Grade Five

Tecumseh School District
Math Curriculum Map

August/September

ndicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NBT.3a Read, write, and compare decimals to thousandths: a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	thousandths using base-ten numerals, number names, and expanded form	X		Benchmark	Based Ten Numerals Number Names Expanded form
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.	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	X		Benchmark	Multi-digit number 10 x as much to the right 1/10 to the left
5.NBT.3b Read, write, and compare decimals to thousandths: b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Use >, =, and < symbols to record the results of comparisons between decimals Compare two decimals to the thousandths based on the place value of each digit	X		X	Compare Greater than Less than Comparison Symbols

5.NBT.2 Explain patterns in the number of zeros 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.	Represent powers of 10 using whole number exponents Fluently translate between powers of ten written as ten raised to a whole number exponent, the expanded form, and standard notation (103 = 10 x 10 x 10 = 1000) Explain the patterns in the number of zeros of the product when multiplying a number by powers of 10. Explain the relationship of the placement of the decimal point when a decimal is multiplied or divided by a power of 10.	X		X	Exponent Whole number exponent Expanded form Standard notation Relationship Patterns
5.NBT.4 Use place value understanding to round decimals to any place.	Use knowledge of base ten and place value to round decimals to any place.	X		X	Place Value Round
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	Review arrays with standard algorithm	X			Arrays Standard Algorithm Product

October

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NBT.4 Use place value understanding to round decimals to any place.	Use knowledge of base ten and place value to round decimals to any place.		X		

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	Add, subtract, multiply, and divide decimals to hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction Relate the strategy to a written method and explain the reasoning used to solve decimal operation calculations	X		X	Concrete models Strategies Properties of Operation Relationship of add/Sub Reasoning
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	Fluently multiply multi-digit whole numbers using the standard algorithm		X	X	Product
5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Find whole number quotients of whole numbers with up to four digit dividents. Use strategies based on place value, the properties of operations, and/or the relationship between multiplication and division to solve division problems. Illustrate and explain division calculations by using equations, rectangular arrays, and/or area models	X			Quotients Dividents Divisor Calculations Illustrate Rectangular Array Area Models Relationship of multiply/divide
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.	Recognize that some two dimensional shapes can be classified into more than one category based on their attributes. Recognize if a two-dimensional shape is classified into a category, that it belongs to all subcategories of that category.	X			2 Dimensional Attributes Subcategories

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.G.4 Classify two-dimensional figures in a hierarchy based on properties.	Analyze properties of two-dimensional figures in order to place into a hierarchy Classify two-dimensional figures into categories and/or sub-categories based on their attributes.	X			Hierachy
5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	Recognize units of measurement within the same system Divide and multiply to change unit Convert units of measurement within the same system Solve multi-step, real world problems that involve converting units	X			Convert Unit of Measure Metric

November

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.		X		
5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Find whole number quotients of whole numbers with up to four digit dividents.	X	X		Quotients Dividents Divisor Calculations Illustrate Rectangular Array Area Models Relationship of multiply/divide
5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms for two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and the given rule “Add 6” and the starting number 0, generate the terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.	Generate two numerical patterns using two given rules. Form ordered pairs consisting of corresponding terms for the two patterns Graph generated ordered pairs on a coordinate plane Analyze and explain the relationships between corresponding terms in the two numerical patterns.	X		X	Numerical Pattern Rules Ordered Pairs Corresponding terms Coordinate Plane Analyze Generate
5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	Use order of operations including parenthesis, brackets, or braces. Evaluate expressions using the order of operations (including using parenthesis, brackets, or braces.)	X		X	Numerical expression Operational words for writing expressions

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
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 (e.g., x-axis and x-coordinate, y-axis and y-coordinate)	Define the coordinate system Identify the x- and y-axis Locate the origin on the coordinate system Identify coordinates of a point on a coordinate system Recognize and describe the connection between the ordered pair and the x- and y-axis.	X			X and Y axis Origin Coordinate System
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.	Graph points in the first Quadrant Represent real world and mathematical problems by graphing points in the first quadrant Interpret coordinate values of points in real world context and mathematical problems	X			First Quadrant

December

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.		X	X	
5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models	Find whole number quotients of whole numbers with up to four digit dividend. Use strategies based on place value, the properties of operations, and/or the relationship between multiplication and division to solve division problems. Illustrate and explain division calculations by using equations, rectangular arrays, and/or area models		X	X	
5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd)	Generate equivalent fractions to find the like denominator Solve addition and subtraction problems involving fractions (including mixed numbers) with like and unlike denominators using an equivalent fraction strategy	X			Equivalent fraction Equivalent sum Like/unlike denominator Mixed number Equivalent fraction strategy Numerator Denominator

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g. by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7<1/2.	Generate equivalent fractions to find like denominators Solve word problems involving addition and subtraction of fractions with unlike denominators referring to the same whole (e.g. by using visual fraction models or equations to represent the problem) Evaluate the reasonableness of an answer, using fractional number sense, by comparing it to a benchmark fraction	X			Fraction model Benchmark Fraction Evaluate Reasonableness
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, e.g., by using visual fraction models or equations to represent the problem. F	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. (e.g. using visual fraction models or equations to represent the problem.) Interpret the remainder as a fractional part of the problem.	X			Remainder as a fractional part of the problem
5.G.4 Classify two-dimensional figures in a hierarchy based on properties	Analyze properties of two-dimensional figures in order to place into a hierarchy Classify two-dimensional figures into categories and/or sub-categories based on their attributes.		X	X	
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.	Graph points in the first Quadrant Represent real world and mathematical problems by graphing points in the first quadrant Interpret coordinate values of points in real world context and mathematical problems		X	X	

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
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	Define the coordinate system Identify the x- and y-axis Locate the origin on the coordinate system Identify coordinates of a point on a coordinate system Recognize and describe the connection between the ordered pair and the x- and y- axis.		X	X	

January

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	Fluently multiply multi-digit whole numbers using the standard algorithm.		X		
5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Generate equivalent fractions to find the like denominator Solve addition and subtraction problems involving fractions (including mixed numbers) with like and unlike denominators using an equivalent fraction strategy		x	X	
5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd)	Generate equivalent fractions to find the like denominator Solve addition and subtraction problems involving fractions (including mixed numbers) with like and unlike denominators using an equivalent fraction strategy				
5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g. by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7<1/2.	Generate equivalent fractions to find like denominators Solve word problems involving addition and subtraction of fractions with unlike denominators referring to the same whole (e.g. by using visual fraction models or equations to represent the problem) Evaluate the reasonableness of an answer, using fractional number sense, by comparing it to a benchmark fraction.		X	X	

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, e.g., by using visual fraction models or equations to represent the problem	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. (e.g. using visual fraction models or equations to represent the problem.) Interpret the remainder as a fractional part of the problem.		X	X	
5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Interpret the product (a/b) x q as a parts of a partition of q into b equal parts; equivalently, as a result of a sequence of operations a x q / b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)	Multiply fractions by whole numbers. Multiply fractions by fractions Interpret the product of a fraction times a whole number as total number of parts of the whole. (for example ¾ x 3 = ¾ + ¾ + ¾ = 9/4) Determine the sequence of operations that result in the total number of parts of the whole. (for example ¾ x 3 = (3 x 3)/4 = 9/4) Interpret the product of a fraction times a fraction as the total number of parts of the whole	X			Interpret the product of a fraction
5.NF.4b Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	Find area of a rectangle with fractional side lengths using different strategies. (e.g., tiling with unit squares of the appropriate unit fraction side lengths, multiplying side lengths) Represent fraction products as rectangular areas. Justify multiplying fractional side lengths to find the area is the same as tiling a rectangle with unit squares of the appropriate unit fraction side lengths.	X			Fractional side length Justify Tiling Unit Squares

February

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	Fluently multiply multi-digit whole numbers using the standard algorithm.		X	X	
5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Find whole number quotients of whole numbers with up to four digit dividents. Use strategies based on place value, the properties of operations, and/or the relationship between multiplication and division to solve division problems. Illustrate and explain division calculations by using equations, rectangular arrays, and/or area models		X	X	
5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Interpret the product (a/b) x q as a parts of a partition of q into b equal parts; equivalently, as a result of a sequence of operations a x q / b	Multiply fractions by whole numbers. Multiply fractions by fractions Interpret the product of a fraction times a whole number as total number of parts of the whole. (for example ¾ x 3 = ¾ + ¾ + ¾ = 9/4) Determine the sequence of operations that result in the total number of parts of the whole. (for example ¾ x 3 = (3 x 3)/4 = 9/4) Interpret the product of a fraction times a fraction as the total number of parts of the whole		X	X	

5.NF.4b Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	Model the area of rectangles with fractional side lengths with unit squares to show the area of rectangles.		X	X	
5.NF.5a Interpret multiplication as scaling (resizing), by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.	Know that scaling (resizing) involves multiplication. Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. F	X		X	Scaling Resizing Factor
5.NF.5b Interpret multiplication as scaling (resizing), by: b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n × a)/(n × b) to the effect of multiplying a/b by 1.	Know that multiplying whole numbers and fractions result in products greater than or less than one depending upon the factors. Draw a conclusion multiplying a fraction greater than one will result in a product greater than the given number. Draw a conclusion that when you multiply a fraction by one (which can be written as various fractions, ex 2/2, 3/3, etc.) the resulting fraction is equivalent. Draw a conclusion that when you multiply a fraction by a fraction, the product will be smaller than the given number.	X		X	Draw a conclusion Forms of 1 (1/1, 2/2, 3/3)

5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	Represent word problems involving multiplication of fractions and mixed numbers (e.g., by using visual fraction models or equations to represent the problem.) Solve real world problems involving multiplication of fractions and mixed numbers.	x			

March

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	Fluently multiply multi-digit whole numbers using the standard algorithm.		X		
5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models	Use strategies based on place value, the properties of operations, and/or the relationship between multiplication and division to solve division problems. Illustrate and explain division calculations by using equations, rectangular arrays, and/or area models.		X	X	

5.NF.7abc Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) divided by 4, and use a visual fraction model to show the quotient. Use relationships between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) x 4 = 1/3	Know the relationship between multiplication and division Interpret division of a unit fraction by a whole number and justify your answer using the relationship between multiplication and division, and by creating story problems, using visual models, and relationship to multiplication, etc. Interpret division of a whole number by a unit fraction and justify your answer using the relationship between multiplication and division, and by representing the quotient with a visual fraction model. Solve real world problems involving division of unit fractions by whole numbers other than 0 and division of whole numbers by unit fractions using strategies such as visual fractions models and equations.	X		X	Unit fraction
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 of fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	Identify benchmark fractions (1/2, 1/4, 1/8) Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving information presented in line plots which use fractions of a unit (1/2, 1/4, 1/8) by adding, subtracting, multiplying, and dividing fractions.	X		X	Line Plot Data Set

5.MD.3ab Recognize volume as an attribute of solid figures and understands concepts of volume measurement. a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	Recognize that volume is the measurement of the space inside a solid three-dimensional figure. Recognize a unit cube has 1 cubic unit of volume and is used to measure volume of 3D shapes. Recognize any solid figure packed without gaps or overlaps and filled with (n) "unit cubes" indicates the total cubic units or volume.	X		X	Volume Solide 3D figure Unit cube 1 cubic unit Gaps Overlaps
5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in., cubic ft., and improvised units	Measure volume by counting unit cubes, cubic cm, cubic in., cubic ft., and improvised units	X		X	Improvised Units
5.MD.5a Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number procedures as volumes, e.g., to represent the associative property of multiplication	Identify a right rectangular prism. Multiply the three dimensions in any order to calculate volume (Commutative and associative properties) Develop volume formula for a rectangle prism by comparing volume when filled with cubes to volume by multiplying the height by the area of the base, or when multiplying the edge lengths (LxWxH) Find the volume of a right rectangular prism with whole number side lengths by packing it with unit cubes.	X		X	Right Rectangular Prism Commutative Property Associative Property Height Area of Base Edge Lengths
5.MD.5b Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. b. Apply the formulas V=l x w x h and V=B x h for rectangular prisms to find volumes of right rectangular prisms with whole-number lengths in the context of solving real world and mathematical problems	Know that "B" is the area of the base Apply the following formulas to right rectangular prisms having whole number edge lengths in the context of real world mathematical problems: Volume = length x width x height Volume = area of base x height	X		X	Base "B" is the area of the base Formulas for volume

5.MD.5c Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	Recognize volume as additive. Solve real world problems by decomposing a solid figure into two non-overlapping right rectangular prisms and adding their volumes.	X		X	Additive

April

Indicator	Learning Targets	Introduce	Continue	Assess	Vocabulary
5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems	(Customary) Convert units of measurement within the same system Solve multi-step, real world problems that involve converting units		X	X	Customary