Standards Based Map

Grade 4 Math

Timeline	NxG Standard(s)	Student I Can Statement(s) / Learning Target(s)	Essential Questions	Academic Vocabulary	Strategies / Activities	Resources / Materials	Assessment	Notes / Self - Reflection
Quarter 3	M.4.G.1 Draw points, lines, line segments, rays, angles (right , acute, obtuse) and perpendicular and parallel lines and identify these in two-dimensional figures.	I can draw and identify points, lines, line segments, angles, rays, perpendicular and parallel lines.		• 2 dimensional • Angles • Right • Acute • Obtuse • Line segments • Attribute • Symmetry • Parallel • Perpendicular • Properties of geometric figures • Angle measure • Models • Accurate	Using analog clock identify times that represent the following obtuse, acute, and right angles. Reconfigure for central, pacific, and mountain time zones. Venn Diagrams, T-chart, card games	Analog clocks	Selected response Performance assessment Discussion Teacher observation	

					Frayer Model			
Quarter 3	M.4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size, recognize right triangles as a category and identify right triangles.	I can classify 2D figures based upon lines and angles.	How are 2D shapes identified?	• acute • angle • line • parallel • perpendicular • right, • obtuse • 2 dimensional figure	Venn diagram Using 2D figures, students discuss the attributes specifically as having parallel or perpendicular lines and the sizes of angles.	Venn diagrams Pattern blocks	Selected response Performance assessment Discussion Teacher observation	
Quarter 3	M.4.G.3 recognize a line of symmetry for a 2D figure as a line across the figure such that the figure can be folded along the line into matching parts, identify line-symmetric figures and	I can identity and draw lines of symmetry for a 2D shape.	How is symmetry determined for 2D shapes?	• Symmetry • 2 dimensional figure	Students construct figures on geoboards with rubber bands. Use additional bands to create lines of symmetry. Then draw the figure on paper and cut and fold to check for understanding.	Geoboard Rubber bands Scissors Paper	Selected response Performance assessment Discussion Teacher observation	

	draw lines of symmetry.							

Quarter 1	M.4.NBT.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.*	I can recognize that in multi-digit whole number a digit in one place represents ten times what it represents in the place to its right.	How does a digit's position affect its value?	• multi-digit • whole number • represent • place value	Students use unit cubes to represent numbers. Students use base ten blocks to represent a given number. Place Value mat	Unit cubes Base ten blocks Place value mat	Selected response Performance assessment Discussion Teacher observation	
Quarter 1	M.4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names and expanded	I can read and write whole numbers using numerals, words, and in expanded form.	How can numbers be represented differently? How can place value be used to compare numbers?	• Whole numbers • Place value • Base ten • Equivalence • Accurate • Equation • Expanded form	Using knowledge of place value write numbers in expanded form. Given a list of digits students will make two	Paper Pencil Computer	Selected response Performance assessment Discussion Teacher observation	

	form and compare two multi-digit numbers based on meanings of the digits in each place, using >, = and < symbols to record the results of comparisons.	I can compare two large numbers using symbols to show the comparison.			different numbers, compare them and justify their values. Students will research the sales of 5 like items from multiple fast food restaurants for a week and then order the total sales of items for each restaurant from least to greatest. Justify how they got their answers.			
Quarter 1	M.4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.	I can round large whole numbers to any place value.	How can place value be used to round whole numbers?	Whole numbers Place value Rounding Multi-digit equation	*When buying school clothes students will use ads to make list of items they want to purchase and round the price to the nearest dollar to estimate their budget of $500. *When given 5 countries, students will pick three and research the population and round to the	computer, ads	Selected response Performance assessment Discussion Teacher observation	

					nearest 10 thousand and justify their answers.			

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Quarter 1	M.4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm .	I can add and subtract multi-digit numbers.	How is the standard algorithm used to add and subtract multi-digit numbers?	• place value • addition • subtraction • difference • sum	Students use graph paper to accurately line up a multi-digit addition or subtraction problem. *Students can use base ten blocks to subtract. *Fact Triangles	Graph paper Base ten blocks Fact triangles	Selected response Performance assessment Discussion Teacher observation	
Quarter 1 Quarter 2 Quarter 3 Quarter 4	M.4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number,	I can multiply a whole number up to four digits by a one-digit whole number. I can multiply	How can you illustrate and explain the process for multiplying multi-digit numbers? How can	• Multiplicatio n • Multiply • Product • Whole number • Place value	Arrays Lattice multiplication Traditional multiplication Partial	Paper Pencil Fact Triangles	Selected response Performance assessment Discussion Teacher	

	multiply two two-digit numbers, using strategies based on place value and the properties of operations and illustrate and explain the calculation by using equations, rectangular arrays and/or area models.	two two-digit numbers.	equations, arrays, and models be used to illustrate multiplication by multi-digit numbers?		Product: Students write multi-digit factors in expanded notation form when multiplying by one-digit factors. *Fact Triangles		observation	
Quarter 1 Quarter 2 Quarter 3 Quarter 4	M.4.NBT.6 Find whole-number quotients & remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, properties of operations and/or the relationship between multiplication	I can find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors. divide, quotients, remainders, dividends, divisors	How can strategies such as place value, properties of operation, and the relationship between multiplication and division be used to illustrate and explain the process of finding whole number quotients?	• Divide • Quotients • Remainders • Dividends • Divisors	Flip Book Fact Triangles Use grid paper to draw rectangular arrays.	Paper Pencil Flip Books Fact triangles Grid paper	Selected response Performance assessment Discussion Teacher observation	

	and division and illustrate and explain calculation by using equations, rectangular arrays and/or area models.							

Quarter 1	M.4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5 and represent verbal statements of multiplicative comparisons as multiplication equations.	I can understand that multiplication fact problems can be seen as comparisons of groups.	How can you represent multiplication facts as comparison groups?	• Comparison • Multiplication • Product	*Students make trains using different color rods to represent comparison groups.	Cubes	Selected response Performance assessment Discussion Teacher observation	
Quarter 1 Quarter 2 Quarter 3 Quarter 4	M.4.OA.2 multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and	I can multiply or divide to solve word problems by using drawings or writing equations and solving	How can the value of an unknown variable in a number sentence be found?	• Additive • Comparison • Divide • Multiplicative • Multiply • Factor • Product •			Selected response Performance assessment Discussion Teacher	

	equations with a symbol for the unknown number to represent the problem and distinguishing multiplicative comparison from additive comparison.	for a missing number.					observation	
Quarter 1 Quarter 2 Quarter 3 Quarter 4	M.4.OA.3 solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted, represent these problems using equations with a letter standing for the unknown quantity and assess the reasonableness of answers using mental computation and estimation	I can solve multi-step word problems involving whole numbers. I can represent word problems by using equations with a letter standing for the unknown number. I can determine how reasonable my answers to word problems are by using estimation, mental math	How can you find the value of an unknown variable in a number sentence? How can different algorithms be used to solve word problems? remainders, computation, estimation, reasonableness, rounding, strategies	• Remainders • Computation • Estimation • Reasonable • Rounding • Strategies •	CUBES strategy Students work in pairs to devise plans for solving word problems. Students use counters to act out word problems.	Counters	Selected response Performance assessment Discussion Teacher observation	

	strategies including rounding.	and rounding.						
Quarter 1 Quarter 2 Quarter 3	M.4.OA.4 Find all factor pairs for a whole number in the range 1–100, recognize that a whole number is a multiple of each of its factors, determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number and determine whether a given whole number in the range 1–100 is prime or composite .	I can find all factor pairs for a number from 1 to 100. I can determine whether a given whole number up to 100 is a prime or composite number.	How can factor pairs be used to determine if a number is composite or prime? prime, composite, factor, whole number, multiple	• Prime • Composite • Factor • Whole Number • Multiple	Factor trees *Use hundreds chart to shade all multiples of given number. Students use counters to form rectangular arrays for given numbers and determine if the numbers are prime or composite.	Hundreds Chart Counters	Selected response Performance assessment Discussion Teacher observation	
Quarter 3 Quarter 4	M4.4.OA.5 Generate a number or shape pattern that follows a given rule and identify apparent features of the pattern that were not explicit in the rule itself.	I can create a number or shape pattern that follows a given rule. I can notice different features of a pattern once it is created by a rule.	How can patterns help me make a generalization about numbers and number sequences? pattern, rule, term (of a sequence), unknown	• Pattern • Rule • Term of a sequence • Unknown	Input/output Model Hundreds Chart Clear Counters	Hundreds Chart Counters	Selected response Performance assessment Discussion Teacher observation	

Quarter 1 Quarter 2 Quarter 3	M.4.NF.1 Explain why a fraction *a/b* is equivalent to a fraction *(n × a)/(n × b)* by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size and use this principle to recognize and generate equivalent fractions.	I can explain (and show models for) why multiplying a numerator and a denominator by the same number does not change the value of a faction.	How can equivalent fractions be identified? common denominator, compare, decompose, denominator, equivalent, fraction, numerator	• Common denominator • Compare • Decompose • Denominator • Equivalent • Fraction • Numerator	*Students use centimeter grid paper to create strips showing multiples of given numbers Students cut strips apart and line up equivalent fractions.	Grid paper	Selected response Performance assessment Discussion Teacher observation	

Quarter 1 Quarter 2 Quarter 3	M.4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators, numerators, or by comparing to a benchmark fraction such as ½, recognize that comparisons are valid only when the two fractions refer to the same whole and record the results of comparisons with symbols >, = or <, and justify the conclusions, e.g., by using a visual fraction model.	I can compare two fractions. I can compare fractions using symbols and justify the comparison by using models.	Why is it important for students to understand that fractions are parts of a whole? How can fractions be compared with different denominators ? common denominator, compare, decompose, denominator, equivalent, fraction, numerator	• Common denominator • Compare • Decompose • Denominator • Equivalent • Fraction • Numerator	Visual fraction models Students create models of fractions that refer to the same whole. Students compare fractions to determine greater than, less than, or equal to and record the results using >, <, or =.	Visual fraction models		
Quarter 2 Quarter 3 Quarter 4	M.4.NF.3 understand a fraction *a/b* with *a* > 1 as a sum of fractions 1/*b* a. understand	I can understand that improper fractions have a greater numerator	How can you add and subtract fractions?	• Addition • Subtraction • Common denominator • Fraction • Compare	Use fraction circles to add or subtract fractions. Students join pieces to	Fraction circles Paper Pencil	Selected response Performance	

	addition and subtraction of fractions as joining and separating parts referring to the same whole, b. decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation and justify decompositions, e.g., by using a visual fraction model. c. add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction,	than denominator I can understand addition and subtraction of fractions as joining and separating parts referring to the same whole. I can decompose a fraction into a sum of fractions with the same denominator. I can add and subtract mixed numbers with like denominators. I can solve word problems involving addition and subtraction of fractions with like denominators.	addition, subtraction, common denominator, fraction, compare, decompose, sum, difference, denominator, numerator, improper fractions, equivalent, mixed number, unit fraction	• Decompose • Sum • Difference • Denominator • Numerator • Improper fraction • Equivalent • Mixed number • Unit fraction	determine the sum and separate pieces to determine the difference. Using fraction models, students demonstrate all possible combinations.	Fraction models	assessment Discussion Teacher observation	

	d. solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.							
Quarter 2 Quarter 3 Quarter 4	M.4.NF.4 apply and extend previous understandings of multiplication to multiply a fraction by a whole number a. understand a fraction a/b as a multiple of 1/b, b. understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number, c. solve word problems involving	I can multiply a fraction by a whole number. I can solve word problems involving multiplication of a fraction by a whole number.	How do you multiply a whole number by a fraction? common denominator, compare, decompose, denominator, equivalent, fraction, numerator, multiplication, product, whole number	• Common denominator • Compare • Decompose • Denominator • Equivalent fraction • Numerator • Multiplication • Product • Whole number	Students use visual fraction models to represent an understanding of a fraction as a multiple of its parts. Students decompose the fraction into equal parts and write a multiplication equation to represent the factors.	Fraction Models	Selected response Performance assessment Discussion Teacher observation	

	multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.							
Quarter 2 Quarter 3	M.4.NF.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.	I can show a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100 in order to add the two fractions.	How are fractions and decimals related? common denominator, compare, decompose, denominator, equivalent, fraction, numerator,	• Common denominator • Compare • Decompose • Denominator • Equivalent fraction • Numerator	*Students use sets of ten dimes to convert tenths to hundredths.	Dimes		
Quarter 2 Quarter 3	M.4.NF.6 Use decimal notation for fractions with denominators 10 or 100.	I can use decimals to show fractions with denominators of 10 and 100.	How do you represent fractions as decimals?	• Decimals • Fractions • Denominator • Numerator • Decimal notation		Decimal Squares	Selected response Performance assessment Discussion Teacher observation	
Quarter	M.4.NF.7	I can compare	How do you	• Decimals	Students use	10 x 10	Selected	

2 Quarter 3	Compare two decimals to hundredths by reasoning about their size, recognize that comparisons are valid only when the two decimals refer to the same whole and record the results of comparisons with the symbols >, = or < and justify the conclusions, e.g., by using a visual model.	two decimals to hundredths.	compare two or more decimals?	• Compare • Justify	two 10 x 10 grids to shade decimal numbers. Students compare the shaded grids and write number sentences with comparison symbols.	grids	respons e Perform ance assessm ent Discussi on Teacher observati on	
Quarter 3	M.4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec, within a single system of measurement, express measurements in a larger unit in terms of a smaller unit, record	I can show the relative size of measurement units within a single system. I can show the measurement of a larger unit in terms of smaller units and record these in a table.	How are units in the same measurement system related?	• Standard unit • Metric unit • Capacity • Area • Mass • Measure • Measurement • Perimeter • Volume	*Gallon Man .	Meter stick Yard stick Ruler Measurin g cups Construct ion paper	Selected response Performance assessment Discussion Teacher observation	

	measurement equivalents in a two column table, (For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in.) and generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).							
Quarter 3 Quarter 4	M.4.MD.2 use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects and money, including problems involving simple fractions or decimals and problems that require expressing	I can use the four operations (+,-, x, ÷) to solve word problems involving measurement ; including simple fractions and decimals.	How do we convert units? How can we use measurement to solve problems? measurement , convert, simple fractions, decimals, operations	• Measurement • Convert • Simple fraction • Decimals • Operations	Students will use clocks to problem solve elapsed time. *Use the draw a picture strategy to solve word problems involving everyday situation with measurement and money. Students will write equations to solve the problems.	Clocks	Selected response Performance assessment Discussion Teacher observation	

	measurements given in a larger unit in terms of a smaller unit and represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.							
Quarter 3 Quarter 4	M.4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	I can use what I know about area and perimeter to solve real world problems involving rectangles.	How do I find the area and perimeter of a rectangle? How can I find a missing side of a rectangle if given the area and perimeter and a side?	• Area • Perimeter • Rectangle • Formula • Square unit			Selected response Performance assessment Discussion Teacher observation	
Quarter 2	M.4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8) and solve problems involving addition and subtraction of fractions by using information	I can solve problems involving addition and subtraction of fractions by using information presented in line plots.	How can I construct a line plot to display data?	• Difference • Fractions • Line plot • Data • Sum •	Students create line plots with fractional units including 0, 1/8, 1/4, 1/2, 3/4, 7/8, and 1.		Selected response Performance assessment Discussion Teacher observation	

	presented in line plots							
Quarter 3	M.4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: a. an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle and an angle that turns through 1/360	I can identify angles. I can measure angles.	How do you measure an angle?	• acute angle • angle • right angle • obtuse angle • measure • degree • protractor • radii			Selected response Performance assessment Discussion Teacher observation	

	of a circle is called a “one-degree angle,” and can be used to measure angles, b. an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.							
Quarter 4	M.4.MD.6 measure angles in whole-number degrees using a protractor and sketch angles of specified measure.	I can use a protractor to measure angles in whole-number degrees.	How do you use a protractor to measure an angle? How do you draw an angle with a given number of degrees?	• Acute angle • Angle • Right angle • Obtuse angle • Measure • Degree • Measurement • Protractor • radii		Protractors	Selected response Performance assessment Discussion Teacher observation	
Quarter 4	M.4.MD.7 Recognize angle measure as additive, when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts and	I can solve addition and subtraction problems involving angles.	How do you decompose an angle?	• acute angle • angle • right angle • obtuse angle • measure • degree • measurement • protractor • radii • decompose • sum • difference	*When given two parts of fraction circle cutouts, partners measure the angle of each fractional part and label the measurements in degrees.		Selected response Performance assessment Discussion Teacher observation	

	solve addition & subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.							