

Math - Fourth Grade Curriculum Map

Instructional Days: September and October		
Content (What Students Should Know)	Essential Questions	Skills (What Students Should Be Able To Do)
<p>Place Value of Multi-Digit Whole Numbers Module 1, Ls1-4 4.NBT.1; 4.NBT.2; 4.OA.1</p> <p>Comparing Multi-Digit Whole Numbers Module 1, Ls 5-6 4.NBT.2 B</p> <p>Rounding Multi-Digit Whole Numbers Module 1, Ls 7-10 4.NBT.3</p> <p>Multi-Digit Whole Number Addition Module 1, Ls 11-12 4.OA.3; 4.NBT.4; 4.NBT.1; 4.NBT.2 D</p> <p>Multi-Digit Whole Number Subtraction Module 1, Ls 14-16 4.OA.3; 4.NBT.4; 4.NBT.1; 4.NBT.2</p> <p>Addition and Subtraction Word Problems Lesson</p>	<p>How can we use estimation to check for reasonability of sums and differences?</p> <p>How do we use symbols and variables to represent unknown quantities?</p> <p>How do we determine the value of a digit?</p> <p>What different ways can we write numbers?</p>	<p>Interpret a multiplication equation as a comparison.</p> <p>Recognize a digit represents 10 times the value of what it represents in the place to its right.</p> <p>Name numbers within 1 million by building understanding of the place value chart and placement of commas for naming base thousand units.</p> <p>Read and write multi-digit numbers using base ten numerals, number names, and expanded form.</p> <p>Compare numbers based on meanings of the digits using $>$, $<$, or $=$ to record the comparison.</p> <p>Find 1, 10, and 100 thousand more and less than a given number.</p> <p>Round multi-digit numbers to any place using the vertical number line.</p> <p>Use place value understanding to round multi-digit numbers to any place value using real world applications.</p> <p>Use place value understanding to fluently add multi-digit whole numbers using the standard addition algorithm, and apply the algorithm to solve word problems using tape diagrams.</p> <p>Solve multi-step word problems using the standard addition algorithm modeled with tape diagrams, and assess the reasonableness of answers using rounding.</p> <p>Use place value understanding to fluently decompose to smaller units multiple times in any place using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams.</p>

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Module 1, Ls 17-19 4.OA.3; 4.NBT.4; 4.NBT.1; 4.NBT.2		Solve two-step and multi-step word problems using the standard subtraction algorithm fluently modeled with tape diagrams, and assess the reasonableness of answers using rounding. Solve additive compare word problems modeled with tape diagrams.
Resources and Major Assessments		
<p style="text-align: center;"><u>Web Sites</u></p> Brain Pop Engage NY Mr. Nussbaum Learn Zillion		<p style="text-align: center;"><u>Texts and Assessments</u></p> HSP Harcourt, Textbook Teacher created resources New York State Module Mid Module Assessment, End of Module Assessment

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Instructional Days: November		
Content (What Students Should Know)	Essential Questions	Skills (What Students Should Be Able To Do)
Metric Unit Conversions Module 2, Ls 1-3 4.MD.1; 4.MD.2 Application of Conversions Module 2, Ls 4-5 4.MD.1; 4.MD.2	How do we convert between metric units? How do we find sums and differences of mixed units?	Express metric length, mass, and capacity measurements in smaller units Know and relate metric units to place value units. Use addition & subtraction to solve multi-step word problems involving length, mass, capacity.
Resources and Major Assessments		
	<u>Web Sites</u> Brain Pop Engage NY Mr. Nussbaum Learn Zillion Super Teacher Math Playground Castle Learning ExtraMath.org	<u>Texts and Assessments</u> HSP Harcourt, Textbook Teacher created resources New York State Module Mid Module Assessment, End of Module Assessment

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Instructional Days: December- January		
Content (What Students Should Know)	Essential Questions	Skills (What Students Should Be Able To Do)
<p>Multiplicative Comparison Word Problems Module 3, Ls 1-3 4.OA.1; 4.OA.2; 4.OA.3; 4.MD.3</p> <p>Multiplication by 10, 100, and 1,000 Module 3, Ls 4-6 4.OA.1; 4.OA.2; 4.NBT.1</p> <p>Multiplication of up to Four Digits by Single-Digit Numbers Module 3, Ls 7-11 4.OA.2; 4.NBT.1</p> <p>Multiplication Word Problems Module 3, Ls 12-13 4.OA.1; 4.OA.2; 4.OA.3; 4.NBT.5</p> <p>Division of Tens and Ones with Successive Remainders Module 3, Ls 14-21 4.OA.3; 4.NBT.6;</p> <p>Reasoning with Divisibility Module 3, Ls 22-25 4.OA.4</p>	<p>How can we use estimation to check reasonability of products and quotients?</p> <p>How are division and multiplication related to subtraction and addition?</p> <p>What patterns can we find in multiplication and division facts?</p> <p>How do you multiply whole numbers?</p> <p>How do you interpret remainders?</p>	<p>Investigate and use the formulas for area and perimeter of rectangles. Demonstrate understanding of area and perimeter formulas by solving multi-step real world problems and multiplicative comparison word problems.</p> <p>Interpret and represent patterns when multiplying by 10, 100, and 1,000 in arrays and numerically. Multiply multiples of 10, 100, and 1,000 by single digits, recognizing patterns. Multiply two-digit multiples of 10 by two-digit multiples of 10 with the area model.</p> <p>Use place value disks to represent two-digit by one-digit multiplication. Extend the use of place value disks to represent three- and four-digit by one-digit multiplication. Multiply three- and four-digit numbers by one-digit numbers applying the standard algorithm. Connect the area model and the partial products method to the standard algorithm.</p> <p>Solve two-step word problems, including multiplicative comparison. Use multiplication, addition, or subtraction to solve multi-step word problems.</p> <p>Solve division word problems with/without remainders. Understand and solve division problems with a remainder using the array and area models. Understand and solve two-digit dividend division problems with a remainder in the ones place by using place value disks. Represent and solve division problems requiring decomposing a remainder in the tens. Find whole number quotients and remainders. Explain remainders by using place value understanding and models.</p> <p>Find factor pairs for numbers to 100, and use understanding of factors to define prime and composite. Use division and the associative property to test for factors and observe patterns. Determine if a whole number is a multiple of another number.</p>

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<p>Division of Thousands, Hundreds, Tens, and Ones Module 3, Ls 26-30 4.OA.3; 4.NBT.1; 4.NBT.6</p> <p>Multiplication of Two-Digit by Two-Digit Numbers Module 3, Ls 34-38 4.OA.3; 4.MD.3</p>		<p>Explore properties of prime and composite numbers to 100 by using multiples.</p> <p>Divide multiples of 10, 100, and 1,000 by single-digit numbers. Represent and solve division problems with up to a three-digit dividend numerically and with place value disks requiring decomposing a remainder in the hundreds place. Represent and solve three-digit dividend division with divisors of 2, 3, 4, and 5 numerically. Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times. Solve division problems with a zero in the dividend or with a zero in the quotient. Interpret division word problems as either <i>number of groups unknown</i> or <i>group size unknown</i>. Interpret and find whole number quotients and remainders to solve one-step division word problems with larger divisors of 6, 7, 8, and 9. Explain the connection of the area model of division to the long division algorithm for three- and four-digit dividends.</p> <p>Multiply two-digit multiples of 10 by two-digit numbers using a place value chart. Multiply two-digit multiples of 10 by two-digit numbers using the area model. Multiply two-digit by two-digit numbers using four partial products. Transition from four partial products to the standard algorithm for two-digit by two-digit multiplication.</p>
<p>Resources and Major Assessments</p>		
	<p style="text-align: center;"><u>Web Sites</u></p> <p>Brain Pop Engage NY Mr. Nussbaum Learn Zillion</p> <p>Super Teacher Math Playground Castle Learning ExtraMath.org</p>	<p style="text-align: center;"><u>Texts and Assessments</u></p> <p>HSP Harcourt, Textbook Teacher created resources New York State Module 3 Mid Module Assessment, End of Module Assessment</p>

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Instructional Days: February		
Content (What Students Should Know)	Essential Questions	Skills (What Students Should Be Able To Do)
<p>Lines and Angles Module 4, Ls 1-4 4.G.1</p> <p>Angle Measurement Module 4, Ls 5-8 4.MD.5; 4.MD.6</p> <p>Problem Solving with the Addition of Angle Measures Module 4, Ls 9-11 4.MD.7</p> <p>Two-Dimensional Figures and Symmetry Module 4, Ls 12-16 4.G.1; 4.G.2; 4.G.3</p>	<p>How do you know if a shape is symmetrical?</p> <p>How do you measure angles?</p> <p>How do you find an unknown angle?</p> <p>How do we classify 2-dimensional shapes?</p>	<p>Identify and draw points, lines, line segments, rays, and angles. Recognize them in various contexts and familiar figures.</p> <p>Use right angles to determine whether angles are equal to, greater than, or less than right angles. Draw right, obtuse, and acute angles.</p> <p>Identify, define, and draw perpendicular lines.</p> <p>Identify, define, and draw parallel lines.</p> <p>Use a circular protractor to understand a 1-degree angle as $\frac{1}{360}$ of a turn. Explore benchmark angles using the protractor.</p> <p>Use varied protractors to distinguish angle measure from length measurement.</p> <p>Measure and draw angles. Sketch given angle measures and verify with a protractor.</p> <p>Identify and measure angles as turns and recognize them in various contexts.</p> <p>Decompose angles using pattern blocks.</p> <p>Use the addition of adjacent angle measures to solve problems using a symbol for the unknown angle measure.</p> <p>Recognize lines of symmetry for given two-dimensional figures. Identify line-symmetric figures and draw lines of symmetry.</p> <p>Analyze and classify triangles based on side length, angle measure, or both.</p>
Resources and Major Assessments		
<u>Web Sites</u>		<u>Texts and Assessments</u>
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Instructional Days: March-April		
Content (What Students Should Know)	Essential Questions	Skills (What Students Should Be Able To Do)
<p>Decomposition and Fraction Equivalence Module 5, Ls 1-6 4.NF.3b; 4.NF.4a; 4.NF.3a</p> <p>Fraction Equivalence Using Multiplication and Division Module 5, Ls 7-11 4.NF.1; 4.NF.3b</p> <p>Fraction Comparison Module 5, Ls 12-15 4.NF.2</p> <p>Fraction Addition and Subtraction Module 5, Ls 16-21 4.NF.3a; 4.NF.3d; 4.NF.1; 4.MD.2</p> <p>Extending Fraction Equivalence to Fractions Greater Than 1 Module 5, Ls 22-28 4.NF.1; 4.NF.2; 4.NF.3; 4.NBT.6; 4.NF.4a; 4.MD.4</p> <p>Addition and Subtraction of Fractions by Decomposition Module 5, Ls 29-34</p>	<p>How do fractions relate to other numbers?</p> <p>How do we add and subtract fractions and mixed numbers?</p> <p>How do we compare fractions?</p> <p>How do we express fractions as the sum of their parts?</p>	<p>Decompose fractions as a sum of unit fractions using tape diagrams. Decompose non-unit fractions and represent them as a whole number times a unit fraction using tape diagrams. Decompose fractions into sums of smaller unit fractions using tape diagrams. Decompose unit fractions using area models to show equivalence. Decompose fractions using area models to show equivalence.</p> <p>Use the area model and multiplication to show the equivalence of two fractions. Use the area model and division to show the equivalence of two fractions. Explain fraction equivalence using a tape diagram and the number line, and relate that to the use of multiplication and division.</p> <p>Reason using benchmarks to compare two fractions on the number line. Find common units or number of units to compare two fractions.</p> <p>Use visual models to add and subtract two fractions with the same units. Use visual models to add and subtract two fractions with the same units, including subtracting from one whole. Add and subtract more than two fractions. Solve word problems involving addition and subtraction of fractions. Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.</p> <p>Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models. Add and multiply unit fractions to build fractions greater than 1 using visual models.</p>

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<p>4.NF.3c; 4.NF.3d; 4.MD.4; 4.MD.2</p> <p>Repeated Addition of Fractions as Multiplication Module 5, Ls 35-40 4.NF.4; 4.MD.4; 4.OA.2; 4.MD.2</p> <p>Exploring a Fraction Pattern Module 5, Ls 41 4.OA.5</p>		<p>Decompose and compose fractions greater than 1 to express them in various forms. Compare fractions greater than 1 by reasoning using benchmark fractions. Compare fractions greater than 1 by creating common numerators or denominators. Solve word problems with line plots.</p> <p>Estimate sums and differences using benchmark numbers. Add a mixed number and a fraction. Add mixed numbers. Subtract a fraction from a mixed number. Subtract a mixed number from a mixed number.</p> <p>Represent the multiplication of n times a/b as $(n \times a)/b$ using the associative property and visual models. Find the product of a whole number and a mixed number using the distributive property. Solve multiplicative comparison word problems involving fractions. Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots. Find and use a pattern to calculate the sum of all fractional parts between 0 and 1. Share and critique peer strategies.</p>
<p>Resources and Major Assessments</p>		
<p style="text-align: center;"><u>Web Sites</u></p> <p>Brain Pop Engage NY Mr. Nussbaum Learn Zillion</p> <p style="text-align: center;">Super Teacher Math Playground Castle Learning ExtraMath.org</p>		<p style="text-align: center;"><u>Texts and Assessments</u></p> <p>HSP Harcourt, Textbook Teacher created resources New York State Module Mid Module Assessment, End of Module Assessment</p>

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Instructional Days: May		
Content (What Students Should Know)	Essential Questions	Skills (What Students Should Be Able To Do)
<p>Exploration of Tenths Module 6, Ls 1-3 4.NF.6; 4.NBT.1; 4.MD.1</p> <p>Tenths & Hundredths Module 6, Ls 4-8 4.NF.5; 4.NF.6; 4.NBT.1; 4.NF.1; 4.NF.7; 4.MD.1</p> <p>Decimal Comparison Module 6, Ls 9-11 4.NF.7; 4.MD.1; 4.MD.2</p> <p>Addition with Tenths and Hundredths Module 6, Ls 12-14 4.NF.5; 4.NF.6; 4.NF.3c; 4.MD.1</p> <p>Money Amounts as Decimal Numbers Module 6, Ls 15-16 4.MD.2; 4.NF.5; 4.NF.6</p>	<p>What does a decimal represent?</p> <p>How do we read/write decimals?</p> <p>How do we add/subtract decimals, and decimals as money?</p>	<p>Use metric measurement to model the decomposition of one whole into tenths</p> <p>Use metric measurements and area models to represent tenths as fractions greater than 1 and decimal numbers</p> <p>Represent mixed numbers with units of tens, ones, and tenths with number disks on a number line and in expanded form</p> <p>Use meters to model the decomposition of one whole into hundredths</p> <p>Model the equivalence of tenths and hundredths using an area model & number disks</p> <p>Use area model and number line to represent mixed numbers</p> <p>Model mixed numbers with units of hundreds, tens, ones, tenths & hundredths in expanded form</p> <p>Use understanding of fraction equivalence to investigate decimal numbers on a place value chart expressed in different units</p> <p>Use place value chart and metric measurements to compare decimals</p> <p>Use area models and number line to compare decimal numbers using $<$, $>$, and $=$</p> <p>Compare and order mixed numbers in various forms</p> <p>Apply understanding of fraction equivalence to add tenths and hundredths</p> <p>Add decimal numbers by converting to fraction form</p> <p>Solve word problems involving the addition of measurements in decimal form</p> <p>Express money amounts given in various forms as decimal numbers</p> <p>Solve word problems involving money</p>
Resources and Major Assessments		
<p><u>Web Sites</u></p> <p>Brain Pop Engage NY Mr. Nussbaum Learn Zillion</p> <p>Super Teacher Math Playground Castle Learning ExtraMath.org</p>		<p><u>Texts and Assessments</u></p> <p>HSP Harcourt, Textbook Teacher created resources New York State Module Mid Module Assessment, End of Module Assessment</p>

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Instructional Days: June		
Content (What Students Should Know)	Essential Questions	Skills (What Students Should Be Able To Do)
<p>Measurement Conversion Tables Module 7, Ls 1-5 4.OA.1; 4.OA.2; 4.MD.1; 4.NBT.5; 4.MD.2</p> <p>Problem Solving with Measurement Module 7, Ls 6-11 4.OA.2; 4.OA.3; 4.MD.1; 4.MD.2; 4.NBT.5; 4.NBT.6</p> <p>Investigation of Measurements Expressed as Mixed Numbers Module 7, Ls 12-14 4.OA.3; 4.MD.1; 4.MD.2; 4.NBT.5; 4.NBT.6</p>	<p>How do we convert between customary units?</p> <p>How do we find sums/differences of mixed units?</p>	<p>Create conversion tables for length, weight, and capacity units using measurement tools, and use the tables to solve problems. Create conversion tables for units of time, and use the tables to solve problems. Solve multiplicative comparison word problems using measurement conversion tables. Share and critique peer strategies.</p> <p>Solve Problems involving mixed units of capacity. Solve problems involving mixed units of length. Solve problems involving mixed units of weight. Solve problem involving mixed units of time. Solve multi-step measurement word problems.</p> <p>Use measurement tools to convert mixed number measurements to smaller units. Solve multi-step word problems involving converting mixed number measurements to a single unit.</p>
Resources and Major Assessments		
	<p><u>Web Sites</u></p> <p>Brain Pop Engage NY Mr. Nussbaum Learn Zillion</p> <p>Super Teacher Math Playground Castle Learning ExtraMath.org</p>	<p><u>Texts and Assessments</u></p> <p>HSP Harcourt, Textbook Teacher created resources New York State Module Mid Module Assessment, End of Module Assessment</p>