For the Wyoming Department of Education

Comparison of the Wyoming Mathematics Standards to the Common Core Standards, Grades K-8

May 2010

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Mathematics Gap Analysis *The Wyoming Standards Compared to the Common Core Standards*		
Wyoming Content Standards	**Alignment Rating with Comment**	**Common Core State Standards**
Kindergarten		
K.1 NUMBERS AND OPERATIONS: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MAK.1.1 Students read and represent numbers up to 9.	Partial alignment (scope): CC content includes numbers 10-100. Partial alignment (scope): CC content includes numbers 10-20.	K.NCC.1. Say the number name sequence to 100. K.NCC.4. Write numbers from 1 to 20 in base-ten notation.
MAK.1.2 Students recognize the larger of two sets. (Which set has more or less?)	Strong alignment	K.NCC.8. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. *Include groups with up to ten objects.*
MAK.1.3 Students recognize and name penny, nickel, dime, and quarter using real coins.	No match	
MAK.1.4 Students count with understanding up to 21 objects to solve problems.	Strong alignment Partial alignment (specificity): CC specifies what the student needs to understand about counting, and the WY content specifies that students count up to 21 objects.	K.NCC.5. Count to answer "how many?" questions about as many as 20 things. *Objects may be arranged in a line, a rectangular array, a circle, or a scattered configuration.* K.NCC.6. Understand that when counting objects, a. The number names are said in the standard order. b. Each object is paired with one and only one number name.

	Partial alignment (specificity): CC specifies what the student needs to understand about counting, and the WY content specifies that students count up to 21 objects.	c. The last number name said tells the number of objects counted. K.NCC.7. Understand that when counting forward, each successive number name refers to a quantity that is 1 larger.
MAK.1.5 Students act out or use objects as strategies to solve problems.	Weak alignment: Content is similar, but there is a significant difference in the phrasing and emphasis. WY content is specifically about strategies to use, while CC content is about the concept of addition and subtraction. Also, the CC content includes the use of fingers, mental images, sounds, verbal explanations, expressions, or equations.	K.NOP.2. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. Note that drawings need not show details, but should show the mathematics in the problem. (This note also applies wherever drawings are mentioned in subsequent standards.)
K.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MAK.2.1 Students recognize, name, compare, and sort geometric shapes (circle, square, triangle and rectangle).	Partial alignment (specificity): CC specifies the size and orientation of the shape. Partial alignment (scope): CC includes the relative position of objects.	K.G.2. Understand that names of shapes apply regardless of the orientation or overall size of the shape. *For example, a square in any orientation is still a square. Students may initially need to physically rotate a shape until it is "level" before they can correctly name it.* K.G.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using

		terms such as *above, below, beside, in front of, behind, and next to*.
	Partial alignment (specificity): CC specifies two- and three-dimensional shapes and the type of language that should be used to describe shapes.	K.G.5. Analyze and compare a variety of two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, component parts (e.g., number of sides and vertices) and other attributes (e.g., having sides of equal length).
MAK.2.2 Students select, use, and communicate organizational methods in a problem -solving situation using geometric shapes.	Weak alignment: Content is similar, but there is a significant difference in the emphasis. While both WY and CC are about problems using geometric shapes, the WY content emphasizes organizational methods while the CC content emphasizes combining shapes.	K.G.6. Combine two- or three-dimensional shapes to solve problems such as deciding which puzzle piece will fit into a place in a puzzle.
K.3 <u>MEASUREMENT</u>: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MAK.3.1 Students apply estimation and measurement of length to content problems using non-standard units up to 9 units.	Weak alignment: Content is similar, but there is a significant difference in the phrasing or emphasis. WY content specifies non-standard units up to 9 should be used. CC content specifies that students compare and not measure.	K.MD.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of" the attribute. *For example, directly compare the heights of two books and identify which book is taller.*
	Weak alignment: CC content is in 1st grade and is less specific. WY content specifies measuring using up to 9 units.	1.MD.3. Measure the length of an object by using another object as a length unit.
	Weak alignment: CC content is in 1st grade and is less specific. WY content specifies measuring using up to 9 units.	1.MD.2. Understand that the length of an object can be expressed numerically by using another

		object as a length unit (such as a paper-clip, yardstick, or inch length on a ruler). The object to be measured is partitioned into as many equal parts as possible with the same length as the length unit. The length measurement of the object is the number of length units that span it with no gaps or overlaps. *For example, "I can put four paperclips end to end along the pencil, so the pencil is four paperclips long."*
K.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MAK.4.1 Students recognize, describe, and create three-element patterns by using manipulatives.	No match	
K.5 <u>DATA ANALYSIS AND PROBABILITY</u>: Students use data analysis and probability to analyze given situations and the results of experiments.		
MAK.5.1 Students sort real objects to create graphs.	Partial alignment (specificity): CC specifies limits on category counts.	K.MD.3. Classify objects or people into given categories; count the numbers in each category and sort the categories by count. Limit category counts to be less than or equal to 10.
MAK.5.2 Students communicate conclusions from a set of data. (Which set has more or less?)	Weak alignment: CC content is in 1st grade, and is more difficult than the WY content. CC requires students to specify how many more or less a set has, while WY only requires students to identify which set has more or less.	1.MD.5. Organize, represent, and interpret data with several categories; ask and answer questions about the total number of data points, how many in each

		category, and how many more or less are in one category than in another.
Grade 1		
1.1 NUMBERS AND OPERATIONS: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MA1.1.1 Students use the concept of place value to read and represent numbers up to 99.	Weak alignment: CC content is in Kindergarten and is more specific. The CC content specifies what students need to understand about how place value relates to two-digit numbers. Partial alignment (grade level): CC content is in Kindergarten. Strong alignment	K.NBT.6. Understand that the two digits of a two-digit number represent amounts of tens and ones. *In 29, for example, the 2 represents two tens and the 9 represents nine ones.* K.NCC.4. Write numbers from 1 to 20 in base-ten notation. 1.NBT.1. Read and write numbers to 100.
MA1.1.2 Students use sets of objects to compare values and order numerals.	Partial alignment (grade level): CC content is in Kindergarten.	K.NCC.8. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. Include groups with up to ten objects.
MA1.1.3 Students use coins (penny, nickel, dime, and quarter) to compare values (more/less).	No match	
MA1.1.4 Students demonstrate computational fluency with basic facts (add to 10).	Partial alignment (scope): WY content only includes addition and not subtraction. Weak alignment: CC content is in Kindergarten. In addition, while the content is similar, there is some difference in the phrasing and emphasis. The WY content is specifically about	1.NBT.6. Demonstrate fluency in addition and subtraction within 10. K.NOP.3. Decompose numbers less than or equal to 10 into pairs in various ways, e.g., using objects or drawings, and record each

	computational fluency, while the CC standard specifies creating sums and differences using objects or drawings and representing these operations in an equation.	decomposition by a drawing or equation (e.g., 5 = 2 + 3). Compose numbers whose sum is less than or equal to 10, e.g., using objects or drawings, and record each composition by a drawing or equation (e.g., 3 + 1 = 4).
	Weak alignment: Content is similar, but there is some difference in the phrasing and emphasis, as well as a grade level difference. The WY content is specifically about computational fluency, while the CC standard specifies creating sums and differences using equations or drawing. In addition, this content appears in Kindergarten in CC.	K.NOP.4. Compose and decompose numbers less than or equal to 10 in two different ways, and record compositions and decompositions by drawings or equations. *For example, 7 might be composed or decomposed in two different ways by a drawing showing how a group of 2 and a group of 5 together make the same number as do a group of 3 and a group of 4.*
	Weak alignment: CC content is in Kindergarten. In addition, the CC content does not include sums and minuends of 6 – 10.	K.NOP.7. Fluently add and subtract, for sums and minuends of 5 or less.
	Weak alignment: CC content is in Kindergarten and is more specific. The CC content specifies creating sums and differences using objects or drawings and representing these operations in drawings or equations.	K.NBT.7. Decompose 10 into pairs of numbers, e.g., by using objects or drawings, and record each decomposition with a drawing or equation.
	Weak alignment: CC content is in Kindergarten and is more specific. The CC content specifies creating sums using drawings or equations.	K.NBT.9. 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.
	Partial alignment (implicit): WY content	1.NOP.6. Understand that addition

	emphasizes the skill, while the CC content emphasizes the concept.	and subtraction apply to situations of adding-to, taking-from, putting together, taking apart, and comparing. *See Glossary, Table 1.*
MA1.1.5 Students make a picture or use objects as strategies to solve problems.	Partial alignment (specificity): CC content specifies that students should solve word problem within 20. It also specifies addition and subtraction.	1.NOP.7. Solve word problems involving addition and subtraction within 20, e.g., by using objects, drawings and equations to represent the problem. *Students should work with all of the addition and subtraction situations shown in the Glossary, Table 1, solving problems with unknowns in all positions, and representing these situations with equations that use a symbol for the unknown (e.g., a question mark or a small square). Grade 1 students need not master the more difficult problem types.*
MA1.1.5 Students make a picture or use objects as strategies to solve problems.	Partial alignment (specificity): CC content specifies which operations and what types of problems that students should solve. Weak alignment: CC content is in Kindergarten. In addition, while the content is similar, there is a significant difference in the emphasis. WY content is specifically about strategies to use, while CC content is about the concept of addition and subtraction. It is a reasonable inference that the problems referenced in the WY benchmark are related to addition and subtraction, but it is not explicit. Weak alignment: CC content is in Kindergarten. In addition, while the content is similar, there is a significant difference in the phrasing and	1.NOP.8. Solve word problems involving addition of three whole numbers whose sum is less than or equal to 20. K.NOP.1. Understand addition as putting together—e.g., finding the number of objects in a group formed by putting two groups together. Understand subtraction as taking apart—e.g., finding the number of objects left when a one group is taken from another. K.NOP.2. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds

	emphasis. WY content is specifically about strategies to use, while CC content is about the concept of addition and subtraction. Also, the CC content includes the use of fingers, mental images, sounds, verbal explanations, expressions, or equations. Weak alignment: CC content is in Kindergarten and is more specific. CC specifies addition and subtraction word problems.	(e.g., claps), acting out situations, verbal explanations, expressions, or equations. Note that drawings need not show details, but should show the mathematics in the problem. (This note also applies wherever drawings are mentioned in subsequent standards.) K.NOP.6. Solve addition and subtraction word problems, and calculate additions and subtractions within 10, e.g., using objects or drawings to represent the problem.
MA1.1.6 Students communicate their choice of appropriate grade level procedures and results when performing operations in a problem-solving situation.	Partial alignment (implicit): Content is similar, with some difference in emphasis. Both WY and CC contain content related to communicating procedures and results. However, CC emphasizes the properties of addition and subtraction, while WY emphasizes communicating problem solving techniques.	1.NOP.2. Explain and justify properties of addition and subtraction, e.g., by using representations such as objects, drawings, and story contexts. Explain what happens when:
1.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MA1.2.1 Students recognize, name, compare, and sort 2- and 3-dimensional geometric objects	Weak alignment: CC content is in Kindergarten and is more specific. CC specifies two- and three-dimensional shapes and the type of language that should be used to describe shapes. Weak alignment: CC content is in Kindergarten and WY content is more difficult, as the CC	K.G.5. Analyze and compare a variety of two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, component parts (e.g., number of sides and vertices) and other attributes (e.g., having sides of equal length). K.G.3. Understand that shapes can be two-dimensional (lying in a

	standard could be considered prerequisite to the WY standard.	plane, “flat”) or three-dimensional (“solid”).
MA1.2.2 Students select, use, and communicate organizational methods in a problem-solving situation using 2- and 3- dimensional geometric objects.	No match	
1.3 <u>MEASUREMENT</u>: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MA1.3.1 Students apply estimation and measurement of length to content problems using non-standard units up to 99 units	Partial alignment (specificity): WY specifies up to 99 units.	1.MD.2. Understand that the length of an object can be expressed numerically by using another object as a length unit (such as a paper-clip, yardstick, or inch length on a ruler). The object to be measured is partitioned into as many equal parts as possible. 1.MD.3. Measure the length of an object by using another object as a length unit.
MA1.3.2 Students apply estimation and measurement of capacity to content problems using non-standard units.	No match	
MA1.3.3 Students tell time, using both analog and digital clocks to the nearest half-hour.	Strong alignment	1.MD.4. Tell time from analog clocks in hours and half- or quarter-hours.
1.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MA1.4.1 Students recognize, create, and describe four-element patterns by using manipulatives and graphic representations.	No match. CC discusses patterns as part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
MA1.4.2 Students apply knowledge of repeating	No match. CC discusses patterns as part of	Standards for Mathematical

patterns when solving problems.	mathematical practice.	Practice: 4. Look for and make use of structure.
1.5 <u>DATA ANALYSIS AND PROBABILITY</u>: Students use data analysis and probability to analyze given situations and the results of experiments.		
MA1.5.1 Students collect and classify information to create graphs with pictures and report data in problem-solving situations.	Strong alignment	1.MD.5. Organize, represent, and interpret data with several categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
MA1.5.2 Students communicate conclusions about a set of data using graphs with pictures.	Strong alignment	1.MD.5. Organize, represent, and interpret data with several categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
MA1.5.3 Students perform and record (with tally marks) simple probability experiments.	Partial alignment (implicit): Content is similar, with some difference in emphasis. While both CC and WY include content about recording data, WY content emphasizes probability experiments, and CC emphasizes discussion about the recorded data.	1.MD.5. Organize, represent, and interpret data with several categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
Grade 2		
2.1 <u>NUMBERS AND OPERATIONS</u>: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MA2.1.1 Students use the concept of place value to read and write designated numbers up to 999.	Strong alignment	2.NBT.2. Read and write numbers to 1000 using base-ten notation,

		number names, and expanded form.
MA2.1.2 Students compare and order whole numbers up to 999.	Partial alignment (grade level): CC content is in 1st grade, and does not include comparing three-digit numbers. Weak alignment: CC content is in 1st grade and it is more specific than the WY content. CC content specifies how the numbers should be compared and ordered. In addition, WY content includes the comparison of three-digit numbers. Partial alignment (implicit): The WY content emphasizes the skill, while the CC content emphasizes the concept. Strong alignment	1.NBT.3. Understand that when comparing two-digit numbers, if one number has more tens, it is greater; if the amount of tens is the same in each number, then the number with more ones is greater. 1.NBT.4. Compare and order two-digit numbers based on meanings of the tens and ones digits, using > and < symbols to record the results of comparisons. 2.NBT.4. Understand that when comparing three-digit numbers, if one number has more hundreds, it is greater; if the amount of hundreds is the same in each number, then the number with more tens is greater. If the amount of tens and hundreds is the same in each number, then the number with more ones is greater. 2.NBT.5. Compare and order three-digit numbers based on meanings of the hundreds, tens, and ones digits.
MA2.1.3 Students use coins to compare the values and make combinations up to one dollar.	Partial alignment (implicit): WY content is similar, with some differences in emphasis. WY content relates to making a dollar with different combinations of coins while the CC standard is about solving word problems involving money.	2.MD.8. Solve word problems involving dollar bills, quarters, dimes, nickels and pennies. *Do not include dollars and cents in the same problem.*
MA2.1.4 Students demonstrate computational fluency with basic facts (add to 20, subtract from	Partial alignment (grade level): CC content is in 1st grade.	1.NBT.6. Demonstrate fluency in addition and subtraction within 10.

10).	Weak alignment: CC content is in 1st grade and is more specific. WY content specifies adding basic facts to 20. Partial alignment (scope): CC content includes computation fluency of subtraction above 10. Partial alignment (specificity): CC specifies the types of strategies for student to use to achieve computational fluency.	1.NBT.9. Add one-digit numbers to two-digit numbers, and add multiples of 10 to one-digit and two-digit numbers. 2.NBT.6. Fluently add and subtract within 20. By end of Grade 2, know from memory sums of one-digit numbers. 2.NBT.11. Compute sums and differences of one-, two-, and three-digit numbers using strategies based on place value, properties of operations, and/or the inverse relationship between addition and subtraction; explain the reasoning used.
MA2.1.5 Students use mental math (fact families) and estimation strategies (referent to a group of 10) to solve problems.	Partial alignment (grade level): CC content is in the 1st grade.	1.NBT.5. Calculate mentally, additions and subtractions within 20. a. Use strategies that include counting on; making ten (for example, 7 + 6 = 7 + 3 + 3 = 10 + 3 = 13); and decomposing a number (for example, 17 – 9 = 17 – 7 – 2 = 10 – 2 = 8).
MA2.1.5 Students use mental math (fact families) and estimation strategies (referent to a group of 10) to solve problems.	Weak alignment: The WY content emphasizes the skill, while the CC content emphasizes the concept. In addition, CC content is in Kindergarten. Weak alignment: CC content is in 1st grade and	K.NOP.5. Understand that addition and subtraction are related. *For example, when a group of 9 is decomposed into a group of 6 and a group of 3, this means not only 9 = 6 + 3 but also 9 – 3 = 6 and 9 – 6 = 3.* 1.NOP.2. Explain and justify

	is more specific. CC content specifies explaining and justifying properties of addition and subtraction.	properties of addition and subtraction, e.g., by using representations such as objects, drawings, and story contexts. Explain what happens when: a. Changing the order of addends does not change their sum. b. Subtracting one addend from a sum of two numbers results in the other addend. c. If more is subtracted from a number, the difference is decreased, and if less is subtracted the difference is increased. d. In an addition equation, each addend can be decomposed and the parts can be recombined in any order without changing the sum. *For example, 5 + 3 = 8. Because 5 decomposes as 4 + 1, the first addend can be replaced by 4 + 1, yielding (4 + 1) + 3 = 8. Recombining in two different orders: 4 + 4 = 8, also 7 + 1 = 8.*
	Weak alignment: CC content is in the 1st grade. In addition, the WY content emphasizes the skill, while the CC content emphasizes the concept.	1.NOP.3. Understand that addition and subtraction have an inverse relationship. *For example, if 8 + 2 = 10 is known, then 10 – 2 = 8 and 10 – 8 = 2 are also known.*
	Weak alignment: CC content is in 1st grade.	1.NOP.1. Understand the

	However, it may be inferred that students understand the commutative property if they are using fact families.	properties of addition. a. Addition is commutative. *For example, if 3 cups are added to a stack of 8 cups, then the total number of cups is the same as when 8 cups are added to a stack of 3 cups; that is, 8 + 3 = 3 + 8.* b. Addition is associative. *For example, 4 + 3 + 2 can be found by first adding 4 + 3 = 7 then adding 7 + 2 = 9, or by first adding 3 + 2 = 5 then adding 4 + 5 = 9.* c. 0 is the additive identity.
MA2.1.6 Students look for patterns and use guess and check as strategies to solve problems.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
MA2.1.7 Students communicate their choice of appropriate grade level procedures and results when performing operations in a problem-solving situation.	Partial alignment (implicit): Content is similar, with some difference in emphasis. Both WY and CC contain content related to communicating procedures and results. However, CC emphasizes the properties of addition and subtraction, while WY emphasizes communicating problem solving techniques.	2.NOP.1. Explain and justify properties of addition and subtraction, e.g., by using representations such as objects, drawings, and story contexts. Include properties such as: a. The order of addends in a sum is changed in a sum with two addends. b. 0 is added to a number. c. A number is subtracted from itself. d. One addend in a sum is increased by 1 and the other addend is decreased by 1. *Limit to two addends.*

2.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MA2.2.1 Students name, classify, and describe 2- and 3-dimensional geometric objects.	Weak alignment: CC content is in 1st grade and is more specific. CC content specifies distinguishing between defining and non-defining attributes.	1.G.1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) for a wide variety of shapes.
	Partial alignment (implicit): The CC content is similar, with some difference in emphasis. The WY content emphasizes the skill, while the CC content emphasizes the concept.	2.G.1. Understand that different categories of shapes (e.g., rhombuses, trapezoids, rectangles, and others) can be united into a larger category (e.g., quadrilaterals) on the basis of shared attributes (e.g., having four straight sides).
	Partial alignment (specificity): CC content does not include 3-dimensional objects.	2.G.2. Identify and name polygons of up to six sides by the number of their sides or angles.
	Partial alignment (scope): CC content does not include 2- or 3-dimensional shapes other than quadrilaterals.	2.G.3. Recognize rectangles, rhombuses, squares and trapezoids as examples of quadrilaterals; draw examples of quadrilaterals that do not belong to any of these subcategories.
	Strong alignment	2.G.4. Draw and identify shapes that have specific attributes, such as number of equal sides or number of equal angles. *Sizes of lengths and angles are compared directly or visually, not compared by measuring.*

	Weak alignment: Content is similar, but there is a significant difference in the phrasing or emphasis. WY requires students to classify 3-dimensional objects, while CC only requires recognition, and specifies that students do not have to learn the formal names.	2.G.5. Recognize objects as resembling spheres, right circular cylinders, and right rectangular prisms. *Students do not need to learn formal names such as "right rectangular prism."*
MA2.2.2 Students identify lines of symmetry in various geometric objects.	Weak alignment: CC content is in 4th grade and emphasizes the concept, while the WY content emphasizes the skill. Weak alignment: CC content is in 4th grade and includes completing a drawing using symmetry.	4.G.4. Understand that a line of symmetry for a geometric figure is a line across the figure such that the figure can be folded along the line into matching part. 4.G.5. Identify line-symmetric figures; given a horizontal or vertical line and a drawing that is not a closed figure, complete the drawing to create a figure that is symmetric with respect to the given line
MA2.2.3 Students select, use, and communicate organizational methods in problem- solving situations with 2- and 3- dimensional objects.	No match	
2.3 <u>MEASUREMENT</u>: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MA2.3.1 Students apply estimation and measurement of length to content problems using standard units to the nearest inch.	Partial alignment (implicit): CC content is similar, with some difference in emphasis. The WY content emphasizes the skill, while the CC content emphasizes the concept. Weak alignment: Content is similar, but there is a significant difference in the phrasing or emphasis. WY content emphasizes estimating and measuring length. CC content emphasizes comparing lengths. It may be inferred that one of the estimation skills referred to by the WY	2.MD.1. Understand that 1 inch, 1 foot, 1 centimeter, and 1 meter are conventionally defined lengths used as standard units. 2.MD.5. Understand that lengths can be compared by placing objects side by side, with one end lined up. The difference in lengths is how far the longer extends beyond the end of the shorter.

	standard may be comparing the lengths of objects. Partial alignment (implicit): CC content is similar, with some difference in emphasis. WY content emphasizes the skill, while the CC content emphasizes the concept. Partial alignment (specificity): CC content is more specific. CC specifies the student must generate data by making repeated measurements.	2.MD.2. Measure lengths using measurement tools such as rulers, yardsticks and measuring tapes; understand that these tools are used to find out how many standard length units span an object with no gaps or overlaps, when the 0 mark of the tool is aligned with an end of the object. 2.MD.9. Generate measurement data by measuring whole-unit lengths of several objects, or by making repeated measurements of the same object. Show the measurements by making a dot plot, where the horizontal scale is marked off in whole-number units.
MA2.3.2 Students apply estimation and measurement of weight to content problems using non-standards units.	No match	
MA2.3.3 Students tell time, using both analog and digital clocks to the nearest five minutes.	Partial match (scope): CC content is less difficult. CC does not include digital clocks, and goes to the nearest 15 minutes, rather than 5.	1.MD.4. Tell time from analog clocks in hours and half- or quarter-hours.
2.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MA2.4.1 Students recognize, describe, create, and extend patterns by using manipulatives and graphic representations.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
MA2.4.2 Students apply knowledge of appropriate grade-level patterns when solving problems.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use

		of structure.
2.5 <u>DATA ANALYSIS AND PROBABILITY</u>: Students use data analysis and probability to analyze given situations and the results of experiments.		
MA2.5.1 Students collect, organize, and report data using graphs and Venn diagrams.	Partial alignment (specificity): CC is more specific. CC specifies the formats for reporting data comparing problems using data found in a bar graph.	2.MD.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with several categories. Connect representations on bar graph scales, rulers, and number lines that begin with zero. Solve simple Put Together/Take Apart and Compare problems using information presented in a bar graph. See Glossary, Table 1.
MA2.5.2 Students communicate conclusions about a set of data using graphs and Venn diagrams.	Weak alignment: Content is similar, but there is a significant difference in the phrasing or emphasis. Both WY and CC include content about using graphs. However, WY emphasizes communication about conclusions, while CC emphasizes drawing graphs and connecting representations. In addition, WY includes Venn diagrams, while CC does not.	2.MD.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with several categories. Connect representations on bar graph scales, rulers, and number lines that begin with zero. Solve simple Put Together/Take Apart and Compare problems using information presented in a bar graph. See Glossary, Table 1.
MA2.5.3 Students perform and record results of simple probability experiments using equally and unequally divided spinners.	No match	
Grade 3		
3.1 <u>NUMBERS AND OPERATIONS</u>: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MA3.1.1 Students use the concept of place value	Strong alignment	3.NBT.2. Read and write numbers

to read and write designated numbers up to 9,999.		to 10,000 using base-ten notation, number names, and expanded form.
MA3.1.2 Students compare and order whole numbers up to 9,999.	Partial alignment (implicit): The CC content is similar, with some difference in emphasis. The WY content emphasizes the skill, while the CC content emphasizes the concept.	3.NBT.4. Understand that when comparing four-digit numbers, if one number has more thousands, it is greater; if the amount of thousands is the same in each number, then the number with more hundreds is greater; and so on. Compare and order four-digit numbers based on meanings of the digits.
MA3.1.3 Students use coins and bills to compare the values and make combinations up to five dollars.	Weak alignment: CC content is in 2nd grade and has a different emphasis. WY content relates to making up to five dollars with different combinations of coins while the CC content is about solving word problems involving money.	2.MD.8. Solve word problems involving dollar bills, quarters, dimes, nickels and pennies. *Do not include dollars and cents in the same problem.*
MA3.1.4 Students demonstrate computational fluency with basic facts (add to 20 and subtract from 20).	Partial alignment (grade level): CC content is in 2nd grade.	2.NBT.6. Fluently add and subtract within 20. By end of Grade 2, know from memory sums of one-digit numbers.
MA3.1.5 Students add and subtract two- and three-digit numbers with and without regrouping.	Weak alignment: CC content is in 2nd grade and does not include all two- and three digit numbers, but it does specify mental calculations. Weak alignment: CC content is in the 1st grade and is less specific. CC specifies how to add and subtract two-digit numbers. Weak alignment: CC content is in 1st grade and it is different in scope because the CC content	2.NBT.9. Given a number from 100 to 900, mentally find 10 more or 10 less than the number, and mentally find 100 more or 100 less than the number, without counting. 1.NBT.7. Understand that in adding or subtracting two-digit numbers, one adds or subtracts like units (tens and tens, ones and ones) and sometimes it is necessary to compose or decompose a higher value unit. 1.NBT.11. Add two-digit numbers to two-digit numbers using

	includes using the properties of operations or the inverse relationship between operations.	strategies based on place value, properties of operations, and/or the inverse relationship between addition and subtraction; explain the reasoning used.
	Weak alignment: CC content is in 2nd grade and it emphasizes the concept, while the CC content emphasizes the skill.	2.NBT.8. Understand that in adding or subtracting three-digit numbers, one adds or subtracts like units (hundreds and hundreds, tens and tens, ones and ones) and sometimes it is necessary to compose or decompose a higher value unit.
	Weak alignment: CC content is in 2nd grade and is more specific. CC specifies the types of strategies for students to use to achieve computational fluency.	2.NBT.11. Compute sums and differences of one-, two-, and three-digit numbers using strategies based on place value, properties of operations, and/or the inverse relationship between addition and subtraction; explain the reasoning used.
	Weak alignment: CC content is in 2nd grade and is more specific. CC specifies the number of two-digit numbers that students can compute.	2.NBT.13. Compute sums of two three-digit numbers, and compute sums of three or four two-digit numbers, using the standard algorithm; compute differences of two three-digit numbers using the standard algorithm.
	Partial alignment (scope): CC content does not include all two- and three digit numbers, but it does specify mental calculations.	3.NBT.5. Mentally calculate sums and differences of multiples of 10, 100, and 1000. *For example, mentally calculate 1300 – 800*
	Partial alignment (scope): CC content does not include all two- and three digit numbers, but it	3.NBT.6. Given a number from 1000 to 9000, mentally find 100

	does specify mental calculations.	more or 100 less than the number, and mentally find 1000 more or 1000 less than the number, without counting.
MA3.1.6 Students make an organized list and break problems into parts as strategies to solve problems.	No match	
MA3.1.7 Students use estimation strategies (rounding to the nearest 10 or 100, or front-end loading) to solve problems.	Partial alignment (grade level): CC content is in 4th grade.	4.NOP.4. Assess the reasonableness of answers using mental computation and estimation strategies including rounding to the nearest 10 or 100.
MA3.1.8 Students communicate their choice of procedures and results when performing number operations in a problem-solving situation.	Weak alignment: CC content is found in 1st grade, and while content is similar, there is some difference in emphasis. Both WY and CC contain content related to communicating procedures and results. However, CC emphasizes the properties of addition and subtraction, while WY emphasizes communicating problem solving techniques.	1.NOP.2. Explain and justify properties of addition and subtraction, e.g., by using representations such as objects, drawings, and story contexts. Explain what happens when:
3.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MA3.2.1 Students recognize, name, compare, and sort 2- and 3-dimensional geometric objects	Strong alignment	3.G.2. Describe, analyze, compare and classify two-dimensional shapes by their properties and connect these properties to the classification of shapes into categories and subcategories (e.g., squares are “special rectangles" as well as “special rhombuses"). *Focus on triangles and quadrilaterals.*
MA3.2.2 Students describe and compare various geometric objects using congruency and lines of symmetry.	Weak alignment: CC content is in 4th grade and emphasizes the concept, while the WY content emphasizes the skill.	4.G.4. Understand that a line of symmetry for a geometric figure is a line across the figure such that the figure can be folded along the

	Weak alignment: CC content is in 4th grade and includes completing a drawing using symmetry.	line into matching part. 4.G.5. Identify line-symmetric figures; given a horizontal or vertical line and a drawing that is not a closed figure, complete the drawing to create a figure that is symmetric with respect to the given line
MA3.2.3 Students select, use, and communicate organizational methods in a problem-solving situation using 2- and 3- dimensional geometric objects.	No match	
3.3 <u>MEASUREMENT</u>: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MA3.3.1 Students apply estimation and measurement of length to content problems using actual measuring devices and express the results in U.S. customary units (inches, feet, and yards).	Partial alignment (specificity): CC content is more specific. CC specifies generating and using measurements as data and using this data to create a dot plot.	3.MD.7. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a dot plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
MA3.3.2 Students apply estimation and measurement of capacity in problem-solving situations using actual measuring devices and express the results in U.S. customary units (cups, quarts, and gallons).	No match	
MA3.3.3 Students demonstrate relationships within the U.S. customary units in problem- solving situations.	Weak alignment: CC content is in 2nd grade, and is less specific. WY specifies real world situations and U.S. customary units.	2.MD.4. Understand that units can be decomposed into smaller units, e.g., 1 foot can be decomposed into 12 inches and 1 meter can be decomposed into 100 centimeters. A small number of long units might compose a greater length than a large number of small units.
MA3.3.4 Students determine perimeter of	Strong alignment	3.MD.5. Solve problems involving

rectangles and squares using models in problem solving situations.		perimeters of polygons. a. Add given side lengths, and multiply for the case of equal side lengths. b. Find an unknown length of a side in a polygon given the perimeter and all other side lengths; represent these problems with equations involving a letter for the unknown quantity. c. Exhibit rectangles with the same perimeter and different area, and with the same area and different perimeter.
MA3.3.5 Students tell time, using both analog and digital clocks, to the nearest minute using A.M. and P.M.	Weak alignment: CC content is in 1st grade, and WY content is more difficult. CC does not include digital clocks, and goes to the nearest 15 minutes, rather than 1.	1.MD.4. Tell time from analog clocks in hours and half- or quarter-hours.
3.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MA3.4.1 Students recognize, describe, create, and extend patterns by using manipulatives, numbers, and graphic representations.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
MA3.4.2 Students apply knowledge of appropriate grade level patterns when solving problems.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
3.5 <u>DATA ANALYSIS AND PROBABILITY</u>: Students use data analysis and probability to analyze given situations and the results of experiments.		
MA3.5.1 Students collect, organize, and compare data using graphs and Venn diagrams.	Partial alignment (specificity): CC specifies scaled picture graphs and single and multiple unit scales.	3.MD.6 Draw a scaled picture graph and a scaled bar graph to represent a data set with several

		categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. Include single-unit scales and multiple-unit scales; for example, each square in the bar graph might represent 1 pet, 5 pets, or 10 pets.
MA3.5.2 Students communicate conclusions about a set of data by interpreting information using graphs and Venn diagrams.	Weak alignment: Content is similar, but there is a significant difference in the phrasing or emphasis. Both WY and CC include content about using graphs. However, WY emphasizes communication about conclusions, while CC emphasizes drawing graphs and connecting representations. In addition, WY includes Venn diagrams, while CC does not.	3.MD.6 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. Include single-unit scales and multiple-unit scales; for example, each square in the bar graph might represent 1 pet, 5 pets, or 10 pets.
MA3.5.3 Students predict, perform, and record likely results of simple probability experiments.	No match	
Grade 4		
4.1 NUMBERS AND OPERATIONS: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MA4.1.1 Students use the concept of place value to read and write whole numbers up to 999,999 in words, standard, and expanded form.	Partial alignment (implicit): The WY content emphasizes the skill, while the CC content emphasizes the concept. Partial alignment (scope): CC content does not include numbers from 100,001 up to 999,999.	4.NBT.1. Understand that a digit in one place represents ten times what it represents in the place to its right. For example, 7 in the thousands place represents 10 times as many as than 7 in the hundreds place. 4.NBT.2. Read, write and compare numbers to 100,000 using base-

		ten notation, number names, and expanded form.
MA4.1.2 Students compare and order whole numbers.	Partial alignment (specificity): CC content is more specific. CC specifies a limit on the types of numbers that students should be able to compare.	4.NBT.2. Read, write and compare numbers to 100,000 using base-ten notation, number names, and expanded form.
MA4.1.3 Students use coins and bills to compare the values, make combinations up to $10.00, and make change from amounts up to $5.00.	Weak alignment: CC content is found in 2nd grade, and while the content is similar, there is a significant difference in emphasis. While both CC and WY include content about problem solving with money, WY emphasizes making change and combinations of coins and bills, while CC emphasizes word problems with money, and specifies not to include dollars and cents in the same problem.	2.MD.8. Solve word problems involving dollar bills, quarters, dimes, nickels and pennies. Do not include dollars and cents in the same problem.
MA4.1.4 Students demonstrate computational fluency with basic facts (add to 20, subtract from 20, multiply by 0-10).	Weak alignment: CC content is in 3rd grade and the WY content emphasizes the skill of multiplication, while the CC content emphasizes the concept. Partial alignment (grade level): CC content is in 3rd grade. Partial alignment (specificity): CC content is more specific. CC specifies that students should be able to multiply and divide mentally using multiples of 10, 100, or 1000.	3.NOP.1. Understand that multiplication of whole numbers is repeated addition. *For example, 5 × 7 means 7 added to itself 5 times. Products can be represented by rectangular arrays, with one factor the number of rows and the other the number of columns.* 3.NBT.8. Fluently multiply one-digit numbers by 10. 4.NBT.5. Mentally calculate products of one-digit numbers and one-digit multiples of 10, 100, and 1000 (e.g., 7 × 6000). Mentally calculate whole number quotients with divisors of 10 and 100.
MA4.1.5 Students add and subtract to thousands and multiply hundreds by a single digit.	Weak alignment: CC content is found in 2nd grade, and includes the use of multiple strategies. Also, CC does not include adding and subtracting	2.NBT.11. Compute sums and differences of one-, two-, and three-digit numbers using

	four-digit numbers.	strategies based on place value, properties of operations, and/or the inverse relationship between addition and subtraction; explain the reasoning used.
MA4.1.6 Students explain their choice of problem-solving strategies and justify their results when performing whole number operations in problem-solving situations.	No match	
MA4.1.7 Students recognize commonly used fractions (halves, thirds, fourths) as parts of a whole using an area model.	Partial alignment (grade level): CC content is in 1st grade. Partial alignment (grade level): CC content is in 2nd grade.	1.G.5. Decompose circles and rectangles into two and four equal parts. Describe the parts using the words *halves, fourths, and quarters*, and using the phrases *half of, fourth of, and quarter of*. Describe the whole as two of, or four of the parts. Understand that decomposing into more equal shares creates smaller shares. 2.G.6. Decompose circular and rectangular objects into two, three, or four equal parts. Describe the parts using the words *halves, thirds, half of, a third of,* etc.; describe the wholes as two halves, three thirds, four fourths. Recognize that a half, a third, or a fourth of a circular or rectangular object—a graham cracker, for example—is the same size regardless of its shape.
MA4.1.8 Students use estimation strategies to solve problems.	Partial alignment (scope): CC content includes assessing the reasonableness of answers.	4.NOP.4. Assess the reasonableness of answers using mental computation and estimation strategies including rounding to the nearest 10 or 100.

	Partial alignment (specificity): CC specifies the purpose of using estimation (checking work that results from multiplying two two-digit numbers).	4.NBT.8. Compute products of two-digit numbers using the standard algorithm, and check the result using estimation.
4.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MA4.2.1 Students classify and describe 2- and 3-dimensional geometric objects by their attributes (sides, edges, vertices, and faces).	Partial alignment (implicit): Content is similar, with some difference in emphasis. WY content emphasizes classifying shapes based on attributes, while the CC content classifies shapes based on the presence or absence of parallel or perpendicular lines.	4.G.3. Classify shapes based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of specified size.
MA4.2.2 Students understand the images resulting from reflections (flips).	No match	
MA4.2.3 Students select, use, and communicate organizational methods in problem-solving situations appropriate to grade level.	No match	
MA4.2.4 Students know characteristics of lines (parallel, perpendicular, and intersecting).	Partial alignment (scope): CC includes drawing the lines, and includes points, lines, line segments, rays, and angles.	4.G.1 Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines; identify these in plane figures.
4.3 <u>MEASUREMENT</u>: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MA4.3.1 Students select and apply appropriate U.S. customary units (half inch, quarter inch, feet, and yards) to the estimation and measurement of length in real-world problems using actual measuring devices.	Weak alignment: CC content is found in 2nd grade, and while the content is similar, there is some difference in emphasis. While both CC and WY include using measuring length with measurement devices, WY emphasizes U.S. customary units, while CC emphasizes the concept of measurement tools in general.	2.MD.2. Measure lengths using measurement tools such as rulers, yardsticks and measuring tapes; understand that these tools are used to find out how many standard length units span an object with no gaps or overlaps, when the 0 mark of the tool is aligned
MA4.3.2 Students select and apply appropriate U.S. customary units (ounces and pounds) to the	No match	

estimation and measurement of weight in real-world problems using actual measuring devices.		
MA4.3.3 Students select and apply appropriate U.S. customary units (teaspoons, tablespoons, cups, pints, quarts, and gallons) to the estimation and measurement of capacity in real-world problems using actual measuring devices.	No match	
MA4.3.4 Students demonstrate relationships within the U.S. customary system, given an equivalence chart, in problem-solving situations.	Weak alignment: CC content is found in 3rd grade, and while the content is similar, there is some difference in phrasing/emphasis. While both CC and WY include conversion within a measurement system, CC emphasizes the understanding of units in general, while WY emphasizes the U.S. customary system.	3.MD.2 Understand that a unit of measure can be decomposed into equal-sized parts, whose sizes can be represented as fractions of the unit. Convert measurements in one unit to measurements in a smaller or a larger unit, and solve problems involving such mixed units (e.g., feet and inches, weeks and days).
MA4.3.5 Students determine area and perimeter of rectangles and squares using models in problem-solving situations.	Weak alignment: CC content is in 3rd grade and is more specific. CC specifies understanding and using the units of area. Weak alignment: WY content is in 3rd grade and is more specific. CC specifies types of problems involving perimeters of polygons.	3.MD.3. Understand and use concepts of area measurement. 3.MD.5. Solve problems involving perimeters of polygons. a. Add given side lengths, and multiply for the case of equal side lengths. b. Find an unknown length of a side in a polygon given the perimeter and all other side lengths; represent these problems with equations involving a letter for the unknown quantity. Exhibit rectangles with the same perimeter and different area, and with the same area and different perimeter.
MA4.3.6 Students use time, in problem-solving	Partial alignment (grade level): CC content is in	2.MD.7. Find time intervals

situations to: • compare relationships among seconds, minutes, and hours; • use elapsed time to the nearest minute.	2nd grade.	between hours in one day.
4.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MA4.4.1 Students recognize, describe, extend, create, and generalize patterns by using manipulatives, numbers, and graphic representations.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
MA4.4.2 Students apply knowledge of appropriate grade level patterns when solving problems.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
MA4.4.3 Students explain a rule given a pattern or sequence.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
4.5 <u>DATA ANALYSIS AND PROBABILITY</u>: Students use data analysis and probability to analyze given situations and the results of experiments.		
MA4.5.1 Students collect, organize, and compare data in graphs, Venn diagrams, tables, and charts.	Partial alignment (specificity): CC specifies a dot plot and the use of fractions.	4.MD.7 Make a dot plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in dot plots. For example, from a dot plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.
MA4.5.2 Students communicate conclusions about a set of data by interpreting information using graphs, Venn diagrams, tables, and charts.	Weak alignment: Content is similar, but there is a significant difference in the phrasing or emphasis. Both WY and CC include content about using graphs. However, WY emphasizes communication about conclusions, while CC	4.MD.7 Make a dot plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by

	emphasizes drawing graphs and connecting representations. In addition, WY includes Venn diagrams, while CC does not.	using information presented in dot plots. For example, from a dot plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.
MA4.5.3 Students predict, perform, and record results of probability experiments.	Weak alignment: CC content is found in 11th grade, and is more specific than WY. CC specifies details about the probability experiments.	HS.S.PM Generate data by sampling, repeated experimental trials, and simulations. Record and appropriately label such data, and use them to construct an empirical probability model. Compute probabilities in such models.
MA4.5.4 Students predict all possible outcomes of a given situation or event.	Weak alignment: CC content is found in 7th grade, and is more specific than WY. CC specifies the use of proportional reasoning when prediction outcomes.	7.SP.2 Use proportional reasoning to predict relative frequencies of outcomes for situations involving randomness, but for which a theoretical answer can be determined. For example, when rolling a number cube 600 times, one would predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. How far off might your prediction be? Use technology to generate multiple samples to approximate a distribution of sample proportions. Repeat the process for smaller sample sizes.
Grade 5		
5.1 NUMBERS AND OPERATIONS: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MA5.1.1 Students use the concept of place value to read and write whole numbers (in words, standard, and expanded form) and decimals (10ths and 100ths).	Partial alignment (scope): CC content includes comparing decimals.	5.NBT.5. Read, write, and compare numbers expressed as decimals. Understand that a digit in one place represents ten times what it represents in the place to

		its right. For example, 7 in the hundredths place represents 10 times as many as 7 in the thousandths place.
MA5.1.2 Students demonstrate computational fluency with basic facts for all four operations, including identifying multiples and factors of designated numbers up to 100.	Partial alignment (grade level): CC content is in 3rd grade. Partial alignment (Grade Level): CC content is in 4th grade. Partial alignment (grade level): CC content is in 4th grade. Partial alignment (specificity): CC content is less specific. WY specifies fluency up to 100 and the CC does not specify a limit.	3.NBT.9. Use a variety of strategies for multiplication and division within 100. By end of Grade 3, know from memory products of one-digit numbers where one of the factors is 2, 3, 4, or 5. 4.NOP.1. Find the factor pairs for a given whole number less than or equal to 100; recognize prime numbers as numbers greater than 1 with exactly one factor pair. Example: The factor pairs of 42 are {42, 1}, {21, 2}, {14, 3}, {7, 6}. 4.NBT.4. Fluently multiply and divide within 100. By end of Grade 4, know from memory products of one-digit numbers where one of the factors is 6, 7, 8, or 9. 5.NBT.4. Fluently add, subtract and multiply whole numbers using the standard algorithm for each operation.
MA5.1.3 Students demonstrate an understanding of whole number operations by: • explaining the relationships between the operations of addition, subtraction, multiplication, and division; and • multiplying by two-digit whole numbers and dividing by single-digit whole numbers.	Partial alignment (grade level): CC content is in 3rd grade. Weak alignment: CC content is in 3rd grade and	3.NOP.1. Understand that multiplication of whole numbers is repeated addition. *For example, 5 × 7 means 7 added to itself 5 times. Products can be represented by rectangular arrays, with one factor the number of rows and the other the number of columns.* 3.NOP.3. Explain and justify

	is more specific. CC specifies all the properties of multiplication and division.	properties of multiplication and division, e.g., by using representations such as objects, drawings, and story contexts. Include properties such as: a. Changing the order of two factors does not change their product.
	Weak alignment: CC content is in 3rd grade and the WY content emphasizes the skill of using and explaining inverse operations, while the CC content emphasizes the concept.	3.NOP.4. Understand that multiplication and division have an inverse relationship. *For example, if 5 × 7 = 35 is known, then 35 ÷ 5 = 7 and 35 ÷ 7 = 5 are also known. The division 35 ÷ 5 means the number which yields 35 when multiplied by 5; because 5 × 7 = 35, then 35 ÷ 5 = 7.*
	Weak alignment: CC content is in 3rd grade and is more specific. CC specifies mentally multiplying and dividing multiples of 10, 100, and 1000.	4.NBT.5. Mentally calculate products of one-digit numbers and one-digit multiples of 10, 100, and 1000 (e.g., 7 × 6000). Mentally calculate whole number quotients with divisors of 10 and 100.
	Partial alignment (grade level): CC content is in 4^{th} grade.	4.NBT.6. Compute products and whole number quotients of two-, three- or four-digit numbers and one-digit numbers, and compute products of two two-digit numbers, using strategies based on place value, the properties of operations, and/or the inverse relationship between multiplication and division; explain the reasoning used.
	Weak alignment: CC content is in 4^{th} grade and is more specific. CC specifies multiplying two two-	4.NBT.8. Compute products of two-digit numbers using the

	digit numbers. Partial alignment (scope): CC content includes computing quotients of three-digit and four-digit numbers as well as the expressions of these problems in equations form. Partial alignment (scope): CC content includes dividing three-digit and four-digit numbers as well as the expressions of these problems in equations form. Partial alignment (grade level): CC content is in 1st grade.	standard algorithm, and check the result using estimation. 5.NBT.1. Compute quotients of two-, three-, and four-digit whole numbers and two-digit whole numbers using strategies based on place value, the properties of operations, and/or the inverse relationship between multiplication and division; explain the reasoning used. 5.NBT.3. Use the standard algorithm to compute quotients of two-, three- and four-digit whole numbers and two-digit whole numbers, expressing the results as an equation (e.g., 145 = 11 × 13 + 2 or 120 × 7 = 17 1/7). 1.NOP.3. Understand that addition and subtraction have an inverse relationship. *For example, if 8 + 2 = 10 is known, then 10 – 2 = 8 and 10 – 8 = 2 are also known.*
MA5.1.4 Students explain their choice of estimation or problem-solving strategies and justify results when performing number operations in problem-solving situations.	No match	
MA5.1.5 Students add and subtract decimals to hundredths and solve problems in the context of money.	Weak alignment: The content is similar, with a significant difference in emphasis. While both WY and CC require students to add and subtract decimals, WY emphasizes the context of money, while CC emphasizes specific values of decimals to add and subtract up to the thousandths place.	5.NBT.9. Fluently find 0.1 more than a number and less than a number; 0.01 more than a number and less than a number; and 0.001 more than a number and less than a number, for numbers expressed as finite decimals.

	Partial alignment (implicit): The WY content emphasizes the skill, while the CC content emphasizes the concept.	5.NBT.8. Understand that in adding or subtracting finite decimals, one adds or subtracts like units (tenths and tenths, hundredths and hundredths, etc.) and sometimes it is necessary to compose or decompose a higher value unit.
	Partial alignment (scope): CC content includes converting decimals to fractions before they are added/ subtracted.	5.NBT.10. Compute sums and differences of finite decimals by expressing the decimals as fractions and adding the fractions. For example, 0.05 + 0.91 = 5/100 + 91/100 = 96/100 or 0.96.
	Weak alignment: CC content does not include computations in the context of money. WY content is less specific. CC specifies using inverse relationships and place value.	5.NBT.11. Compute sums, differences, products, and quotients of finite decimals using strategies based on place value, the properties of operations, and/or the inverse relationships between addition and subtraction and between multiplication and division; explain the reasoning used. For example, transform 1.5 ÷ 0.3 into 15 ÷ 3 = 5.
	Strong alignment	5.NBT.13. Use the standard algorithm for each of the four operations on decimals (to hundredths).
MA5.1.6 Students demonstrate an understanding of fractions as parts of wholes.	Weak alignment: CC content is in 3rd grade and is more specific. CC specifies using linear models as opposed to using area models.	3.NF.1. Understand that a unit fraction corresponds to a point on a number line. *For example, 1/3 represents the point obtained by decomposing the interval from 0 to 1 into three equal parts and taking the right-hand endpoint of the first*

		part. In Grade 3, all number lines begin with zero.
	Partial alignment (grade level): CC content is in 3rd grade.	3.NF.2. Understand that fractions are built from unit fractions. *For example, 5/4 represents the point on a number line obtained by marking off five lengths of ¼ to the right of 0.*
	Partial alignment (grade level): CC content is in 3rd grade.	3.NF.5. Understand that fractions apply to situations where a whole is decomposed into equal parts; use fractions to describe parts of wholes. *For example, to show 1/3 of a length, decompose the length into 3 equal parts and show one of the parts.*
MA5.1.7 Students order, compare, add, and subtract fractions with like denominators.	Weak alignment: CC content is in 3rd grade and includes comparing and ordering fractions with equal numerators.	3.NF.6. Compare and order fractional quantities with equal numerators or equal denominators, using the fractions themselves, tape diagrams, number line representations, and area models. Use > and < symbols to record the results of comparisons.
	Weak alignment: CC content is in 4^{th} grade and WY content emphasizes the skill, while the CC content emphasizes the concept.	4.NF.1. Understand addition of fractions: a. Adding or subtracting fractions with the same denominator means adding or subtracting copies of unit fractions. For example, 2/3 + 4/3 is 2 copies of 1/3 plus 4 copies of 1/3, or 6 copies of 1/3 in all, that I s 6/3.b. Sums of related fractions can be computed by replacing one with an

		equivalent fraction that has the same denominator as the other. For example, the sum of the related fractions 2/3 and 1/6 can be computed by rewriting 2/3 as 4/6 and computing 4/6 + 1/6 = 5/6.
	Weak alignment: CC content is in 4th grade and includes solving word problems. In addition, CC specifies adding and subtracting related fractions or solving word problems involving fractions with like denominators.	4.NF.2. Compute sums and differences of fractions with like denominators, add and subtract related fractions within 1 (e.g., 1/2 + 1/4, 3/10 + 4/100, 7/8 – 1/4), and solve word problems involving these operations.
	Partial alignment (scope): CC content includes comparing and ordering fractions with unlike denominators.	5.NF.3. Compare and order fractions with like or unlike denominators, e.g., by finding equivalent fractions with the same denominator, and describe the sizes of fractional quantities from a context with reference to the context. Compare using the fractions themselves, tape diagrams or number line representations, and area models.
5.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MA5.2.1 Students describe, draw, and classify two-dimensional geometric figures such as triangles, quadrilaterals, and circles.	Strong alignment	5.G.4. Classify plane figures in a hierarchy based on properties. 5.G.3. Understand that properties belonging to a category of plane figures also belong to all subcategories of that category. For example, all rectangles have four

		right angles and squares are rectangles, so all squares have four right angles.
MA5.2.2 Students describe, identify, and classify three-dimensional geometric figures such as cylinders, cones, pyramids, rectangular prisms, and spheres.	Weak alignment: CC content is in grade 2, and specifies that students do not need to learn the formal names of objects.	2.G.5. Recognize objects as resembling spheres, right circular cylinders, and right rectangular prisms. Students do not need to learn formal names such as "right rectangular prism."
MA5.2.3 Students describe and compare various geometric objects using congruency and lines of symmetry appropriate to grade level.	Weak alignment: CC content is in 4th grade and emphasizes the concept, while the WY content emphasizes the skill. Weak alignment: CC content is in 4th grade and includes completing a drawing using symmetry.	4.G.4. Understand that a line of symmetry for a geometric figure is a line across the figure such that the figure can be folded along the line into matching part. 4.G.5. Identify line-symmetric figures; given a horizontal or vertical line and a drawing that is not a closed figure, complete the drawing to create a figure that is symmetric with respect to the given line
MA5.2.4 Students select, use, and communicate organizational methods in problem-solving situations appropriate to grade level.	No match	
5.3 MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MA5.3.1 Students apply estimation and measurement of length to content problems using actual measuring devices and express the results in U.S. customary units (parts of inch-halves/fourths, eighths inches, feet, yards, and miles).	Weak alignment: CC content is found in 2nd grade, and while the content is similar, there is some difference in emphasis. While both CC and WY include using measuring length with measurement devices, WY emphasizes U.S. customary units, while CC emphasizes the concept of measurement tools in general.	2.MD.2. Measure lengths using measurement tools such as rulers, yardsticks and measuring tapes; understand that these tools are used to find out how many standard length units span an object with no gaps or overlaps, when the 0 mark of the tool is aligned

MA5.3.2 Students apply estimation and measurement of weight to content problems using actual measuring devices and express the results in U.S. customary units (ounces and pounds).	No match	
MA5.3.3 Students apply estimation and measurement of capacity in real-world problem-solving situations using actual measuring devices and express the results in U.S. customary units (teaspoons, tablespoons, cups, pints, quarts, and gallons).	No match	
MA5.3.4 Students demonstrate relationships within the U.S. customary units, given an equivalence chart, in problem-solving situations appropriate to grade level.	Weak alignment: CC content is found in 3rd grade, and while the content is similar, there is some difference in phrasing/emphasis. While both CC and WY include conversion within a measurement system, CC emphasizes the understanding of units in general, while WY emphasizes the U.S. customary system.	3.MD.2 Understand that a unit of measure can be decomposed into equal-sized parts, whose sizes can be represented as fractions of the unit. Convert measurements in one unit to measurements in a smaller or a larger unit, and solve problems involving such mixed units (e.g., feet and inches, weeks and days).
MA5.3.5 Students determine area and perimeter of triangles, rectangles, and squares using models in problem-solving situations using appropriate units.	Weak alignment: CC content is in 4^{th} grade and includes measuring and computing whole-square unit areas and limits the situations to those requiring products of one or two-digit numbers.	4.MD.3. Apply the formulas for area of squares and rectangles. Measure and compute whole-square-unit areas of objects and regions enclosed by geometric figures which can be decomposed into rectangles. Limit to situations requiring products of one-or two-digit numbers.
MA5.3.6 Students use time, in problem-solving situations to: • compare relationships among seconds, minutes, hours, and days, and • use elapsed time to the nearest minute.	Weak alignment: CC content is in 3rd grade and while the content is similar, there is a significant difference in the emphasis. Both WY and CC include finding elapsed time; however, WY specifies this in relationship to problem solving, while CC emphasizes number lines.	3.MD.1. Understand that a number line has an origin (0) and a unit (1), with whole numbers one unit distance apart. Use number lines to represent problems involving distances, elapsed time, amounts of money and other quantities. *In such problems, the interval from 0*

		to 1 may represent a unit of distance, time, money, etc.
5.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MA5.4.1 Students recognize, describe, extend, create, and generalize patterns by using manipulatives, numbers, and graphic representations, including charts and graphs.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
MA5.4.2 Students apply knowledge of patterns when solving problems appropriate to grade level.	No match. CC discusses patterns as a part of mathematical practice.	Standards for Mathematical Practice: 4. Look for and make use of structure.
MA5.4.3 Students represent the idea of a variable as an unknown quantity, a letter, or a symbol within addition and subtraction sentences using whole numbers.	Weak alignment: CC content is in 6th grade, and emphasizes the concept, while WY emphasizes the skill.	6.EE.2. Understand the use of variables in expressions and algebraic conventions: a. A letter is used to stand for a number in an expression in cases where the number is unknown, or where, for the purpose at hand, it can be any number in a domain of interest. Such a letter is called a variable. b. If a variable appears in an expression more than once (e.g., as in t + 3t), that variable is understood to refer to the same number in each instance. c. The multiplication symbol can be omitted when writing products of two or more variables or of a number and a variable. For example, the expressions xy and 2a indicate x ´ y and 2 ´ a, respectively.

5.5 <u>DATA ANALYSIS AND PROBABILITY</u>: Students use data analysis and probability to analyze given situations and the results of experiments.		
MA5.5.1 Students systematically collect, organize, and describe/represent categorical data using bar graphs.	Partial alignment (grade level): CC is found in 3rd grade.	3.MD.6 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. Include single-unit scales an
MA5.5.2 Students find and interpret mode for data sets in a problem-solving setting appropriate to grade level. Students communicate their findings.	No match	
MA5.5.3 Students predict and record outcomes of probability experiments or simulations.	Weak alignment: CC content is found in 11th grade, and is more specific than WY. CC specifies details about the probability experiments.	HS.S.PM Generate data by sampling, repeated experimental trials, and simulations. Record and appropriately label such data, and use them to construct an empirical probability model. Compute probabilities in such models.
Grade 6		
6.1 <u>NUMBERS AND OPERATIONS</u>: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MA6.1.1 Students use the concept of place value to read and write decimals (to 1000ths) in words, standard, and expanded form.	Partial alignment (grade level): CC content is in 5th grade.	5.NBT.4. Read, write, and compare numbers expressed as decimals. Understand that a digit in one place represents ten times what it represents in the place to its right. For example, 7 in the hundredths place represents 10 times as many as 7 in the thousandths place.
MA6.1.2 Students multiply decimals (10ths & 100ths) and divide whole numbers by 2-digit	Weak alignment: CC content is in 5th grade and is more specific. CC specifies the types of	5.NBT.11. Compute sums, differences, products, and

divisors and divide decimals by whole numbers.	strategies to be used to multiply and divide decimals. Partial alignment (grade level): CC content is in 5th grade. Partial alignment (specificity): WY specifies the number of digits in the divisors.	quotients of finite decimals using strategies based on place value, the properties of operations, and/or the inverse relationships between addition and subtraction and between multiplication and division; explain the reasoning used. For example, transform 1.5 ÷ 0.3 into 15 ÷ 3 = 5. 5.NBT.13. Use the standard algorithm for each of the four operations on decimals (to hundredths). 6.NS.4. Fluently divide whole numbers using the standard algorithm.
MA6.1.3 Students represent the number line using integers.	Weak alignment: CC content is in 3rd grade and emphasizes the concept, while the WY content emphasizes the skill. CC content does not include negative numbers. Weak alignment: The WY content emphasizes the skill, while the CC content emphasizes the concept and CC content is more specific. CC specifies a set of knowledge that students must understand about the number line.	3.MD.1. Understand that a number line has an origin (0) and a unit (1), with whole numbers one unit distance apart. Use number lines to represent problems involving distances, elapsed time, amounts of money and other quantities. *In such problems, the interval from 0 to 1 may represent a unit of distance, time, money, etc.* 6.NS.7. Understand that number lines familiar from previous grades can be extended to represent negative numbers to the left of zero. Number lines can also be vertically oriented, as when a coordinate system is formed. Then the conventional terms “to the right of 0” and “to the left of 0”

		conventionally become “above 0” and “below 0.”
	Strong alignment	6.NS.8. Find and position rational numbers, including integers, on a number line.
	Partial match (implicit): The WY content emphasizes the skill, while the CC content emphasizes the concept.	6.NS.5. Understand that a number is a point on the number line.
MA6.1.4 Students explain their choice of estimation and problem solving strategies and justify results when performing number operations with fractions and decimals in problem-solving situations.	Weak alignment: CC content is in 4th grade. CC includes mental computation. WY specifies justifying results when performing number operations with fractions and decimals.	4.NOP.4. Assess the reasonableness of answers using mental computation and estimation strategies including rounding to the nearest 10 or 100.
MA6.1.5 Students identify prime and composite numbers and apply prime factorization to numbers less than 100.	Partial alignment (grade level): CC content is in 4th grade.	4.NOP.1. Find the factor pairs for a given whole number less than or equal to 100; recognize prime numbers as numbers greater than 1 with exactly one factor pair. Example: The factor pairs of 42 are {42, 1}, {21, 2}, {14, 3}, {7, 6}.
MA6.1.6 Students demonstrate an understanding of fractions and decimals by: • representing fractions as division of whole numbers; • converting between mixed numbers and improper fractions; • simplifying fractions and mixed numbers; • writing fractions in equivalent forms; • using parts of a set; • rounding decimal numbers to 10ths, 100ths, and whole numbers (units) place; and • converting between decimals (from .01 to .99), fractions and representing percentages.	Weak alignment: CC content is in 3rd grade and does not include content beyond equivalent fractions. CC specifies the value of the denominators for finding equivalent fractions. Weak alignment: CC content is in 4th grade and is more specific. CC specifies recognizing that a fraction multiplied by its denominator’s reciprocal results in the numerator.	3.NF.3. Understand that two fractions are equivalent (represent the same number) when both fractions correspond to the same point on a number line. Recognize and generate equivalent fractions with denominators 2, 3, 4, and 6 (e.g., 1/2 = 2/4, 4/6 = 2/3), and explain the reasoning. 4.NF.5. Understand that fractions give meaning to the quotient of any whole number by any non-zero whole number. For example, 3 ÷ 4 = 3/4, because 3/4 multiplied by 4 equals 3. (The division 3 ÷ 4 means the number which yields 3

		when multiplied by 4.)
	Weak alignment: CC content is in 4th grade and the CC content emphasizes the concept, while WY emphasizes the skill.	4.NF.7. Understand that a two-digit decimal is a sum of fractions with denominators 10 and 100. For example, 0.34 is 3/10 + 4/100.
	Weak alignment: CC content is in 4th grade and includes comparing and ordering decimals.	4.NF.8. Use decimals to hundredths to describe parts of wholes; compare and order decimals to hundredths based on meanings of the digits; and write fractions of the form a/10 or a/100 in decimal notation. Use > and < symbols to record the results of comparisons.
	Partial alignment (grade level): CC content is in 5th grade.	5.NBT.6. Round decimals (to hundredths) to the nearest whole number.
	Weak alignment: CC content is in 5th grade and is more specific. CC specifies which type of fractions to write in decimal form.	5.NBT.7. Write fractions in decimal notation for fractions with denominators 2, 4, 5, 8, 10, and 100.
	Weak alignment: CC content is in 5th grade and is more specific. CC specifies different scenarios that demonstrate fractional equivalence.	5.NF.1. Understand fraction equivalence: a. a. Multiplying the numerator and denominator of a fraction by the same nonzero whole number produces an equivalent fraction. For example, 2/3 = (2 × 4)/ (3 × 4) = 8/12. (1/3 is 4 copies of 1/12, so 2/3 is 8 copies of 1/12.) b. Equivalent fractions correspond to the same

		point on a number line. In Grade 5, all numbers lines begin with zero. When the numerators of equivalent fractions are divided by their denominators, the resulting quotients are the same.
	Weak alignment: CC content is in 5th grade and is more specific. CC specifies identifying types of equivalent fractions.	5.NF.2. Identify pairs of equivalent fractions; given two fractions with unlike denominators, find two fractions with the same denominator and equivalent to each.
	Weak alignment: WY content is in 5th grade and emphasizes the skill, while the CC content emphasizes the concept.	5.NF.11. Understand that a mixed number such as 3 2/5 represents the sum of a whole number and a fraction less than one. Because a whole number can be represented as a fraction (3 = 3/1), and the sum of two fractions is also a fraction, a mixed number also represents a fraction (3 2/5 = 3 + 2/5 = 15/5 + 2/5 = 17/5). Write fractions as equivalent mixed numbers and vice versa.
MA6.1.7 Students add and subtract mixed numbers with like denominators.	Weak alignment: CC content is in 5th grade and emphasizes the concept, while the CC content emphasizes the skill.	5.NF.11. Understand that a mixed number such as 3 2/5 represents the sum of a whole number and a fraction less than one. Because a whole number can be represented as a fraction (3 = 3/1), and the sum of two fractions is also a fraction, a mixed number also represents a fraction (3 2/5 = 3 + 2/5 = 15/5 + 2/5 = 17/5). Write fractions as equivalent mixed numbers and vice versa.

	Weak alignment: CC content is in 4th grade and emphasizes the concept, while the CC content emphasizes the skill. Partial alignment (Grade Level): CC content is in 4th grade.	4.NF.1. Understand addition of fractions: a. Adding or subtracting fractions with the same denominator means adding or subtracting copies of unit fractions. For example, 2/3 + 4/3 is 2 copies of 1/3 plus 4 copies of 1/3, or 6 copies of 1/3 in all, that 4.NF.2. Compute sums and differences of fractions with like denominators, add and subtract related fractions within 1 (e.g., 1/2 + 1/4, 3/10 + 4/100, 7/8 – 1/4), and solve word problems involving these operations.
MA6.1.8 Students represent repeated multiplication in exponential form.	Partial alignment (grade level): CC content is found is high school.	HS.N.RN.1. Understand that the laws of exponents for positive integer exponents follow from an understanding of exponents as indicating repeated multiplication, and from the associative law for multiplication.
6.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MA6.2.1 Students classify, describe, compare, and draw representations of 1- and 2- dimensional objects and angles.	Weak alignment: CC content is in 4th grade and is more specific. CC specifies the classification of right angles, and includes the recognition of right triangles. Weak alignment: CC content is in 4th grade and is more specific. CC specifies what information the student should know including that the measure of an angle is a fraction of a circle.	4.G.2. Identify right angles, and angles smaller than or greater than a right angle in geometric figures; recognize right triangles. 4.MD.5. Understand what an angle is and how it is measured:

	Weak alignment: CC content is in 4th grade and is more difficult. CC includes problem solving with angles. Weak alignment: CC content is in 4th grade and is more specific. CC specifies which objects and angles should be drawn (line segments, rays, perpendicular and parallel lines).	4.MD.6. Measure angles in whole-number degrees using a protractor; sketch angles of specified measure; find the measure of a missing part of an angle, given the measure of the angle and the measure of a part of it, representing these problems with equations involving a letter for the unknown quantity. 4.G.1. Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines; identify these in plane figures.
MA6.2.2 Students identify and classify congruent objects by properties appropriate to grade level.	Weak alignment: CC content is in high school and emphasizes the concept, while the WY content emphasizes the skill.	HS.G.CO.1 Understand that two geometric figures are congruent if there is a sequence of rigid motions (rotations, reflections, translations) that carries one onto the other. This is the principle of superposition.
MA6.2.3 Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.	No match	
4.3 MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MA6.3.1 Students apply estimation and measurement of length to content problems and express the results in metric units (centimeters and meters).	Weak alignment: CC content is in 3rd grade and is more specific. CC specifies generating and using measurements as data and using this data to create a dot plot.	3.MD.7. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a dot plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

MA6.3.2 Students apply estimation and measurement of weight to content problems and express the results in U.S. customary units (ounces, pounds, and tons).	No match	
MA6.3.3 Students apply estimation and measurement of capacity to content problems and express the results in U.S. customary units (teaspoons, tablespoons, cups, pints, quarts, gallons).	No match	
MA6.3.4 Students demonstrate relationships within the U.S. customary units for weight and capacity and within the metric system (centimeters to meters) in problem-solving situations.	Partial alignment (grade level): CC content is in 5th grade.	5.MD.3. Convert among different-sized standard measurement units within a given measurement system (e.g., feet to yards, centimeters to meters) and use conversion in solving multi-step word problems.
MA6.3.5 Students determine the area and perimeter of regular polygons and the area of parallelograms, with and without models.	Strong alignment Partial alignment (grade level): CC content is in 3rd grade. Strong alignment	6.G.2. Find the areas enclosed by right triangles, other triangles, special quadrilaterals, and polygons (by composing into rectangles or decomposing into triangles and other shapes). 3.MD.5. Solve problems involving perimeters of polygons. 6.G.5. Solve problems involving area, volume and surface area of objects.
6.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MA6.4.1 Students recognize, describe, extend, create, and generalize patterns, such as numeric sequences, by using manipulatives, numbers, graphic representations, including charts and graphs.	Partial alignment (specificity): CC specifies using numerical data sets to recognize and extend patterns.	6.SP.4. Summarize numerical data sets, such as by: a. Reporting the number of observations. b. Describing the nature of the

		variable, including how it was measured and its units of measurement. Data sets can include fractional values at this grade but not negative values. c. Describing center and variation, as well as describing any overall pattern and any striking deviations from the overall pattern.
MA6.4.2 Students apply their knowledge of patterns to describe a constant rate of change when solving problems.	Partial alignment (scope): CC content includes using reasoning with equations to solve unit rate problems.	6.RP.6. Solve unit rate problems including unit pricing and constant speed, including reasoning with equations such as $d = r \times t$, $r = d/t$, $t = d \div r$.
MA6.4.3 Students represent the idea of a variable as an unknown quantity, a letter, or a symbol within any whole number operation.	Partial alignment (scope): CC content includes understanding that a variable can represent a domain of interest or how to combine variable expressions. Weak alignment: Content is similar, but there is a significant difference in the emphasis. WY content emphasizes the variables representing unknown quantities, while CC emphasizes variables representing quantities that can change. In addition, CC content includes independent and dependent variables.	6.EE.2. Understand the use of variables in expressions and algebraic conventions: 6.EE.8. Understand that a variable can be used to represent a quantity that can change, often in relationship to another changing quantity, and an equation can express one quantity, thought of as the dependent variable, in terms of other quantities, thought of as the independent variables; represent a relationship between two quantities using equations, graphs, and tables; translate between any two of these representations. For example, describe the terms in a sequence $t = 3, 6, 9, 12, \ldots$ of multiples of 3 by writing the

		equation t = 3n for n = 1, 2, 3, 4, ….
6.5 <u>DATA ANALYSIS AND PROBABILITY</u>: Students use data analysis and probability to analyze given situations and the results of experiments.		
MA6.5.1 Students systematically collect, organize, and describe/represent numeric data using line graphs.	Partial alignment (scope): CC does not include representing numeric data using line graphs.	6.SP.4. Summarize numerical data sets, such as by: a. Reporting the number of observations. b. Describing the nature of the variable, including how it was measured and its units of measurement. Data sets can include fractional values at this grade but not negative values. c. Describing center and variation, as well as describing any overall pattern and any striking deviations from the overall pattern.
MA6.5.2 Students, given a scenario, recognize and communicate the likelihood of events using concepts from probability (i.e., impossible, equally likely, certain) appropriate to grade level.	No match	
Grade 7		
7.1 <u>NUMBERS AND OPERATIONS</u>: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MA7.1.1 Students represent and order rational numbers that are greater than or equal to 0 in a variety of equivalent forms in problem-solving situations.	Partial alignment (grade level): CC content is in 3rd grade.	3.NF.6. Compare and order fractional quantities with equal numerators or equal denominators, using the fractions themselves, tape diagrams, number line representations, and area models.

		Use > and < symbols to record the results of comparisons.
MA7.1.2 Students use basic operations with integers in problem-solving situations.	Strong Alignment	7.NS.2. Understand and perform addition and subtraction with rational numbers:
MA7.1.3 Students divide decimal numbers by decimal numbers.	Partial alignment (grade level): CC content is in 5th grade.	5.NBT.10. Compute sums, differences, products, and quotients of finite decimals by expressing the decimals as fractions and adding the fractions. For example, 0.05 + 0.91 = 5/100 + 91/100 = 96/100 or 0.96.
MA7.1.4 Students explain their choice of estimation and problem- solving strategies and justify results when performing number operations with fractions and decimals in problem-solving situations appropriate to grade level. Students add and subtract fractions and mixed numbers.	Partial alignment (grade level): CC content is in 5th grade.	5.NF.5. Compute sums and differences of fractions with like or unlike denominators, and solve word problems involving addition and subtraction of fractions. Estimate fraction sums and differences to assess the reasonableness of results.
	Weak alignment: CC content is in 5th grade. In addition, the WY content emphasizes the skill, while the CC content emphasizes the concept.	5.NF.4. Understand that sums and differences of fractions with unlike denominators can be computed by replacing each with an equivalent fraction so that the resulting fractions have the same denominator. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12.
	Partial alignment (grade level): CC content is in 5th grade.	5.NF.8. Explain and justify the properties of operations with fractions, e.g., by using equations, number line representations, area models, and story contexts.
	Weak alignment: CC content is in 6th grade and is more specific. CC specifies solving word	6.NS.3. Solve word problems requiring arithmetic with fractions,

	problems and using properties of operation and conversion.	using the properties of operations and converting between forms as appropriate; estimate to check reasonableness of answers.
MA7.1.5 Students multiply and divide fractions and mixed numbers.	Weak alignment: CC content is in 5th grade, and the WY content emphasizes the skill, while the CC content emphasizes the concept. Weak alignment: CC content is in 5th grade and is more specific. CC specifies solving word problems and representing calculation using equations, area models, and length models. Weak alignment: CC content is in 6th grade and emphasizes the concept, while the WY content emphasizes the skill. Weak alignment: CC content is in 5th grade, and the WY content emphasizes the skill, while the CC content emphasizes the concept.	5.NF.9. Understand division of unit fractions by whole numbers and division of whole numbers by unit fractions: 5.NF.10. Calculate products of fractions, and quotients of unit fractions and nonzero whole numbers (with either as divisor), and solve word problems involving these operations. Represent these operations using equations, area models and length models. 6.NS.2. Understand that division of fractions is defined by viewing a quotient as the solution for an unknown-factor multiplication problem. For example, (2/3) ÷ (5/7) = 14/15 because (5/7) × (14/15) = (2/3). 5.NF.6. Understand that multiplying a fraction by a/b means taking a parts of a decomposition of the fraction into b equal parts. For example, to multiply 2/3 × 4/5 = 8/15, one may decompose a whole of size 4/5 into 3 equal parts; each part has size 4/15. Two of these parts then make 8/15, so 2/3 × 4/5 = 8/15. (In general, a/b × p/q = ap/bq.) This standard includes multiplication of a whole

		number by a fraction, by writing the whole number as fraction with denominator 1.
MA7.1.6 Students evaluate whole numbers expressed in exponential form.	Partial alignment (grade level): CC content is found in high school.	HS.N.RN.1. Understand that the laws of exponents for positive integer exponents follow from an understanding of exponents as indicating repeated multiplication, and from the associative law for multiplication.
MA7.1.7 Students apply the order of operations (whole numbers including grouping symbols and operations, excluding roots and powers) in problem-solving situations.	No match	
7.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MA7.2.1 Students classify and describe one- and two-dimensional geometric objects, including: • lines, rays, segments, and angles; • parallel and perpendicular relationships; and • regular polygon types.	Weak alignment: CC specifies which parallel and perpendicular relationships should be understood. In addition, CC requires students to justify those relationships, and WY requires students to describe them. Weak alignment: CC specifies which parallel and perpendicular relationships should be understood. In addition, CC requires students to use those relationships, and WY requires students to describe them.	7.G.8. Justify facts about the angle sum of triangles, exterior angles, and alternate interior angles created when parallel lines are cut by a transversal, e.g., by using physical models, transparencies, or dynamic geometry software to make rigid motions and give informal arguments. For example, arrange three copies of the same triangle so that the three angles appear to form a line, and give an argument in terms of transversals why this is so. 7.G.9. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an

		unknown angle in a figure
MA7.2.2 Students make conjectures about geometric figures based on knowledge of congruence and similarity.	Weak alignment: CC content is in 8th grade and is more specific. CC specifies using AA and SAS criteria to prove theorems.	8.G.5. Give an informal explanation using similarity transformations of the AA and SAS criteria for triangle similarity, and use them to prove simple theorems.
	Partial alignment (implicit): WY content emphasizes the skill, while the CC content emphasizes the concept.	7.G.2. Understand the meaning of congruence: a plane figure is congruent to another if the second can be obtained from the first by a rigid motion.
	Partial alignment (implicit): WY content emphasizes the skill, while the CC content emphasizes the concept.	7.G.4. Understand the meaning of similarity: a plane figure is similar to another if the second can be obtained from the first by a similarity transformation (a rigid motion followed by a dilation).
	Weak alignment: Content is similar, but there is a significant difference in the phrasing. WY content is about making conjectures based on knowledge of similarity, while CC content is about solving problems that involve similar figures.	7.G.5. Solve problems involving similar figures and scale drawings. Include computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
	Weak alignment: CC content is in 8th grade and is more specific. CC specifies what aspects of congruence to use and what conjectures to make.	8.G.3. Give an informal explanation using rigid motions of the SAS and ASA criteria for triangle congruence, and use them to prove simple theorems.
	Weak alignment: CC content is in 8th grade and is more specific. CC specifies using rigid motion to explain why triangles are congruent.	8.G.2. Explain using rigid motions the meaning of congruence for triangles as the equality of all pair

		of sides and all pairs of angles.
MA7.2.3 Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.	No match	
7.3 <u>MEASUREMENT</u>: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MA7.3.1 Students apply estimation and measurement of length to content problems and convert within the U.S. customary (in, ft, yd, mi) and within the metric system (mm, cm, m, km).	Partial alignment (grade level): CC content is in 5th grade.	5.MD.3. Convert among different-sized standard measurement units within a given measurement system (e.g., feet to yards, centimeters to meters) and use conversion in solving multi-step word problems.
MA7.3.2 Students apply estimation and measurement of weight to content problems expressing the results in metric units (g, kg).	No match	
MA7.3.3 Students apply estimation and measurement of capacity to content problems expressing the results in metric units (liters).	No match	
MA7.3.4 Students determine the circumference of a circle using models.	Partial alignment (scope): CC emphasizes using formulas to find circumference, while WY emphasizes using models.	7.G.7. Know the formulas relating the area, radius and circumference of a circle and solve problems requiring the use of these formulas; give an informal derivation of the relationship between the circumference and area of a circle.
MA7.3.5 Students calculate the areas of triangles and trapezoids.	Weak alignment: CC content is in 6th grade and is more specific. CC specifies the types of triangles and the method used to find area.	6.G.2. Find the areas enclosed by right triangles, other triangles, special quadrilaterals, and polygons (by composing into rectangles or decomposing into triangles and other shapes).

MA7.3.6 Students measure angles with a protractor.	Partial alignment (grade level): CC content is in 6th grade. Weak alignment: CC content is in 4th grade and is more difficult. CC includes problem solving with angles.	6.G.5. Solve problems involving area, volume and surface area of objects. 4.MD.6. Measure angles in whole-number degrees using a protractor; sketch angles of specified measure; find the measure of a missing part of an angle, given the measure of the angle and the measure of a part of it, representing these problems with equations involving a letter for the unknown quantity.
7.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MA7.4.1 Students translate word phrases, which involve addition and subtraction, into mathematical expressions.	Weak alignment: CC content is in 6th grade and emphasizes the skill, while the CC content emphasizes the concept. Weak alignment: CC content is in 6th grade and includes solving word problems.	6.EE.1. Understand that an expression records operations with numbers or with letters standing for numbers. For example, the expression 2 – (8 + 7) records adding 8 and 7 then multiplying by 2; the expression 5 – y records subtracting y from 5. Focus on the operations of addition, subtraction, multiplication and division, with some attention to square or cube roots. 6.EE.7. Choose variables to represent quantities in a word problem, and construct simple expressions or equations to solve the problem by reasoning about the quantities.
MA7.4.2 Students solve one-step linear equations.	Weak alignment: CC is in 6th grade and is more	6.EE.6. Using the idea of

	specific. CC specifies using the idea of maintaining equality to solve linear equations.	maintaining equality between both sides of the equation, solve equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.
MA7.4.3 Students evaluate algebraic expressions and formulas, using order of operations, given positive integer values for variables.	Strong alignment	7.EE.1. Interpret numerical expressions at a level necessary to calculate their value using a calculator or spreadsheet. For expressions with variables, use and interpret conventions of algebraic notation, such as y/2 is y ÷ 2 or 1/2 × y; (3 ± y)/5 is (3 ± y) ÷ 5 or 1/5 × (3 ± y); a2 is a × a, a3 is a × a × a, a2b is a × a × b.
MA7.4.4 Students understand and use basic concepts of the coordinate system, including plotting points in all four quadrants.	Weak alignment: CC content is in 5th grade and more specific. CC specifies the aspects of the coordinate system that students need to understand. Weak alignment: CC content is in 5th grade and does not include all four quadrants. In addition, CC specifies that students identify the location of ordered pairs and interpret coordinate values in problem solving situations. Weak alignment: CC content is in 6th grade and includes interpreting the coordinate values in the context of the situation.	5.G.1. Understand that a pair of perpendicular number lines, called axes, defines a coordinate system. 5.G.2. Graph points in the first quadrant of the coordinate plane, and identify the coordinates of graphed points. Where ordered pairs arise in a problem situation, interpret the coordinate values in the context of the situation. 6.NS.10. Graph points and identify coordinates of points on the coordinate plane in all four quadrants. Where ordered pairs arise in a problem situation, interpret the coordinate values in the context of the situation.

7.5 <u>DATA ANALYSIS AND PROBABILITY</u>: Students use data analysis and probability to analyze given situations and the results of experiments.		
MA7.5.1 Students systematically collect, organize, describe, and analyze data using histograms.	Weak alignment: CC content is in 6th grade and includes data displays like dot plots or box plots. Weak alignment: CC content is in 6th grade and is more specific. CC specifies several items such as: reporting the number of observations in a data set and describing the nature of the variable.	6.SP.3. Display numerical data in plots on a number line, including dot plots, histograms, and box plots. 6.SP.4. Summarize numerical data sets, such as by: a) Reporting the number of observations. b) Describing the nature of the variable, including how it was measured and its units of measurement. Data sets can include fractional values at this grade but not negative values. c) Describing center and variation, as well as describing any overall pattern and any striking deviations from the overall pattern.
MA7.5.2 Students calculate mean, median, mode, and range for data sets and use in real world setting.	Weak alignment: CC content is in 6th grade and emphasizes the concept, while the WY content emphasizes the skill.	6.SP.2. Understand that a set of data generated by answers to a statistical question typically shows variability—not all of the values are the same—and yet often the values show an overall pattern, often with a tendency to cluster. a. A measure of center for a numerical data set summarizes all of its values

		using a single number. The median is a measure of center in the sense that approximately half the data values are less than the median, while approximately half are greater. The mean is a measure of center in the sense that it is the value that each data point would take on if the total of the data values were redistributed fairly, and in the sense that it is the balance point of a data distribution shown on a dot plot. b. A measure of variation for a numerical data set describes how its values vary using a single number. The interquartile range and the mean absolute deviation are both measures of variation.
MA7.5.3 Students predict, compare, and report as ratios probable outcomes of experiments or simulations (i.e., impossible, equally likely, certain).	Weak alignment: CC content is in 6th grade. In addition, while the content is similar, there is some difference in emphasis. Both documents require students to know what a ratio is, but WY only requires ratios in context of probability, while CC requires it in other contexts.	6.RP.1. Understand the concept of a ratio: Two quantities are said to be in a ratio of a to b when for every a units of the first quantity there are b units of the second. For example, in a flock of birds, the ratio of wings to beaks might be 2 to 1; this ratio is also written 2:1. In Grade 6, limit to ratios of whole numbers.

	Partial alignment (grade level): CC content is in 6th grade.	6.RP.4. Describe categorical data sets using ratios (e.g., for every vote candidate A received, candidate C received nearly three votes; the ratio of type O blood donors to type B blood donors was 9:2).
Grade 8		
8.1 NUMBERS AND OPERATIONS: Students use numbers, number sense, and number relationships in a problem-solving situation.		
MA8.1.1 Students represent and apply numbers in a variety of equivalent forms (such as changing from percent to decimal to fraction, etc.) and in a problem-solving context: • prime factors, factors, and multiples; • rational numbers and proportions; and • square roots and powers.	Weak Alignment: CC content is in 7th grade and is more specific. CC specifies solving proportions in everyday situations.	7.RP.3. Compute unit rates and solve proportional relationship problems in everyday contexts, such as shopping, cooking, carpentry, party planning, etc. Represent proportional relationships by equations that express how the quantities are related via the constant of proportionality or unit rate. For example, total cost, t, is proportional to the number, n, purchased at a constant price, p; this relationship can be expressed as t = pn.
	Weak Alignment: CC content is in 7th grade and emphasizes the concept, while the WY content emphasizes the skill.	7.RP.6. Understand that percentages are rates per 100. For example, 30% of a quantity means 30/100 times the quantity. A percentage can be a complex fraction, as in 3.75% = 3.75/100.
	Weak Alignment: CC content is in 7th grade and is more specific. CC specifies solving proportions that use percentages.	7.RP.7. Find a percentage of a quantity; solve problems involving finding the whole given a part and the percentage.

	Weak alignment: CC content is in 7th grade. In addition, The WY content emphasizes the skill, while the CC content emphasizes the concept.	6.RP.1. Understand the concept of a ratio: Two quantities are said to be in a ratio of a to b when for every a units of the first quantity there are b units of the second. For example, in a flock of birds, the ratio of wings to beaks might be 2 to 1; this ratio is also written 2:1. In Grade 6, limit to ratios of whole numbers.
	Weak match: CC content is in 7th grade. In addition, the WY content emphasizes the skill, while the CC content emphasizes the concept.	7.RP.2. Recognize situations in which two quantities covary and have a constant ratio. (The quantities are then said to be in a proportional relationship and the unit rate is called the constant of proportionality.) Decide whether two quantities that covary are in a proportional relationship, e.g., by testing for equivalent ratios or graphing on a coordinate plane.
	Weak alignment: CC content is in 7th grade, and is more specific. CC specifies which problem solving contexts should be used when using proportions.	7.SP.2. Use proportional reasoning to predict relative frequencies of outcomes for situations involving randomness, but for which a theoretical answer can be determined. For example, when rolling a number cube 600 times, one would predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. How far off might your prediction be? Use technology to generate multiple samples to approximate a distribution of sample proportions.

		Repeat the process for smaller sample sizes.
MA8.1.2 Students extend understanding and use of basic arithmetic operations on rational numbers. • Simplify numerical expressions using the order of operations; • Order rational numbers expressed in a variety of forms .	Weak Alignment: CC content is in 7th grade and the content is similar, with some difference in emphasis. CC emphasizes the interpretation of numerical expressions for calculation when using a calculator or spreadsheet.	7.EE.1. Interpret numerical expressions at a level necessary to calculate their value using a calculator or spreadsheet. For expressions with variables, use and interpret conventions of algebraic notation, such as y/2 is y ÷ 2 or 1/2 × y; (3 ± y)/5 is (3 ± y) ÷ 5 or 1/5 × (3 ± y); a2 is a × a, a3 is a × a × a, a2b is a × a × b.
MA8.1.3 Students explain their choice of estimation and problem- solving strategies and justify results of solutions in problem-solving situations involving rational numbers.	Weak alignment: CC content is in 4th grade. CC includes mental computation. WY specifies justifying results when using rational numbers.	4.NOP.4. Assess the reasonableness of answers using mental computation and estimation strategies including rounding to the nearest 10 or 100.
MA8.1.4 Students understand properties of operations with rational numbers.	Weak alignment: CC content is found in 7th grade and is more specific. CC specifies which properties students should understand (additive inverse). Weak alignment: CC content is in 3rd grade and is more specific. CC content specifies understanding the properties of multiplication.	7.NS.2. Understand and perform addition and subtraction with rational numbers: 3.NOP.2. Understand the properties of multiplication. a. Multiplication is commutative*. For example, the total number in 3 groups with 6 things each is the same as the total number in 6 groups with 3 things each, that is, 3 × 6 = 6 × 3.* b. Multiplication is associative. *For example, 4 × 3 × 2 can be calculated by first calculating 4 × 3 = 12 then calculating 12 × 2 = 24, or by first calculating 3*

		× *2 = 6 then calculating 4 × 6 = 24.* c. 1 is the multiplicative identity. d. Multiplication distributes over addition (the distributive property). *For example, 5 × (3 + 4) = (5 × 3) + (5 × 4).*
	Weak alignment: CC content is in 3rd grade and is more specific. CC specifies all the properties of multiplication and division.	3.NOP.3. Explain and justify properties of multiplication and division, e.g., by using representations such as objects, drawings, and story contexts. Include properties such as: a. Changing the order of two factors does not change their product.
	Weak alignment: CC content is in 3rd grade and is more specific. The CC standard specifies understanding and using the distributive property.	3.NBT.7. Understand that the distributive property is at the heart of strategies and algorithms for multiplication and division computations with numbers in base-ten notation; use the distributive property and other properties of operations to explain patterns in the multiplication table and to derive new multiplication and division equations from known ones. *For example, the distributive property makes it possible to multiply 4 × 7 by decomposing 7 as 5 + 2 and using 4 × 7 = 4 × (5 + 2) = (4 × 5) + (4 × 2) = 20 + 8 = 28.*
	Weak alignment: CC content is in 4th grade and is more specific. CC specifies the property	4.NBT.3. Understand how the distributive property and the

	(distributive property) and the expanded form of a multi-digit number that students need to understand.	expanded form of a multi-digit number can be used to calculate products of multi-digit numbers.
	Weak alignment: CC content is in 6th grade and is more specific. CC specifies that the properties of operation can be applied to addition and multiplication of fractions.	6.NS.1. Understand that the properties of operations apply to, and can be used with, addition and multiplication of fractions.
	Weak alignment: CC content is in 7th grade and includes performing operations.	7.NS.2. Understand and perform addition and subtraction with rational numbers:
	Weak Alignment: CC content is in 7th grade and is more specific. CC specifies understanding additive inverse.	7.NS.2. Understand and perform addition and subtraction with rational numbers:
	Weak Alignment: CC content is in 7th grade and is more specific. CC specifies performing multiplication and division operations with rational numbers.	7.NS.3. Understand and perform multiplication and division with rational numbers:
	Weak alignment: CC content is in 1st grade and is more specific. CC specifies that students understand the properties of addition.	1.NOP.1. Understand the properties of addition. a. Addition is commutative. *For example, if 3 cups are added to a stack of 8 cups, then the total number of cups is the same as when 8 cups are added to a stack of 3 cups; that is, 8 + 3 = 3 + 8.* b. Addition is associative. *For example, 4 + 3 + 2 can be found by first adding 4 + 3 = 7 then adding 7 + 2 = 9, or by first adding 3 + 2 = 5 then adding 4 + 5 = 9.* c. 0 is the additive identity.
	Weak alignment: CC content is in 1st grade and is more specific. CC content specifies explaining	1.NOP.2. Explain and justify properties of addition and

	and justifying properties of addition and subtraction. Weak alignment: CC content is in 2nd grade and is more specific. CC specifies that students understand various properties of numbers.	subtraction, e.g., by using representations such as objects, drawings, and story contexts. Explain what happens when: 2.NOP.1. Explain and justify properties of addition and subtraction, e.g., by using representations such as objects, drawings, and story contexts. Include properties such as: a. Changing the order of addends does not change their sum. b. Subtracting one addend from a sum of two numbers results in the other addend. If more is subtracted from a number, the difference is decreased, and if less is subtracted the difference is increased. d. In an addition equation, each addend can be decomposed and the parts can be recombined in any order without changing the sum. *For example, 5 + 3 = 8. Because 5 decomposes as 4 + 1, the first addend can be replaced by 4 + 1, yielding (4 + 1) + 3 = 8. Recombining in two different orders: 4 + 4 = 8, also 7 + 1 = 8.*
8.2 <u>GEOMETRY</u>: Students apply geometric concepts, properties, and relationships in a problem-solving situation.		
MA8.2.1 Students classify and describe one-, two-, and three-dimensional geometric objects,	Weak alignment: CC content is found in 7th grade, and is more specific. CC specifies which parallel	7.G.8. Justify facts about the angle sum of triangles, exterior angles,

including: • lines, rays, segments, and angles; • parallel and perpendicular relationships; • circles and spheres; • regular polygon types; • right prisms, cylinders, cones, and pyramids.	and perpendicular relationships should be understood. In addition, CC requires students to justify those relationships, and WY requires students to describe them. Weak alignment: CC content is in 7th grade, and is more specific than CC. CC specifies which parallel and perpendicular relationships should be understood. In addition, CC requires students to use those relationships, and WY requires students to describe them.	and alternate interior angles created when parallel lines are cut by a transversal, e.g., by using physical models, transparencies, or dynamic geometry software to make rigid motions and give informal arguments. For example, arrange three copies of the same triangle so that the three angles appear to form a line, and give an argument in terms of transversals why this is so. 7.G.9. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure
MA8.2.2 Students make conjectures about geometric objects based on knowledge of geometric transformations, congruence, and similarity.	Weak Alignment: CC content is in 7th grade and is more specific. CC specifies making conjectures about figures that are dilated by different scale factors. Partial alignment (specificity): CC content is more specific. CC specifies what aspects of congruence to use and what conjectures to make. Strong alignment	7.G.6. Use informal arguments involving approximation by lines, squares, and cubes to see that a similarity transformation with a scale factor of k leaves angle measures unchanged, changes lengths by a factor of k, changes areas by a factor of k2, and changes volumes by a factor of k3. 8.G.3. Give an informal explanation using rigid motions of the SAS and ASA criteria for triangle congruence, and use them to prove simple theorems. 8.G.4. Explain using similarity transformations the meaning of similarity for triangles as the

		equality of all pairs of angles and the proportionality of all pairs of sides.
	Partial alignment (specificity): CC content is specific. CC specifies using ASA and SAS criteria to prove theorems.	8.G.5. Give an informal explanation using similarity transformations of the AA and SAS criteria for triangle similarity, and use them to prove simple theorems.
	Weak alignment: CC content is in 7th grade, and is more specific. CC specifies what types of conjectures should be made.	7.G.1. Verify experimentally the fact that a rigid motion (a sequence of rotations, reflections, and translations) preserves distance and angle, e.g., by using physical models,
	Partial alignment (specificity): CC content is in 7th grade, and is more specific. CC specifies which type of transformation and what kinds of conjectures should be made.	7.G.3. Verify experimentally that a dilation with scale factor k preserves lines and angle measure, but takes a line segment of length L to a line segment of length kL.
	Partial alignment (specificity): CC content is more specific. CC specifies using rigid motion to explain why triangles are congruent.	8.G.2. Explain using rigid motions the meaning of congruence for triangles as the equality of all pair of sides and all pairs of angles.
MA8.2.3 Students use geometric formulas including the Pythagorean Theorem.	Partial alignment (specificity): CC content is more specific. CC specifies how the sides of a right triangle relate to the Pythagorean Theorem.	8.G.6. The side lengths of a right triangle are related by the Pythagorean Theorem. Conversely, if the side lengths of a triangle satisfy the Pythagorean Theorem, it is a right triangle.
	Weak alignment: Content is similar, but there is a significant difference in the phrasing or emphasis.	8.G.7. Explain a proof of the Pythagorean Theorem and its

	While both CC and WY content is related to the Pythagorean Theorem, CC emphasizes explaining the proof of the Pythagorean Theorem, and WY emphasizes the use of formulas. Partial alignment (specificity): CC content is more specific. CC specifies a type of use for the Pythagorean Theorem. Partial alignment (specificity): CC content is more specific. CC specifies using the Pythagorean Theorem to find the distance between two points.	converse. 8.G.8. Use the Pythagorean Theorem to determine unknown side lengths in right triangles and to solve problems in two and three dimensions. 8.G.9. Use the Pythagorean Theorem to find the distance between two points in a coordinate system
MA8.2.4 Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.	No match	
MA8.2.5 Students represent geometric figures using a rectangular coordinate plane.	Partial alignment (scope): CC content is more difficult because the WY content is prerequisite to the CC content. Students have to be able to represent geometric figures in the coordinate plane before they can perform dilations in the coordinate plane.	8.G.1. Use coordinate grids to transform figures and to predict the effect of dilations, translations, rotations and reflections.
8.3 <u>MEASUREMENT</u>: Students use a variety of tools and techniques of measurement in a problem-solving situation.		
MA8.3.1 Students apply estimation and measurement of weight/mass to content problems and convert within U.S. customary and within metric units (mg, g, kg).	No match	
MA8.3.2 Students apply estimation and measurement of capacity/volume to content problems and convert within metric units (ml, l).	Weak alignment: CC content is in 5^{th} grade and emphasizes the concept, while the WY content emphasizes the skill.	5.MD.4. Understand concepts of volume measurement:
MA8.3.3 Students select and use the appropriate methods, tools, and units to solve problems	Partial alignment (grade level): CC content is in 6^{th} grade.	6.G.5. Solve problems involving area, volume and surface area of

involving angle measure, perimeter, circumference, area (including circles), and volume of rectangular solids.	Weak alignment: CC content is in 7th grade, and is more specific. CC content specifies the use of exponents and symbols for square and cube roots when using the appropriate units for volume. Weak alignment: CC content is in 7th grade and is more specific. CC specifies that students know the formulas that relate radius to the area and circumference of a circle.	objects. 6.G.7. Use exponents and symbols for square roots and cube roots to express the area of a square and volume of a cube in terms of their side lengths, and to express their side lengths in terms of their area or volume. 7.G.7. Know the formulas relating the area, radius and circumference of a circle and solve problems requiring the use of these formulas; give an informal derivation of the relationship between the circumference and area of a circle.
8.4 <u>ALGEBRA</u>: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.		
MA8.4.1 Students translate word phrases, which involve the four basic operations to mathematical expressions.	Partial alignment (grade level): CC content is in 4th grade. Weak alignment: CC content is in 7th grade, and is more specific. CC specifies the types of word problems students should solve.	4.NOP.2. Solve multistep word problems involving the four operations with whole numbers. 7.EE.3. Choose variables to represent quantities in a word problem, and construct simple equations to solve the problem by reasoning about the quantities.
MA8.4.2 Students solve one- and two- step linear equations each with an integer coefficient and integer solutions.	Partial alignment (specificity): CC specifies the forms of the linear equations.	6.EE.6. Using the idea of maintaining equality between both sides of the equation, solve equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational

		numbers.
	Weak alignment: CC content is in 6th grade and emphasizes the concept, while the WY content emphasizes the skill.	6.EE.5. Understand that an equation is a statement that two expressions are equal, and a solution to an equation is a replacement value of the variable (or replacement values for all the variables if there is more than one) that makes the equation true.
	Partial alignment (specificity): CC content is more specific. CC specifies solving equations that have rational coefficients and those that require expanding expression using the distributive law and collecting like terms.	8.EE.2. Solve linear equations with rational number coefficients, including equations that require expanding expressions using the distributive law and collecting like terms.
MA8.4.3 Students evaluate algebraic expressions and formulas given integer values for variables.	Partial alignment (grade level): CC content is in 7th grade.	7.EE.1. Interpret numerical expressions at a level necessary to calculate their value using a calculator or spreadsheet. For expressions with variables, use and interpret conventions of algebraic notation, such as y/2 is y ÷ 2 or 1/2 × y; (3 ± y)/5 is (3 ± y) ÷ 5 or 1/5 × (3 ± y); a2 is a × a, a3 is a × a × a, a2b is a × a × b.
MA8.4.4 Using simple linear equations, students create a table, and graph the solutions on the coordinate system.	Strong alignment	8.EE.7 Graph proportional relationships and relationships defined by a linear equation; find the slope and interpret the slope in context.
8.5 DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.		
MA8.5.1 Students systematically collect, organize, describe, analyze, and represent data using	Weak alignment: CC content is in 6th grade and is more specific. CC specifies several items such	6.SP.4. Summarize numerical data sets, such as by:

tables, charts, diagrams, and graphs.	as: reporting the number of observations in a data set and describing the nature of the variable.	d) Reporting the number of observations. e) Describing the nature of the variable, including how it was measured and its units of measurement. Data sets can include fractional values at this grade but not negative values. f) Describing center and variation, as well as describing any overall pattern and any striking deviations from the overall pattern.
MA8.5.2 Students calculate mean, median, mode, and range for data sets and use in a real-world setting appropriate to grade level.	Weak alignment: CC content is in 6th grade and emphasizes the concept, while the WY content emphasizes the skill.	6.SP.2. Understand that a set of data generated by answers to a statistical question typically shows variability—not all of the values are the same—and yet often the values show an overall pattern, often with a tendency to cluster.
MA8.5.3 Students predict, compare, and calculate probable outcomes of experiments or simulations.	Weak alignment: CC content is in 6th grade. In addition, while the content is similar, there is some difference in emphasis. Both documents require students to know what a ratio is, but WY only requires ratios in context of probability, while CC requires it in other contexts.	6.RP.1. Understand the concept of a ratio: Two quantities are said to be in a ratio of a to b when for every a units of the first quantity there are b units of the second. For example, in a flock of birds, the ratio of wings to beaks might be 2 to 1; this ratio is also written 2:1. In Grade 6, limit to ratios of whole numbers.
MA8.5.4 Students communicate about the likelihood of events using concepts from probability such as impossible, equally likely and certain appropriate to grade level.	No match	