CURRICULUM MAP

Subject: Math 5 Common Core   **Grade Level: 5th**   **rev 9/14**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Place Value and Decimal Fractions **5.NBT.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. **5.NBT.2** Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. **5.NBT.3** Read, write, and compare decimals to thousandths. **5.NBT.4** Use place value understanding to round decimals to any place. **5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths. **5.MD.1** Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems. **Multi-Digit Whole Number and Decimal Fraction Operations** **5.OA.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. **5.OA.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. **5.NBT.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. **5.NBT.2** Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or	**Addition and Subtraction of Fractions** **5.NF.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. **5.NF.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators. **Multiplication and Division of Fractions and Decimal Fractions** **5.OA.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. **5.OA.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. **5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths. **5.NF.3** Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. **5.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	**Multiplication and Division of Fractions and Decimal Fractions** (continued) **5.NF.5** Interpret multiplication as scaling (resizing). **5.NF.6** Solve real world problems involving multiplication of fractions and mixed numbers. **5.NF.7** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. **5.MD.1** Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems. **5.MD.2** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. **Addition and Multiplication with Volume and Area** **5.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. **5.MD.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement. **5.MD.4** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. **5.MD.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. **5.G.3** Understand that attributes belonging to a category of two-dimensional figures also belong to all	**Problem Solving with the Coordinate Plane** **5.OA.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. **5.OA.3** Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. **5.G.1** Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond. **5.G.2** Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Math 5 Common Core continued divided by a power of 10. Use whole-number exponents to denote powers of 10. **5.NBT.5** Fluently multiply multi-digit whole numbers using the standard algorithm. **5.NBT.6** Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors. **5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths. **5.MD.1** Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems.		subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. **5.G.4** Classify two-dimensional figures in a hierarchy based on properties.	

CURRICULUM MAP

Subject: Math 6 Common Core   **Grade Level: 6th**   **rev 9/14**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER

Ratio and Proportional Relationships
  6.RP.1 Use ratio language to describe the relationship between two quantities (3 formats and writing)
  6.RP.2 Describe a unit rate in words and write in the form a:b a/b
     Use rate language in the context of a ratio relationship
     Calculate unit pricing and constant speed and graph to show relationship
  6.RP.3 Use models (table, double number line, tape diagram) to find and reason about equivalent ratios
     Plot the pairs of equivalent ratios on coordinate plane and write an equation to reason
     Use rate and ratio reasoning to solve real world problems
     Convert measurement units using ratio reasoning
     Understand percent means hundredths
     Find the percent of a quantity in order to solve real world problems
     Find the whole, given the part and a percent in order to solve real world problems
	The Number System
	  LCM
	  Multiplying fractions
	  6.NS.1 Use fraction language to interpret real world fraction problems
	    Interpret and compute quotients of fractions and solve word problems
	  6.NS.4 GCF
	  6.NS.2 Fluently divide multi-digit numbers using standard algorithm
	    Place Value, Rounding
	  6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using algorithm
	  Rational Numbers
	  6.NS.5 Understanding positive and negative numbers on a number line and use them together to describe quantities having opposite direction and value. Place integers and other rational numbers in the correct locations on a number line. Use integers to represent quantities in real world context
	  6.NS.6 Understand that 0 is its own opposite and as the origin on the number line
	    Recognize that if two ordered pairs only differ by the signs, the points are reflections across one or both axes Plot ordered pairs on a coordinate plane in all four quadrants
	  6.NS.7 Understand absolute value in real world situations and compare absolute value of rational numbers
	   Interpret statements of inequality
	  6. NS.8 Use coordinates and absolute value to find the distance between horizontal or vertical points on a grid in different quadrants
		Expressions and Equations
		  6.EE.1 Write and evaluate numerical expressions involving exponents
		  6.EE.2 Write, read, and evaluate expression with variables
		   Identity parts of an expression (term, product, factor, quotient, coefficient)
		   Use variables to write and solve real world problems
		   Use formulas
		   Evaluate using order of operations given rational numbers
		  6.EE.3 Apply the properties of operation to generate equivalent expressions (commutative, distributive)
		  6.EE.4 Combining like terms and identifying expressions are equivalent
		   Substituting to solve and check that expressions with variables are equivalent
		  6.EE.5 Solving equations and inequalities using substitution
		  6.EE.6 Use variables to represent numbers and write expressions when solving real-world problems.
		  6.EE.7 Solve real world equations by using inverse operations including fractions and decimals as coefficients
		  6.EE.8 Write an inequality to show that there are infinite solutions. Test solutions validity. Graph inequalities
		  6.EE.9 Use variables to represent two quantities that change in relationship to one another
		  Understand dependent and independent values
		   Analyze how dependent variables change in a graph
		   Understand that a graph, table and an equation can all represent the same real world problem
		
		Geometry
		
		  6.G.1 Find the area of a triangle, quadrilateral, and polygons using
			6.SP.1 Recognize the difference between a statistical and non-statistical question
			  6.SP.2 Find the center of data Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread and overall shape
			  6.SP.3 Understand and calculate the mean as a measure of center
			   Understand and calculate the median as a single number given a set of data with an even number of values
			   Understand the range and it is a measure of variation
			  6.SP.4 Display numerical data on a dot plot, histogram, and box plot
			  6.SP.5 Report observations (spread, distribution)
			   Analyze a data set and describe what attribute is being measured, and how it was measured and its unit of measure
			   Find the interquartile range on a graph
			   Find the mean absolute deviation

Math 6 Common Core continued		mathematical formulas and decomposing shapes
		  6.G.2 Find the volume of right rectangular prisms using formulas and rational numbers in order to solve real world and mathematical problems
		  6.G.3 Draw polygons in the coordinate plane
		  Find the length on the sides
		  Apply them to find area and perimeter in real world problems
		  6.G.4 Represent three-dimensional figures using nets
		  Use nets to find the surface of 3-D figures composed of rectangles or triangles	

CURRICULUM MAP

Subject: 6 Grade Math Skills/AIS Class   Common Core   **Grade Level: 6th**   **rev 9/14**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Module 1- Ratios and Unit Rates Foundational Standards: **4.OA.2** Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. **5.NF.3** Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. **5.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. **5.G.1** Define and identify the parts of a coordinate system (x-axis, x-coordinate, y-axis, y-coordinate, coordinate pairs, origin, distance from the origin along each axis, quadrants). **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. Focus Standards: **6.RP.1** Understand ratios and use the language to describe the relationship between two quantities. **6.RP.2** Understand the concept of a unit rate and use the language to describe the relationship between two quantities. **6.RP.3** Use ratio and rate reasoning to solve real-world problems, including tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. **6.RP.3a** Make tables of equivalent ratios relating quantities with whole number	**Module 2- cont'd** Focus Standards: **6.NS.1** Interpret and compute quotients of fractions. Solve word problems involving division of fractions by fractions, use visual fraction models and equations to represent the problem. **6.NS.2** Fluently divide multi-digit numbers using the standard algorithm. **6.NS.3** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. **6.NS.4** Find the greatest common factor of two whole numbers less than or equal to 100, and least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two numbers 1-100 with a common factor and multiple, of a sum of two whole numbers with no common factor. **Module 3- Rational Numbers** Foundational standards: **3.NF.A.2** Identify fractions on a number line and count up by fractional parts treating the denominator as a unit (1 fourth, 2 fourths, etc.). **4.G.A.3** Identify line-symmetric figures and draw lines of symmetry. **5.G.A.1** Define and identify the parts of a coordinate system (x-axis, x-coordinate, y-axis, y-coordinate, coordinate pairs, origin, distance from the origin along each axis, quadrants). **5.G.A.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. Focus Standards: **6.NS.C.5** Use positive and negative numbers to represent quantities in real-	**Module 4- cont'd** **6.EE.A.4** Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). **6.EE.B.5** Use substitution to determine whether a given number in a specified set makes an equation or inequality true. **6.EE.B.6** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem. **6.EE.B.7** Solve real-world and mathematical problems by writing and solving equations in the form x+p=q and px=q for cases in which p, q and x are all nonnegative rational numbers. **6.EE.B.8** Write an inequality of the form x>c or x<c to represent a constraint or condition in a real-world mathematical problem. Recognize that inequalities of the form x>c or x<c have infinitely many solutions. Represent solutions of such inequalities on number line diagrams. **6.EE.C.9** Use variables to represent two quantities in a real-world problem that change in relationship to one another. Write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. **Module 5- Area, Surface Area, Volume** Foundational Standards: **1.G.A.2** Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter circles) or three-dimensional shapes (cubes, right	**Module 5- cont'd** Focus Standards **6.G.A.1** Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. **6.G.A.2** Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\,w\,h$ and $V = b\,h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. **6.G.A.3** Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. **6.G.A.4** Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. **Module 6- Statistics** Foundational Standard: **5.MD.B.2** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. Focus Standards: **6.SP.A.1** Recognize a statistical question

6 Grade Math Skills/AIS Class
p2

measurements, find missing values in tables, and plot the pairs of values on the coordinate plane.
Use tables to compare ratios.

6.RP.3b Solve unit rate problems including those involving unit pricing and constant speed.

6.RP.3c Find a percent of quantity as a rate per 100 and solve problems involving finding the whole given a part and the percent.

6.RP.3d Use ratio reasoning to convert measurement units, manipulate and transform units appropriately when multiplying or dividing quantities

Module 2- Arithmetic Operations Including Dividing by a Fraction
Foundational Standards**:**
4.OA.4 Find all factors for whole numbers between 1 and 100. Determine multiples of factors between 1 and 100. Determine whether a given whole number in the range 1–100 is prime or composite..

5.NBT.2 Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.

5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths.

5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by fractions.

world contexts, explaining the meaning of 0 in each situation.

6.NS.C.6 Identify rational numbers on a number line. Identify locations of numbers with opposite signs (+3 and -3). Define 0 as its own opposite. Identify the relationship between the signs of coordinates and the four quadrants of a coordinate plane. Reflect points over the x- and y- axes and identify the relationship between the signs of the coordinates. Find and position pairs of integers and other rational numbers on a coordinate plane.

6.NS.C.7 Define and identify the absolute value of rational numbers. Compare and order rational numbers.

6.NS.C.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Use coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Module 4- Expressions and Equations
Foundational standards:
1.OA.B.3 Identify and apply the commutative and associative properties of addition.

3.OA.B.5 Identify and apply the commutative and associate properties of multiplication as well as the distributive property.

4.MD.C.5 Identify angles and angle types (acute, obtuse, right)

4.MD.C.6 Measure and sketch angles using a protractor.

4.MD.C.7 Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.

5.OA.A.2 Write simple expressions that record calculations with numbers. Interpret numerical expressions without evaluating them.

5.OA.B.3 Generate two numerical patterns using two given rules, form ordered pairs using corresponding terms, and identify

rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

2.G.A.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

3.G.A.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

4.MD.A.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems, including finding the missing dimension when given the perimeter or area.

4.G.A.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.

5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.

5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in., cubic ft., and improvised units.

5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.

5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

as one that anticipates variability in the data related to the question and accounts for it in the answers.

6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

6.SP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

6.SP.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

6.SP.B.5 Summarize numerical data sets in relation to their context.

| 6 Grade Math Skills/AIS Class p3 | apparent relationships between corresponding terms.

Focus Standards:
6.EE.A.1 Write and evaluate numeric expressions involving whole-number exponents.

6.EE.A.2 Write, read, and evaluate expressions in which letters stand for numbers

6.EE.A.3 Apply the properties of operations to generate equivalent expressions.. | | |
|---|---|---|---|

CURRICULUM MAP

Subject: Math 7 Common Core   **Grade Level: 7th**   **rev 9/14**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Ratios & Proportional Relationships – Analyze proportional relationships and use them to solve real-world and mathematical problems. 7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. 7.RP.2 Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate. **The Number System – Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.** 7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. b. Understand $p + q$ as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q	**Expressions & Equations - Use properties of operations to generate equivalent expressions.** 7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. 7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. **Solve real-life and mathematical problems using numerical and algebraic expressions and equations.** 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. 7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	**Geometry - Draw construct, and describe geometrical figures and describe the relationships between them.** 7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. **Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.** 7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. **Probability - Investigate chance processes and develop, use, and evaluate probability models.** 7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. 7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. 7.SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities	**Geometry - Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.** 7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. **Draw construct, and describe geometrical figures and describe the relationships between them.** 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. 7.G.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. **Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.** 7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. 7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Math 7 Common Core Continued

is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
d. Apply properties of operations as strategies to add and subtract rational numbers.
7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.
c. Apply properties of operations as strategies to multiply and divide rational numbers.
d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.

Ratios & Proportional Relationships – Analyze proportional relationships and use them to solve real-world and mathematical problems.
7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

of events.
b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.
7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.
c. Design and use a simulation to generate frequencies for compound events.

Statistics - Use random sampling to draw inferences about a population.
7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

Draw informal comparative inferences about two populations.
7.SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.
7.SP.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.

CURRICULUM MAP

Subject: Accelerated Math 7/8   Common Core   **Grade Level: 7th**   **rev 9/14**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Ratios & Proportional Relationships 7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. 7.RP.2 Recognize and represent proportional relationships between quantities. 7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error. **Expressions & Equations** 7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. 7.EE.4 Use variables to represent quantities in a real-world or mathematical **Accelerated Math 7/8 Common Core continued p2** problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.	**Expressions & Equations** 7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. 7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. 7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. **Geometry** 7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. **The Number System** 8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. **Expressions & Equations** 8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$,	**Ratios & Proportional Relationships** 7.RP.2 Recognize and represent proportional relationships between quantities. **Geometry** 7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. 7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. 7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. **Probability** 7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. 7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. 7.SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. 7.SP.4 Use measures of center and measures of variability for numerical data	**Functions** 8.F.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. 8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). 8.F.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. 8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. 8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. **Expressions and Equations** 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and

8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. 8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. 8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. **The Number System** 7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. 7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. **Accelerated Math 7/8 Common Core continued p3** 7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers. 8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. 8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2)	where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational. 8.EE.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. 8.EE.7. Solve linear equations in one variable with fraction and decimal coefficients	from random samples to draw informal comparative inferences about two populations. 7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. 7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. 7.SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. 7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. 8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. 8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. 8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	estimation strategies. 7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. **Geometry** 7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. 7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. 7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

CURRICULUM MAP

Subject: Algebra 1 Accelerated Common Core **Grade Level: 8th** **rev 9/14**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Module 1 Relationships between quantities and reasoning with equations and their graphs N.Q.1, N.Q.3 Analyzing Graphs of linear, quadratic, piecewise and exponential functions. **Properties of Binary relations** A-SSE.2 Use the structure of an expression to identify ways to rewrite it. A-APR.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. **Perform arithmetic operations on polynomials** A-APR.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. **Factoring** A.SSE.1 Polynomials (factoring GCF, Difference of two squares, trinomial, by grouping) Interpret expressions that represent a quantity in terms of its context. a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1+r)n$ as the product of P and a factor not depending on P.* **Solving Equations** A-REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument.	**Arithmetic and geometric sequences (module 3)** F-LE.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). F-BF.1 Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context. A-SSE.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. c. Use the properties of exponents to transform expressions for exponential functions. **Solving Systems of Equations** A-REI.5 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. A-REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. Solving Systems of equations by substitution, elimination, graphically, including word problems Solving systems of inequalities A-REI.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes	**Quadratics (module 4)** A.APR.3 Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial (x and y intercepts) A.SSE.3 Factor quadratic expression to reveal the zeros, Complete the square in a quadratic expression to reveal the max and min value F.IF.4 Graph using key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. F.IF.4 Relate the domain of a function to its graph A.REI.4 Solve quadratic equations by factoring, completing the square and quadratic formula F.IF.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. F.IF.7 Parent functions, Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology (linear, quadratic, square root, cube root, piecewise, absolute value) F.IF.8 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. - Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. F.BF.3 Build new functions from existing functions. Identify the effect on the graph	**Statistics (Module 2) continued** S.ID.7 & S.ID.8 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. Compute (using technology) and interpret the correlation coefficient of a linear fit. S.ID.9 Distinguish between correlation and causation. **Model Analysis (Module 5)** F.IF.4 Analyze/Interpret functions that arise in applications in terms of real world context F.BF.1 Build a function that models a real world relationship between two quantities. Tasks are limited to linear, quadratic and exponential functions with domains in the integers. F.LE.1 Distinguish between situations that can be modeled with linear functions and with exponential functions. -Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. -Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. - Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. F.LE.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

Algebra 1 Accelerated continued

A-REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
True/False equations.
Solving word problems using let statements (Consecutive integer, Coin, Age, Motion) A-CED.1 Create equations in one variable and use them to solve problems.

Solving Inequalities
A-REI.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality),
A-CED.1 Create inequalities in one variable and use them to solve problems.
Include equations arising from linear
A-CED.3 Represent constraints by inequalities, and interpret solutions as viable or non-viable options in a modeling context. Compound inequalities and word problems. (A-CED.1)
A-CED.4 **Rearrange formulas** to highlight a quantity of interest, using the same reasoning as in solving equations.
For example, rearrange Ohm's law $V = IR$ to highlight resistance R.

Solving Quadratic Equations
A-REI.4 Solve quadratic equations in one variable.
b. Solve quadratic equations by inspection (e.g., for $x2 = 49$), taking square roots, Solving quadratic word problems

Exponential Growth and Decay
A-SSE.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
c. Use the properties of exponents to transform expressions for exponential functions.
F-LE.2 Construct…exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

Interpret expressions for functions in terms of the situation they model
F-LE.5 Interpret the parameters in a linear or exponential function in terms of a context.
Solve word problems dealing with exponential growth and decay

Functions
Definition, domain and range
F-IF.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.
F-IF.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs.

Statistics (Module 2)
S.ID.1 Represent data with plots on the real number line (dot plots, histograms, and box plots).
S.ID.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (inter-quartile range, standard

deviation) of two or more different data sets.
S.ID.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
S.ID.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
S.ID.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. Fit a function to the data
Emphasize linear, quadratic, and exponential models

CURRICULUM MAP

Subject: Math 8 Common Core   **Grade Level: 8th**   **rev 9/14**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Algebra **Order of Operations** **Expressions & Equations –Analyze and solve linear equations and pairs of simultaneous linear equations.** 8.EE.7 Solve linear equations in one variable. 8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. 8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. 8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. **Geometry – Understand congruence and similarity using physical models, transparencies, or geometry software.** 8.G.1 Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines. 8.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	**Geometric Relationships continue** 8.G.2 Concepts of Congruence, Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. 8.G.1 Properties of Rotations, Translations, Reflections Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines. 8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from a dilation 8.G.1 Rigid Motion Properties are the same as: the properties of rotations, reflections, and translations. 8.G.2 Transformations and sequencing : Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. 7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and use them to solve simple equations for an unknown angle in a figure 8.G.5 Exterior Angles of a triangle, Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines	**Expressions & Equations –Analyze and solve linear equations and pairs of simultaneous linear equations.** 8.EE.8 Analyze and solve pairs of simultaneous linear equations. **Functions – Define, evaluate, and compare functions. Use functions to model relationships between quantities.** 8.F.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. **Expressions & Equations – Understand the connections between proportional relationships, lines, and linear equations.** 8.EE.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. **Functions – Define, evaluate, and compare functions. Use functions to model relationships between quantities.** 8.F.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. 8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. 8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal	**Statistics & Probability – Investigate patterns of association in bivariate data.** 8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. **Number System – Know that there are numbers that are not rational, and approximate them by rational numbers.** 8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. 8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2) **Expressions & Equations – Work with radicals and integer exponents.** 8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.

Math 8 Common Core Continued	are cut by a transversal 8.G.5 Similar triangles: Use informal arguments to establish facts about the angle-angle criterion for similarity of triangle 8.G.4 Dilations revisited **Algebra/Functions** 6.EE.9 Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. 8.EE.5 Proportional and non-proportional relationships 8.F.4 Graphing using slope-intercept form: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, 8.EE.5 Graph proportional and non-proportional relationships interpreting/finding slope (using slope formula) Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. 8.FF.4 Finding slope from a graph and table: Interpret the rate of change.. of a linear function in terms of the situation it models, and in terms of its graph or a table of values. 8.F.4 Writing Equations from charts, tables and graphs: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. 8.F.2 Comparing rates (slopes)	descriptions). 8.F.4 Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. 8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. **Geometry – Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.** 7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. 8.G.9 Solve real-world and mathematical problems involving volume of cylinders, cones and spheres. **Geometry - Draw, construct and describe geometrical figures and describe the relationships between them.** 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. 7.G.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. **Statistics & Probability – Investigate patterns of association in bivariate data.** 8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as	**Geometry – Understand and apply the Pythagorean Theorem.** 8.G.6 Explain a proof of the Pythagorean Theorem and its converse. 8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. 8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

		clustering, outliers, positive or negative association, linear association, and nonlinear association. 8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. 8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	