Math - Fifth Grade Curriculum Map

Instructional Days: September, October, and November		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Module 1 Place Value and Decimal Fractions 5.NBT.1 5.NBT.2 5.NBT.3 5.NBT.4 5.NBT.7 5.MD.1	How are decimals and base-ten fractions useful in understanding the relationship between powers of ten (ie. a digit in one place represents 10 times what it represents in its place to the right? When you multiply factors with powers of ten to each other, what happens to the number of zeroes in the product? What are three different methods to express a number written to the thousandths place? How do we compare decimals? What things need to be considered when comparing decimals of different lengths?	5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. 5.NBT.2 Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10. 5.NBT.3 Read, write, and compare decimals to thousandths. 5.NBT.4 Use place value understanding to round decimals to any place. 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths. 5.MD.1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems. 5.MD.1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems.

Math - Fifth Grade Curriculum Map

Module 2 Multi-Digit Whole Number and Decimal Fraction Operations 5.NBT.1 5. NBT.2 5.NBT.5 5.NBT.6 5.NBT.7 5.OA.1 5.OA.2 5.MD.1	How can you use place value understanding to solve multiplication and division problems? How can drawing a diagram help you solve multiplication and division problems? How can knowing properties of operations help you solve multiplication and division problems? What does it mean to divide? How can you use multiplication to solve division problems? When dividing, why is the remainder important? Or, why do you need to consider the remainder? How can you decide if your solution is reasonable? What is the difference between an expression and an equation? Why is the order important when evaluating or	5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. 5.NBT.2 Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10. 5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm. 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors. 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths. 5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. 5.MD.1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems.

	solving expressions and equations?	

Resources and Major Assessments

Web Site			Texts and Assessments
Super Teacher Worksheets	Engage NY		Teacher created resources
XtraMath.org	Embarc	Kahoot	New York State Module
Cayuga Boces-Buzz			Module 1
			Module 2
			Mid Module Assessment, End of Module Assessment
			Exit Tickets

Math - Fifth Grade Curriculum Map

Instructional Days: December and January		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Module 3 Addition and Subtraction of Fractions 5.NF.1 5.NF.2	How can you add and subtract fractions with unlike denominators? How are benchmark fractions helpful when solving problems? How can using diagrams help you solve problems involving fractions? Why display data in different ways?	5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. 5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.

Resources and Major Assessments	
Web Sites Super Teacher Worksheets Engage NY XtraMath.org Embarc Kahoot Cayuga Boces-Buzz	Texts and Assessments Teacher created resources New York State Module Mid Module Assessment, End of Module Assessment

Instructional Days:February and March		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Module 4 Multiplication and Division of Fractions and Decimal Fractions 5.OA.1 5.OA.2 5.NBT.7 5.NF.3 5.NF.4 5.NF.5 5.NF.6 5.NF.7 5.MD.1 5.MD.2	What do fractions represent? How can fractions be used to describe fair or equal shares? How can using diagrams help you to understand fractions? How can a number line be used to compare relative sizes of fractions? What does it mean to decompose fraction? How can decomposing fractions help us model fraction multiplication? How can modeling an area help you with multiplying fractional pieces?	5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths. 5.NF.3 Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 5.NF.5 Interpret multiplication as scaling (resizing). 5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers. 5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. 5.MD.1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems.

	How can a model help you solve problems involving fractions? How can you model dividing a unit fraction by a whole number with manipulatives and diagrams? What does dividing a unit fraction by a whole number look like?	5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.

Resources and Major Assessments

Web Sites	Texts and Assessments
Super Teacher Worksheets Engage NY XtraMath.org Embarc Kahoot Cayuga Boces-Buzz	Teacher created resource s New York State Modules Mid Module Assessment, End of Module Assessment

Instructional Days: April and May		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Module 5 Addition and Multiplication with area and Volume 5.NF.4 5.MD.3 5.MD.4 5.MD.5 5.G.3 5.G.4	How can objects be represented and compared using geometric attributes? How are area and volume similar and different? How do you represent the inside of a three-dimensional figure? Why is volume represented with cubic units and area represented with square units? What is the relationship between volumes of geometric solids?	5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. 5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 5.G.3 Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. 5.G.4 Classify two-dimensional figures in a hierarchy based on properties.

	Why are some tools better to use than other when measuring volume?	

Resources and Major Assessments	
<u>Web Sites</u> Super Teacher Worksheets Engage NY XtraMath.org Embarc Kahoot Cayuga Boces-Buzz	<u>Texts and Assessments</u> HSP Harcourt, Textbook Teacher created resources New York State Module Mid Module Assessment, End of Module Assessment

Instructional Days: June		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Module 6 Problem Solving with the Coordinate Plane 5.OA.2 5.OA.3 5.G.1 5.G.2		5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond. 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Resources and Major Assessments

Web Sites			Texts and Assessments
Super Teacher Worksheets	Engage NY		Teacher created resources
XtraMath.org	Embarc	Kahoot	New York State Module
Cayuga Boces-Buzz			Mid Module Assessment, End of Module Assessment

Math - Fifth Grade Curriculum Map

Module #1-Vocabulary

Exponent: how many times a number is to be used in a multiplication sentence

Millimeter: a metric unit of length equal to one-thousandth of a meter

Thousandths: related to place value

< , > , =: less than, greater than, equal to

Bundling, making, renaming, changing, regrouping, trading, unbundling, breaking: all terms refer to addition and subtraction and the grouping or ungrouping of units into larger or smaller units

Centimeter: cm, a unit of measure equal to one-hundredth of a meter

Digit: any of the numbers 0 to 9; e.g., what is the value of the digit in the tens place?

Expanded form: e.g., $135 = 1 \times 100 + 3 \times 10 + 5 \times 1$

Number line: a line marked with numbers at evenly spaced intervals

Number sentence: e.g., $4 + 3 = 7$

Place value: the numerical value that a digit has by virtue of its position in a number

Standard form: a number written in the format: 135s

Unit form: e.g., 3.21 = 3 ones 2 tenths 1 hundredth

Word form: e.g., one hundred thirty-five

Module #2-Vocabulary

Kilometer: km, a unit of measure for length

Mass: the measure of the amount of matter in an object

Milliliter: mL, a unit of measure for liquid volume

Capacity: the maximum amount that something can contain

Convert: to express a measurement in a different unit

Distance: the length of the line segment joining two points

Equivalent: equal, the same value as

Estimate: an approximation of the value of a number or quantity

Kilogram: kg, gram, g, units of measure for mass

Larger or smaller unit: used in a comparison of units

Length: the measurement of something from end to end

Liter: L, unit of measure for liquid volume

Measurement: dimensions, quantity, or capacity as determined by comparison with a standard

Meter: m, centimeter, cm, units of measure for length

Table: used to represent data

Weight: the measurement of how heavy something is

Associative Property: the ability to group numbers differently without changing the total

Distributive Property: multiplication using decomposing, or breaking down, the factors

Module #3-Vocabulary

Benchmark fraction: 1/2 is a benchmark fraction when comparing 1/3 and 3/5

Denominator: the fractional unit: fifths in 3 fifths, which is shown as the bottom number (the 5 in 3/5)

Numerator: the count of fractional units: 3 in 3 fifths, shown as the top number (the 3 in 3/5)

Unlike denominators: different units; 1/8 and 1/7

Like denominators: same units; 1/8 and 5/8

Whole unit: any unit that is partitioned into smaller, equally sized fractional units

Fractional unit: the size of the fractional part; the fifth unit in 3 fifths denoted by the denominator 5 in 3/5

Number sentence: 3 + 7 = 10 One tenth of: 1/10 × 250

Fraction: 3 fifths or 3/5 Between: 1/2 is between 1/3 and ⅗

Fraction written in the largest possible unit: 3/6 is equal to 1/2 but halves are larger fractional units than sixths

Equivalent fraction: 3/5 = 6/10

Tenth: 1/10 or 0.1

Hundredth: 1/100 or 0.01

Fraction greater than or equal to 1: the numerator is larger than the denominator: 7/3

Module #4-Vocabulary

Decimal divisor: the number that divides the whole and that has units of tenths, hundredths, thousandths, etc.

Simplify: using the largest fractional unit possible to express an equivalent fraction

Denominator: denotes the fractional unit; bottom number (the 2 in ½)

Conversion factor

Commutative Property: 4 x ½ = ½ x 4

Distribute: with reference to the distributive property, e.g., in 1 2/5 x 15 = (1x15) + (2/5 x 15)

Divide, division: partitioning a total into equal groups to show how many units in a whole, e.g., 5 divided by 1/5 = 25

Equation: statement that two expressions are equal, e.g., 3 × 4 = 6 × 2

Equivalent fraction: fraction that has the same value as another ½ = 5/10

Expression: a number or word sentence without an equal sign

Factors: numbers that are multiplied to obtain a product

Fraction greater than or equal to 1: 7/2, 3 ½ , an abbreviations for 3 + 1/2

Fraction written in the largest possible unit: 3/6 is equal to 1/2 but halves are larger fractional units than sixths

Fractional unit: the fifth unit in 3 fifths, the denominator 5 in 3/5

Hundredth: 1/100 or 0.01

Line plot: data table to show frequency- number of times an event occurs

Mixed number: a whole number and a fraction combined; 3 ½

Numerator: the count of fractional units: 3 in 3 fifths, shown as the top number (the 3 in 3/5)

Parentheses: symbols ( ) used around a fact or numbers within an equation

Quotient: the answer when one number is divided by another

Tape diagram: method for modeling problems

Module #5-Vocabulary

Base: one face of a three-dimensional solid—often thought of as the surface upon which the solid rests

Bisect: divide into two equal parts

Cubic units: cubes of the same size used for measuring

Height: adjacent layers of the base that form a rectangular prism

Hierarchy: series of ordered groupings of shapes

Unit cube: cube whose sides all measure 1 unit; cubes of the same size used for measuring volume

Volume of a solid: measurement of space or capacity

Angle: the union of two different rays sharing a common vertex

Area: the number of square units that covers a two-dimensional shape

Attribute: given quality or characteristic

Cube: three-dimensional figure with six square sides

Degree measure of an angle: subdivide the length around a circle into 360 arcs of equal length; a central angle for any of these arcs is called a one degree angle and is said to have angle measure 1 degree

Face: any flat surface of a three-dimensional figure

Kite: quadrilateral with two equal sides that are also adjacent; a kite can be a rhombus if all sides are equal

Parallel lines: two lines in a plane that do not intersect

Parallelogram: four-sided closed figure with opposite sides that are parallel

Perpendicular: two lines are perpendicular if they intersect, and any of the angles formed between the lines are ˚ angles

Perpendicular bisector: line that cuts a line segment into two equal parts at 90

Plane: flat surface that extends infinitely in all directions

Polygon: closed figure made up of line segments

Quadrilateral: closed figure with four sides

Rectangle: quadrilateral with four 90˚ angles

Rectangular prism: three-dimensional figure with six rectangular sides

Rhombus: parallelogram with equal sides

Right angle: angle formed by perpendicular lines; angle measuring 90˚

Right rectangular prism: rectangular prism with only ˚ angles

Solid figure: three-dimensional figure

Square units: squares of the same size, used for measuring

Three-dimensional figures: solid figures

Trapezoid: quadrilateral with at least one pair of parallel sides

Two-dimensional figures: figures on a plane

Module #6-Vocabulary

Axis: fixed reference line for the measurement of coordinates

Coordinate: number that identifies a point on a plane

Coordinate pair: two numbers that are used to identify a point on a plane; written (x, y) where x represents a distance from 0 on the x -axis and represents a distance from 0 on the y -axis

Coordinate plane: plane spanned by the x -axis and y -axis in which the coordinates of a point are distances from the two perpendicular axes

Ordered pair: two quantities written in a given fixed order, usually written as (x, y)

Origin: fixed point from which coordinates are measured; the point at which the x-axis and y-axis intersect, labeled (0, 0) on the coordinate plane

Quadrant: any of the four equal areas created by dividing a plane by an x-axis and y-axis

Angle: union of two different rays sharing a common vertex

Angle measure: number of degrees in an angle

Degree: unit used to measure angles

Horizontal: parallel to the x-axis

Line: two-dimensional object that has no endpoints and continues on forever in a plane

Parallel: two lines in a plane that do not intersect

Perpendicular: two lines are perpendicular if they intersect, and any of the angles formed between the lines are 90-degree angles

Point: zero-dimensional figure that satisfies the location of an ordered pair

Rule: procedure or operation(s) that affects the value of an ordered pair

Vertical: parallel to the y-axis

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