

GBCS Curriculum Guide			GRADE: 9-12		SUBJECT: Algebra I Support			
Topic	Pacing	Unit	Standards	Enduring Understandings & Essential Questions	Learning Targets	Vocabulary	Materials	Assessments
		Chapter 1: Foundations for Algebra	A.SSE.1, A.SSE.1a, Prepares for N.RN.3, Prepares for A.CED.3, N.RN.3, A.CED.1, Prepares for A.REI.1, PREPARES FOR A.CED.2, A.CED.2, A.REI.10	Variable – You can use variables to represent quantities and to write algebraic expressions and equations. Properties – The properties of real numbers describe relationships that are always true. You can use them to rewrite expressions.	I can use symbols to represent quantities that are unknown or that vary. I can write algebraic expressions using both words and symbols. I can use variables to write an expression that represents a real world situation. I can evaluate and simplify expressions by plugging numbers in for variables and using the order of operations. I can estimate square roots. I can order real numbers on a number line. I can identify the properties of real numbers. I can use the properties of real numbers to write equivalent expressions. I can simplify expressions using the distributive property. I can simplify expressions by combining like terms. I can use a table to solve equations. I can solve an equation using mental math. I can describe a mathematical relationship using words, tables, equations and graphs.	absolute value, additive inverse, algebraic expression, base, coefficient, constant, counterexample, deductive reasoning, Distributive Property, element of the set, equation, equivalent expression, evaluate, exponent, inductive reasoning, inequality, integer, irrational number, like terms, multiplicative inverse, natural number, numerical expression, open sentence, opposite, order of operations, perfect square, power, quantity, radical, radicand, rational number, real number, reciprocal, set, simplify, solution of an equation, square root, subset, term, variable, whole number absolute value, additive inverse, algebraic expression, base, coefficient, constant, counterexample, deductive reasoning, Distributive Property, element of the set, equation, equivalent expression, evaluate, exponent, inductive reasoning, inequality, integer, irrational number, like terms, multiplicative inverse, natural number, numerical expression, open sentence, opposite, order of operations, perfect square, power, quantity, radical, radicand, rational number, real number, reciprocal, set, simplify, solution of an equation, square root, subset, term, variable, whole number		
		Chapter 2: Solving Equations	Prepares for A.REI.1, A.REI.1, A.REI.3, A.CED.1, A.CED.4, N.Q.1, N.Q.2, Prepares for N.Q.3, N.Q.3	Equivalence - You can represent an equation in many ways. Equivalent representations have the same solution as the original equation. Solving Equations and Inequalities - You can use properties of numbers and equality to transform equations into equivalent, simpler equations and find solutions. Proportionality - In a proportional relationship, the ratios of two quantities are equal. You can use this relationship to describe similar figures, scale models, and rates.	I can solve one-step equations. I can solve two step equations using inverse operations. I can solve equations with multiple steps using inverse operations I can write an equation to solve a real world problem. I can solve equations with variables on both sides using inverse operations. I can solve an equation for a given variable (in this case, y). I can determine the better buy using the unit rate. I can convert between units using ratios. I can solve a simple proportion problem. I can use proportions to find missing side lengths of geometric figures. I can use proportions to solve real world problems. I can solve problems involving percents. I can determine percent increase or decrease.	Addition Property of Equality, Conversion factor, Cross products, Cross product property, Division property of equality, Equivalent expressions, Formula, Identity, Inverse operations, Isolate, Literal equation, Multiplication property of equality, Percent error, Percent change, Percent decrease, Percent increase, Proportion, Rate, Ratio, Relative error, Scale, Scale drawing, Scale model, Similar figures, Subtraction property of equality, Unit analysis, Unit rate		

		Chapter 3: Solving Inequalities	Prepares for A.REI.3, A.REI.3, A.CED.1, N.Q.2, A.SSE.1, A.SSE.1.b	You can use algebraic inequalities to represent relationships between quantities that are not equal. You can represent an inequality in many ways. Equivalent representations have the same solutions as the original inequality. You can use properties of inequality to transform an inequality into equivalent, simpler inequalities and then find solutions.	I can determine whether a given number is a solution to an inequality. I can graph an inequality. I can write an inequality when given the graph. I can solve and graph a one-step inequality. I can solve and graph a multi-step inequality. I can solve and graph a compound inequality. I can solve and graph an absolute value equation. I can write a compound inequality using interval notation. I can solve and graph an absolute value inequality. I can determine the union of two sets. I can determine the intersection of two sets.	Complement of a set, Compound inequality, Disjoint sets, Empty set, Equivalent inequalities, Intersection, Interval notation, Roster form, Set-builder notation, Solution of an inequality, Union, Universal set		
		Chapter 4: Intro to Functions	A.REI.10, A.REI.11, A.CED.2, A.SSE.1, A.SSE.1.a, A.SSE.1.b, N.Q.1, F.IF.5, N.Q.2, Prepares for F.IF.4, F.IF.2, F.IF.3, F.BF.1, f.BF.1.a, F.BF.2, F.LE.2	A function is a relationship that pairs one input value with exactly one output value. You can use words, tables, equations, sets of ordered pairs, and graphs to represent functions. You can use functions to model real-world situations that pair one input value with a unique output value.	I can visually represent the relationships between two variable quantities as they both change. I can use a graph to show relationships between variables. I can determine whether a relationship between numbers is a linear function. I can represent a linear function using words, a table, an equation and a graph. I can determine whether a relationship between numbers represents a linear or nonlinear function. I can graph a nonlinear function using a table. I can write a function rule for linear functions. I can determine whether a relation is a function. I can identify the domain and range of a function. I can describe a pattern in a sequence and find the next two terms. I can recognize an arithmetic sequence. I can find the common difference in an arithmetic sequence. I can write an equation to describe an arithmetic sequence.	Arithmetic sequence, Common difference, Continuous graph, Dependent variable, Discrete graph, Domain, Explicit formula, Function, Function notation, Input, Independent variable, Linear function, Nonlinear function, Output, Range, Recursive formula, Relation, Sequence, Term of a sequence, Vertical line test		
		Chapter 5: Linear Functions	F.IF.4, F.IF.6, F.IF.7, F.IF.7.a, F.IF.9, F.LE.1b, F.LE.2, F.LE.5, N.Q.2, A.CED.2, F.BF.1, F.BF.1.a, F.BF.3, A.SSE.1, A.SSE.1.a, F.SSE.2	In the graph of a line, the ratio for the slope indicates the rate of change. There are several forms for the equation of a line. Each form communicates different information. For instance, from the point-slope form, you can determine a point and the slope of a line. You can model the trend of the real-world data in a scatter plot with the equation of a line. You can use the equation to estimate or to make predictions.	I can find the rate of change from tables. I can find the slope of a line. I can write a linear equation using slope-intercept form. I can graph linear equations in slope-intercept form. I can write equations using point-slope form. I can graph equations in point-slope form. I can graph linear equations using intercepts. I can write linear equations in Standard Form. I can write equations in Slope-Intercept, Point-Slope, and Standard Forms when given different information. I can determine whether given lines are parallel, perpendicular, or neither. I can determine the correlation of a scatter plot. I can create a scatter plot. I can write an equation of a trend line and use it to make predictions. I can graph an absolute value function using a table. I can graph an absolute value function using transformations. I can describe the transformations that occur in an absolute value functions given their equations.	Absolute value function, Direct variation, Extrapolation, Interpolation, Inverse function, Linear equation, Line of best fit, Negative correlation, No correlation, Opposite reciprocals, Parallel lines, Perpendicular lines, Piecewise function, Point-slope function, Positive correlation, Rate of change, Residual, Scatter plot, Slope, Slope-intercept form, Standard form of a linear equation, Step function, Trend line, x-intercept, y-intercept		

		Chapter 6: Systems of Equations and Inequalities	Prepares for A.REI, A.REI.5, A.REI.6, Extends A.REI.6, A.REI.11, A.REI.12, N.Q.2, N.Q.3, A.CED.3	There are several ways to solve systems of equations and inequalities, including graphing and using equivalent forms of equations and inequalities within the system. The number of solutions depends on the type of system. You can represent many real-world mathematical problems algebraically. When you need to find two unknowns, you may be able to write and solve a system of equations.	I can solve systems of equations by Graphing. I can analyze systems of equations that are both dependent and inconsistent. I can solve a system of equations using the substitution method. I can write and solve a system of equations to model a real world situation. I can solve systems of equations using the elimination method. I can recognize when a system has no solutions or infinitely many solutions. I can graph linear inequalities in two variables. I can use linear inequalities to model real-world situations.	Consistent, Dependent, Elimination method, Inconsistent, Independent, Linear inequality, Solution of an inequality, Solution of a system of linear equations, Solution of a system of linear inequalities, Substitution method, System of linear equations, System of linear inequalities		
		Chapter 7: Exponents and Exponential Functions	Prepares for N.RN.1 and N.RN.2, N.RN.1, N.RN.2, A.SSE.1, A.SSE.1.a, A.SSE.1.b, A.SSE.3.c, A.CED.2, A.REI.11, F.IF.4, F.IF.5, F.IF.7, F.IF.7.e, F.IF.8, F.IF.8.b, F.IF.9, F.BF.1, F.BF.3, F.LE.1.c, F.LE.2, f.LE.5	One way to represent numbers is to use exponents. A number raised to the 0 power is equal to 1. Just as there are properties that describe how to rewrite expressions involving addition and multiplication, there are properties that describe how to rewrite and simplify exponential and radical expressions.	I can simplify expressions with zero and negative exponents. I can simplify expressions involving zero and negative exponents. I can multiply powers with the same base. I can multiply powers with fractional exponents. I can raise a power to a power. I can raise a product to a power. I can raise a power to a power with fractional exponents. I can raise a product to a power with fractional exponents. I can divide powers with the same base. I can raise a quotient to a power. I can rewrite expressions involving radicals and rational exponents. I can evaluate and graph exponential functions. I can determine whether a sequence is geometric or arithmetic. I can determine the next term in a geometric sequence. I can write a recursive function to model a geometric sequence.	Compound interest, Decay factor, Exponential decay, Exponential function, Exponential growth, Geometric sequence, Growth factor, Index		
		Chapter 8: Polynomials and Factoring	Prepares for A.APR.1, A.APR1, Prepares for A.SSE.2, A.SSE.2, A.SSE.1, A.SSE.1.a, A.SSE.1.b	You can represent algebraic expressions in many ways. When you add, subtract, multiply, divide, and factor polynomials, you replace one expression with an equivalent expression. The properties of real numbers are the basis of the laws of algebra. You can apply properties of real numbers, such as the Distributive Property, to polynomials.	I can factor trinomials with a leading coefficient of 1. I can factor higher degree polynomials by the grouping method. I can factor trinomials with a leading coefficient greater than one. I can multiply binomials whose products are the difference of two squares and perfect square trinomials. I can factor a difference of two squares and perfect square trinomials.	Binomial, Degree of a monomial, Degree of a polynomial, Difference of two squares, Factoring by grouping, Monomial, Perfect-square trinomial, Polynomial, Standard form of a polynomial, Trinomial		
		Chapter 9: Quadratic Functions and Equations	A.CED.1, A.CED.2, A.CED.3, A.CED.4, A.APR.3, A.REI.1, A.REI.4, A.REI.4.a, A.REI.4.b, A.REI.7, A.REI.11, A.SSE.1, A.SSE.1a, A.SSE.1.b, A.SSE.3, A.SSE.3.a, A.SSE.3.b, F.IF.4, F.IF.5, F.IF.6, F.IF.7, F.IF.7.a, F.IF.7.b, F.IF.8, F.IF.8.a, F.IF.9, F.BF.1, F.BF.1.b, F.BF.3, F.LE.1a, F.LE.2, F.LE.3, N.Q.2,	The family of quadratic functions has equations of the form $y = ax^2 + bx + c$ where $a$ does not equal 0. The graph of a quadratic function is a parabola. You can solve quadratic equations using general methods. To model a data set, choose a function that most closely matches the pattern in the data or graph.	I can graph a quadratic equation. I can solve quadratic equations by graphing, using square roots, factoring, the quadratic formula and completing the square. I can use the discriminant to determine the number of solutions of a quadratic. I can compare linear, exponential, and quadratic models.	Axis of symmetry, Completing the square, Discriminant, Maximum, Minimum, Parabola, Quadratic equation, Quadratic formula, Quadratic function, Root of an equation, Vertex, Zero of a function		

		Chapter 10: Radical Expressions and Equations	G.SRT.6, G.SRT.8, Prepares for A.REI.2, Prepares for A.REI.2, A.REI.2, A.CED.2, F.IF.7.b	Radical expressions can be represented in many ways. To simplify a square root, factor out perfect squares from the radicand. Square root functions contain a variable in the radicand. The parent square root functions is $y = \sqrt{x}$ . To isolate the variable in a radical equation, first isolate the radical and then square both sides.	I can name a polynomial by its degree and number of terms. I can put a polynomial in standard form. I can add and subtract polynomials. I can multiply a monomial by a polynomial. I can factor out a greatest common factor. I can multiply a binomial by a binomial. I can multiply a binomial by a trinomial.	Angle of depression, Angle of elevation, Conclusion, Conditional, Conjugates, Converse, Cosine, Extraneous solution, Hypotenuse, Hypothesis, Leg, Like radicals, Pythagorean Theorem, Radical equation, Radical expression, Rationalize the denominator, sine, square root function, tangent, trigonometric ratios, unlike radicals		
		Chapter 12: Data Analysis and Probability	Prepares for N.VM.6, N.Q.1, N.Q.2, S.ID.1, S.ID.2, S.ID.3, S.ID.5, S.IC.3, S.IC.5, S.CP.1, S.CP.2, S.CP.4, S.CP.5, S.CP.7, S.CP.8, Prepares for S.CP.9	When you collect data, you should use a sampling technique free of bias. You can use standard measures to describe data sets and make estimates, decisions, or predictions. You can use matrices, frequency tables, histograms, box-and-whisker plots, tree diagrams, and other representations to describe different types of data sets. You can find theoretical and experimental probabilities to make decisions or predictions about future events.	I can find measures of central tendency. I can examine samples and conduct surveys. I can make predictions based on the data I collect and observe. I can find permutations and combinations.	Bias, bivariate, box-and-whisker plot, combination, complement of an event, compound event, dependent events, element, frequency, histogram, independent events, interquartile range, matrix, measure of central tendency, outcome, outlier, overlapping events, percentile, permutation, population, probability, qualitative, quantitative, quartile, range of a set, sample, scalar multiplication, univariate		