

Curriculum Map Grade 5 Mathematics
for:

Prerequisites: Completion of Grade 4

Scope: Students entering Grade 5 continue to acquire skills across all process and content strands. Interwoven in the content are themes of problem solving, reasoning, and representation of number systems involving ratio, fractions, decimals, and percent. Fluency in all operations leads to the ability to evaluate using order of operations. Students apply measurement and geometry to draw angles, use a centimeter ruler, and convert units within a system. Data is investigated and reported from a variety of sources and may now be displayed in a line graph. Algebra ideas continue to emerge as students represent unknown quantities with variables and math relationships with equations.

Assessment: Assessment comes in a variety of forms and wherever possible should be used to reflect and enhance the teaching and learning process that occurs in a classroom. Assessment should not be seen as a separate activity, but as an integral part of the teaching and learning process. Alternative assessments apply to any and all assessments that differ from multiple choice, timed, one-shot approaches that characterize most standardized and classroom assessment. Authentic assessments are assessments that engage students in applying knowledge and skills in the same way they are used in the real-world. Performance assessment is a broad term, encompassing many of the characteristics of both authentic and alternative assessments.

As this course of study demonstrates, it is clear that no single type of assessment could provide an accurate measurement of the learning experience. Students should have the best opportunity to demonstrate their understanding of the learning experience. Therefore, it is suggested that a variety of data gathering methods be used such as objective tests, observations, products, written reports, performances and a collection of student works.

This Curriculum Map: This document contains four different columns available to the user. The **TIME** column offers a suggested timeline so that all topics in the **CONTENT/SKILLS** column are feasibly met. It is understood that times will need to be adjusted as the course develops. The mapping of content to present textbooks can occur in the **C/S** column. The **PERFORMANCE INDICATOR** column aligns topics in **C/S** with the NYS Standards. The **APPLICATION/PROJECT IDEAS** column is designed to offer unique or novel suggestions and sources for the teacher other than just their textbook. Mapping of content to present textbooks may also occur in this column. Discussions of different types of evaluation may also occur in this last column.

| TIME | CONTENT / SKILLS | PERFORMANCE INDICATOR | APPLICATIONS / IDEAS |
|-----------|---|---|---|
| September | Place Value - Billions | 5.N.1 Read and write whole numbers to millions. <i>Billions not tested in 5th grade, but are part of grade level expectations.</i> | TM1 1-1 Place Value Through Billions |
| | Place Value - Comparing and Ordering | 4.A.2 (Post-March 4th grade) Use the symbols $<$, $>$, $=$, and \neq (with and without the use of a number line) to compare whole numbers and unit fractions and decimals (up to hundredths) 5.N.2 Compare and order numbers to millions | TM1 1-2 Comparing and Ordering Whole Numbers |
| | Decimals - Tenths, Hundredths and Thousandths | 4.N.10 (post-March 4th grade) Develop an understanding of decimals as part of a whole 4.N.11 Read and write decimals to hundredths, using money as a context 4.N.12 Use concrete materials and visual models to compare and order decimals (less than 1) to the hundredths place in the context of money 4.N.25 Add and subtract decimals to tenths and hundredths using a hundreds chart 5.N.8 Read, write, and order decimals to thousandths 5.N.10 Compare decimals using $<$, $>$, $=$ | TM1 1-3 Place Value Through Thousandths |
| September | Decimals - Comparing and Ordering | | TM1 1-4 Comparing and Ordering Decimals |

| TIME | CONTENT / SKILLS | PERFORMANCE INDICATOR | APPLICATIONS / IDEAS |
|------|--|---|---|
| | Place Value - Base 10 System Place Value - Rounding (decimals and whole numbers) Decimals - Estimating Adding and Subtracting Whole Numbers and Decimals | 5.N.3 Understand the place value structure of the base ten number system 10 ones = 1 ten 10 tens = 1 hundred 10 hundreds = 1 thousand 10 thousands = 1 ten thousand 10 ten thousands = 1 hundred thousand 10 hundred thousands = 1 million 5.N.24 Round numbers to the nearest hundredth and up to 10,000 (rounding beyond 10,000 is not tested in 5th grade) 5.N.26 Estimate sums, differences, products, and quotients | TM1 1-5 Place Value Patterns (mentions exponents briefly; use supplemental materials to teach concept) TM1 1-8 Rounding Whole Numbers and Decimals TM1 1-9 Estimating Sums and Differences |

| TIME | CONTENT / SKILLS | PERFORMANCE INDICATOR | APPLICATIONS / IDEAS |
|---------|---|--|---|
| October | <p>Whole Numbers</p> <p>Decimals - Adding Decimals</p> <p>Decimals - Subtracting Decimals</p> <p>Review</p> <p>Multiplication- Commutative and Associative Properties</p> <p>Multiplication -Estimating Products</p> <p>Multiplication - Distributive Property</p> <p>Multiplication - Multiplying Whole Numbers, up to three digit by two digit</p> <p>Multiplication - Distributive Property</p> <p>Problem Solving - Organized List</p> <p>Multiplication - Decimals</p> <p>Multiplication - Decimals</p> <p>Multiplication - Whole Numbers and Decimals</p> | <p>Review</p> <p>5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths</p> <p>5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths</p> <p>4.N.19 Use a variety of strategies to multiply two-digit numbers by two-digit numbers (with and without regrouping) Post-March 4th grade</p> <p>5.N.16 Use a variety of strategies to multiply three-digit numbers</p> <p>introduces concept of use of formulas</p> <p>5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths</p> <p>5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths</p> | <p>TM1 1-11 Adding and Subtracting Whole Numbers</p> <p>TM1 1-12 Adding Decimals</p> <p>TM1 1-13 Subtracting Decimals</p> <p>TM1 1-14 Look Back and Check</p> <p>TM1 2-1 Multiplication Patterns</p> <p>TM1 2-2 Estimating Products</p> <p>TM1 2-3 Mental Math: Using the Distributive Property</p> <p>TM1 2-4 Multiplying Whole Numbers</p> <p>TM1 2-5 Choosing a Computation Method</p> <p>TM1 2-6 Make an Organized List</p> <p>TM1 2-7 Decimal Patterns</p> <p>TM1 2-8 Estimating Decimal Products</p> <p>TM1 2-9 Multiplying Whole Numbers and Decimals</p> |
| October | <p>Multiplication - Decimals</p> <p>Multiplication - Decimals</p> <p>Algebra</p> <p>Algebra</p> | <p>5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths</p> <p>5.A.1 Define and use appropriate terminology when referring to constants, variables, and algebraic expressions</p> <p>5.A.4 Solve simple one-step equations</p> | <p>TM1 2-10 Using Grids to Multiply Whole Numbers and Decimals</p> <p>TM1 2-11 Multiplying Decimals by Decimals</p> <p>TM1 2-12 Variables and Expressions</p> <p>TM1 2-13 Translating Words into Expressions</p> |

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|------|---|--|---|
| | <p>Algebra</p> <p>Problem solving</p> <p>Division - estimating quotients</p> <p>Problem Solving - Look for a Pattern</p> <p>Division - 1 digit divisors and placing the first digit</p> | <p>Review if needed - tested in 4th grade</p> <p>5.N.27 Justify the reasonableness of answers using estimation</p> <p>5.N.17 Use a variety of strategies to divide three-digit numbers by one- and two-digit numbers Note: Division by anything greater than a two-digit divisor should be done using technology.</p> | <p>TM1 2-15 Solving Equations</p> <p>TM1 2-16 Problem-Solving with Multiplication (using weight)</p> <p>TM1 3-3 Estimating Quotients</p> <p>TM1 3-4 Problem-Solving Strategy</p> <p>TM1 3-5 Understanding Division and 3-6 Dividing Whole Numbers</p> |

| TIME | CONTENT / SKILLS | PERFORMANCE INDICATOR | APPLICATIONS / IDEAS |
|---------------------|--|--|--|
| October/Nov. | Division - zeroes in quotient | 5.N.17 Use a variety of strategies to divide three-digit numbers by one- and two-digit numbers Note: Division by anything greater than a two-digit divisor should be done using technology. | TM1 3-7 Zeroes in the Quotient |
| | Division - money | 5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths | TM1 3-9 Dividing Money |
| | Fractions - factors and divisibility | 5.N.14 Identify the factors of a given number | TM1 3-10 Factors and Divisibility |
| | Prime and Composite Numbers | 5.N.12 Recognize that some numbers are only divisible by one and themselves (prime) and others have multiple divisors (composite) | TM1 3-11 Prime and Composite Numbers |
| | Division - interpreting remainders | 5.N.17 Use a variety of strategies to divide three-digit numbers by one- and two-digit numbers Note: Division by anything greater than a two-digit divisor should be done using technology. | TM1 3-12 Interpreting Remainders |
| | Multiplication - Multiplication Properties (order of operations) | 5.N.18 Evaluate an arithmetic expression using order of operations including multiplication, division, addition, subtraction and parentheses | TM1 3-13 Order of Operations |
| | Division - decimals | 5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths | TM2 4-1 Dividing by Multiples of 10 |
| November | Division - estimating 2 digit divisors Problem Solving Division - 2 digit divisors | 5.N.17 Use a variety of strategies to divide three-digit numbers by one- and two-digit numbers Note: Division by anything greater than a two-digit divisor should be done using technology. | TM2 4-2 Estimating with Two Digit Divisors TM2 4-3 Try, Check and Revise TM2 4-4 Dividing Whole Numbers by Two Digit Divisors |

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|------|---|---|--|
| | Problem Solving Division - decimals Division - money Division - decimals Reading and Making Line Graphs Division - Mean Line Graphs | <p>5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths</p> <p>5.S.1 Collect and record data from a variety of sources 5.S.4 Formulate conclusions and make predictions from graphs 5.S.2 Display data in a line graph to show an increase or decrease over time 5.S.3 Calculate the mean for a given set of data and use to describe a set of data</p> <p>5.CM.4 Share organized mathematical ideas through the manipulation of objects, numerical tables, drawings, pictures, charts, graphs, tables, diagrams, models and symbols in written and verbal form</p> | <p>TM2 4-8 Problem-Solving Multiple-Step Problems TM2 4-9 Dividing Decimals by 10, 100 and 1,000 TM2 4-10 Dividing Money by Two Digit Divisors TM2 4-11 Dividing Decimals by Whole Numbers TM2 5-3 - Line Graphs TM2 5-6 Mean, Median and Mode TM2 5-9 Writing to Compare</p> |

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|--------------|--|--|---|
| November/Dec | Geometry - Angles | <i>Review- Post-March 4th grade</i> 4.G.7 Identify points and rays when drawing angles 4.G.8 Classify angles as acute, obtuse, right and straight 5.M.6 Determine the tool and technique to measure with an appropriate level of precision; lengths and angles 5.M.7 Measure and draw angles using a protractor | TM2 6-2 Measuring and Classifying Angles |
| | Geometry - triangles | 5.M.6 Determine the tool and technique to measure with an appropriate level of precision; lengths and angles 5.M.7 Measure and draw angles using a protractor 5.G.7 Know that the sum of the interior angles of a triangle is 180 degrees 5.G.8 Find a missing angle when given two angles of a triangle 5.G.6 Classify triangles by properties of their angles and sides | TM2 6-5 Classifying Triangles |
| | Geometry - quadrilaterals, interior angles | 5.G.4 Classify quadrilaterals by properties of their angles and sides 5.G.5 Know that the sum of the interior angles of a quadrilateral is 360 degrees | TM 2 6-6 Classifying Quadrilaterals |
| | Geometry - problem solving | 5.CN.3 Connect and apply mathematical information to solve problems | TM2 6-7 Solve a Simpler Problem |

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|-----------------|---|---|---|
| December | <p>Geometry - similar and congruent</p> <p>Geometry - symmetry</p> <p>Fractions - intro to fractions</p> <p>Fractions - Mixed Numbers</p> <p>Fractions - Understanding Equivalent Fractions</p> | <p>5.G.2 Identify pairs of similar triangles 5.G.3 Identify the ratio of corresponding sides of similar triangles 5.G.9 Identify pairs of congruent triangles 5.G.10 Identify corresponding parts of congruent triangles 5.A.8 Create algebraic or geometric patterns using concrete objects or visual drawings (e.g., rotate and shade geometric shapes)</p> <p>5.G.11 Identify and draw lines of symmetry of basic geometric shapes</p> <p><i>Review - Post-March 4th grade</i> 4.N.7 <i>Develop an understanding of fractions as locations on number lines and as divisions of whole numbers</i></p> <p>5.N.20 Convert improper fractions to mixed numbers, and mixed numbers to improper fractions</p> <p><i>Review - Post-March 4th grade</i> 4.N.8 <i>recognize and generate equivalent fractions (halves, fourths, thirds, fifths, sixths, and tenths) using manipulatives, visual models and illustrations</i></p> | <p>TM2 6-9 Congruence and Similarity</p> <p>TM2 6-11 Symmetry</p> <p>TM 3 7-1 Meanings of Fractions</p> <p>TM3 7-3 Mixed Numbers</p> <p>TM3 7-7 Understanding Equivalent Fractions</p> |
| December | <p>Fractions - patterns with equivalent fractions</p> <p>Fractions - greatest common factor</p> <p>Fractions - Simplest form</p> | <p>5.N.4 Create equivalent fractions, given a fraction</p> <p>5.N.15 Find the common factors and the greatest common factor of two numbers</p> <p>5.N.19 Simplify fractions to lowest terms</p> | <p>TM 3 7-8 Equivalent Fractions</p> <p>TM3 7-9 Greatest Common Factor</p> <p>TM3 7-10 Fractions in Simplest Form</p> |

| TIME | CONTENT / SKILLS | PERFORMANCE INDICATOR | APPLICATIONS / IDEAS |
|------|---|---|--|
| | Measurement - use of ruler, personal references | <p>5.M.1 Use a ruler to measure to the nearest inch, and 1/2, 1/4 and 1/8 inch</p> <p>5.M.6 Determine the tool and technique to measure with an appropriate level of precision; lengths and angles</p> <p>5.M.9 Determine personal references for customary units of length (e.g., your pace is approximately 3 feet, your height is approximately 5 feet, etc.)</p> | TM3 9-2 Measuring with Fractions of an Inch |

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|----------------------------|---|--|--|
| February/ March | <p>Measurement - estimating and measuring length in metric units</p> <p>Measurement - millimeters, centimeters, meters, decimals</p> <p>Measurement - perimeter of polygons</p> <p>Time</p> <p>Elapsed Time - hours and minutes</p> <p>Geometry - Ratios</p> <p>Geometry - Ratios</p> <p>Fractions - fractions and percent</p> <p>Fractions - fractions and percent</p> | <p>5.M.3 Measure to the nearest centimeter</p> <p>5.M.10 Determine personal references for metric units of length</p> <p>5.M.11 Justify the reasonableness of estimates</p> <p>5.M.4 Identify equivalent metric units of length</p> <p>5.G.1 Calculate the perimeter of regular and irregular polygons</p> <p>5.A.6 Evaluate the perimeter formula for given input values</p> <p>5.M.7 Calculate elapsed time in hours and minutes</p> <p>5.N.6 Understand the concept of ratio</p> <p>5.N.7 Express Ratios in different forms</p> <p>5.N.6 Understand the concept of ratio</p> <p>4.N.24 <i>Post-March 4th grade Express decimals as an equivalent form of fractions to tenths and hundredths</i></p> <p>5.N.11 Understand that percent means part of 100, and write percents as fractions and decimals</p> | <p>TM3 9-3 Metric Units of Length</p> <p>TM3 9-4 Converting Metric Units Using Decimals</p> <p>TM3 9-5 Finding Perimeter</p> <p>TM3 9-12 Time</p> <p>TM3 9-13 Elapsed Time</p> <p>TM4 11-1 Understanding Ratios</p> <p>TM4 11-2 Equal Ratios</p> <p>TM4 11-3 Graphs of Equal Ratios</p> <p>TM4 11-8 Understanding Percent</p> <p>TM4 11-9 Mental Math: Finding a Percent of a Number</p> |

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|--------------|---|---|------------------------|
| March | Algebra - variables, algebraic expressions, order of operations | <p>5.A.1 Define and use appropriate terminology when referring to constants, variables, and algebraic expressions</p> <p>5.A.2 Translate simple verbal expressions into algebraic expressions</p> <p>5.A.3 Substitute assigned values into variable expressions and evaluate using order of operations</p> <p>5.A.7 Create and explain patterns and algebraic relationships (e.g., 2, 4, 6, 8...) algebraically: $2n$ (doubling)</p> | Supplemental Materials |

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|-------------------|--|--|--|
| Post March | <p>Division</p> <p>Algebra</p> <p>Probability - outcomes for single-event experiments</p> <p>Probability - record results</p> <p>Probability - sample space/ determine probability of single event</p> | <p>5.G.12 Identify and plot points in the first quadrant</p> <p>5.G.13 Plot points to form basic geometric shapes (identify and classify)</p> <p>5.G.14 Calculate perimeter of basic geometric shapes drawn on a coordinate plane (rectangles and shapes composed of rectangles having sides with integer lengths and parallel to the axes)</p> <p>5.S.5 List the possible outcomes for a single-event experiment</p> <p>5.S.5 List the possible outcomes for a single-event experiment</p> <p>5.S.6 Record experiment results using fractions/ratios</p> <p>5.S.7 Create a sample space and determine the probability of a single event, given a simple experiment (e.g., rolling a number cube)</p> | <p>TM1 3-8 Dividing Larger Dividends</p> <p>TM1 3 - 14 Graphing Ordered Pairs</p> <p>TM1 3-15 Rules, Tables and Graphs</p> <p>TM1 4-5 Dividing Larger Numbers</p> <p>TM2 5-10 Predicting Outcomes</p> <p>TM2 5-11 Listing Outcomes</p> <p>TM2 5-12 Expressing Probability as a Fraction</p> <p>Supplemental Materials</p> |

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|------|--|-----------------------|---|
| | <p>Lessons to skip Post-March</p> <p>Problem-Solving Lessons High Interest DO IF TIME PERMITS</p> | | <p>11-4 Rates 11-7 Writing to explain</p> <p>3-2 Division Patterns 4-6 Dividing-Choosing a Method 4-7 Dividing with zeroes in the quotient 5-2 Bar Graphs</p> <p>3-16 High Speed Trains 4-12 Animal Speeds 5-13 Population Growth 6-12 Skyscraper 7-16 Extreme Machines 9-16 Statue of Liberty 11-11 Food</p> |

