Wyoming Department of Education Required Virtual Education Course Syllabus

Natrona County School District # 1

Program Name	Natrona Virtual Learning	Content Area	MA
Course ID	NVA030401	Grade Level	4
Course Name	Math Red Grade 4	of Credits	
SCE Code	30401	Curriculum Type	K1 Inc

COURSE DESCRIPTION

This research-based course focuses on computational fluency, conceptual understanding, and problem-solving. The engaging course features new graphics, learning tools, and games; adaptive activities that help struggling students master concepts and skills before moving on; and more support for Learning Coaches to guide their students to success. This course for students in Grade 4 moves into applications and properties of operations. Students work with simple fraction and decimal operations, which are applied in the study of measurement, probability, and data, and practice mathematical reasoning techniques. Students begin the study of equivalencies between fractions and decimals on the number line and early work with integers. Algebraic thinking is developed as students work with variables, coordinate graphing, and formulas in problems involving perimeter, area, and rate. Geometry is extended into greater classification of shapes and work with lines, angles and rotations.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK_(Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
4.OA.1	Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
4.OA.2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
4.OA.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
4.OA.4	Find all factor pairs for whole number in the range 1-100. Recognize that whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is multiple of given one-digit number. Determine whether a

	given whole number in the range 1-100 is prime or composite.
4.OA.5	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between od and even numbers. Explain informally why the numbers will continue to alternate in this way.
4.NBT.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 1 by applying concepts of place value and division. (Grade expectations in this domain are limited to whole numbers less than or equal to 1,000,000.)
4.NBT.2	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based o meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.)
4.NBT.3	Use place value understanding to round multi-digit whole numbers to any place. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.)
4.NBT.4	Fluently add and subtract multi-digit whole numbers using the standard algorithm. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.)
4.NBT.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based o place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.)
4.NBT.6	Find whole-number quotients and remainders with u to four-digit dividends and one-digit divisors, using strategies based o place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.)
4.NF.1	Explain why fraction a/b is equivalent to fraction (n a)/(n b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. (Grade expectations in this domain are limited to

	fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.2	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using visual fraction model. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.3	Understand a fraction a/b with a > 1 as a sum of fractions 1/b. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.3a	Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
4.NF.3b	Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.
4.NF.3c	Ad and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
4.NF.3d	Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
4.NF.4	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.4a	Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = × (1/4).
4.NF.4b	Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express × (2/5) as × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)
4.NF.4c	Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at party will eat 3/8 of pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

4.NF.5	Express fraction with denominator 1 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100 and add 3/10 4/100 34/100. (Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.) (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.6	Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100 ; describe length as 0.62 meters; locate 0.62 on number line diagram. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.NF.7	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons comparisons are valid only when two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)
4.MD.1	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in two-column table. For example: Know that 1 ft is 12 times as long as in. Express the length of a 4 f snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ….
4.MD.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
4.MD.3	Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.
4.MD.4	Make a line 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 line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.
4.MD.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: **a.** A angle is measured with reference to a circle with its center at the common endpoint of the

	rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. **b.** A angle that turns through n one-degree angles is said to have an angle measure of degrees.	
4.MD.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	
4.MD.7	Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles o a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	
4.G.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	
4.G.2	Classify two-dimensional figures based o the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	
4.G.3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Whole Number Sense Place Value Through 1,000,000	4.NBT.1 4.NBT.2	Identify the place value for each digit in whole numbers through 100,000,000. Identify the place value for each digit in whole numbers through 10,000. Identify the place value for each digit in whole numbers through 1,000,000.
Whole Number Sense Numbers Through 1,000,000	4.NBT.2	Write numerals through 1,000,000. Read numerals and number words through 1,000,000. Demonstrate automatic recall of addition facts with sums through 20. Use the inverse relationship of multiplication and division to compute and check results. Demonstrate automatic recall of multiplication facts. Demonstrate automatic recall of subtraction facts with minuends through 20. Read whole numbers through 10,000. Write numerals through 10,000.

Whole Number Sense Expanded Form Through 1,000,000	4.NBT.2	Use expanded form to represent numbers through 1,000,000. Use expanded form to represent numbers through 10,000.
Whole Number Sense Compare and Order Greater Numbers (A)	4.NBT.2	Use expanded form to represent numbers through 1,000,000. Compare whole numbers through 10,000. Compare and order numbers through 1,000,000. Determine a missing number in an equation or an inequality. Demonstrate automatic recall of multiplication facts.
Whole Number Sense Compare and Order Greater Numbers (B)	4.NBT.2	Compare and order numbers through 1,000,000.
Whole Number Sense Using Boundary Numbers for Rounding	4.NBT.3	Roun whole numbers through 1,000,000. Roun whole numbers through 10,000.
Whole Number Sense Core Focus		Roun whole numbers through 1,000,000. Identify the place value for each digit in whole numbers through 1,000,000.
Whole Number Sense Unit Review		Identify the place value for each digit in whole numbers through 1,000,000. Write numerals through 1,000,000. Use expanded form to represent numbers through 1,000,000. Roun whole numbers through 1,000,000. Read numerals and number words through 1,000,000. Compare and order numbers through 1,000,000.
Whole Number Sense 1 Unit Checkpoint		Read numerals and number words through 1,000,000.
Whole Number Sense 1 Extended Problems: Reasoning		Analyze complex problems using mathematical knowledge and skills.
Whole Number Operations 1 Estimate to Solve Problems (A)	4.NBT.3 4.OA.3	Use an inverse relationship to simplify a computation or check a result. Explain and apply standard step-by-step approaches for multiplication. Explain and apply standard step-by-step approaches for addition. Explain and apply standard step-by-step approaches for subtraction. Explain and apply standard step-by-step approaches for division of multidigit number by 1- or 2-digit divisor. Define and identify a prime number. Estimate sums and differences on number line. Demonstrate automatic recall of addition facts with sums through 20.

		Demonstrate automatic recall of subtraction facts with minuends through 20.
		Use the inverse relationship of multiplication and division to compute and check results.
		Demonstrate automatic recall of multiplication facts.
		Determine the reasonableness of an answer using estimation, rounding, or mental computation.
Whole Number Operations 2 Estimate to Solve Problems (B)	4.NBT.3 4.OA.3	Use estimation to predict a solution to a story problem and to determine whether calculations are reasonable.
		Recognize and solve a story problem in which a quantity changes by addition or subtraction.
		Represent a multistep word problem as an equation, using a letter to represent the unknown.
		Solve multistep word problems using whole numbers.
		Solve problems using estimation, rounding, or mental computation.
Whole Number Operations 3 Add Whole Numbers	4.NBT.4	Explain and apply standard step-by-step approaches for addition.
		Determine the sum or difference of two whole numbers.
		Use expanded form to represent numbers through 100,000,000.
		Roun a whole number.
		Identify the place value for each digit in whole numbers through 100,000,000.
Whole Number Operations 4 Subtract Whole Numbers	4.NBT.4	Explain and apply standard step-by-step approaches for subtraction.
		Use an inverse relationship to simplify a computation or check a result.
		Use the inverse relationship between addition and subtraction to solve problems.
		Determine the sum or difference of two whole numbers.
		Determine a missing number in an equation or an inequality.
Whole Number Operations 5 Multiply Multidigit Numbers (A)	4.NBT.5 4.OA.1	Explain and apply standard step-by-step approaches for multiplication.
		Interpret a multiplication equation as a comparison (for example, interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and times as many as 5).
		Represent verbal statements of multiplicative comparisons as multiplication equations.
		Use a model to explain multiplication as repeated addition of the same quantity.
		Solve multiplication problem involving multidigit factor and a one-digit factor.
Whole Number Operations 6 Multiply Multidigit Numbers (B)	4.NBT.5 4.OA.1	Solve multiplication problem involving multidigit factor and a one-digit factor.
		Use a model to explain multiplication as repeated addition of the same quantity.
		Interpret a multiplication equation as a comparison (for example, interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and times as many as 5).

		Represent verbal statements of multiplicative comparisons as multiplication equations. Explain and apply standard step-by-step approaches for multiplication.
Whole Number Operations 7 Area Models for Multiplication (A)	4.NBT.5 4.OA.1	Use tally charts and bar graphs to compare data (for example, find largest, smallest, most often, least often). Solve addition problems by filling in missing number or numbers in a given number sentence. Recognize and solve word problems involving sums or minuends up through 100 in which one quantity changes by addition or subtraction. Use an area model to explain multiplication. Use concrete objects or sketches of arrays to model multiplication problems. Demonstrate an understanding of multiplication as a comparison.
Whole Number Operations 8 Area Models for Multiplication (B)	4.NBT.5 4.OA.1	Multiply 2 two-digit whole numbers. Use an area model to explain multiplication.
Whole Number Operations 9 Multiply 4-Digit Numbers by 1-Digit Numbers	4.NBT.5	Explain and apply standard step-by-step approaches for multiplication. Multiply a whole number of up to four digits by a one-digit whole number. Solve multiplication problem involving a multidigit factor and a one-digit factor. Use objects or sketches to solve a division story problem.
Whole Number Operations 10 Multiply Two 2-Digit Numbers	4.NBT.5 4.OA.1	Multiply 2 two-digit whole numbers. Explain and apply standard step-by-step approaches for multiplication. Demonstrate automatic recall of multiplication facts. Use objects or sketches to solve a division story problem.
Whole Number Operations 11 Model and Explain Division	4.NBT.6	Explain division as the sharing of quantity into equal groups. Explain the meaning of the symbol. Use division to solve a story problem that involves equal groups. Explain division as repeated subtraction. Use models and math symbols to represent division. Correctly use the ÷ symbol. Recognize that the ÷ sign refers to division. Use objects or sketches to solve a division problem.
Whole Number Operations 12 Division as Sharing	4.NBT.6	Explain the meaning of the symbol. Explain division as the sharing of quantity into equal groups. Use division to solve a story problem that involves equal groups.
Whole Number Operations 14 Dividing with Remainders	4.NBT.6	Interpret the remainder in the solution to a word problem. Divide a whole number with up to four digits by one-digit number (with a remainder). Explain division as the sharing of quantity into equal groups. Use objects or sketches to solve a division story problem.

Whole Number Operations 15 Divide Greater Numbers	4.NBT.6	Solve division problem that has a multidigit dividend, a one-digit divisor, and n remainder. Use objects or sketches to solve a division problem.
Whole Number Operations 16 Different Ways to Divide (A)	4.NBT.6	Explain and apply standard step-by-step approaches for division of multidigit number by a 1- or 2-digit divisor. Explain division as the sharing of quantity into equal groups. Explain division as repeated subtraction. Use the inverse relationship of multiplication and division to compute and check results. Demonstrate automatic recall of subtraction facts with minuends through 20. Demonstrate automatic recall of multiplication facts. Demonstrate automatic recall of addition facts with sums through 20.
Whole Number Operations 17 Different Ways to Divide (B)	4.NBT.6	Divide a whole number with up to four digits by a one-digit number (with a remainder). Explain and apply standard step-by-step approaches for division of multidigit number by 1- or 2-digit divisor.
Whole Number Operations 18 Prime Numbers Less Than 100	4.OA.4	Define and identify a prime number. Define and identify prime and composite numbers. Use concrete objects or sketches of arrays to model multiplication problems. Use an area model to explain multiplication.
Whole Number Operations 19 Prime Factors	4.OA.4	Determine the prime factorization of a composite number. Demonstrate automatic recall of subtraction facts with minuends through 20. Demonstrate automatic recall of addition facts with sums through 20. Demonstrate automatic recall of multiplication facts. Use the inverse relationship of multiplication and division to compute and check results. Define and identify a prime number. Write equations to demonstrate that whole numbers can be factored in multiple ways.
Whole Number Operations 20 Core Focus		Determine the prime factorization of a composite number. Explain and apply standard step-by-step approaches for multiplication. Solve story problem involving two or more operations.
Whole Number Operations 21 Unit Review		Explain and apply standard step-by-step approaches for multiplication. Define and identify a prime number. Explain and apply standard step-by-step approaches for addition. Solve story problem involving two or more operations. Use an inverse relationship to simplify a computation or check a result. Estimate sums and differences on number line.

		Explain and apply standard step-by-step approaches for subtraction. Explain and apply standard step-by-step approaches for division of multidigit number by 1- or 2-digit divisor. Determine the prime factorization of a composite number. Use an area model to explain multiplication.
Whole Number Operations 23 Unit Checkpoint		
Whole Number Operations 24 Extended Problems: Real-World Application	4.OA.3	
Applications of Operations 1 Order of Operations (A)		Explain and apply standard step-by-step approaches for multiplication. Explain and apply standard step-by-step approaches for addition. Use parentheses and the order of operations to write or evaluate an expression. Solve division problem that has multidigit dividend, one-digit divisor, and n remainder. Use an inverse relationship to simplify a computation or check a result. Check the computation of a solution to a story problem. Solve story problem involving whole numbers. Demonstrate how and when to use the distributive property. Solve story problem involving rate.
Applications of Operations 2 Order of Operations (B)		Use parentheses and the order of operations to write or evaluate an expression. Explain and apply standard step-by-step approaches for addition. Use the order of operations to evaluate an expression. Explain and apply standard step-by-step approaches for multiplication.
Applications of Operations 3 The Distributive Property (A)		Use an inequality to represent a relationship between quantities. Extend linear pattern, such as stating what number comes next in series. Order three or more whole numbers through 10,000. Recognize and solve a story problem in which two quantities are combined. Demonstrate how and when to use the distributive property. Use the order of operations to evaluate an expression.
Applications of Operations 4 The Distributive Property (B)	4.OA.3	Use a letter to represent an unknown value in an expression or an equation. Demonstrate how and when to use the distributive property. Use the order of operations to evaluate an expression. Demonstrate automatic recall of subtraction facts with minuends through 20.

		Demonstrate automatic recall of addition facts with sums through 20. Use the inverse relationship of multiplication and division to compute and check results. Demonstrate automatic recall of multiplication facts.
Applications of Operations 5 Story Problems: Solve and Check (A)		Use an inverse relationship to simplify a computation or check a result. Solve story problem involving whole numbers. Determine the appropriate operation and use the operation to solve a story problem involving addition, subtraction, multiplication, or division. Write number words through 10,000. Determine the sum or difference of two whole numbers. Solve multiplication problem involving multidigit factor and a one-digit factor. Write numerals up to 10,000.
Applications of Operations 6 Story Problems: Solve and Check (B)	4.OA.3	Use an inverse relationship to simplify a computation or check a result. Check the computation of a solution to a story problem. Solve story problem involving whole numbers.
Applications of Operations 7 Core Focus		Demonstrate how and when to use the distributive property. Represent a multistep word problem as an equation, using a letter to represent the unknown. Solve multistep word problems using whole numbers. Determine the reasonableness of an answer using estimation, rounding, or mental computation.
Applications of Operations 8 Unit Review		Use parentheses and the order of operations to write or evaluate an expression. Solve multistep word problems using whole numbers. Solve story problem involving whole numbers. Demonstrate how and when to use the distributive property. Represent a multistep word problem as an equation, using a letter to represent the unknown. Determine the reasonableness of an answer using estimation, rounding, or mental computation. Use an inverse relationship to simplify a computation or check a result. Check the computation of a solution to a story problem. Solve story problem involving rate.
Applications of Operations 10 Unit Checkpoint		
Applications of Operations 11 Extended Problems: Reasoning		Interpret the remainder in the solution to a word problem. Solve story problem involving whole numbers. Analyze complex problems using mathematical knowledge and skills. Use an inverse relationship to simplify a computation or check a

		result. Determine the reasonableness of an answer using estimation, rounding, or mental computation. Solve multistep word problems using whole numbers. Demonstrate how and when to use the distributive property.
Lines, Angles, and Rotations 1 Line Pairs	4.G.1	Identify right angles in geometric figures or everyday objects. Identify attributes of parallelograms, rectangles, and squares. Identify lines that are parallel or intersecting. Identify lines that are perpendicular. Draw perpendicular and parallel lines and line segments. State and recognize the definitions of right angle, an acute angle, an obtuse angle, and straight angle. Recognize that 90°, 180°, 270°, and 360° are associated respectively with a ¼, ½, ¾, and full turn. Demonstrate understanding of relative angle measures. Demonstrate automatic recall of addition facts with sums through 20. Demonstrate automatic recall of subtraction facts with minuends through 20. Demonstrate automatic recall of multiplication facts. Use the inverse relationship of multiplication and division to compute and check results.
Lines, Angles, and Rotations 2 Types of Angles	4.G.1 4.MD.5	State and recognize the definitions of right angle, an acute angle, an obtuse angle, and straight angle. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify right angles in geometric figures or objects. Identify the measure of an angle in a geometric figure or object as greater than or less than a right angle.
Lines, Angles, and Rotations 3 Angles and Rotation	4.MD.5	Demonstrate understanding of relative angle measures. Recognize that 90°, 180°, 270°, and 360° are associated respectively with a ¼, ½, ¾, and full turn. State and recognize the definitions of right angle, an acute angle, an obtuse angle, and straight angle.
Lines, Angles, and Rotations 4 Angles (A)	4.MD.6 4.G.1	State and recognize the definitions of right angle, an acute angle, an obtuse angle, and straight angle. Demonstrate understanding of relative angle measures. Identify, measure, and draw angles with appropriate math tools.
Lines, Angles, and Rotations 5 Angles (B)	4.MD.6 4.G.1	Identify, measure, and draw angles with appropriate math tools. Solve division problem that has multidigit dividend, a one-digit divisor, and n remainder. Demonstrate understanding of relative angle measures.
Lines, Angles, and Rotations 6 Core Focus	4.MD.7	Recognize that for an angle decomposed into two nonoverlapping angles, the sum of the angle measures of the parts is equal to the angle measure of the whole. Given a diagram with a pair of adjacent angles, add or subtract to find an unknown angle measure.

Lines, Angles, and Rotations 7 Unit Review		Identify lines that are parallel or intersecting. Identify, measure, and draw angles with appropriate math tools. State and recognize the definitions of right angle, an acute angle, an obtuse angle, and straight angle. Recognize that 90°, 180°, 270°, and 360° are associated respectively with a ¼, ½, ¾, and full turn. Given a diagram with a pair of adjacent angles, add or subtract to find an unknown angle measure. Recognize that for an angle decomposed into two nonoverlapping angles, the sum of the angle measures of the parts is equal to the angle measure of the whole. Identify lines that are perpendicular.
Lines, Angles, and Rotations 9 Unit Checkpoint		
Lines, Angles, and Rotations 10 Extended Problems: Real-World Application		Sketch angles of specified whole-number measure. Identify the measures when an angle is decomposed into nonoverlapping parts, or the sum of the angle measures of the parts. Solve multistep word problems using whole numbers. Apply mathematical knowledge and skills to evaluate and analyze real-world situations. Measure angles in whole-number degrees using a protractor. Measure the length of an object using an appropriate tool. Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. Solve addition and subtraction problems to find unknown angles on diagram.
Fraction Sense 1 Fractions		Explain why two given fractions are equivalent. Find fraction between two numbers. Identify the fraction represented by a part of a whole figure. Explain why a/a 1. Represent a fraction with a sketch. Recognize and determine equivalent fractions. Explain and give examples of different interpretations of fractions. Demonstrate automatic recall of multiplication facts. Determine a missing number in an equation or an inequality. Write the fraction represented by a drawing that shows parts of a set or parts of a whole.
Fraction Sense 2 Sketch Fractions		Represent a fraction with a sketch. Write the fraction represented by a drawing that shows parts of a set or parts of a whole.
Fraction Sense 3 Different Meanings of Fractions (A)		Use parentheses and the order of operations to write or evaluate an expression. Demonstrate an understanding of the effects of division on whole numbers. Demonstrate automatic recall of multiplication facts.

		Explain that fraction can be used to represent part of a set, the relationship of a part to a whole, and a rational number on the number line. Explain and give examples of different interpretations of fractions.
Fraction Sense 4 Different Meanings of Fractions (B)		Explain and give examples of different interpretations of fractions. Use the inverse relationship of multiplication and division to compute and check results. Demonstrate automatic recall of subtraction facts with minuends through 20. Demonstrate automatic recall of multiplication facts. Demonstrate automatic recall of addition facts with sums through 20.
Fraction Sense 5 (Optional) Your Choice		Identify and master skills and tasks from earlier in the course that have not yet been mastered.
Fraction Sense 6 Different Meanings of Fractions (C)		Demonstrate an understanding of the inverse relationship between multiplication and division. Demonstrate an understanding of how multiplication affects whole numbers. Determine elapsed time to the nearest minute. Explain and give examples of different interpretations of fractions. Explain that fraction can be used to represent part of set, the relationship of a part to a whole, and a rational number on the number line.
Fraction Sense 7 Different Meanings of Fractions (D)		Explain and give examples of different interpretations of fractions. Determine a missing number in an equation or an inequality. Explain that fraction can be used to represent part of set, the relationship of a part to a whole, and rational number on the number line.
Fraction Sense 8 Explain Equivalent Fractions (A)	4.NF.1	Explain why two given fractions are equivalent. Identify a few simple equivalent fractions, such as 1/2 = 2/4. Explain and give examples of different interpretations of fractions. Determine the sum or difference of two whole numbers. Explain and apply the zero property of multiplication. Use an area model to explain multiplication.
Fraction Sense 9 Explain Equivalent Fractions (B)	4.NF.1	Explain why two given fractions are equivalent. Identify a few simple equivalent fractions, such as 1/2 = 2/4. Explain and give examples of different interpretations of fractions.
Fraction Sense 10 Determine Equivalent Fractions (A)	4.NF.1	Explain and give examples of different interpretations of fractions. Explain why two given fractions are equivalent. Explain why a/a 1. Demonstrate automatic recall of addition facts with sums through 20. Use the inverse relationship of multiplication and division to compute and check results. Demonstrate automatic recall of subtraction facts with minuends through 20.

		Demonstrate automatic recall of multiplication facts.
		Recognize and determine equivalent fractions.
Fraction Sense 11 Determine Equivalent Fractions (B)	4.NF.1	Recognize and determine equivalent fractions. Explain why two given fractions are equivalent. Explain and give examples of different interpretations of fractions.
Fraction Sense 13 Compare Fractions (A)	4.NF.2	Explain why fraction is greater than, equal to, or less than another fraction; limited to fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100. Solve division problem that has multidigit dividend, one-digit divisor, and n remainder. Demonstrate how fractions and whole numbers can be plotted o a number line.
Fraction Sense 14 Compare Fractions (B)	4.NF.2	Explain why fraction is greater than, equal to, or less than another fraction; limited to fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100. Compare two fractions with different numerators and different denominators using the symbols >, =, or <; limited to fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100.
Fraction Sense 15 Core Focus		Compare two fractions with different numerators and different denominators using the symbols >, =, or <; limited to fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100. Recognize and determine equivalent fractions. Explain why two given fractions are equivalent. Demonstrate how fractions and whole numbers can be plotted on a number line.
Fraction Sense 16 Unit Review		Explain why a/a 1. Explain and give examples of different interpretations of fractions. Identify the fraction represented by a part of a whole figure. Compare two fractions with different numerators and different denominators using the symbols >, =, or <; limited to fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100. Recognize and determine equivalent fractions. Explain why two given fractions are equivalent. Demonstrate how fractions and whole numbers can be plotted o a number line. Represent a fraction with a sketch. Find fraction between two numbers.
Fraction Sense 18 Unit Checkpoint		
Fraction Sense 19 Extended Problems: Reasoning		Analyze complex problems using mathematical knowledge and skills. Represent or identify a fraction o a number line; limited to fractions with denominators 2, 3, 4, 6, and 8. Recognize and determine equivalent fractions. Extend linear pattern, such as stating what number comes next in series.

		Explain and give examples of different interpretations of fractions. Identify the fraction represented by a part of a whole figure. Compare two fractions with different numerators and different denominators using the symbols >, =, or <; limited to fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100. Partition shapes into parts with equal areas. Express the area of each part as unit fraction of the whole. Explain why two given fractions are equivalent.
Measurement 1 Estimate Lengths	4.MD.1	Estimate the length of line segment to the nearest inch or centimeter. Identify inches on a ruler and measure the length of an object to the nearest inch. Identify centimeters on a ruler and measure the length of an object to the nearest centimeter. Determine a missing number in an equation or an inequality. Demonstrate automatic recall of multiplication facts. Solve story problem involving equal measures. Identify the appropriate metric and English units and tools to measure temperature. Identify the appropriate Fahrenheit or Celsius temperature for a given practical setting. Read a thermometer that measures temperature in Celsius degrees. Solve measurement-conversion problem by using multiplication or division. Read a thermometer that measures temperature in Fahrenheit degrees.
Measurement 2 Change Measurement	4.MD.1	Write a simple unit conversion, such as inches to feet, as an expression or an equation. Solve measurement-conversion problem by using multiplication or division.
6 Measurement 3 Measurement in Story Problems (A)	4.MD.2	Solve story problem involving equal measures. Use division to solve a story problem that involves equal measures. Use multiplication to solve a story problem that involves equal measures.
Measurement 4 Measurement in Story Problems (B)	4.MD.2	Solve story problem involving equal measures. Use division to solve a story problem that involves equal measures. Use multiplication to solve a story problem that involves equal measures. Solve story problem involving two or more operations.
Measurement 6 Core Focus	4.OA.2	Use multiplication to solve a story problem that involves equal measures. Use division to solve a story problem that involves equal measures. Solve measurement-conversion problem by using multiplication or division.
Measurement 7 Unit Review		Estimate the length of line segment to the nearest inch or centimeter.

		Solve story problem involving equal measures. Solve measurement-conversion problem by using multiplication or division.
Measurement 9 Unit Checkpoint		
Measurement 10 Extended Problems: Real-World Application		Extend linear pattern, such as stating what number comes next in series. Solve story problem involving equal measures. Represent a multistep word problem as an equation, using a letter to represent the unknown. Interpret the remainder in the solution to a word problem. Demonstrate an understanding of multiplication as a comparison. Solve multistep word problems using whole numbers. Find the area of rectangular shape and use the appropriate unit. Roun whole numbers through 10,000. Recognize and describe a linear pattern, such as counting by 5s or multiplying 5 times a number to reach 100, by its rule. Solve measurement-conversion problem by using multiplication or division. Demonstrate understanding that rectangles that have the same perimeter can have different areas. Apply mathematical knowledge and skills to evaluate and analyze real-world situations.
Semester Review and Checkpoint 1 Semester Review		Use expanded form to represent numbers through 100,000,000. Use an inverse relationship to simplify a computation or check a result. Solve story problem involving rate. Explain why a/a 1. Write equations to demonstrate that whole numbers can be factored in multiple ways. Explain why two given fractions are equivalent. Find fraction between two numbers. Read a thermometer that measures temperature in Fahrenheit degrees. Estimate the sum or difference of positive decimal numbers. Identify fraction and decimal-number equivalents for halves and fourths. Identify figures that have rotational symmetry. Read numerals and number words through 100,000,000. Estimate the length of line segment to the nearest inch or centimeter. Solve measurement-conversion problem by using multiplication or division. Read a thermometer that measures temperature in Celsius degrees. Write numerals through 100,000,000. Explain and apply standard step-by-step approaches for

subtraction.

Recognize that 90°, 180°, 270°, and 360° are associated respectively with a ¼, ½, ¾, and full turn.

Explain and give examples of different interpretations of fractions.

Represent a fraction with a sketch.

Use objects or sketches to solve a story problem that involves addition or subtraction of fractions.

Divide a whole number by a fraction to solve a story problem.

Identify and explain why given figures are congruent.

Explain and apply standard step-by-step approaches for multiplication.

Simplify factors in fraction multiplication problems in which numerators and denominators have common factors.

Compute the sum or difference of positive decimal numbers.

Define and identify a prime number.

Use parentheses and the order of operations to write or evaluate an expression.

Solve   story problem involving whole numbers.

Demonstrate understanding of relative angle measures.

Identify and explain when rounding is useful.

Write tenths and hundredths in decimal and fraction notation and show that the representations are equivalent.

Relate a decimal number to a fraction o   a number line.

Define and sketch different types of triangles and identify their attributes.

Know how to define and sketch different quadrilaterals.

Describe a geometric solid in terms of the shapes of its faces and the number of faces, edges, and vertices it has.

Roun   a whole number.

Estimate sums and differences on   number line.

Explain and apply standard step-by-step approaches for division of   multidigit number by   1- or 2-digit divisor.

Explain and apply standard step-by-step approaches for addition.

Check the computation of a solution to a story problem.

Identify lines that are parallel or intersecting.

State and recognize the definitions of   right angle, an acute angle, an obtuse angle, and   straight angle.

Recognize and determine equivalent fractions.

Solve   story problem involving equal measures.

Solve and simplify   problem that involves addition or subtraction of fractions with unlike denominators.

Judge the accuracy of a rounded decimal number.

Identify the diameter and radius of a circle.

Identify the place value for each digit in whole numbers through 100,000,000.

Compare and order numbers through 100,000,000.

Demonstrate how and when to use the distributive property.

Identify lines that are perpendicular.

		Identify the fraction represented by a part of a whole figure. Compare decimal numbers. Roun a decimal number. Identify the appropriate metric and English units and tools to measure temperature. Identify the appropriate Fahrenheit or Celsius temperature for a given practical setting. Multiply a fraction by a whole number to solve a story problem. Order three or more decimal numbers. Identify figures that have bilateral symmetry and draw the line or lines of symmetry. Recognize and sketch a two-dimensional representation of a three-dimensional object.
Semester Review and Checkpoint 3 Semester Checkpoint 1		
Semester Review and Checkpoint 4 Semester Checkpoint 2		
Fraction Operations 1 Add and Subtract Fractions (A)	4.NF.3	Write the fraction represented by a drawing that shows parts of a set or parts of a whole. Use objects or sketches to solve a story problem that involves addition or subtraction of fractions.
Fraction Operations 2 Add and Subtract Fractions (B)	4.NF.3	Write the fraction represented by a drawing that shows parts of a set or parts of a whole. Use objects or sketches to solve a story problem that involves addition or subtraction of fractions.
Fraction Operations 3 Add and Subtract Fractions (C)	4.NF.3	Write the fraction represented by a drawing that shows parts of a set or parts of a whole. Use objects or sketches to solve a story problem that involves addition or subtraction of fractions.
Fraction Operations 4 Add and Subtract Fractions (D)	4.NF.2	
Fraction Operations 5 Making Line Plots	4.MD.4	Create a line plot to display a set of measurements in fractions of a unit. Use operations on fractions to solve problems involving information presented in line plots.
Fraction Operations 6 Different Ways to Write Products		Write equations to demonstrate that whole numbers can be factored in multiple ways.
Fraction Operations 7	4.NF.4	Simplify factors in fraction multiplication problems in which numerators and denominators have common factors.

Fraction and Whole Number Products (A)		
Fraction Operations 8 Fraction and Whole Number Products (B)	4.NF.4	Simplify factors in fraction multiplication problems in which numerators and denominators have common factors.
Fraction Operations 9 Fraction and Whole Number Products (C)	4.NF.4	Multiply a fraction by a whole number to solve a story problem.
Fraction Operations 10 Fraction and Whole Number Products (D)	4.NF.4	
Fraction Operations 11 Core Focus		
Fraction Operations 12 Unit Review		
Fraction Operations 14 Unit Checkpoint		
Fraction Operations 15 Extended Problems: Real-World Application		
Decimals and Equality with Fractions Decimal Numbers	4.NF.7	Compare decimal numbers.
Decimals and Equality with Fractions Decimal and Fraction Equivalents (A)	4.NF.5 4.NF.6	
Decimals and Equality with Fractions Decimal and Fraction Equivalents (B)	4.NF.5 4.NF.6	Explain that simple fraction and decimal amount can represent the same quantity. Write tenths and hundredths in decimal and fraction notation and show that the representations are equivalent.
Decimals and		

Equality with Fractions Decimal and Fraction Equivalents (C)		
Decimals and Equality with Fractions Decimal and Fraction Equivalents (D)	4.NF.6	
Decimals and Equality with Fractions Relate Decimal Numbers to Fractions (A)	4.NF.6	Relate a decimal number to a fraction o a number line.
Decimals and Equality with Fractions Relate Decimal Numbers to Fractions (B)	4.NF.5	Relate a decimal number to a fraction o a number line.
Decimals and Equality with Fractions Core Focus	4.NF.5	
Decimals and Equality with Fractions 1 Unit Review		
Decimals and Equality with Fractions 1 Unit Checkpoint		
Decimals and Equality with Fractions 14 Extended Problems: Real-World Application		
1 Mathematical Reasoning 1 Analyze Story Problems (A)		Analyze a story problem by identifying the question, recognizing relevant information, sequencing and prioritizing information, and developing a solution strategy.
1 Mathematical Reasoning 2 Analyze Story Problems (B)		Analyze a story problem by identifying the question, recognizing relevant information, sequencing and prioritizing information, and developing a solution strategy.
1 Mathematical Reasoning 3 Multistep Problems	4.OA.3	Determine when and how to break a multistep story problem into simpler problems.
1 Mathematical	4.OA.3	Use estimation to predict a solution to a story problem and to verify

Reasoning 4 Estimate to Predict and Verify (A)		the reasonableness of the calculated result.
1 Mathematical Reasoning 5 Estimate to Predict and Verify (B)	4.OA.3	Use estimation to predict a solution to a story problem and to verify the reasonableness of the calculated result.
1 Mathematical Reasoning 6 Represent and Explain Story Problems		Explain mathematical reasoning in story problem by using multiple representations.
1 Mathematical Reasoning 7 State Solutions Clearly (A)	4.OA.3	Express the solution to story problem clearly and logically.
1 Mathematical Reasoning 8 State Solutions Clearly (B)	4.OA.3	Express the solution to story problem clearly and logically.
1 Mathematical Reasoning 9 Problem-Solving Strategies	4.OA.3	Explain mathematical reasoning in story problem by using multiple representations. Evaluate strategy or strategies used in story problem.
1 Mathematical Reasoning 10 (Optional) Your Choice	4.OA.5	
1 Mathematical Reasoning 11 Core Focus	4.OA.5	
1 Mathematical Reasoning 12 Unit Review		
1 Mathematical Reasoning 14 Unit Checkpoint		
1 Mathematical Reasoning 15 Extended Problems: Reasoning		
1 Geometry 1 Define and Sketch Triangles	4.G.2	Define and sketch different types of triangles and identify their attributes.
1 Geometry 2 Define and Sketch Quadrilaterals (A)	4.G.2	Know how to define and sketch different quadrilaterals.
1 Geometry 3 Define and Sketch	4.G.2	Know how to define and sketch different quadrilaterals.

Quadrilaterals (B)		
1 Geometry 4 (Optional) Your Choice	4.G.2	Know how to define and sketch different quadrilaterals.
1 Geometry Lines of Symmetry	4.G.3	Identify figures that have bilateral symmetry and draw the line or lines of symmetry.;Identify figures that have rotational symmetry.
1 Geometry Core Focus		
1 Geometry Unit Review		
1 Geometry 9 Unit Checkpoint		
1 Geometry 10 Extended Problems: Reasoning		
1 Algebra Thinking Expressions and Equations		Use a mathematical expression to represent a relationship between quantities.;Use an equation to represent relationship between quantities. Use symbols to stand for variables in simple expressions or equations.
1 Algebra Thinking Addition Property of Equality (A)		Demonstrate that when equal quantities are added to equal quantities the resulting quantities are equal.
1 Algebra Thinking Addition Property of Equality (B)		Demonstrate that when equal quantities are added to equal quantities the resulting quantities are equal.
1 Algebra Thinking Multiply by Equal Quantities (A)		Demonstrate that when equal quantities are multiplied by equal quantities the resulting quantities are equal.
1 Algebra Thinking Multiply by Equal Quantities (B)		Demonstrate that when equal quantities are multiplied by equal quantities the resulting quantities are equal.
1 Algebra Thinking Two-Variable Equations (A)		Solve for one variable in two-variable equation when the value of the other variable is given.
1 Algebra Thinking Two-Variable Equations (B)		Solve for one variable in a two-variable equation when the value of the other variable is given.
1 Algebra Thinking The Coordinate Plane		Locate and plot points on a coordinate plane.
1 Algebra Thinking Line Segments in the Coordinate Plane	4.G.1	Find the length of horizontal line segment by finding the difference of the x-coordinates. Find the length of vertical line segment by finding the difference of the y-coordinates.
1 Algebra Thinking	4.OA.5	Use symbols to stand for variables in simple expressions or

1 Linear Relationships (A)		equations. Plot linear relationship in the first quadrant of coordinate plane.
1 Algebra Thinking 1 Linear Relationships (B)	4.OA.5	Use symbols to stand for variables in simple expressions or equations. Plot linear relationship in the first quadrant of a coordinate plane.
1 Algebra Thinking 1 Core Focus		
1 Algebra Thinking 1 Unit Review		
1 Algebra Thinking 1 Unit Checkpoint		
1 Algebra Thinking 1 Extended Problems: Real-World Application		
1 Perimeter and Area Formulas 1 Perimeters of Polygons		Define and demonstrate understanding of the perimeter of any polygon.
1 Perimeter and Area Formulas 2 Formulas for Perimeter (A)	4.MD.3	Use a formula to find the perimeter of a rectangle or a square. Interpret and use formulas to answer questions about quantities and their relationships.
1 Perimeter and Area Formulas 3 Formulas for Perimeter (B)	4.MD.3	Use a formula to find the perimeter of a rectangle or a square. Interpret and use formulas to answer questions about quantities and their relationships.
1 Perimeter and Area Formulas 4 Understand Area		Define and demonstrate understanding of the area of any plane figure.
1 Perimeter and Area Formulas 5 Area of Rectangular Shapes		Find the area of rectangular shape and use the appropriate unit.
1 Perimeter and Area Formulas 6 Formulas for Area (A)	4.MD.3	Use a formula to find the area of a rectangle, a square, or a figure that can be divided into rectangles or squares.
1 Perimeter and Area Formulas 7 Formulas for Area (B)	4.MD.3	Use a formula to find the area of a rectangle, a square, or a figure that can be divided into rectangles or squares.
1 Perimeter and Area Formulas 8 Area Story Problems (A)	4.MD.3	Solve story problem that requires finding rectangular area.
1 Perimeter and	4.MD.3	Solve story problem that requires finding rectangular area.

Area Formulas 9 Area Story Problems (B)		
1 Perimeter and Area Formulas 10 Compare Area and Perimeter		Demonstrate understanding that rectangles that have the same area can have different perimeters. Demonstrate understanding that rectangles that have the same perimeter can have different areas.
1 Perimeter and Area Formulas 11 How Many Squares Does It Take?	4.MD.3	Estimate or determine the number of squares required to cover the area of solid figure.
1 Perimeter and Area Formulas 12 Core Focus		
1 Perimeter and Area Formulas 13 Unit Review		
1 Perimeter and Area Formulas 15 Unit Checkpoint		
1 Perimeter and Area Formulas 16 Extended Problems: Reasoning		
1 Semester Review and Checkpoint 1 Semester Review		
1 Semester Review and Checkpoint 3 Semester Checkpoint 1		
1 Semester Review and Checkpoint 4 Semester Checkpoint 2		