

Diocese of Bridgeport
Curriculum Map

Course: Mathematics

Grade Level: 4

Content	Skills	Suggested Assessments*	Connecticut Content Standards
<p>Numbers Place Value</p> <ul style="list-style-type: none"> To millions Rounding Reading and writing numbers in standard, expanded and word form Comparing and ordering <p>Addition/Subtraction</p> <ul style="list-style-type: none"> Adding/Subtracting whole numbers and money Properties of addition of whole numbers and money Estimating sums and differences <p>Algebra</p> <ul style="list-style-type: none"> One-step equations 	<ul style="list-style-type: none"> Recognize and use related vocabulary in content area Identify the place and value of a given number Round to the place value given Read and write numbers in expanded, standard, and word form Compare and order larger numbers <ul style="list-style-type: none"> Apply commutative, associative, and identity Align digits properly Apply regrouping and renaming skills Apply problem solving strategies to word problems <ul style="list-style-type: none"> Solve one-step equations Substitute for variable 	<ul style="list-style-type: none"> Order numbers from greatest to least and least to greatest Say and write names of number in standard and expanded forms to millions Use signs of inequality: > and < Draw number line and round to lower or higher number Use place value block and charts to show numbers to millions <ul style="list-style-type: none"> Mad minute math and timed test for addition and subtraction automaticity Use calculator to find patterns in addition and subtraction Write addition and subtraction algorithms with regrouping, aligning numbers correctly Use 5 steps in problem solving: 1) read, 2) plan, 3) estimate, 4) solve, 5) check Performance assessment: Set up class store; teacher uses rubric to ascertain that each child understands numeric value of money—ie, know how to make change, etc. <ul style="list-style-type: none"> Compute, check answers and explain verbally. 	<ul style="list-style-type: none"> Patterns can be classified as repeating or growing. Place value patterns, number lines, expanded and regrouped forms, and algebraic properties may be used to explain how various estimation and computation procedures (algorithms) work. <ul style="list-style-type: none"> Place value patterns and commutative and associative properties can be used to invent estimation, mental computation, and paper and pencil strategies for addition and subtraction of multi-digit numbers. <ul style="list-style-type: none"> Variables are used to represent a set of possible values. The equivalence of both sides of an equation is maintained if the same value is added, subtracted, multiplied or divided on each side.

	Content	Skills	Suggested Assessments*	Connecticut Content Standards
	<p>Numbers</p> <p>Multiplication</p> <ul style="list-style-type: none"> • Multiply 2, 3, and 4 digits by 1 and 2 digit multipliers • Multiply money <p>Division</p> <ul style="list-style-type: none"> • Rules for division • Division with remainders • Zeroes in quotient • Problem solving • Dividing money <p>Roman Numerals</p>	<ul style="list-style-type: none"> • Memorize basic multiplication facts up to 12 • Explore patterns of multiplying • Compute multiplication of 2,3, and 4 digits by 1 and 2 digit multipliers • Apply multiplication skills to money as well as whole numbers <ul style="list-style-type: none"> • Recognize the relationship between multiplication and division • Name the rules of division • Interpret remainders and solve problems • Distinguish the steps of division • Extend their knowledge of division rules to using 0's in the quotient • Generalize the rules of division to include money • Apply multiplication and division strategies to solve word problems <ul style="list-style-type: none"> • Recognize and read Roman numerals 	<ul style="list-style-type: none"> • Practice using flash cards • Play multiplication bingo • Hold math bees for multiplication • Practice on board aligning numbers in multiplication • Recognize multiplication and division are opposite <ul style="list-style-type: none"> • Play division bingo • Hold math bees for division • Practice on board aligning numbers in long division • Memorize steps in long division • Solve division problems using zeroes in quotient • Solve division problems using money • Solve division problems with remainders • Practice using calculators <ul style="list-style-type: none"> • Write 1-10 in Roman numerals • Convert ordinal numbers to Roman numerals—ie, Super Bowl, Olympics, year of birth, etc. • Convert Arabic numerals to Roman and vice versa 	<ul style="list-style-type: none"> • Number patterns, basic facts, rectangular arrays, place value models and the distributive property $10 \times (5 + 4) = (10 \times 5) + (10 \times 4)$ can be used to multiply and divide. <ul style="list-style-type: none"> • The equivalence of both sides of an equation is maintained if the same value is added, subtracted, multiplied, or divided on each side. • Variables are used to represent a set of possible values.

	Content	Skills	Suggested Assessments*	Connecticut Content Standards
	<p>Fractions & Mixed Numbers</p> <ul style="list-style-type: none"> • Compare and order parts of a set/whole and parts of a region/group • Factors • Equivalent Fractions • Reduce • Subtract and add with like denominators • Subtract and add unlike denominators • Recognizing as ratios <p>Decimals</p> <ul style="list-style-type: none"> • Read and write tens and hundreds • Ordering and comparing • Adding and subtracting • Problem solving • Relate decimals to fractions 	<ul style="list-style-type: none"> • Identify, read, and write fractions • Identify equivalent fractions • Compare and order fractions • List the factors of a number • Identify greatest common factors of numerator and denominator • Reduce fractions to lowest terms using greatest common factor • Recognize like denominators and add/subtract numerators. • Define common multiples • Add/subtract numerators and reduce to lowest terms. • Recognize a fraction as a ratio. <ul style="list-style-type: none"> • Read and write decimals using tenths and hundreds • Compare and order decimals. • Round decimals to nearest given place value. • Align digits in place value and add or subtract. • Recognize equivalent decimals and fractions • Apply fractions and decimals to solve word problems 	<ul style="list-style-type: none"> • Identify GCF, denominator and numerator in a written assessment. • Use factorial cubes to identify factors of numbers • Write improper fractions and change to a mixed number • Use fraction cubes to identify greatest/least common factors of numerators and denominators • Compose step-by-step method for finding equivalent fraction • Shade in equal parts of a picture to represent fraction • Use fraction strips to understand concept of equivalent fractions and to compare and order fractions • Identify, write, compare and read fractions using fraction bars • Define and recognize common multiples in a written assessment • Complete addition and subtraction problems in a written assessment. • Find and recognize fractions as a ratio using a calculator <ul style="list-style-type: none"> • Use place value blocks to show, read and write decimals using tenths and hundredths • Compose number line and label numbers to compare and order decimals • Use grid paper to explore fractions as decimals • Use a number line to visualize rounding of decimals • Equate decimals and fractions using manipulatives • Solve word problems that involve fractions and decimals 	<ul style="list-style-type: none"> • Ratios help to make comparisons and describe quantitative relationships. • A fraction is another way to represent a division problem or a ratio. • Models and pictures can reveal patterns about equivalent fractions and ratios. • Models and pictures may be used to estimate and demonstrate the addition and subtraction of fractions and mixed numbers with like and unlike denominators. <ul style="list-style-type: none"> • Decimal notation is another way of writing fractions that have denominators that are multiples of ten.

	Content	Skills	Suggested Assessments*	Connecticut Content Standards
	<p>Geometry</p> <ul style="list-style-type: none"> • Congruence • Symmetry • Points, lines, flips, turns, perimeter, area • Graphs, bar, line, segments <p>Measurement</p> <ul style="list-style-type: none"> • Metric and standard units of length • Weights and capacity • Time <p>Statistics & probability</p> <ul style="list-style-type: none"> • Mean, median, mode, range • Problem solving 	<ul style="list-style-type: none"> • Identify and name two dimensional and 3 dimensional figures. • Explore congruent figures and motions. • Recognize symmetry in a figure • Identify intercepting, parallel, and perpendicular lines, rays, and line segments. • Classify angles and triangles. • Calculate perimeter and area of a polygon. • Read and interpret bar, line, pictographs, circle and coordinate graphs. <ul style="list-style-type: none"> • Measure length in standard and metric units. • Measure weights and capacity in standard and metric units. • Determine time to the minute using both analog and digital. <ul style="list-style-type: none"> • Identify the range, median, mode and mean in a set of data. • Apply geometry, measurements, statistics and probability to word problems. 	<ul style="list-style-type: none"> • Use shape manipulative to explore and identify 2- and 3-dimensional figures • Use mirrors to identify symmetry • Identify all line segments • Calculate perimeter, area of a polygon • Design bar graphs, pictographs and pie graphs based on information gathered in class <ul style="list-style-type: none"> • Use ruler manipulators to measure metric and standard units of length • Develop measurement chart to identify and compute measurements • Use a balance with gram and kilogram masses to explore concept of mass • Use real situations to develop time measures and graphs • Use clock with movable hands to find elapsed time <ul style="list-style-type: none"> • Computer range, median and mode for data gathered in class • Determine if event is impossible, unlikely, likely or certain 	<ul style="list-style-type: none"> • Lines of symmetry, slides, flips and turns can be used to build, describe, classify and analyze two- and three-dimensional shapes. • Maps are based on the rectangular coordinate system and help to locate positions and find possible pathways between two points. <ul style="list-style-type: none"> • Measurements of length, perimeter and area of squares and rectangles, when organized in a data table, reveal patterns which are generalized as formulas. • Benchmarks (points of reference such as a centimeter = the width of the smallest finger) may be used to make estimates of length, area, volume, weight, temperature and time. • Measurement tools increase the precision of the estimates. • Glyphs, systematic listing, spreadsheets and circle graphs are ways to organize and work with categorical and numerical data. <ul style="list-style-type: none"> • The range, mode, median and mean indicate what is “average” about the characteristics in the data set. • Knowing the likelihood of an occurrence can help identify fair situations and good choices.

July 2006

*Formal and informal assessments for skills may also encompass—1) testing; 2) quizzes; 3) class work (self-guided and group); 4) homework; 5) IOWA Test of Basic Skills; 6) use of computer curriculum to assess skills on map.