Instructional Days: September and October (MOD 1)		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Properties of Multiplication and Division NY-3.OA.1 Interpret products of whole numbers NY-3.OA.2 Interpret whole-number quotients of whole numbers. NY-3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. NY-3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. NY-3.OA.5 Apply properties of operations as strategies to multiply and divide. NY-3.OA.6 Understand division as an unknown-factor problem.	Multiplication: How are addition and multiplication related? What patterns can be used to find certain multiplication facts? How can unknown multiplication facts be found using known facts? Division: How is division related to the other operations? How can an unknown division fact be found by thinking of a related multiplication fact?	Multiplication and the Meaning of the Factors: ● Understand equal groups of as multiplication and division ● Relate multiplication and division to the array model ● Interpret the meaning of factors—the size of the group or the number of groups Division as an Unknown Factor Problem: ● Understand the meaning of the unknown as the size of the group in division ● Understand the meaning of the unknown as the number of groups in division ● Interpret the unknown in division using the arra model Analyze Arrays to Multiply Using Units of 2 and 3: ● Demonstrate the commutativity of multiplication, and practice related fact by skip-counting objects in array models ● Find related multiplication facts by adding and subtracting equal groups in array models ● Model and apply the distributive property with arrays to decompose units as a strategy to multiply Division Using Units of 2 and 3: ● Model division as the unknown factor in multiplication using arrays and tape diagrams ● Interpret the quotient as the number of group or the number of objects in each group using units of 2, 3,4,5, 10 ● Skip-count objects in models to build fluency with multiplication facts using units of 2, 3, 4, 5, 10 ● Relate arrays to tape diagrams to model the commutative property of multiplication

NY-3.OA.7a Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations. NY-3.OA.7b Know from memory all products of two one-digit numbers. NY-3.OA.8 Solve two-step word problems posed with whole numbers and having whole-number answers using the four operations. NY-3.OA.8a Represent these problems using equations or expressions with a letter standing for the unknown quantity. NY-3.OA.8b Assess the reasonableness of answers using mental computation and estimation strategies including rounding NY-3.OA.9 Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table).	How can two dimensional shapes be described, analyzed, and classified? How can lengths of time be measured and found? Perimeter and Area: How can perimeter be measured and found? What does area mean? How can I determine area of a shape? What are the customary units for measuring capacity and weight? How can data be represented, interpreted, and analyzed?	● Use the distributive property as a strategy to find related multiplication facts ● Model the relationship between multiplication and division Distributive Property and Problem Solving Using Units of 2-5 and 10: ● Apply the distributive property to decompose units ● Solve two-step word problems involving multiplication and division, and assess the reasonableness of answers

Resources and Major Assessments		
Web Sites		Texts and Assessments
Engage NY	Math Playground	Embarc Topic Quizzes
xtraMath.org	splashmath	Teacher created resources
edpuzzle	prodigy	New York State Modules End of Module Assessment
Embarc	IXL	problemattic assignments
problemattic	math and learning videos for kids	IXL

Instructional Days: November - mid December (MOD 2)		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Place Value and Problem solving with time and units of measure NY-3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve one-step word problems involving addition and subtraction of time intervals in minutes. NY-3.MD.2a Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (l). NY-3.MD.2b Add, subtract, multiply, or divide to solve one-step word problems involving masses or liquid	What strategies can I use to help me tell time and write time to the nearest minute and measure time intervals in minutes? What connections can I make between a clock and a number line?	Time Measurement and Problem Solving: ● Relate skip-counting by fives on the clock and telling time to a continuous measurement model, the number line ● Count by fives and ones on the number line as a strategy to tell time to the nearest minute on the clock ● Solve word problems involving time intervals within 1 hour by counting backward and forward using the number line and clock Measuring Weight and Liquid Volume in Metric Units: ● Build and decompose a kilogram to reason about the size and weight of 1 kilogram, 100 grams,10 grams, and 1 gram ● Solve one-step word problems involving metric weights within 100 and estimate to reason about solutions ● Decompose a liter to reason about the size of 1 liter, 100 milliliters, 10 milliliters, and 1 milliliter ● Estimate and measure liquid volume in liters and milliliters using the vertical number line ● Solve mixed word problems involving all four operations with grams, kilograms, liters,and milliliters given in the same units Rounding to the Nearest Ten and Hundred: ● Round two-digit measurements to the nearest ten on the vertical number line

volumes that are given in the same units Number and Operations in Base Ten NY-3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100 NY-3.NBT.2 Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.		● Round two and three- digit numbers to the nearest ten on the vertical number line ● Round to the nearest hundred on the vertical number line Two-and-Three Digit Measurement Addition Using the Standard Algorithm: ● Add measurements using the standard algorithm to compose larger units once ● Add measurements using the standard algorithm to compose larger units twice ● Estimate sums by rounding and apply to solve measurement word problems Two-and Three-Digit Measurement Subtraction Using the Standard Algorithm: ● Decompose once to subtract measurements including three digit minuends with zeros in the tens or ones place ● Decompose twice to subtract measurements including three digit minuends with zeros in the tens and ones places ● Estimate differences by rounding and apply to solve measurement word problems ● Estimate sums and differences of measurements by rounding, and then solve mixed word problems

Resources and Major Assessments

Web Sites		Texts and Assessments
Engage NY	Math Playground	Embarc Topic Quizzes
xtraMath.org	splashmath	Teacher created resources
edpuzzle	prodigy	New York State Modules End of Module Assessment
Embarc	IXL	problemattic assignments
problemattic	math and learning videos for kids	IXL

Instructional Days: December - January (MOD 3)		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Multiplication and Division with 0, 1, 6-10 NY-3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. NY-3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. NY-3.OA.5 Apply properties of operations as strategies to multiply and divide NY-3.OA.7a Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations. NY-3.OA.8 Solve two-step word problems posed with whole numbers and having whole-number answers using the four operations.		● Study commutativity to find known facts of 6, 7, 8, and 9. ● Apply the distributive and commutative properties to relate multiplication facts 5 × n+n t 6 × n and n × 6 where n is the size of the unit. ● Multiply and divide with familiar facts using a letter to represent the unknown. ● Count by units of 6 to multiply and divide using number bonds to decompose. ● Count by units of 7 to multiply and divide using number bonds to decompose. ● Use the distributive property as a strategy to multiply and divide using units of 6 and 7. ● Interpret the unknown in multiplication and division to model and solve problems using units of 6 and 7. ● Understand the function of parentheses and apply to solving problems. ● Model the associative property as a strategy to multiply. ● Use the distributive property as a strategy to multiply and divide. ● Interpret the unknown in multiplication and division to model and solve problems. ● Apply the distributive property and the fact 9 = 10-1 as a strategy to multiply. ● Identify and use arithmetic patterns to multiply. ● Interpret the unknown in multiplication and division to model and solve problems. ● Reason about and explain arithmetic patterns using units of 0 and 1 as they relate to multiplication and division. ● Solve two-step word problems involving all four operations and assess the reasonableness of solutions. ● Multiply by multiples of 10 using the place value chart.

NY-3.OA.9 Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table). NY-3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.		● Use place value strategies and the associative property $n \times (m \times 10) = (n \times m) \times 10$ (where n and m are less than 10) to multiply by multiples of 10. ● Solve two-step word problems involving multiplying single-digit factors and multiples of 10.

Resources and Major Assessments

Web Sites		Texts and Assessments
Engage NY	Math Playground	Embarc Topic Quizzes
xtraMath.org	splashmath	Teacher created resources
edpuzzle	prodigy	New York State Modules End of Module Assessment
Embarc	IXL	problemattic assignments
problemattic	math and learning videos for kids	IXL

Instructional Days: February (MOD 4)		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Multiplication and Area NY-3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement. NY-3.MD.5a Recognize a square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. NY-3.MD.5b Recognize a plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. NY-3.MD.6 Measure areas by counting unit squares. NY-3.MD.7 Relate area to the operations of multiplication and addition. NY-3.MD.7a Find the area of a rectangle with whole-number		● Understand area as an attribute of plane figures. ● Decompose and recompose shapes to compare areas. ● Model tiling with centimeter and inch unit squares as a strategy to measure area. ● Form rectangles by tiling with unit squares to make arrays. Draw rows and columns to determine the area of a rectangle given an incomplete array. Interpret area models to form rectangular arrays. Find the area of a rectangle through multiplication of the side lengths. Analyze different rectangles and reason about their area. Apply the distributive property as a strategy to find the total area of a large rectangle by adding two products. Demonstrate the possible whole number side lengths of rectangles with areas of 24, 36, 48, or 72 square units using the associative property. Solve word problems involving area. Find areas by decomposing into rectangles or completing composite figures to form rectangles.

side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. NY-3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. NY-3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side length a and side length b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning. NY-3.MD.7d Recognize area as additive. Find areas of figures composed of non-overlapping rectangles, and apply this technique to solve real world problems.		
Resources and Major Assessments		

Web Sites		Texts and Assessments
Engage NY	Math Playground	Embarc Topic Quizzes
xtraMath.org	splashmath	Teacher created resources
edpuzzle	prodigy	New York State Modules End of Module Assessment
Embarc	IXL	problemattic assignments
problemattic	math and learning videos for kids	IXL

Instructional Days: March - April (MOD 5)		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Fractions **NY-3.NF.1 Understand a unit fraction, 1 *bb* , is the quantity formed by 1 part when a whole is partitioned into b equal parts. Understand a fraction *aa bb* is the quantity formed by a parts of size 1 ◆** **NY-3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line** **NY-3.NF.2a Represent a fraction 1 *bb* on a number line by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1 *bb* and that the**	What are different interpretations of fractions? What are different ways to compare fractions? How do fractions relate to other numbers? How do we add and subtract fractions and mixed numbers? How do we compare fractions? How do we express fractions as the sum of their parts?	Partitioning a Whole into Equal Parts: ● Specify and partition a whole into equal parts, identifying and counting unit fractions using concrete models. ● Specify and partition a whole into equal parts, identifying and counting unit fractions by folding fraction strips. ● Specify and partition a whole into equal parts, identifying and counting unit fractions by drawing pictorial area models. ● Represent and identify fractional parts of different wholes. Unit Fractions and Their Relation to the Whole: ● Partition a whole into equal parts and define the equal parts to identify the unit fraction numerically. ● Build non-unit fractions less than one whole from unit fractions. ● Identify and represent shaded and non-shaded parts of one whole as fractions ● Represent parts of one whole as fractions with number bonds. ● Build and write fractions greater than one whole using unit fractions. Comparing Unit Fractions and Specifying the Whole:

endpoint of the part starting at 0 locates the number 1 *bb* on the number line. **NY-3.NF.2b Represent a fraction *aa bb* on a number line by marking off a lengths 1 *bb* from 0. Recognize that the resulting interval has size *aa bb* and that its endpoint locates the number *aa bb* on the number line.** **NY-3.NF.3 Explain equivalence of fractions and compare fractions by reasoning about their size. Note: Fractions are limited to those with denominators 2, 3, 4, 6, and 8.** **NY-3.NF.3a Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.** **NY-3.NF.3b Recognize and generate equivalent fractions. e.g., 1 2 = 2 4 ; 4 6 = 2 3 . Explain why the fractions are equivalent.**		• Compare unit fractions by reasoning about their size using fraction strips. • Compare unit fractions with different-sized models representing the whole. • Specify the corresponding whole when presented with one equal part. • Identify a shaded fractional part in different ways depending on the designation of the whole. Fractions on the Number Line: • Place unit fractions on a number line with endpoints 0 and 1. • Place any fraction on a number line with endpoints 0 and 1. • Place whole number fractions and fractions between whole numbers on the number line. • Practice placing various fractions on the number line. • Compare fractions and whole numbers on the numberline by reasoning about their distance from 0. • Understand distance and position on the number line as strategies for comparing fractions. Equivalent Fractions: • Recognize and show that equivalent fractions have the same size, though not necessarily the same shape. • Recognize and show that equivalent fractions refer to the same point on the number line. • Generate simple equivalent fractions by using visual fraction models and the number line. • Express whole numbers as fractions and recognize equivalence with different units • Express whole number fractions on the number line when the unit interval s 1. • Decompose whole number fractions greater than 1 using whole number equivalence with various models.

e.g., using a visual fraction model. **NY-3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. e.g., Express 3 in the form 3 = 3 1 , recognize that 6 3 = 2, and locate 4 4 and 1 at the same point on a number line.** **NY-3.NF.3d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.**		● Explain equivalence by manipulating units and reasoning about their size. Comparison, Order, and Size of Fractions: ● Compare fractions with the same numerator pictorially. ● Compare fractions with the same numerator using <, >, or =, and use a model to reason about their size. ● Partition various wholes precisely into equal parts using a number line method.

Resources and Major Assessments

Web Sites		Texts and Assessments
Engage NY	Math Playground	Embarc Topic Quizzes
xtraMath.org	splashmath	Teacher created resources
edpuzzle	prodigy	New York State Modules End of Module Assessment
Embarc	IXL	problemattic assignments
problemattic	math and learning videos for kids	IXL

Instructional Days: May (MOD 6)		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Represent and interpret data **NY-3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in a scaled picture graph or a scaled bar graph.** **NY-3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters**		Generate and Analyze Categorical Data: ● Generate and organize data ● Rotate tape diagrams vertically ● Create scaled bar graphs ● Solve one-step and two-step problems involving graphs Generate and Analyze Measurement Data: ● Create ruler with 1-inch, ½ inch and ¼ inch intervals, and generate measurement data ● Interpret measurement data from various line plots ● Represent measurement data with line plots analyze

Resources and Major Assessments		
Web Sites		Embarc Topic Quizzes
Engage NY	Math Playground	Teacher created resources
xtraMath.org	splashmath	New York State Modules End of Module Assessment
edpuzzle	prodigy	problemattic assignments
Embarc	IXL	IXL
problemattic	math and learning videos for kids	

Instructional Days: June (MOD 7)		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
3.OA.8 Solve two-step word problems using the four operations. 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. 3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.		• Solve word problems in varied contexts using a letter to represent the unknown Perimeter • Compare and classify quadrilaterals • Compare and classify other polygons • Draw polygons with specified attributes to solve problems • Reason about composing and decomposing polygons using tetrominoes • Create a tangram puzzle and observe relationships among the shapes • Reason about composing and decomposing polygons using tangrams Problem Solving with Perimeter: • Decompose quadrilaterals to understand perimeter as the boundary of a shape • Tessellate to understand perimeter as the boundary of a shape • Measure side lengths in whole number units to determine the perimeter of polygons

3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. 3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.		• Explore perimeter as an attribute of plane figures and solve problems • Determine the perimeter of regular polygons and rectangles when whole number measurements are missing • Solve word problems to determine perimeter with given side lengths • Use string to measure the perimeter of various circles to the nearest quarter inch • Use all four operations to solve problems involving perimeter and missing measurements Recording Perimeter and Area Data on Line Plots: • Construct rectangles from a given number of unit squares and determine the perimeters • Use a line plot to record the number of rectangles constructed from a given number of unit squares • Construct rectangles with a given perimeter using unit squares and determine their areas • Use a line plot to record the number of rectangles constructed Problem Solving with Perimeter and Area • Solve a variety of word problems with perimeter • Solve a variety of word problems involving area and perimeter

Resources and Major Assessments		
<u>Web Sites</u> Engage NY xtraMath.org edpuzzle Embarc problemattic	 Math Playground splashmath prodigy IXL math and learning videos for kids	Embarc Topic Quizzes Teacher created resources New York State Modules End of Module Assessment problemattic assignments IXL