles, and classify shapes by properties of their lines and angles				Classify two-dimensional figures into categories based on their properties			
1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.				2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.				3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and square are rectangles, so all squares have four right angles.</i>			
								4. Classify two-dimensional figures in a hierarchy based on properties.			
2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. <i>For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.</i>				1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures							

CCSS Curriculum Analysis Tool 1—Geometry for Grades 3-5

CCSS Grade 3			CCSS Grade 4			CCSS Grade 5					
3.G Geometry	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H	4.G Geometry	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H	5.G Geometry	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H
Reason with shapes and their attributes				Draw and identify lines and angles, and classify shapes by properties of their lines and angles				Classify two-dimensional figures into categories based on their properties			
				3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.				1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to the travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond.			
								2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.			
Notes and Examples:											

CCSS Curriculum Analysis Tool 1—Geometry for Grades 3-5

Overall Impression:

1. What are your overall impressions of the curriculum materials examined?
2. What are the strengths and weaknesses of the materials you examined?

Standards Alignment:

3. Have you identified gaps within this domain? What are they? If so, can these gaps be realistically addressed through supplementation?
4. Within grade levels, do the curriculum materials provide sufficient experiences to support student learning within this standard?
5. Within this domain, is the treatment of the content across grade levels consistent with the progression within the Standards?

Balance between Mathematical Understanding and Procedural Skill:

6. Do the curriculum materials support the development of students' mathematical understanding?
7. Do the curriculum materials support the development of students' proficiency with procedural skills?
8. Do the curriculum materials assist students in building connections between mathematical understanding and procedural skill?
9. To what extent do the curriculum materials provide a balanced focus on mathematical understanding and procedural skill?
10. Do student activities build on each other within and across grades in a logical way that supports mathematical understanding and procedural skill?

CCSSM Curriculum Analysis Tool 1—Number and Operations—Fractions for Grades 3 - 5

Name of Reviewer _____ **School/District** _____ **Date** _____

Name of Curriculum Materials _____ **Publication Date** _____ **Grade Level(s)** _____

Content Coverage Rubric:
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Balance of Mathematical Understanding and Procedural Skills Rubric:
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 Acceptable (A) - The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, but the connections between the two were not developed.
 High (H) - The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, and the connections between the two were developed.

CCSS Grade 3				CCSS Grade 4				CCSS Grade 5			
3.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H	4.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H	5.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H
Develop understanding of fractions as numbers.				Extend understanding of fraction equivalence and ordering				Apply and extend previous understandings of multiplication and division to multiply and divide fractions			
G2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. 1. Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.				3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, by using a visual fraction model.				3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.			

CCSSM Curriculum Analysis Tool 1—Number and Operations—Fractions for Grades 3 - 5

CCSS Grade 3				CCSS Grade 4				CCSS Grade 5			
3.NF Number and Operations— Fractions	Chap. Pages	Content N-L-M- A-H	Bal N-L-M- A-H	4.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H	5.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H
Develop understanding of fractions as numbers				Extend understanding of fraction equivalence and ordering				Apply and extend previous understandings of multiplication and division to multiply and divide fractions			
2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line. b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.				4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. Understand a fraction a/b as a multiple of $1/b$. <i>For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.</i>				5. Interpret multiplication as scaling (resizing). Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.			
				Extend understanding of fraction equivalence and ordering				Use equivalent fractions as a strategy to add and subtract fractions			
3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model. c. Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers.				1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Recognize/generate equivalent fractions.				1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.			

CCSSM Curriculum Analysis Tool 1—Number and Operations—Fractions for Grades 3 - 5

CCSS Grade 3				CCSS Grade 4				CCSS Grade 5			
3.NF Number and Operations— Fractions	Chap. Pages	Content N-L-M- A-H	Bal N-L-M- A-H	4.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H	5.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H
Develop understanding of fractions as numbers				Extend understanding of fraction equivalence and ordering				Use equivalent fractions as a strategy to add and subtract fractions			
3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions.				2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions.				2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.			
				Build fractions from unit fractions y applying and extending previous understanding of operations on whole numbers				Apply and extend previous understanding of multiplication and division to multiply and divide fractions			
				3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole b. Decompose a fraction into a sum of fractions with the same denominator in more than one way—justify decomposition c. Add and subtract mixed numbers with like denominators. d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.				3. Interpret a fraction as division of the numerator by the denominator. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.			

CCSSM Curriculum Analysis Tool 1—Number and Operations—Fractions for Grades 3 - 5

Grade 3				Grade 4				Grade 5			
3.NF Number and Operations— Fractions	Chap. Pages	Content N-L-M- A-H	Bal N-L-M- A-H	4.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H	5.NF Number and Operations— Fractions	Chap Pages	Content N-L-M- A-H	Bal N-L-M- A-H
				Build fractions from unit fractions y applying and extending previous understanding of operations on whole numbers				Apply and extend previous understanding of multiplication and division to multiply and divide fractions			
				<p>4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. <i>For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)</i></p> <p>c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.</p>				<p>4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p>a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.</p> <p>b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.</p>			
				5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. ⁴				5. Interpret multiplication as scaling (resizing), by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without multiplying b. Explaining why multiplying a given number by a fraction is greater than 1 results in a product greater than the whole number; explaining why multiplying a number by a fraction that is less than 1 results in a product smaller than the number.			

Tool 2

Mathematical Practices

Name of Reviewer _____ School/District _____ Date _____

Name of Curriculum Materials _____ Publication Date _____ Grade Level(s) _____

Tool 1 Domain Considered _____

**Opportunities to Engage in the Standards for Mathematical Practices
Found Across the Content Standards**

Overarching Habits of Mind	1. Make sense of problems and persevere in solving them.	6. Attend to precision.
Evidence of how the Standards for Mathematics Practice were addressed (with page numbers)		
Reasoning and Explaining	2. Reason abstractly and quantitatively.	3. Construct viable arguments and critique the reasoning of others.
Evidence of how the Standards for Mathematics Practice were addressed (with page numbers)		

Modeling and Using Tools	4. Model with mathematics.	5. Use appropriate tools strategically.
<p>Evidence of how the Standards for Mathematics Practice were addressed (with page numbers)</p>		
Seeing Structure and Generalizing	7. Look for and make use of structure.	8. Look for and express regularity in repeated reasoning.
<p>Evidence of how the Standards for Mathematics Practice were addressed (with page numbers)</p>		

Synthesis of Standards for Mathematical Practice

(Mathematical Practices → Content) To what extent do the materials demand that students engage in the Standards for Mathematical Practice as the primary vehicle for learning the Content Standards?

(Content → Mathematical Practices) To what extent do the materials provide opportunities for students to develop the Standards for Mathematical Practice as “habits of mind” (ways of thinking about mathematics that are rich, challenging, and useful) throughout the development of the Content Standards?

To what extent do accompanying assessments of student learning (such as homework, observation checklists, portfolio recommendations, extended tasks, tests, and quizzes) provide evidence regarding students’ proficiency with respect to the Standards for Mathematical Practice?

What is the quality of the instructional support for students’ development of the Standards for Mathematical Practice as habits of mind?

Summative Assessment

(Low) – The Standards for Mathematical Practice are not addressed or are addressed superficially.

(Marginal) The Standards for Mathematical Practice are addressed, but not consistently in a way that is embedded in the development of the Content Standards.

(Acceptable) – Attention to the Standards for Mathematical Practice is embedded throughout the curriculum materials in ways that may help students to develop them as habits of mind.

Explanation for score

COMMON CORE STATE STANDARDS FOR MATHEMATICS

Standards for Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately) and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy).

1 Make sense of problems and persevere in solving them.

Mathematically proficient students:

- explain to themselves the meaning of a problem and looking for entry points to its solution.
- analyze givens, constraints, relationships, and goals.
- make conjectures about the form and meaning of the solution attempt.
- plan a solution pathway rather than simply jumping into a solution.
- consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution.
- monitor and evaluate their progress and change course if necessary.
- transform algebraic expressions or change the viewing window on their graphing calculator to get information.
- explain correspondences between equations, verbal descriptions, tables, and graphs.
- draw diagrams of important features and relationships, graph data, and search for regularity or trends.
- use concrete objects or pictures to help conceptualize and solve a problem.
- check their answers to problems using a different method.
- ask themselves, “Does this make sense?”
- understand the approaches of others to solving complex problems and identify correspondences between approaches.

2 Reason abstractly and quantitatively.

Mathematically proficient students:

- make sense of quantities and their relationships in problem situations.
- Bring two complementary abilities to bear on problems involving quantitative relationships:
 - ✓ *decontextualize* (abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents and
 - ✓ *contextualize* (pause as needed during the manipulation process in order to probe into the referents for the symbols involved).
- use quantitative reasoning that entails creating a coherent representation of the problem at hand, considering the units involved, and attending to the meaning of quantities, not just how to compute them
- know and flexibly use different properties of operations and objects.

3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students:

- understand and use stated assumptions, definitions, and previously established results in constructing arguments.
- make conjectures and build a logical progression of statements to explore the truth of their conjectures.
- analyze situations by breaking them into cases
- recognize and use counterexamples.
- justify their conclusions, communicate them to others, and respond to the arguments of others.

- reason inductively about data, making plausible arguments that take into account the context from which the data arose
- compare the effectiveness of plausible arguments
- distinguish correct logic or reasoning from that which is flawed and, if there is a flaw, explain what it is
 - ✓ elementary students construct arguments using concrete referents such as objects, drawings, diagrams, and actions..
 - ✓ later students learn to determine domains to which an argument applies.
- listen or read the arguments of others, decide whether they make sense, and ask useful question to clarify or improve arguments

4 Model with mathematics.

Mathematically proficient students:

- apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.
 - ✓ In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community.
 - ✓ By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another.
- make assumptions and approximations to simplify a complicated situation, realizing that these may need revision later.
- identify important quantities in a practical situation
- map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas.
- analyze those relationships mathematically to draw conclusions.
- interpret their mathematical results in the context of the situation.
- reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

5 Use appropriate tools strategically.

Mathematically proficient students

- consider available tools when solving a mathematical problem. (These tools might include pencil and paper, concrete models, a ruler, protractor, calculator, spreadsheet, computer algebra system, a statistical package, or dynamic geometry software.
- are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations.
 - ✓ High school students analyze graphs of functions and solutions generated using a graphing calculator
- detect possible errors by using estimations and other mathematical knowledge.
- know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data.
- identify relevant mathematical resources and use them to pose or solve problems.
- use technological tools to explore and deepen their understanding of concepts.

6 Attend to precision.

Mathematically proficient students:

- try to communicate precisely to others.
- try to use clear definitions in discussion with others and in their own reasoning.
- state the meaning of the symbols they choose, including using the equal sign consistently and appropriately.
- specify units of measure and label axes to clarify the correspondence with quantities in a problem.
- calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context.
 - ✓ In the elementary grades, students give carefully formulated explanations to each other.
 - ✓ In high school, students have learned to examine claims and make explicit use of definitions.

7 Look for and make use of structure.

Mathematically proficient students:

- look closely to discern a pattern or structure.
 - ✓ Young students might notice that three and seven more is the same amount as seven and three more or they may sort a collection of shapes according to how many sides the shapes have.

- ✓ Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for the distributive property.
- ✓ In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems.
- step back for an overview and can shift perspective.
- see complicated things, such as some algebraic expressions, as single objects or composed of several objects.

8 Look for and express regularity in repeated reasoning.

Mathematically proficient students:

- notice if calculations are repeated
- look both for general methods and for shortcuts.
 - ✓ Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeated decimal.
 - ✓ Middle school students might abstract the equation $(y-2)/((x-1)=3$ by paying attention to the calculation of slope as they repeatedly check whether the points are on the line through (1,2) with a slope 3.
 - ✓ Noticing the regularity in the way terms cancel when expanding $(x-1)(x+1)(x^2+1)$ and $(x-1)(x^3+x^2+x+1)$ might lead high school students to the general formula for the sum of a geometric series.
- maintain oversight of the process [of solving a problem](#), while attending to the details.
- continually evaluate the reasonableness of intermediate results.

Tool 3

Overarching Considerations

Equity
Formative Assessment
Technology

CCSSM Curriculum Analysis Tool 3 (Overarching Considerations)

This tool should be used after reviewing mathematics curriculum materials using Tool 1 (Content Analysis) and Tool 2 (Mathematical Practices Analysis). After reviewing the curriculum materials carefully, answer the questions below reflecting important overarching considerations with regard to the materials. Overarching considerations are those that support the teaching of Mathematics Core Content and Practices. **Equity:** NCTM (1991) calls for teachers to build on how students’ linguistic, ethnic, racial, gender, and socioeconomic backgrounds influence their learning; to help students to become aware of the role of mathematics in society and culture; to expose students to the contributions of various cultures to the advancement of mathematics; and to show students how mathematics relates to other subjects; and to provide students with opportunities to apply mathematics to authentic contexts. CCSSM also notes that, “The Standards should be read as allowing for the widest possible range of students to participate fully from the outset, along with appropriate accommodations to ensure maximum participation of students with special education needs.” **Formative Assessment** is a critical part of classroom instruction, and curriculum materials can provide a variety of levels of support with regard to information to teachers about student learning. Finally, the increasing availability of **technology** offers opportunities to use technology mindfully in ways that enable students to explore and deepen their understanding of mathematical concepts.

Name of Reviewer _____ School/District _____ Date _____
 Name of Curriculum Materials _____ Publication Date _____ Grade Level(s) _____

Rubric for answering questions about Overarching Considerations:

- Not Found (N)** - The curriculum materials do not support this element.
- Low (L)** - The curriculum materials contain limited support for this element, but the support is not embedded or consistently present within or across grades.
- Medium (M)** - The curriculum materials contain support for this element, but it is not always embedded or consistently present within or across grades.
- High (H)** - The curriculum materials contain embedded support for this element so that it is consistently present within and across grades.

Questions about Overarching Considerations (Page 1)	See Rubric	Comments/Examples
Equity	N-L-M-H	
To what extent do the materials:		
1. Provide teachers with strategies for meeting the needs of a range of learners?		
2. Provide instructional support to help teachers sequence or scaffold lessons so that students move from what they know to what they do not know?		
3. Provide opportunities for teachers to use a variety of grouping strategies?		
4. Embed tasks with multiple entry-points that can be solved using a variety of solution strategies or representations?		
5. Suggest accommodations and modifications for English language learners that will support their regular and active participation in learning mathematics?		

Questions about Overarching Considerations (Page 2)	See Rubric	Comments/Examples
To what extent do the materials:	N-L-M-H	
6. Provide opportunities to use reading, writing, and speaking in mathematics lessons.		
7. Encourage teachers to draw upon home language and culture to facilitate learning?		
8. Encourage teachers to draw on multiple resources such as objects, drawings, and graphs to facilitate learning?		
9. Draw upon students' personal experiences to facilitate learning?		
10. Provide opportunities for teacher and students to connect mathematics to other subject areas?		
11. Provide both individual and collective opportunities for students to learn using mathematical tasks with a range of challenge?		
12. Provide opportunities for advanced students to investigate mathematics content at greater depth?		
13. Provide a balanced portrayal of various demographic and personal characteristics?		
Assessment		
14. Provide strategies for gathering information about students' prior knowledge and background?		
15. Provide strategies for teachers to identify common student errors and misconceptions?		
16. Assess students at a variety of knowledge levels (e.g., memorization, understanding, reasoning, problem solving)?		
17. Encourage students to monitor their own progress?		
18. Provide opportunities for ongoing review and practice with feedback related to learning concepts, and skills.		
19. Provide support for a varied system of on-going formative and summative assessment (formal or informal observations, interviews, surveys, performance assessments, target problems)?		

Questions about Overarching Considerations (Page 2)	See Rubric	Comments/Examples
Technology	N-L-M-H	
To what extent do the materials:		
20. Integrate technology such as interactive tools, virtual manipulatives/objects, and dynamic mathematics software in ways that engage students in the Mathematical Practices?		
21. Include or reference technology that provides opportunities for teachers and/or students to communicate with each other (e.g. websites, discussion groups, webinars)?		
22. Include opportunities to assess student mathematical understandings and knowledge of procedural skills using technology?		
23. Include or reference technology that provides teachers additional tasks for students?		
24. Include teacher guidance for the mindful use of embedded technology to support and enhance student learning?		
Notes/Examples:		
<p>Summary Discussion Questions</p> <ol style="list-style-type: none"> Equity: To what extent do the materials contain embedded support for elements of equity consistently within and across grades? Assessment: To what extent do the materials contain embedded support for elements of assessment consistently within and across grades? Technology: To what extent do the materials contain embedded support for elements of technology consistently within and across grades? Overall: To what extent do the materials incorporate the Overarching Consideration elements to advance students' learning of mathematical content and engagement in the mathematical practices? 		