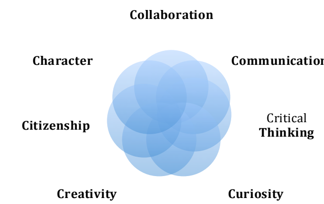
Content Area	Course: Mathematics	Grade Level: 4
	**R14 The Seven Cs of Learning** 	

Unit Titles	Length of Unit
Unit 1-Whole Number Multiplication and Division Concepts	5 weeks
Unit 2-Place Value Concepts, Estimation and Computation	5 weeks
Unit 3-Fractions	7 weeks
Unit 4-Multiplication and Division Concepts and Strategies	7 weeks
Unit 5-Geometry	6 weeks
Unit 6-Measurement and Data	4 weeks

Strands	Course Level Expectations
Number and Operations in Base-Ten	1. Students generalize understandings of place value to 1,000,000, understanding the relative sizes of numbers in each place. 2. Students understand and explain why procedures for multiplication work based on place value. 3. Students use place value knowledge as they develop, discuss and use efficient, accurate and generalizable methods to compute products and quotients of multi-digit whole numbers.
Number and Operations with Fractions	1. Students develop understanding of fraction equivalence and operations with fractions. 2. Students recognize that two different fractions can be equal (e.g., 15/9 = 5/3), and they develop methods for generating and recognizing equivalent fractions. 3. Students extend previous understandings about how fractions are build from unit fractions, composing fractions from unit fractions, decomposing fractions into unit fractions, and using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number. 4. Understand decimal notation for fractions, and compare decimal fractions.

Strands	Course Level Expectations
Operations and Algebraic Thinking	1. Students will use the four operations with whole numbers to solve problems 2. Students gain familiarity with factors and multiples. 3. Students generate and analyze patterns. 4. Students apply understandings of models for multiplication and division (equal-sized groups, arrays, and area models), place value, and properties of operations as they develop, discuss and use efficient, accurate, and generalizable methods to compute products and quotients of multi-digit whole numbers. 5. Students develop fluency with efficient procedures for multiplying whole numbers. 6. Students select and accurately apply appropriate methods to estimate and mentally calculate products and quotients, and interpret remainders based upon the context.
Measurement and Data	1. Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. 2. Students will represent and interpret data. 3. Students understand concepts of angles and measure angles.

Unit Title	Whole Number Multiplication and Division Concepts	Length of Unit	5 weeks

Inquiry Questions **(Engaging & Debatable)**	● How can we represent multiplication, division, addition and subtraction situations? ● How can we use the properties of operations and other strategies to solve multiplication and division problems? ● How do factors and multiples help us to understand numbers? ● How and why do we generate and analyze patterns?
Standards	**Operations and Algebraic Thinking** 4.OA.A1, 4.OA.A2, 4.OA.A3, 4.OA.B4, 4.OA.C5
Unit Strands & Concepts	● Multiplicative comparison versus additive comparison ● Understanding and interpreting remainders ● Relationship between factors and multiples ● Multiplicative and additive patterns
Key Vocabulary	Multiplication, division, comparison, equations, multiplicative comparison, additive comparison, remainders, symbol, reasonableness, estimation, rounding, mental computation, factor pairs, multiple, factor, prime, composite, pattern, sequence.

Standards based on Common Core State Standards
For more information visit: http://www.corestandards.org/Math/Content/4/introduction/

Unit Title	Whole Number Multiplication and Division Concepts	Length of Unit	5 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• Multiplication equations can be a comparison • Relationship between factors and multiples • A prime number has only two factors; one and itself. • There are two common situations where division may be used: fair sharing (given the total amount and the number of equal groups, determine how many/much in each group) and measurement (given the total amount and the amount in a group, determine how many groups of the same size can be created). • How the remainder is explained depends on the problem situation • Some problem situations require more than one step to obtain a solution	• Represent and solve multi-step word problems using the four operations posed with whole numbers • Model and solve multiplicative compare problems • Find factors and multiples for a whole number in the range 1-100 • Interpret and use remainders with respect to context. • Identify features of a numeric pattern • Generate a pattern from a given rule • Determine whether a given whole number is prime or composite

Assessments:	Performance task focused on multi-step problem solving involving all operations, understanding of multiplication/division situations involving comparison, pattern recognition and generation, and prime and composite numbers.
Teacher Resources:	MyMath, Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction, CCSS aligned tasks.

Unit Title	Place Value Concepts, Estimation and Computation	Length of Unit	5 weeks

Inquiry Questions **(Engaging & Debatable)**	• How and why do we generate and analyze patterns? • How do we generalize place value understanding for whole digit numbers and comparison of whole digit numbers? • How do we use properties of operations to fluently add and subtract multi-digit whole numbers?
Standards	**Operations and Algebraic Thinking** 4.OA.C5, **Number and Operations in Base-Ten** 4.NBT.A1, 4.NBT.A2, 4.NBT.A3, 4.NBT.B4
Unit Strands & Concepts	• Unitizing • Composing and decomposing • Base ten and place value patterns • Relationship between addition and subtraction • Rounding and comparison strategies
Key Vocabulary	Pattern, rule, whole number, digit, base ten numerals, expanded form, comparison, greater than, less than, equal to, >, <, =, rounding, addition, subtraction, standard algorithm

Unit Title	Place Value Concepts, Estimation and Computation	Length of Unit	5 weeks

Critical Content: My students will **Know**…	Key Skills: My students will be able to **(Do)**…
• In the base-ten system, the value of each place is 10 times the value of the place to the immediate right. • The value of a number is determined by the place of its digits. • A number can be written using digits in standard form, word, or expanded form • Larger numbers can be compared using the place value of the digits within the numbers. The relationship between the two numbers can be expressed using the symbols <, >, or = • Numbers can only be decomposed in multiple ways (37 = 3 tens and 7 ones), or (37 = 2 tens and 17 ones), etc. • Whole numbers can be added and subtracted with or without regrouping. • In adding and subtracting multi-digit numbers one must add like units and sometimes it is necessary to compose or decompose tens, hundreds, and/or thousands • Sometimes it may be necessary to compose or decompose more than one ten, hundred, or thousand.	• Read and write numbers up to 1,000,000 in base-ten numerals, written form, and expanded form • Use place value understanding to round multi-digit whole numbers to any place. • Recognize that in a multi-digit number, a digit in one place represents ten times what it represents in the place to its right. • Compare two multi-digit numbers based on meanings of the digits in each place • Fluently add and subtract multi-digit whole numbers using the standard algorithm

Assessments:	Performance task focused on base ten understanding, unitizing, composing and decomposing, and understanding of place value.
Teacher Resources:	MyMath, Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction, CCSS aligned tasks.

Unit Title	**Fractions**	**Length of Unit**	7 weeks

Inquiry Questions **(Engaging & Debatable)**	• How do we extend the understanding of fraction equivalence and ordering? • How can we compare fractions and justify our solutions? • How can we extend our understanding of operations of whole numbers to addition and subtraction of fractions from the same whole? • How can we apply and extend previous understandings of multiplication to multiply a fraction by a whole number? • What is the relationship between a decimal and a decimal fraction?
Standards	**Number and Operations with Fractions** 4.NF.A1, 4.NF.A2, 4.NF.B3, 4.NF.B4, 4.NF.C5, 4.NF.C6, 4.NF.C7
Unit Strands & Concepts	• Fractional equivalence as it relates to multiplication and division • Relationship between decimals and decimal fractions • Fractional Benchmarks • Meaning of addition and subtractions is the same for whole numbers and fractions • Equal groups representation of fractional multiplication
Vocabulary	Fraction, models, equivalent fractions, numerator, denominator, common denominator, benchmark fractions, comparisons, greater than, less than, equal to, >, <, =, like denominator, Mixed numbers, fraction models, unit fraction, decimal fractions, decimal notation, number line diagram, compare, visual models, <, >, =

Unit Title	**Fractions**	**Length of Unit**	7 weeks

Critical Content: My students will Know…	**Key Skills: My students will be able to (Do)…**
• An infinite amount of equivalent fractions can be generated for a given fraction • Fractions can be joined and separated in the same fashion as whole numbers • Fractions, like whole numbers, can be composed and decomposed in multiple ways • Multiplying a fraction by a whole number equates to copying a given fraction a specific number of times. • Fractions with denominators of 10 or 100 can also be expressed in decimal form. • Fractional benchmarks can be useful in comparing, adding, and subtracting fractions	• Use multiplication and division to generate equivalent fractions • Relate equations for generating equivalent fractions to pictorial representations • Compare fractions with unlike denominators using various strategies including generating common denominators and reasoning using fractional benchmarks. • Use number lines, pictorial and concrete models, and number sentences to add and subtract fractions and mixed numbers with like denominators **(*note-the only exception to this is being able to express a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100 to add 2 fractions)** • Apply visual and numeric decomposition strategies to convert between mixed numbers and improper fractions. • Use concrete manipulatives and visual models to multiply a fraction by a whole number • Express fractions with denominators of 10 and 100 in fractional form and vice versa utilizing strategies based on place value and the relationship between fractions and decimal

Assessments:	Performance task focusing on strategies for recognizing and generating equivalent fractions, fractional comparison strategies, addition and subtraction of fractions with like denominators, and initial understanding of the relationship between decimal fractions and decimals.
Teacher Resources:	MyMath, Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction, CCSS tasks.

Unit Title	**Multiplication and Division Concepts and Strategies**	**Length of Unit**	7 weeks

Inquiry Questions **(Engaging & Debatable)**	● How can we use properties of operations and other strategies to multiply whole numbers? ● How can we use properties of operations and other strategies to divide whole numbers? ● How can we use properties of operations and other strategies to solve and model solutions to problems?
Standards	**Number and Operations in Base-Ten** 4.NBT.B5, 4.NBT.B6
Unit Strands & Concepts	● Arithmetic patterns ● Unitizing ● Distributive property ● Multi-digit multiplication and division strategies ● Efficient composing and decomposing strategies
Key Vocabulary	Multiply, equations, rectangular arrays, area models, quotients, remainders, dividends, divisors, place value.

Unit Title	Multiplication and Division Concepts and Strategies	Length of Unit	7 weeks

Critical Content: My students will Know…	Key Skills: My students will be able to (Do)…
• Some division situations will produce a remainder, but the remainder will always be less than the divisor. If the remainder is greater than the divisor that means at least one more can be given to each group or at least one more group of the given size may be created. • How the remainder is explained depends on the problem situation. • The role of the distributive property in performing multi-digit multiplication • Numbers can be expressed in different base ten units (i.e.120 ones=12 tens= 1 hundred and 2 tens). • Division situations can involve finding the size of a given group or the number of groups. • Division and multiplication problems with large numbers can be decomposed into several smaller problems. • Larger quotients and products can be derived using foundational and familiar facts. • Arithmetic patterns can be used to solve more complex multiplication problems. • Relationship between multiplication and division • Division can be interpreted as an unknown factor problem	• Find whole number quotients and remainders (up to 4-digit dividends with 1-digit divisors) using strategies based on place value, properties of operations, and the relationship between multiplication and division • Compose and decompose numbers in various ways • Relate written equations to pictorial or concrete models • Multiply multi-digit whole numbers (up to 4-digits by 1 digits) using strategies based on place value, and the properties of operations • Compute the product of two 2-digit numbers using strategies based on place value and the properties of operations • Use place value reasoning and base ten understanding to compute products and quotients of one digit numbers and multiples of 10, 100, 1000. • Represent numbers in different units (i.e. 120 ones or 12 tens). • Decompose numbers in order to simplify larger multiplication and division problems. • Use various concrete and pictorial models to represent multiplication and division situations (arrays, number bonds, area models, equal groups, counters, base ten blocks, etc.) • Model and solve multiplication and division stories

Assessments:	Performance assessment focused on strategies for multi-digit multiplication and division, unitizing, understanding of multiplication and division situations, decomposition ability, and recognizing and understanding base ten patterns.
Teacher Resources:	MyMath, Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction,

Unit Title	Geometry	Length of Unit	6 weeks

Inquiry Questions **(Engaging & Debatable)**	• How do we draw and identify lines and angles, and classify shapes by properties of their lines and angles? • How do we understand concepts of angles and measure angles? • How do we use concepts of angles and measurement to find and solve problems with unknown angles?
Standards	**Geometry:** 4.G.A1, 4.G.A2, 4.G.A3, 4.MD.C5, **Measurement and Data:** 4.MD.C6, 4.MD.C7
Unit Strands & Concepts	• Angle measure as a property of geometric figures • Relationship between external and internal angles of a figure • Parallel and perpendicular • Geometric attributes • Part-whole relationships
Key Vocabulary	Points, lines, line segments, rays, angles (right, acute, obtuse), degrees, protractor, perpendicular lines, parallel lines, two-dimensional figure, line of symmetry, diagram, triangles, equilateral, equiangular, isosceles, scalene.

Unit Title	**Geometry**	**Length of Unit**	6 weeks

Critical Content: My students will Know…	**Key Skills: My students will be able to (Do)…**
• Geometric figures can be analyzed and classified based on their properties. • Parallel sides, angle measures, and symmetry can be used to classify geometric figures. • Two lines are parallel if they never intersect and are always equidistant. • Two lines are perpendicular if they intersect in right angles (90 degrees). • Lines of symmetry for a two-dimensional figure occur when a line can be drawn across the figure such that the figure can be folded along the line into matching parts. • Lines are infinite in extent and points have location but no dimension • Grids are made of points and lines and do not end at the edge of the paper • Angle measure is additive • Angles can be composed and decomposed • An angle is measured with reference to a circle with its center at the common endpoint of the rays	• Draw points, lines, line segments and rays. • Draw angles (right, acute, and obtuse). • Measure angles using a protractor • Draw perpendicular and parallel lines. • Identify points, lines, line segments, rays, all angles, perpendicular and parallel lines in two dimensional figures • Classify two dimensional figures based on the presence or absence of right, acute or obtuse angles, and parallel or perpendicular lines • Recognize and describe right triangles. • Identify a line of symmetry • Draw lines of symmetry • Use side length to classify triangles as equilateral, equiangular, isosceles, or scalene

Assessments:	Performance Assessment focused on angle measure and construction, geometric attributes and construction of figures, and triangle classification.
Teacher Resources:	MyMath, Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction,

Unit Title	Measurement and Data	Length of Unit	4 weeks

Inquiry Questions **(Engaging & Debatable)**	• How do we use measurement with different units to understand the relative size, and to convert between units? • How do we solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit? • How do we use the area and perimeter formulas to solve problems? • How do we represent and interpret data, as well as solve problems using line plots?
Standards	**Measurement and Data:** 4.MD.A1, 4.MD.A2, 4.MD.A3, 4.MD.B4
Unit Strands & Concepts	• Measurement conversion • Length benchmarks • Part-whole relationships • Area versus perimeter
Key Vocabulary	Kilometers (km), meters (m), centimeters (cm), kilograms (kg), grams (g), pound (lb), ounce (oz), liter (l), milliliter (ml), hour, minute, second, feet, inches, table, number line diagrams, measurement scale, area, perimeter, formula, line plot

Unit Title	Measurement and Data	Length of Unit	4 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• Relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. • Relationship between units inside the metric system • Difference between area and perimeter • Visual benchmarks for common units of length (foot, meter, quart, etc.)	• Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit • Record measurement equivalents in a two-column table • 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. • Solve 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. • Apply the area and perimeter formulas for rectangles in context • Reason about different ways to represent the area and perimeter formulas for rectangles • Make a line plot to display a data set of measurements in fractions of units (½, ¼, ⅛) • Solve problems involving addition and subtractions using information presented in line plots

Assessments:	Performance task focused on measurement conversion, understanding and application of area and perimeter, problem solving involving various units of measure, and data display and analysis.
Teacher Resources:	MyMath, Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction