**Teacher : Lori Mulacek**

**Grade Level: 4th**

**Course: Math**

**Course Description**

 The fourth grade math curriculum will focus on multiplication and division of whole numbers (with focus on multiplication and division facts while working on multidigit multiplication and division), addition and subtraction of fractions and decimals, and identifying and describing representations of points, lines, line segments, rays, and angles, including endpoints and vertices. Concrete materials and two-dimensional representations will be used to solve problems involving perimeter, patterns, probability, and equivalence of fractions and decimals.

**Textbook:**

Title: Progress in Mathematics

ISBN: 978-0-8215-8444-6

Authors:

Publisher: Sadlier­ Oxford

Publication Date: 2013

**Assessment**

There will be a minimum of 500 points scored each quarter. These points will be obtained from assignments, quizzes, chapter tests, and projects.

UNIT 1 Multiplication & Division Concepts

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| ***Content*** | ***Assessment*** | ***Common Core*** | ***Essential Questions*** |
| 4-1 A Number Patterns4-1B Use Multiplication to compare* 1. Thousands
	2. Milliion
	3. Millions
	4. Place Value
	5. Estimation
	6. Thousands
	7. Millions
	8. Place Value
	9. Compare/Order Whole Numbers
	10. Number Sense: Number Line

1-13 Problem Solving - Mixed8-6 Factors (GCF)9-6 Multiples9-6A Factor Pairs9-6B Prime and Composite Numbers5-15 Factor Trees (Ladders)4-1 Multiplication Properties4-2 Multiplication Models4-3 Special Factors4-4 Multiply by One-Digit Numbers4-5 A Multiply with Models4-6 Multiply with Regrouping4-6A Use Mental Math to Multiply4-7 Multiply Three-Digit Numbers4-9 Multiplying Four-Digit Numbers4-10 Patterns in Multiplication4-11A Multiplying with Area Models4-12 Multiply by Two-Digit Numbers4-13 More Multiplication with Two-Digit Numbers5-13 Multi-step Problems5-1 Division Rules5-2 Relate Multiplication and Division5-3 Missing Numbers5-4 Number Patterns5-5 Estimate in Division/ One-Digit Division5-6 One-Digit Quotients5-7 Divisibility Rules5-8/5-9 Two-Digit Quotients5-10 Three-Digit Quotients5-12 Zeros In Quotients5-13 Large Number Division5-13A Multistep Problems and Bar Graphs5-14 Division in Money5-4A Use Bar Diagrams5-15 Order of Operations5-16 Mean (Average)5-17 Problem Solving-Interpret Remainders5-18 Problem Solving - Review12-11 Problem Solving: More than one Step12-12 Problem Solving: Review14-1 Equations4-5 Products: Front End Estimation4-7 Multiply Three-Digit Numbers4-11 Products: Rounding and Estimation4-16 Problem Solving – Mixed Review5-6 One-Digit Quotients5-7 Divisibility Rules5-8/5-9 Two-Digit Quotients5-10 Three-Digit Quotients5-11 More Quotients5-12 Zeros In Quotients5-13 Large Number Division5-13A Multistep Problems and Bar Graphs6-13 Problem Solving: Use more than One Step12-2 Divisors: Multiples of Ten12-3 Estimate Quotients12-4 Two-Digit Dividend12-5 Three Digit Dividends12-6 Trial Quotients12-7 Greater Quotients12-8 Four Digit Dividends12-9 Zero in the Quotient12-10 Greater Dividends12-11 Problem Solving: More than one Step12-12 Problem Solving: Review | Check Your Progress Chapt 1 1-5Check Your ProgressChapt 1 6-9Check Your ProgressChapt 1-13Check Your ProgressChapter 4 1-6ACheck Your ProgressChapter 4 7-12Check Your ProgressChapter 4 1-16Check Your ProgressChapter 5 1-6Check Your ProgressChapter 5 7-12Check Your ProgressChapter 5 1-18Check Your ProgressChapter 12 1-5Check Your ProgressChapter 12 6-9Check Your ProgressChapter 12 1-12 | **4.OA.1**Use the four operations with whole numbers to solve problems. 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.NBT.1Generalize place value understanding for multi-digit whole numbers. 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 = 10 by applying concepts of place value and division. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.)4.NBT.2Generalize place value understanding for multi-digit whole numbers. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.)4.OA.4Gain familiarity with factors and multiples. Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.4.NBT.5Use place value understanding and properties of operations to perform multi-digit arithmetic. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (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.6Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.4.OA.2Use the four operations with whole numbers to solve problems. 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. 4.0A.3Use the four operations with whole numbers to solve problems. 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. | How and when can numbers be manipulated forapplication purposes?What are ways numbers are represented ineveryday life? How can estimation and mental math aid in thedevelopment of number sense? How can you build numbers through hundred millions?How can you use models and related facts to find missing factors? |

UNIT 2:Fractions: Equivalence and Operations

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| ***Content***8-3 Esitmate Fractions8-4 Understand Equivalent Fractions8-5 Write Equivalent Fractions8-7 Factors: Lowest Terms8-12 Problem Solving Applications: Review8-1 Write fractions8-2 Fractions and number line8-3 Estimate fractions8-4 Understand equivalent fractions8-8 Mixed Numbers8-8A Compare fractions using benchmarks8-9 Compare fractions8-10 Order fractiosn8-12 Problem Solving applications: Review9-1A Models to Add fractions9-1C Use models to subtract fractions9-3 Improper fractions9-1B Decompose fractions9-1 Add fractions: like denominators9-2A Word Problems with fractions9-2 Subtract fractions: like denominators9-12 Problem solving: mixed review9-8A Multiply with fractions9-8A Multiply with fractions9-8A Multiply with fractions9-9 Compute probablility9-10 Find pare of a number9-12 Problem Solving: mixed review6-1 Measure with Inches6-2 Rename Units of Length6-3 Compute customary units6-4 Customary Units of capacity6-5 Customary Units of weight6-6 Measure with metric units6-7 Work with metric units6-8 Metric units of capacity6-9 Metric units of mass6-10 Temperature6-11 A renamed measure6-11 Time6-12 Elapsed time2-8 Add and subtract money4-8 Multiplying money4-12 Multiply by two-digit numbers5-14 Divide money6-1 Measure with Inches6-2 Rename Units of Length6-3 Compute customary units6-4 Customary Units of capacity6-5 Customary Units of weight6-6 Measure with metric units6-7 Work with metric units6-8 Metric units of capacity6-9 Metric units of mass6-10 Temperature6-11 A renamed measure6-11 Time6-12 Elapsed time6-13 Problem solving: more than one step6-14 Problem solving application13-10 Divide with money11-1 Using Perimeter Formulas11-2 Using Area Formulas11-3 Perimeter and Area11-3A Perimeter and Area Formulas11-9 Problem Solving Application – Mixed Review7-4 Surveys and Line Plots9-5A Organize Measurement Data | ***Assessment***Chapter 8 1-5Chapter 8 6-8AChapter 8 1-12Chapter 9 1-5Chapter 9 6-8AChapter 9 1-12 | ***Standards*** | ***Common Core***4.NF.1Explain why a fraction a/b is equivalent to a 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.4.NF.2Compare 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 a visual fraction model. 4.NF.3aUnderstand addition and subtraction of fractions as joining and separating parts referring to the same whole.4.NF. 3bDecompose 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 a 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.3cAdd 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.4aUnderstand 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 = 5 × (1/4).4.NF.4bUnderstand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.4.NF.4cSolve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.4.MD.1Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.4 For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.4.MD.2Use 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.3Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. 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 factor4.MD.4Make 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. | ***Essential Questions***How can strategies be used to compute fractions and decimals?How can fractions and decimals be modeled and compared?How are four math operations compared?Why is it important to hve quick recall of multiplication and division facts?How can you find the perimeter/area of a shape?What geometric features are present in oursurroundings? |

Unit 3 Unit: Decimals

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| ***Content*** | ***Assessment*** | ***Standards*** | ***Common Core*** | ***Essential Questions*** |
| 9-6C Add fractions with denominators of 10 and 10013-1 Tenths/Hundredths13-2 Decimals Greater than One13-3 Decimal Place Value13-3A Comparing Decimals with models and symbols13-4 Comparing decimals13-5 Ordering decimals |  |  | 4.NF.5 Express a fraction with denominator 10 as an equivalent fraction withdenominator 100, and use this technique to add two fractions withrespective denominators 10 and 100.4 For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.4.NF.6Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.4.NF.7Compare two decimals to hundredths by reasoning about their size.Recognize that comparisons are valid only when the two decimalsrefer to the same whole. Record the results of comparisons with thesymbols >, =, or <, and justify the conclusions, e.g., by using a visualmodel. | What are ways numbers are represented ineveryday life?How are fractions/decimals related.**When and where do I use fractions and decimals in my daily life?****How do I use customary and metric measurement in my daily life to measure length?****How can measurements be used to solve problems?** |

Unit 4 Computation Applications

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| ***Content*** | ***Assessment*** | ***Standards*** | ***Common Core*** | ***Essential Questions*** |
| 4-5 Products: Front End Estimation4-7 Multiply Three-Digit Numbers4-11 Products: Rounding and Estimation4-16 Problem Solving – Mixed Review5-6 One-Digit Quotients5-7 Divisibility Rules5-8/5-9 Two-Digit Quotients5-10 Three-Digit Quotients5-11 More Quotients5-12 Zeros In Quotients5-13 Large Number Division5-13A Multistep Problems and Bar Graphs6-13 Problem Solving: Use more than One Step12-2 Divisors: Multiples of Ten12-3 Estimate Quotients12-4 Two-Digit Dividend12-5 Three Digit Dividends12-6 Trial Quotients12-7 Greater Quotients12-8 Four Digit Dividends12-9 Zero in the Quotient12-10 Greater Dividends12-11 Problem Solving: More than one Step12-12 Problem Solving: Review4-1 Multiplication Properties4-1A Number Patterns10-12 Problem Solving –Find Pattern | Chapter 11 –3AChapter 4 1-4Chapter 4 5-9Chapter 4 1-12Chapter12 1-5Chapter 4 6-9Chapter 4 1-12 |  | 4.OA.3Represent and solve problems involving multiplication and division. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.4.OA.5 Understand properties of multiplication and the relationship between multiplication and division. Apply properties of operations as strategies to multiply and divide. Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15 then 15 × 2 = 30, or by 5 × 2 = 10 then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.) (Students need not use formal terms for these properties.)4.NBT.3Generalize place value understanding for multi-digit whole numbers. 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.4Use place value understanding and properties of operations to perform multi-digit arithmetic. 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.MD.1Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. 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 a two-column table. For example: Know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ….4.MD.2Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. 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 |  |

UNIT 5 Dimensional Geometry

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| ***Content*** | ***Assessment*** | ***Standards*** | ***Common Core*** | ***Essential Questions*** |
| 10-1 Points, Lines and Line Segments10-2 Rays and Angles10-3 Parallel and Perpendicular Lines10-4 Circles10-11 Coordinate Geometry10-13 Problem Solving Application: Mixed Review10-1 Points, Lines, and Line Segments10-2 Rays and Angels10=3 Parallel and perpendicular lines10-5 Polygons10-6 Quadrilaterals10-7 Triangles10-7A Symmetry10-12 Problem Solving – Find Pattern10-1A Angle Measure10-2 Rays and Angles10-1A Angle Measure 10-2 Rays and Angles10-2A Measure Angles10-2B Unknown Angle Measures | Chapter 10 1-4Chapter 10 5-8Chapter 10 1-13 |  | 4.G.1Draw points, lines, line segments, rays, angles (right, acute, obtuse),and perpendicular and parallel lines. Identify these in two-dimensionalfigures.4.G.2Classify two-dimensional figures based on the presence or absence ofparallel or perpendicular lines, or the presence or absence of angles ofa specified size. Recognize right triangles as a category, and identifyright triangles4.G.3Recognize a line of symmetry for a two-dimensional figure as a lineacross the figure such that the figure can be folded along the lineinto matching parts. Identify line-symmetric figures and draw lines ofsymmetry.4.MD.5aRecognize angles as geometric shapes that are formed wherever tworays share a common endpoint, and understand concepts of anglemeasurement:An angle is measured with reference to a circle with its center atthe common endpoint of the rays, by considering the fraction ofthe circular arc between the points where the two rays intersectthe circle. An angle that turns through 1/360 of a circle is called a“one-degree angle,” and can be used to measure angles4.MD.5bRecognize angles as geometric shapes that are formed wherever tworays share a common endpoint, and understand concepts of anglemeasurement:An angle that turns through n one-degree angles is said to havean angle measure of n degrees.4.MD.6Measure angles in whole-number degrees using a protractor. Sketchangles of specified measure4.MD.7Recognize angle measure as additive. When an angle is decomposedinto non-overlapping parts, the angle measure of the whole is the sumof the angle measures of the parts. Solve addition and subtractionproblems to find unknown angles on a diagram in real world andmathematical problems, e.g., by using an equation with a symbol forthe unknown angle measure. | What are ways numbers are represented ineveryday life?‐How do coordinate grids help you organize information?What geometric features are present in oursurroundings? |

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| ***Content*** | ***Assessment*** | ***Standards*** | ***Common Core*** | ***Essential Questions*** |
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