Name _____ Date _____ Grade _____

Mathematics

Number Sense & Operations	K	1	2	3	4	5	6	7	8
Place value, reading, writing, and representing numbers (K.N.1, K.N.2, 2.N.1, 3.N.1, 3.N.2, 4.N.1, 5.N.2, 6.N.2, 7.N.1, 7.N.2)	Numbers up to 20.	Numbers up to 100.	Numbers up to 1,000.	Numbers up to 10,000.	Numbers up to 100,000.	Numbers up to millions and thousandths.	-Numbers up to billions and thousandths.	-Compare, order, estimate, and translate among integers, fractions and mixed - numbers (i.e., rational numbers), decimals, and percents.	-Compare, order, estimate, and translate among integers, fractions and mixed numbers (i.e., rational numbers), decimals, and percents. - Investigate the meaning of significant digits.
Powers of ten (Exponents) (5.N.1, 6.N.1)						Powers of ten, e.g., 10^2, 10^5.	Powers of ten, e.g., 10^2, 10^5.		-Investigate negative integral exponents and their use in scientific and calculator notation.
Cardinal and Ordinal Numbers (K.N.3, 2.N.2)	Position of objects in sequence up to fifth.	-Position of objects in sequence up to tenth. -Uses of numbers (cardinal, ordinal, measurement, or label)	-Position of objects in sequence twentieth, thirtieth, fortieth…up to one-hundredth. -Uses of numbers (cardinal, ordinal, measurement, or label)						
Expanded Notation (3.N.2, 4.N.2, 5.N.3)				Represent numbers up to 10, 000 using expanded notation (e.g., 853 = 8 x 100 + 5 x 10 + 3).	Represent numbers up to 100, 000 using expanded notation (e.g., 853 = 8 x 100 + 5 x 10 + 3).	Represent numbers up Numbers up to millions and thousandths using expanded notation (e.g., 853 = 8 x 100 + 5 x 10 + 3).			
Fractions (K.N.5, 2.N.3, 3.N.4, 4.N.4, 4.N.5, 5N.4, 6.N.4, 6.N.5, 6.N.6, 6.N.7, 6.N.9, 6.N.14, 6.N.14, 6.N.16, 7.N.7, 8.N.10,)	Understand and identify whole and half.	Identify and represent ½, 1/3, and ¼ as part of whole, group, or on number line.	Identify and represent ½, 1/3, and ¼ as part of whole, group, or on number line.	-Identify and represent, and compare fractions as part of whole, group, or on number line. -Model and represent mixed numbers, e.g., 1 2/3, 3 1/2.	-Find equivalent fractions and mixed numbers, and order fractions. -Equivalent forms of common fractions less than one whole (halves, quarters, fifths, and tenths).	Understand fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, and as locations on the number line.	-Understand fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, and as locations on the number line. -Find and position fractions on a number line. -Compare and order positive fraction and mixed numbers. -Solve problems involving positive fraction and mixed numbers. -Add, subtract, multiply, and divide (and estimate) positive fractions and mixed numbers.	Estimate and compute with fractions (including simplification of fractions).	Estimate and compute with fractions (including simplification of fractions).

Number Sense & Operations	K	1	2	3	4	5	6	7	8
Money **(K.N.6, 2.N.6, 3.N.8, 4.N.10,**	Identify U.S. coins by name	- Identify the value of all U.S. coins - Identify the value of $1, $5, $10, and $20 bills -Find the value of a collection of coins and different ways to represent it.	- Identify the value of all U.S. coins - Identify the value of $1, $5, $10, and $20 bills - Find the value of a collection of dollar bills up to $5 and different ways to represent it.	-Solve problems involving money up to $100 - Find the value of a collection of dollar bills up to $100 and different ways to represent it.	-Solve problems involving money up to $1000.				
Compare whole numbers **(K.N.4, 2.N.4,)**	Compare sets of objects using correct language (none, more than, fewer than, same number of, one more than	Compare numbers using correct language and symbols (less than, equal to, greater than (<, =, >)	Compare numbers using correct language and symbols (less than, equal to, greater than (<, =, >)						
Classify numbers **(2.N.5, 3.N.5, 4.N.7)**		-Identify odd and even numbers -Determine whether a set of objects has an odd or even number of elements	-Determine whether a set of objects has an odd or even number of elements	-Identify and classify numbers as odd or even (odd number between 50 and 61)	-Identify and classify numbers as odd or even (odd number between 50 and 61)				
Solve Problems **(K.N.7, 2.N.12, 3.N.8, 4.N.10, 5.N.9, 6.N.9, 7.N.9, 8.N.12)**	Solve related addition and subtraction problems to ten	Calculate and solve problems involving addition and subtraction of two-digit numbers.	Calculate and solve problems involving addition and subtraction of three-digit numbers.	Select and use appropriate operations to solve problems.	Select and use appropriate operations to solve problems.	Solve multiplication and division problems with as a part of the problem fractions	Select and use appropriate operations to solve problems with exponents, whole numbers, positive fractions, mixed numbers, decimals, and percents.	Select and use appropriate operations to solve problems with rational numbers (including negatives).	Select and use appropriate operations to solve problems with rational numbers (including negatives).
Estimation **(K.N.8, 2.N.12, 3.N.12, 4.N.17, 5.N.14, 6.N.16,,, 7.N.7, 7.N.8, 8.N.10, 8.N.11)**	Estimate and check the number of objects in a group.	-Estimate, calculate, and solve problems involving addition and subtraction of one-digit numbers. -Check estimates and actual calculations.	-Estimate, calculate, and solve problems involving addition and subtraction of two-digit numbers. -Check estimates and actual calculations.	-Estimate, calculate, and solve problems (measurement, money, quantities) involving addition, subtraction, and multiplication of two-digit numbers and money to $100. -Check estimates and actual calculations.	-Estimate, calculate, and solve problems (measurement, money, quantities) involving addition, subtraction, and multiplication of three-digit numbers and money to $1000. -Check estimates and actual calculations.	-Estimate sums and differences of whole numbers, positive fractions, and positive decimals. -Estimate products of whole numbers and products of positive decimals with whole numbers. -Check estimates and actual calculations.	-Estimate results of computations with whole numbers, and with positive fractions, mixed numbers, decimals, and percents. -Check estimates and actual calculations.	-Estimate and compute with fractions (including simplification of fractions), integers, decimals, and percents (including those greater than 100 and less than 1). -Determine when an estimate rather than an exact answer is appropriate and apply in problem situations.	-Estimate and compute with fractions (including simplification of fractions), integers, decimals, and percents (including those greater than 100 and less than 1). -Determine when an estimate rather than an exact answer is appropriate and apply in problem situations.

Number Sense & Operations	K	1	2	3	4	5	6	7	8
Rounding (3.N.11, 4.N.16)				Round whole numbers through 1,000 to the nearest 10, 100, and 1,000.	Round whole numbers through 100,000 to the nearest 10, 100, 1000, 10,000, and 100,000.				
Meaning of Addition, Subtraction, Multiplication, and Division (2.N.7, 3.N.6, 4.N.8,		-Understand various meanings of addition and subtraction (addition as combination, subtraction as comparison, equalizing, and separation).	-Understand various meanings of addition and subtraction (addition as combination, subtraction as comparison, equalizing, and separation).	-Select, use, and explain various meanings and models of multiplication (through 10 x 10).	-Select, use, and explain various meanings and models of multiplication and division of whole numbers.				
Inverse Relationship Between Operations (Fact Families) (3.N.6, 4.N.8, 5.N.11, 6.N.12, 7.N.6, 8.N.9)		Inverse relationship between addition and subtraction.	Use the inverse relationship between addition and subtraction to solve problems and check solutions.	Inverse relationship between multiplication and division.	Use the inverse relationship between multiplication and division to solve problems and check solutions.	-Understand the inverse relationship of addition and subtraction and use it to simplify computation and solve problems.	-Understand the inverse relationship of addition and subtraction and use it to simplify computation and solve problems.	Use the inverse relationships of addition and subtraction, and of multiplication and division, to simplify computations and solve problems.	Use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.
Number Theory (5.N.8, 6.N.8,						-Number theory concepts of common factor, common multiple, and divisibility rules for 2, 3, 5, and 10 to the solution of problems. -Concepts of prime and composite numbers.	-Number theory concepts of prime and composite numbers, prime factorization, greatest common factor, least common multiple, and divisibility rules for 2, 3, 4, 5, 6, 9, and 10– to the solution of problems.		
Addition and Subtraction (2.N.9, 2.N.10, 2.N.11, 3.N.10, 4.N.12, 5.N.12, 6.N.10)		-Know addition and related subtraction facts up to 10. -Add and subtract two-digit numbers accurately and efficiently.	-Know addition and related subtraction facts up to 20. -Add and subtract three-digit numbers accurately and efficiently. -Use the conventional algorithms for addition and subtraction.	-Add and subtract four-digit numbers accurately and efficiently.	-Add and subtract five-digit numbers accurately and efficiently.	-Add and subtract whole numbers and positive decimals.	-Addition and subtraction of integers, with the exception of subtracting negative integers.		

Number Sense & Operations	K	1	2	3	4	5	6	7	8
Multiplication and Division (3.N.9, 3.N.10, 4.N.11, 4.N.12, 5.N.9, 5.N.12, 5.N.13, 6.N.12, 6.N.13,		-Understand multiplication as equal grouping and division as equal grouping. -Times 0, 1, 2 multiplication facts (exploratory concept)	-Understand multiplication as equal grouping and division as equal grouping. -Times 3, 4, 5, 10 multiplication facts (exploratory concept)	-Multiplication facts through 10 x 10 and related division facts. -Use multiplication facts to solve related problems. -Multiply (up to two-digit numbers by a one-digit number) accurately and efficiently.	-Multiplication facts through 12 x 12 and related division facts. -Use multiplication facts to solve related problems. - Multiply (up to three digits by two digits) accurately and efficiently.	-Multiply positive decimals with whole numbers. -Solve problems involving multiplication and division of whole numbers -Multiplication of positive fractions with whole numbers.	-Multiply and divide whole numbers and positive decimals. -Multiply and divide positive fractions and mixed numbers.		
Properties (3.N.7, 4.N.9, 8.N.8)				-Use the commutative (order) and identity properties of addition and multiplication on whole numbers in computations and problem situations.	-Select, use, and explain the commutative, associative, and identity properties.	-Investigate the distributive property of multiplication over addition for double-digit multipliers (exploratory concept)	-Investigate the distributive property of multiplication over addition for double-digit multipliers (exploratory concept)	-Understand of the properties of arithmetic operations on rational numbers. -Utilize the associative, commutative, and distributive properties; properties of the identity and inverse elements; and the notion of closure of a subset of the rational numbers under an operation.	-Understand of the properties of arithmetic operations on rational numbers. -Utilize the associative, commutative, and distributive properties; properties of the identity and inverse elements; and the notion of closure of a subset of the rational numbers under an operation.
Absolute Value (7.N.4, 8.N.6)								-Understand of absolute value	-Understand of absolute value
Order of Operations (5.N.10, 6.N.11, 7.N.5, 8.N.7)						-Understand how parentheses affect expressions involving addition, subtraction, and multiplication -Solve problems involving parentheses.	-Apply the Order of Operations for expressions involving addition, subtraction, multiplication, and division with grouping symbols	-Apply the rules of positive integer exponents to the solution of problems. –Use the Order of Operations with positive integer exponents.	-Apply the rules of powers and roots to the solution of problems. -Use the Order of Operations with positive integer exponents and square roots.
Equivalency & Comparisons (fractions, decimals, & percent) (4.N.4, 4.N.5, 5.N.5, 6.N.5, 7.N.1, 8.N.1)					-Find equivalent decimals. -Identify and generate equivalent forms of common decimals less than one whole.	-Identify and determine common equivalent fractions and mixed numbers, decimals, and percents.	-Identify and determine common equivalent fractions, mixed numbers, decimals, and percents.	-Compare, order, estimate, and translate among integers, fractions and mixed numbers, decimals, and percents.	-Compare, order, estimate, and translate among integers, fractions and mixed numbers, decimals, and percents.

Patterns, Relations, and Algebra	K	1	2	3	4	5	6	7	8
Attributes (K.P.1, K.P.2)	-Identify the attributes of objects - Sort and classify objects by a given attribute.								
Patterns (K.P.3, 2.P.1, 2.P.2, 3.P.1, 4.P.1, 5.P.1, 6.P.1, 7.P.1, 8.P.1,)	-Identify, reproduce, describe, extend, and create patterns.	-Identify, reproduce, describe, extend, and create patterns. -Identify patterns of counting by twos, fives and tens on the hundreds chart.	-Identify, reproduce, describe, extend, and create patterns. -Identify patterns of counting by forward by threes and fours, and backwards by twos, threes, fours, fives and tens on the hundreds chart.	-Create, describe, extend, and explain symbolic (geometric) patterns.	-Create, describe, extend, and explain symbolic (geometric) patterns.	-Analyze and determine the rules for extending symbolic, arithmetic, and geometric patterns and progressions.	-Analyze and determine the rules for extending symbolic, arithmetic, and geometric patterns and progressions.	-Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic expressions.	-Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic expressions. -Describe, complete, extend, analyze, generalize, and create a wide variety of patterns, including iterative and recursive, and linear functional relationships. - Use tables, graphs, and appropriate technology to explore quadratic and exponential growth patterns.
Skip Counting (K.P.4, 2.P.4)	-Count by fives and tens at least up to 50. -Introduce skip counting by twos.	-Skip count by fives and tens up to at least 100 starting at any number. -Skip count by twos up to at least 50.	-Skip count by fives and tens up to at least 500 starting at any number. -Skip count by twos up to at least 100.						
Patterns with Operations (Addition, Subtraction, Multiplication, and Division) (2.P.3, 3.P.1, 4.P.1)		-Describe and create addition and subtraction number patterns	-Describe and create addition and subtraction number patterns	-Create, describe, extend, and explain addition and subtraction patterns.	-Create, describe, extend, and explain multiplication patterns.				

Patterns, Relations, and Algebra	K	1	2	3	4	5	6	7	8
Variables in Number Sentences (2.P.5, 3.P.3, 4.P.2, 4.P.3, 4.P.6, 5.P.2, 5.P.6, 6.P.2, 6.P.6, 6.P.7, 7.P.2, 7.P.5, 8.P.2, 8.P.6, 8.P.8)		-Construct and solve open addition number sentences that have variables, e.g., □ + 7 = 10.	-Construct and solve open addition and subtraction number sentences that have variables, e.g., □ + 7 = 10. -Introduce situations with variables as unknowns and as quantities that vary.	-Determine the value of a variable (through 10) in simple equations involving addition, subtraction, or multiplication.	-Utilize symbol and letter variables to represent unknowns or quantities. - Determine values of variables in simple equations. - Determine how change in one variable relates to a change in a second variable.	-Replace variables with given values and evaluate/ simplify. - Interpret graphs that represent the relationship between two variables.	-Replace variables with given values and evaluate/ simplify. - Produce and interpret graphs that represent the relationship between two variables. - Identify and describe relationships between two variables with a constant rate of change. -Contrast these with relationships where the rate of change is not constant. -Utilize physical models to investigate and describe how a change in one variable affects a second variable.	-Evaluate simple algebraic expressions for given variable values. -Identify, describe, and analyze linear relationships between two variables.	-Evaluate simple algebraic expressions for given variable values. -Identify the roles of variables within an equation. -Explain and analyze how a change in one variable results in a change in another variable in functional relationships.
Symbols to Represent Mathematical Relationships (2.P.6, 3.P.2, 3.P.4, 4.P.4, 5.P.4, 6.P.4, 7.P.3, 8.P.3, 8.P.4, 8.P.10)		-Write number sentences using +, –, <, = , and/or > to represent mathematical relationships.	-Write number sentences using +, –, x, ÷, <, =, and/or > to represent mathematical relationships.	-Determine which symbol (<, >, or =) is appropriate for a given number sentence. -Write number sentences using +, –, x, ÷, <, =, and/or > to represent mathematical relationships.	Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.	-Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols.	-Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols.	-Create and use symbolic expressions for linear relationships and relate them to verbal, tabular, and graphical representations.	-Understand of the identity (-x)(-y) = xy and use it to simplify algebraic expressions. -Create and use symbolic expressions and relate them to verbal, tabular, and graphical representations. -Utilize tables and graphs to represent and compare linear growth patterns. - Investigate the use of systems of equations, tables, and graphs to represent mathematical relationships. -Identify functions as linear or nonlinear and contrast their properties from tables, graphs, or equations.
Trading (coins, measurement) (2.P.7,		-Describe functions related to trading, including coin trades and measurement trades (number of P, N, D, Q that = $1).	-Describe functions related to trading, including coin trades and measurement trades (number of P, N, D, Q, H that = $1).						
Geometry	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Problem Solving (4.P.5, 5.P.3, 5.P.5, 6.P.3, 6.P.5, 7.P.4, 7.P.6, 8.P.5, 8.P.7, 8.P.9)					-Solve problems involving proportional relationships.	-Utilize the properties of equality to solve problems with whole numbers. -Solve problems involving proportional relationships.	-Utilize the properties of equality to solve problems. -Solve linear equations. -Model situations with proportional relationships and solve problems.	-Solve linear equations using tables, graphs, models, and algebraic methods. -Utilize linear equations to model and analyze problems involving proportional relationships.	-Utilize linear equations to model and analyze problems involving proportional relationships. -Apply the concept of slope to the solution of problems. -Set up and solve linear equations and inequalities with one or two variables.
Two-Dimensional Shapes (K.G.1, K.G.2, 2.G.1, 2.G.2, 3.G.1, 3.G.2, 4.G.1, 4.G.2, 5.G.1, 6.G.1, 7.G.1, 7.G.5, 8.G.1, 8.G.5)	-Name, describe, sort, and draw simple two-dimensional shapes. -Attributes of two-dimensional shapes (number of sides, number of corners).	-Attributes and parts of two- dimensional shapes (length of sides, and number of corners, edges, faces, and sides). - Identify, describe, draw, and compare two-dimensional shapes (six sided polygons, curved figures).	-Attributes and parts of two- dimensional shapes (length of sides, and number of corners, edges, faces, and sides). - Identify, describe, draw, and compare two-dimensional shapes (six sided polygons, curved figures).	-Compare and analyze attributes and other features of two-dimensional geometric shapes. -Describe, model, draw, compare, and classify two-dimensional shapes.	-Compare and analyze attributes and other features of two- dimensional geometric shapes. -Describe, model, draw, compare, and classify two-dimensional shapes.	-Identify, describe, and compare special types of triangles and quadrilaterals. -Recognize that all equilateral triangles are isosceles, but not all isosceles triangles are equilateral.	-Identify polygons based on their properties, including types of interior angles, perpendicular or parallel sides, and congruence of sides.	-Use a ruler, protractor, and compass to draw polygons and circles. - Analyze, apply, and explain the relationship between the number of sides and the sums of the interior angle measures of polygons.	-Analyze, apply, and explain the relationship between the number of sides and the sums of the interior and exterior angle measures of polygons. -Use a straightedge, compass, or other tools to formulate and test conjectures, and to draw geometric figures. - Investigate right triangle relationships,
Three Dimensional Shapes (K.G.3, 2.G.1, 3.G.2, 4.G.1, 4.G.2, 5.G.2, 6.G.2, 8.G.5, 8.G.7)	-Name and compare three-dimensional shapes.	-Attributes and parts of three-dimensional shapes (length of sides, and number of corners, edges, faces, and sides).	-Attributes and parts of three-dimensional shapes (length of sides, and number of corners, edges, faces, and sides).	- Identify and describe simple three-dimensional shapes.	-Compare and analyze attributes and other features of three- dimensional geometric shapes. -Describe, model, draw, compare, and classify three-dimensional shapes.	-Identify, describe, and compare special types of three-dimensional shapes based on their properties.	-Identify three-dimensional shapes based on their properties.		-Use a straightedge, compass, or other tools to formulate and test conjectures, and to draw geometric figures. -Identify three-dimensional figures by their physical appearance, distinguishing attributes, and spatial relationships such as parallel faces.

Geometry	K	1	2	3	4	5	6	7	8
Rate of Change (7.P.5, 8.P.5)							-Utilize models to develop understanding of slope as constant rate of change.	-Compare positive rate of change to negative rate of change.	-Identify the slope of a line as a measure of its steepness and as a constant rate of change from its table of values, equation, or graph.
Symmetry (2.G.5, 3.G.6, 4.G.8, 5.G.6, 6.G.7)	-Introduce symmetry of two- and three-dimensional shapes.	-Identify symmetry in two-dimensional shapes.	-Identify symmetry in two-dimensional shapes. -Introduce symmetry in two-dimensional shapes with mirrors or by paper folding.	-Identify and draw lines of symmetry in two-dimensional shapes.	-Identify and describe line symmetry in two-dimensional shapes.	-Identify and describe line symmetry in two-dimensional shapes, including shapes that have multiple lines of symmetry.	-Identify types of symmetry.		
Position in space, Changing Shapes (K.G.4, 2.G.4, 2.G.6, 3.G.7, 4.G.9, 5.G.5, 6.G.6, 8.G.6)	-Identify positions of objects in space using appropriate language.	-Identify shapes that have been rotated, reflected, translated, and enlarged. -Describe direction of translations. -Predict the results of putting shapes together and taking them apart. -Identify relative positions - Find and name locations on maps and express simple relationships. - Recognize geometric shapes and structures in the environment and specify their location. - Mental images of geometric shapes using spatial memory and spatial visualization.	-Identify shapes that have been rotated, reflected, translated, and enlarged. -Describe direction of translations. -Predict the results of putting shapes together and taking them apart. -Identify relative positions - Find and name locations on maps and express simple relationships. - Recognize geometric shapes and structures in the environment and specify their location. - Mental images of geometric shapes using spatial memory and spatial visualization.	-Predict and explain the results of taking apart and combining two-dimensional shapes.	-Predict and validate the results of partitioning, folding, and combining two- and three-dimensional shapes.	-Describe and perform transformations on two-dimensional shapes.	-Predict, describe, and perform transformations on two-dimensional shapes.		-Predict the results of transformations on unmarked or coordinate planes and draw the transformed figure.

Geometry	K	1	2	3	4	5	6	7	8
Congruency (2.G.3, 4.G.7, 5.G.7, 6.G.8, 7.G.2, 8.G.2)		-Identify congruent shapes.	-Identify congruent shapes.		-Recognize similar figures. -Describe and apply techniques such as reflections, rotations, and translations for determining if two shapes are congruent.	-Determine if two triangles or two quadrilaterals are congruent by measuring sides or a combination of sides and angles, as necessary; or by motions or series of motions.	-Determine if two shapes are congruent by measuring sides or a combination of sides and angles, as necessary; or by motions or series of motions.	-Classify figures in terms of congruence and similarity, and apply these relationships to the solution of problems.	-Classify figures in terms of congruence and similarity, and apply these relationships to the solution of problems.
Geometric ideas & numbers (2.G.7, 4.G.3)		-Relate geometric ideas to numbers.	-Relate geometric ideas to numbers.						
Lines and Points (3.G.4, 4.G.5, 5.G.3, 6.G.3, 6.G.4, 6.G.5, 7.G.4)			-Introduce intersecting, parallel, and perpendicular lines.	-Identify and draw parallel lines, perpendicular lines, and other intersecting lines.	-Describe and draw intersecting, parallel, and perpendicular lines.	-Identify relationships among points and lines.	-Identify relationships among points, lines, and planes. -Graph points and identify coordinates of points on the Cartesian coordinate plane. -Find the distance between two points on horizontal or vertical number lines.	-Graph points and identify coordinates of points on the Cartesian coordinate plane.	
Ordered Pairs (3.G.5, 4.G.6, 5.G.4)				- Utilize ordered pairs of whole numbers and/or letters, locate and identify points on a grid.	- Utilize ordered pairs of numbers and/or letters, graph, locate, identify points, and describe paths.	-Utilize ordered pairs of whole numbers (including zero), graph, locate, and identify points, and describe paths on the Cartesian coordinate plane.			
Angles (3.G.3, 4.G.4, 7.G.3, 8.G.3)				-Identify angles as right angles, less than a right angle, and greater than a right angle.	-Identify angles as acute, right, or obtuse.	-Explore the angles formed by intersecting lines.	-Explore the angles formed by intersecting lines.	-Understand of the relationships of angles formed by intersecting lines.	-Understand of the relationships of angles formed by intersecting lines.

Geometry	K	1	2	3	4	5	6	7	8
Relationship Between Two- and Three- Dimensional Shapes (6.G.9, 8.G.8)							-Match three-dimensional objects and their two-dimensional representations.		-Recognize and draw two-dimensional representations of three-dimensional objects
Pythagorean Theorem (8.G.4)									-Understand the Pythagorean theorem. -Apply the theorem to the solution of problems. -Explore proofs of the Pythagorean theorem.
Tesselations									-Formulate and test conjectures about shapes that tessellate.
Trigonometric Ratios									-Investigate trigonometric ratios in right triangles.

Measurement	K	1	2	3	4	5	6	7	8
Attributes of Measures (K.M.1, 3.M.1, 4.M.1, 6.M.2)	-Recognize and compare the attributes of length, volume/capacity, weight, area, and time.	-Explore attributes of objects and compare concrete objects using these measures.	-Explore attributes of objects and compare concrete objects using these measures.	-Understand the attributes length, area, and weight. the appropriate type of unit for measuring each attribute using both the U.S. Customary (English) and metric systems.	-Understand attributes such as length, area, weight, and volume.		-Identify, measure, describe, classify, and construct various angles, triangles, and quadrilaterals.		
Making measurements (K.M.2, K.M.3, 2.M.4, 2.M.6, 3.M.1, 3.M.5, 4.M.1, 4.M.5, 6.M.2, 6.M.5, 7.M.1, 7.M.3, 8.M.1, 8.M.3)	-Make and use estimates of measurements. -Utilize nonstandard units to measure length, area, weight, and capacity. - Explore and use standard units to measure.	-Measure and compare common objects using metric and English units of length measurement. -Make and use estimates of measurement, including time, volume, weight, and area.	-Measure and compare common objects using metric and English units of length measurement. -Make and use estimates of measurement, including time, volume, weight, and area.	-Utilize appropriate units for measuring attribute using both the U.S. Customary (English) and metric systems. -Identify and use appropriate metric and U.S. Customary units to estimate and measure length, area, weight, temperature, and time.	-Select the appropriate type of unit for measuring a given attribute. -Identify and use appropriate metric and U.S. Customary units to estimate and measure length, area, weight, temperature, and time.		-Identify, measure, describe, classify, and construct various angles, triangles, and quadrilaterals. -Identify, measure, and describe circles and the relationships of the radius, diameter, circumference, and area; and use the concepts to solve problems.	-Select, convert, and use appropriate units of measurement or scale. -Understand and apply formulas and procedures for determining measures.	-Select, convert, and use appropriate units of measurement or scale. -Understand and apply formulas and procedures for determining measures. -Investigate formulas to determine the circumference and area of circles, and the perimeter and area of polygons.
Time (2.M.1, 2.M.2, 3.M.3, 4.M.3)	-Identify positions of events over time.	-Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. -Identify dates using a calendar. -Tell time at quarter-hour intervals on analog and digital clocks using a.m. and p.m.	-Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. -Identify dates using a calendar. -Tell time at five minute intervals on analog and digital clocks using a.m. and p.m.	-Identify time to the minute on analog and digital clocks using a.m. and p.m. -Compute elapsed time, using a clock for times less than one hour and using a calendar.	-Identify time to the minute on analog and digital clocks using a.m. and p.m. -Compute elapsed time, using a clock and using a calendar.				
Comparing Measurements (2.M.3, 2.M.4)	-Compare temperature, length, and time.	-Compare the length, weight, area, and volume of two or more objects. -Measure and compare common objects using metric and English units of length measurement.	-Compare the length, weight, area, and volume of two or more objects. -Measure and compare common objects using metric and English units of length measurement.						
Measurement Tools (2.M.5, 3.M.5, 4.M.5)		-Select and correctly use the appropriate measurement tools.	-Select and correctly use the appropriate measurement tools.	-Identify and use appropriate metric and U.S. Customary tools to measure length, area, weight, temperature, and time.	-Identify and use appropriate metric and U.S. Customary tools to measure length, area, weight, temperature, and time.			Select and apply techniques and tools to accurately find length, area, volume, and angle measures.	Select and apply techniques and tools to accurately find length, area, volume, and angle measures.

Measurement	K	1	2	3	4	5	6	7	8
Conversions (3.M.2, 4.M.2, 5.M.3, 7.M.1, 7.M.2, 8.M.1, 8.M.2)				-Convert units within a system of measurement.	-Convert units within a system of measurement.	-Solve problems involving simple unit conversions within a system of measurement.		-Select, convert, and use appropriate units of measurement or scale. -Utilize formulas, to convert from one system of measurement to another.	-Select, convert, and use appropriate units of measurement or scale. -Utilize formulas, to convert from one system of measurement to another.
Area & Perimeter (3.M.4, 4.M.4, 5.M.1, 6.M.1, 6.M.4, 7.M.3, 8.M.3)				-Estimate and find area and perimeter of a rectangle.	-Estimate and find area and perimeter of a rectangle, triangle, or irregular shape. -Explore surface areas of rectangular prisms. -Investigate areas of right triangles.	-Apply the concepts of perimeter and area to the solution of problems involving triangles and rectangles.	-Apply the concepts of perimeter and area to the solution of problems. -Apply formulas where appropriate. -Find areas of triangles and parallelograms. -Recognize that shapes with the same number of sides but different appearances can have the same area. -Develop strategies to find the area of more complex shapes.	-Utilize formulas to determine the surface area of rectangular prisms and cylinders.	-Utilize formulas to determine the surface area of rectangular prisms, cylinders, and spheres. -Given the formula, find surface area of pyramids and cones.
Problem Solving (3.M.5, 4.M.5, 5.M.1, 5.M.3, 6.M.3, 6.M.5, 8.M.4, 8.M.5)				-Utilize appropriate metric and U.S. Customary units and tools to solve problems involving length, area, weight, temperature, and time.	-Identify and use appropriate metric and U.S. Customary tools to solve problems involving length, area, weight, temperature, and time.	-Apply the concepts of perimeter and area to the solution of problems involving triangles and rectangles. -Apply formulas where appropriate. -Solve problems involving simple unit conversions within a system of measurement.	-Solve problems involving proportional relationships and units of measurement. -Identify, measure, and describe circles and the relationships of the radius, diameter, circumference, and area; and use the concepts to solve problems.		-Utilize ratio and proportion in the solution of problems. - Use models, graphs, and formulas to solve simple problems involving rates.
Volume (5.M.4, 6.M.6, 7.M.3, 8.M.3)					-Explore volumes of rectangular prisms.	-Find volumes and surface areas of rectangular prisms.	-Find volumes and surface areas of rectangular prisms.	-Utilize formulas to determine the volume of rectangular prisms and cylinders.	-Utilize formulas to determine the volume of rectangular prisms, cylinders, and spheres. -Given the formula, find volume of pyramids and cones.

Measurement	K	1	2	3	4	5	6	7	8
Angle Measurements and Calculation (5.M.2, 5.M.5, 6.M.2, 6.M.7)					-Introduce the use of protractors to measure angles. -Identify common measurements of turns.	-Identify, measure, describe, classify, and draw various angles. -Draw triangles given two sides and the angle between them, or given two angles and the side between them.	-Find the sum of the measures of the interior angles in triangles. -Identify, measure, describe, classify, and construct various angles. -Find the sum of the angles in simple polygons (up to eight sides) with and without measuring the angles.		
Understanding of Measurements					-Understand that measurements are approximations and investigate how differences in units affect precision.				

Data Analysis, Statistics, and Probability	K	1	2	3	4	5	6	7	8
Collecting Data (K.D.1, 2.D.1, 3.D.1, 4.D.1, 5.D.2, 7.D.1, 8.D.1, 8.D.2)	-Collect data using concrete objects, pictures, numbers, and graphs.	-Use interviews, surveys, and observations to gather data.	-Use interviews, surveys, and observations to gather data.	-Collect and organize data using observations, measurements, surveys, or experiments.	-Collect and organize data using observations, measurements, surveys, or experiments. - Understand which data-collection methods are appropriate for various types of investigations.	-Construct and interpret line plots, line graphs, and bar graphs.	- Generate and group data, record the data using frequency tables and interpret the tables.	-Select and utilize tabular and graphical representations of data.	-Describe the characteristics and limitations of a data sample. -Identify different ways of selecting a sample. -Select and utilize tabular and graphical representations of data. - Differentiate between continuous and discrete data and ways to represent them.
Displaying Data (3.D.1, 3.D.2, 4.D.1, 4.D.2, 5.D.2, 6.D.2, 7.D.1, 8.D.2)				-Identify appropriate ways to display the data. - Match representations of a data with the actual data set.	-Identify appropriate ways to display the data. -Match representations of a data with the actual data set. -Construct of simple circle graphs.	-Label circle graphs.	-Construct stem-and-leaf plots, line plots, and circle graphs. - Select, create, and use appropriate graphical representations of data, including histograms, box plots, and scatter plots.	-Create and utilize tabular and graphical representations of data.	-Create and utilize tabular and graphical representations of data.
Interpreting Data (K.D.1, 2.D.2, 5.D.2, 6.D.2, 7.D.1)	-Sort, organize, and draw conclusions about data using concrete objects, pictures, numbers, and graphs. -Organize data in lists, tables, and simple graphs.	-Organize, classify, represent, and interpret data using tallies, charts, tables, bar graphs, pictographs, and Venn diagrams.	-Organize, classify, represent, and interpret data using tallies, charts, tables, bar graphs, pictographs, and Venn diagrams.			-Interpret and label circle graphs.	-Interpret stem-and-leaf plots, line plots, and circle graphs. -Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.	-Interpret and utilize tabular and graphical representations of data.	-Interpret and utilize tabular and graphical representations of data.
Drawing Conclusions (2.D.3, 3.D.3, 4.D.3)		-Formulate inferences and make educated guesses about collected data.	-Formulate inferences and make educated guesses about collected data.	-Construct and draw conclusions from representations of data sets in the forms of tables, line plots, pictographs, tallies, and bar graphs.	-Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, pictographs, line graphs, line plots, and tallies.				-Make predictions, conduct experiments, and discuss discrepancies to develop understanding of actual versus predicted outcomes.

Data Analysis, Statistics, and Probability	K	1	2	3	4	5	6	7	8
Probability (2.D.4, 3.D.4, 4.D.4, 4.D.5, 4.D.6, 5.D.3, 6.D.3, 6.D.4, 7.D.3, 8.D.4)		-Decide which outcomes of experiments are most likely.	-Decide which outcomes of experiments are most likely. -List and count possible pairings of objects from two sets. - Investigate likely outcomes using spinners, counters, and other concrete objects.	-List and count the number of possible combinations of objects from two sets.	-Represent the possible outcomes for a simple probability situation. -List and count the number of possible combinations of objects from three sets. -Classify likely outcomes by designing and conducting experiments using concrete objects such as counters, number cubes, spinners, or coins. -Explore situations that involve probabilities of equally likely events.	-Predict the probability of outcomes of simple experiments and test the predictions.	-Use tree diagrams and other models to represent possible or actual outcomes of trials and analyze the outcomes. - Predict the probability of outcomes of simple experiments and test the predictions.	-Use tree diagrams, tables, organized lists, and area models to compute probabilities for events.	-Use tree diagrams, tables, organized lists, basic combinatorics, and area models to compute probabilities for events.
Median, Mode, Range (5.D.1, 6.D.1, 7.D.2, 8.D.3)					-Explore the concepts of median, mode, maximum and minimum, and range.	-Use data to find the median, mean, mode, maximum, minimum, and range, and apply to solutions of problems.	-Describe and compare data sets using of median, mean, mode, maximum and minimum, and range.	-Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) and utilize them to compare different sets of data.	-Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) and utilize them to compare different sets of data.
Ratio (6.D.4)							-Use ratios between 0 and 1 to represent the probability of the outcome. -Connect probability with the likelihood of the event.		
Experimentation							-Set up and analyze capture-recapture experiments.	-Conduct repetitive experiments and compare the outcomes to predicted probabilities.	-Conduct repetitive experiments and compare the outcomes to predicted probabilities.