General Information

Course	*Pre-AP Algebra I*	**Grade**	*8th Grade*
Stakeholders	School staff members, students, families, and community members		

General Unit Information

Unit Name	Integers, Operations, Expressions	Radicals	Solving Linear and Nonlinear Equations	Linear Functions and Relations
Pacing	20 Days	13 Days	18 Days	23 Days
	A1.A.3.2 Simplify polynomial expressions by adding, subtracting, or multiplying	A1.N.1.1 Write square roots and cube roots of constants and monomial algebraic expressions in simplest radical form.	A1.A.1.1 Use knowledge of solving equations with rational values to represent, use and apply mathematical models (e.g., angle measures, geometric formulas, dimensional analysis, Pythagorean theorem, science, statistics) and interpret the solutions in the original context.	A1.F.1.1 Distinguish between relations and functions.
	A1.A.3.3 Factor common monomial factors from polynomial expressions and factor quadratic expressions with a leading coefficient of 1.	A1.N.1.2 Add, subtract, multiply, divide, and simplify square roots of constants, rationalizing the denominator when necessary.	A1.A.1.2 Solve absolute value equations and interpret the solutions in the original context.	A1.F.1.2 Identify the dependent variable, independent variable, domain and range given a function, equation, or graph. Identify restrictions on the domain and range in mathematical models.
	A1.A.3.4 Evaluate linear, absolute value, rational, and radical expressions. Include applying a nonstandard operation such as x ⊙ y=2x+y		A1.A.2.2 Represent relationships using mathematical models with compound and absolute value inequalities and solve the resulting inequalities by graphing and interpreting the solutions on a number line.	A1.F.1.3 Write linear functions, using function notation, to represent mathematical models.
			A1.A.3.1 Solve equations involving several variables for one variable in terms of the others.	A1.F.3.3 Add, subtract, and multiply functions using function notation.
				A1.F.1.4 Read and interpret the linear piecewise function, given a graph modeling a situation.

Standards				
				A1.F.1.5 Interpret graphs as being discrete or continuous.
				A1.F.2.1 Distinguish between linear and nonlinear (including exponential) functions. Understand that linear functions grow by equal intervals (arithmetic) and that exponential functions grow by equal factors over equal intervals (geometric).
				A1.F.2.2 Recognize the parent functions $f(x) = x$ and $f(x) = |x|$. Predict the effects of vertical and horizontal transformations $f(x + c)$ and $f(x) + c$, algebraically and graphically
				A1.F.3.1 Identify and generate equivalent representations of linear functions, graphs, tables, and real-world situations
				A1.F.3.2 Use function notation; evaluate a function, including nonlinear, at a given point in its domain algebraically and graphically. Interpret the results in terms of the original context.
	Linear Equations	**Inequalities**	**Solving Systems of Equations and Inequalities**	**Data, Linear Statistics, and Probability**
	18 Days	11 Days	15 Days	20 Days
	A1.A.4.1 Analyze, use and apply mathematical models and other data sets (e.g., graphs, equations, two points, a set of data points) to calculate and interpret slope and the x- and y-intercepts of a line	A1.A.2.1 Represent relationships using mathematical models with linear inequalities; solve the resulting inequalities, graph on a coordinate plane, and interpret the solutions.	A1.F.3.3 Add, subtract, and multiply functions using function notation.	A1.D.1.1 Display, describe, and compare data sets using summary statistics (central tendency and spread (range)). Utilize technology (e.g., spreadsheets, calculators) to display data and calculate summary statistics.
	A1.A.4.2 Analyze and interpret mathematical models involving lines that are parallel, perpendicular, horizontal, and vertical.	A1.A.2.2 Represent relationships using mathematical models with compound and absolute value inequalities and solve the resulting inequalities by graphing and interpreting the solutions on a number line.	A1.A.3.1 Solve equations involving several variables for one variable in terms of the others.	A1.D.1.2 Collect data and analyze scatter plots for patterns, linearity, and outliers.

A1.A.4.3 Write the equation of the line given its slope and y-intercept, slope and one point, two points, x- and y-intercepts, or a set of data points.		A1.A.3.2 Simplify polynomial expressions by adding, subtracting, or multiplying	A1.D.1.3 Make predictions based upon the linear regression, and use the correlation coefficient to assess the reliability of those predictions using graphing technology.
A1.A.4.4 Express linear equations in slope-intercept, point-slope, and standard forms. Convert between these forms.		A1.A.1.3 Analyze, use and apply mathematical models to solve problems involving systems of linear equations with a maximum of two variables by graphing, substitution, and elimination. Graphing calculators or other appropriate technology may be utilized. Interpret the solutions in the original context.	A1.D.2.1 Apply simple counting procedures (factorials, permutations, combinations, and tree diagrams) to determine sample size, sample space, and calculate probabilities.
A1.A.4.5 Analyze and interpret associations between graphical representations and written scenarios			A1.D.2.2 Given a Venn diagram, determine the probability of the union of events, the intersection of events, and the complement of an event. Understand the relationships between these concepts and the words "AND," "OR," and "NOT."
			A1.D.2.3 Use simulations and experiments to calculate experimental probabilities.
			A1.D.2.4 Apply probability concepts to real-world situations to make informed decisions.