

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

Name of Reviewer \_\_\_\_\_ School/District \_\_\_\_\_ Date \_\_\_\_\_

Name of Curriculum Materials \_\_\_\_\_ Publication Date \_\_\_\_\_ Grade Level(s) \_\_\_\_\_

**Content Coverage Rubric (Cont)**

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

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CCSSM Grade 3				CCSSM Grade 4				CCSSM 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
				<b>Generalize place value understanding for multi-digit whole numbers.</b>				<b>Understand the place value system.</b>			
				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. U4L1, 2, 3, 4, 7; U6L4; UL3, 7; U11L1, 2, 3; U12L2, 4, 5			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.	1. U3L1, 4, 5, 6; U7L1, 3, 4; U8L1, 2, 3, 4, 9, 10, 11; U11L4, 5		
								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.	2. U3L1, 2, 3, 4, 5, 6; U8L1		

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CCSSM Grade 3				CCSSM Grade 4				CCSSM Grade 5			
<b>3.NBT Number and Operations in Base Ten</b>	Chap. Pages	Cont N-L-M- A-H	Bal N-L-M- A-H	<b>4.NBT Number and Operations in Base Ten</b>	Chap. Pages	Cont N-L-M- A-H	Bal N-L-M- A-H	<b>5.NBT Number and Operations in Base Ten</b>	Chap. Pages	Cont N-L-M- A-H	Bal N-L-M- A-H
				<b>Generalize place value understanding for multi-digit whole numbers.</b>				<b>Understand the place value system.</b>			
				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.	2. U4L1, 2, 3, 4, 5, 7, 8, 9, 10; U6L2, 3, 5, 6, 7; U11L1, 2, 3, 4, 5			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.	3. U8L1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11  a. U8L1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11  b. U8L1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11		
								4. Use place value understanding to round decimals to any place.	4. U8L4		
<b>Use place value understanding and properties of operations perform multi-digit arithmetic.</b>				<b>Use place value understanding and properties of operations to perform multi-digit arithmetic.</b>				<b>Perform operations with multi-digit whole numbers and with decimals to hundredths.</b>			
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.	2. U1L2, 3; U2L1, 2, 3, 5, 7, 8; U4L1, 2, 3, 4, 5, 6, 7; U6L1, 2, 3, 4, 5, 6; U7L2, 3, 4, 5, 6, 7, 8; U8 L9; U13L2, 3, 6			4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.	4. U4L1, 4, 5, 6, 7; U7L3, 6, 7, 8						
3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., $9 \times 80$ , $5 \times 60$ ) using strategies based on place value and properties of operations	3. U8L9; U13L2, 3, 6			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.	5. U4L 8, 9, 10; U7L2, 3, 4, 5, 6, 7; U11L1, 2, 3, 4, 5			5. Fluently multiply multi-digit whole numbers using the standard algorithm.	5. U4L1, 2, 3, 4, 5, 6, 7, 8		

			Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.								
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**CCSSM Curriculum Analysis Tool 1—Number and Operations in Base Ten for Grades 3-5**

CCSSM Grade 3			CCSSM Grade 4			CCSSM Grade 5					
<b>3.NBT Number and Operations in Base Ten</b>	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	<b>4.NBT Number and Operations in Base Ten</b>	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	<b>5.NBT Number and Operations in Base Ten</b>	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
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.			
				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. U3L1, 3, 4, 5, 6, 10; U6L1, 4; U12L1, 2, 3, 4, 5, 6			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.	6. U4L1, 5, 6, 7, 8; U7L1, 2, 3, 4		
								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.	7. U8L5, 7, 8, 9, 10, 11		

**Notes and Examples**

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

**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—Operations and Algebraic Thinking for Grades 3-5**

**Name of Reviewer** \_\_\_\_\_ **School/District** \_\_\_\_\_ **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
<b>Represent and solve problems involving multiplication and division.</b>				<b>Use the four operations with whole numbers to solve problems.</b>				<b>Write and interpret numerical expressions.</b>			
1. Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each.	1. U3L2, 3, 4, 5, 6; U8L1, 2, 3, 4, 5, 6, 7, 8, 9, 10; U10L1, 2, 4, 5, 6, 7			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. U5L4, 5, 6, 7			1. Use parentheses, brackets, or braces in numerical expressions and evaluate expressions with these symbols.	1. U7L7; U9L6, 7		
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. U8L1, 2, 3, 4, 5, 6, 7, 8, 9, 10; U10L1, 3, 4, 5, 6, 7							2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	2. U9L6		

<p>3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</p>	<p>3. U3L1, 2, 3, 4, 6; U8L1, 2, 3, 4, 5, 6, 7, 8, 9, 10; U10L1, 2, 3, 4, 5, 6, 7; U12L2, 3, 4, 5, 6; U13L1, 2, 3, 4, 5, 6, 8</p>			<p>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.</p>	<p>2. U5L4, 5, 6, 7; U6L4</p>						
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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.	4, 5, 6, 8										
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**CCSSM Curriculum Analysis Tool 1—Operations and Algebraic Thinking for Grades 3-5**

CCSSM Grade 3				CCSSM Grade 4				CCSSM Grade 5			
<b>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</b>	<b>Chap.Pages</b>	<b>Cont N-L-M-A-H</b>	<b>Bal N-L-M-A-H</b>	<b>Use the four operations with whole numbers to solve problems.</b>	<b>Chap.Pages</b>	<b>Cont N-L-M-A-H</b>	<b>Bal N-L-M-A-H</b>		<b>Chap.Pages</b>	<b>Cont N-L-M-A-H</b>	<b>Bal N-L-M-A-H</b>
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.	8. U3L1, 5, 6; U13L4, 5, 6, 8			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. Asses the reasonableness of answers using mental computation and estimation strategies including rounding.	3. U2L1, 2, 3, 4; U3L2; U4L1, 4, 6; U5L2, 3, 4; U7L4, 5, 6, 7, 8; U11L1, 2, 4, 5; U12L1, 3, 6						
<b>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</b>				<b>Generate and analyze patterns.</b>				<b>Analyze patterns and relationships.</b>			
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</i>	9. U2L3, 5, 6; U8L3, 5, 8, 9, 10; U10L1, 2, 5, 6, 7; U12L4, 6			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</i>	5. U6L3; U10L5; U13L3, 5, 6, 7			3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms	3. U5L2, 3, 4; U7L5, 8; U8L5, 6; U9L2, 3, 4, 6, 7; U11L1, 2, 3, 4, 5, 6		

<p><i>number can be decomposed into two equal addends</i></p>				<p><i>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></p>			<p><i>from the two patterns, and graph the ordered pairs on the coordinate plane. 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></p>			
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**Notes/Examples:**

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

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**CCSSM Grade 3**

**CCSSM Grade 4**

**CCSSM Grade 5**

3.G Geometry		Chap.Pages	Cont N-L-M- A-H	Bal N-L-M- A-H	4.G Geometry		Chap.Pages	Cont N-L-M- A-H	Bal N-L- M- A-H	5.G Geometry		Chap.Page s	Cont N-L-M- A-H	Bal N-L- M- A-H	
<b>Reason with shapes and their attributes.</b>					<b>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</b>					<b>Classify two-dimensional figures into categories based on their properties.</b>					
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.		1. U11L2, 4, 5, 6, 7, 8, 9			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.		2. U9L2, 3, 5, 6, 7, 9, 10, 11				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>		3. U6L5, 6, 7		
										4. Classify two-dimensional figures in a hierarchy based on properties.		4. U6L5, 6, 7			
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>		2. U9L2, 3, 4, 5, 6, 7; U11L2, 3			1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures.		1. U9L2, 6, 9, 10								

**CCSSM Curriculum Analysis Tool 1—Geometry for Grades 3-5**

CCSSM Grade 3				CCSSM Grade 4				CCSSM Grade 5			
3.G Geometry	Chap. Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.G Geometry	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.G Geometry	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
				<b>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</b>				<b>Classify two-dimensional figures into categories based on their properties</b>			
				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.	3. U9L7, 8, 11			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 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.	1. U6L1, 2, 3, 4, 5, 6, 7; U7L8		
								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.	2. U5L2, 3, 4; U6L1, 2, 3, 4, 5, 6, 7; U8L5, 6		

Notes/Examples



**CCSSM Curriculum Analysis Tool 1—Geometry for Grades 3-5**

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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?
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**CCSSM Grade 3**

**CCSSM Grade 4**

**CCSSM Grade 5**

3.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
<b>Develop understanding of fractions as numbers.</b>				<b>Extend understanding of fraction equivalence and ordering.</b>				<b>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</b>			
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 $1/b$ .	G2. U9L2, 3, 4, 5, 6, 7; U11L2, 3  1. U9L1, 2, 3, 4, 5, 6, 7			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. U8L1, 2, 3, 6, 12  a. U8L1, 2, 3, 6, 12  b. U8L1, 2, 3, 6, 12			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.	3. U2L2, 3, 4, 5, 6, 7, 10; U5L1, 2, 3, 6		

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

CCSSM Grade 3				CCSSM Grade 4				CCSSM Grade 5			
3.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
<b>Develop understanding of fractions as numbers.</b>				<b>Extend understanding of fraction equivalence and ordering.</b>				<b>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</b>			
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.	2. U9L1, 2, 3, 4, 5, 6, 7  a. U9L1, 2, 3, 4, 5, 6, 7  b. U9L1, 2, 3, 4, 5, 6, 7			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 $1/b$ . For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$ , recording the conclusion by the equation $5/4 = 5 \times (1/4)$ .	4. U8L1, 2, 3, 4, 7, 8, 10, 11			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.	5. U5L2, 3, 4, 5; U6L3, 4; U7L8, 9; U10L7, 8, 9, 10		
				<b>Extend understanding of fraction equivalence and ordering.</b>				<b>Use equivalent fractions as a strategy to add and subtract fractions.</b>			

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.	3. U9L4, 5, 6, 7 a. U9L4, 5, 6, 7 b. U9L4, 5, 6, 7 c. U9L4, 5, 6, 7			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. U8L1, 2, 4, 5, 6, 7, 8, 9, 11			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.	1. U2L2, 3, 6, 7, 8, 10, 11, 12; U5L1, 2, 3, 4, 5, 6; U9L2, 3, 8, 9; U10L1, 2, 3, 4, 5, 6, 7, 10, 11; U11L4, 5, 6		
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**CCSSM Curriculum Analysis Tool 1—Numbers and Operations - Fractions for Grades 3-5**

CCSSM Grade 3				CCSSM Grade 4				CCSSM Grade 5			
3.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
<b>Develop understanding of fractions as numbers.</b>				<b>Extend understanding of fraction equivalence and ordering.</b>				<b>Use equivalent fractions as a strategy to add and subtract fractions.</b>			
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.	3. U9L4, 5, 6, 7 d. U9L4, 5, 6, 7			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. U8L1, 2, 4, 5, 6, 7, 8, 9, 11			2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.	2. U2L10, 11, 12; U10L1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11		

				<b>Build fractions from unit fractions y applying and extending previous understanding of operations on whole numbers</b>				<b>Apply and extend previous understanding of multiplication and division to multiply and divide fractions</b>			
				<p>3. Understand a fraction <math>a/b</math> with <math>a &gt; 1</math> as a sum of fractions <math>1/b</math>.</p> <p>a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole</p> <p>b. Decompose a fraction into a sum of fractions with the same denominator in more than one way—justify decomposition</p> <p>c. Add and subtract mixed numbers with like denominators.</p> <p>d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.</p>	<p>3. U8L1, 2, 3, 6, 12</p> <p>a. U8L1, 2, 3, 6, 12</p> <p>b. U8L1, 2, 3, 6, 12</p> <p>c. U8L1, 2, 3, 6, 12</p> <p>d. U8L1, 2, 3, 6, 12</p>			<p>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.</p>	<p>3. U2L2, 3, 4, 5, 6, 7, 10; U5L1, 2, 3, 6</p>		

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

CCSSM Grade 3				CCSSM Grade 4				CCSSM Grade 5			
3.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
				<b>Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers</b>				<b>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</b>			
				4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. 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 <math>3 \times (2/5)</math> as <math>6 \times (1/5)</math>, recognizing this product as <math>6/5</math>. (In general, <math>n \times (a/b) = (n \times a)/b</math>.)</i> 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.	4. U8L1, 2, 3, 4, 7, 8, 10, 11  b. U8L4, 7, 8, 10, 11  c. U8L3, 4, 7, 8, 10, 11			4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 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 $a \times q \div b$ . 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.	4. U10L1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11  a. U10L7, 8, 9, 11  b. U10L7, 8, 9, 11		

				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. <sup>4</sup>	5. U10L1, 2, 3, 4, 6			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.	5. U5L2, 3, 4, 5; U6L3, 4; U7L8, 9; U10L7, 8, 9, 10		
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**CCSSM Curriculum Analysis Tool 1—Numbers and Operations - Fractions for Grades 3-5**

CCSSM Grade 3				CCSSM Grade 4				CCSSM Grade 5			
3.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	4.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H	5.NF Number and Operations— Fractions	Chap.Pages	Cont N-L-M-A-H	Bal N-L-M-A-H
								<b>Apply and extend previous understanding of multiplication and division to multiply and divide fractions</b>			
								6. Solve real world problems involving multiplication of fractions and mixed numbers.	6. U10L2, 4, 5, 6, 7, 8, 9, 10, 11		
								7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. a. Interpret division of a unit fraction by a non-zero whole and compute such quotients. b. Interpret division of a whole number by a unit fraction, and compute such quotients.	7. U10L1, 3, 4, 5, 6, 7, 8, 9, 10, 11  a. U10L10, 11  b.10L10, 11		

								7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.	7. U10L1, 3, 4, 5, 6, 7, 8, 9, 10, 11  c.10L10, 11		
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Notes and Examples:

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

**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/procedural skills?