Operations and Linear Equations & Inequalities			
Big Idea **A1.1.1 Operations with Real Numbers and Expressions**			
A1.1.1.1 Represent and/or use numbers in equivalent forms (e.g., integers, fractions, decimals, percents, square roots, and exponents).		**Essential Question:** How is mathematics used to quantify, compare, represent, and model numbers?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.1.1.1.1 Compare and/or order any real numbers. Note: Rational and irrational may be mixed. **A1.1.1.1.2** Simplify square roots (e.g., √24 = 2√6).	**CC.2.1.8.E.1** Distinguish between rational and irrational numbers using their properties. **CC.2.1.8.E.4** Estimate irrational numbers by comparing them to rational numbers. **CC.2.1.HS.F.1** Apply and extend the properties of exponents to solve problems with rational exponents. **CC.2.1.HS.F.2** Apply properties of rational and irrational numbers to solve real-world or mathematical problems.	**Supplemental Materials**	District Created Curriculum based assessment
Vocabulary Rational, irrational, simplest radical form			

Operations and Linear Equations & Inequalities			
Big Idea **A1.1.1 Operations with Real Numbers and Expressions**			
A1.1.1.2 Apply number theory concepts to show relationships between real numbers in problem-solving settings.		**Essential Question:** How do we find the Greatest Common Factor and Least Common Multiple of monomials?	
Concepts	**Competencies**	**Resources**	**Assessments**

A1.1.1.2.1 Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials.	**CC.2.1.6.E.3** Develop and/or apply number theory concepts to find common factors and multiples. **CC.2.1.HS.F.2** Apply properties of rational and irrational numbers to solve real-world or mathematical problems.	**Big Ideas Algebra 1 Textbook Chapter 7**	District Created Curriculum based assessment
Vocabulary Greatest common factor, least common multiple, monomials, factor			

Operations and Linear Equations & Inequalities			
Big Idea **A1.1.1 Operations with Real Numbers and Expressions**			
A1.1.1.3 Use exponents, roots, and/or absolute values to solve problems.		**Essential Question:** How can we use the properties of exponents to solve problems with integer exponents?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.1.1.3.1 Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems. Note: Exponents should be integers from –10 to 10.	**CC.2.1.HS.F.1** Apply and extend the properties of exponents to solve problems with rational exponents. **CC.2.1.HS.F.2** Apply properties of rational and irrational numbers to solve real-world or mathematical problems. **CC.2.2.8.B.1** Apply concepts of radicals and integer exponents to generate equivalent expressions.	**Big Ideas Algebra 1 Textbook Chapter 6**	District Created Curriculum based assessment
Vocabulary Product of Powers Property, Quotient of Powers Property, Power of Powers Property			

Operations and Linear Equations & Inequalities			
Big Idea **A1.1.1 Operations with Real Numbers and Expressions**			
A1.1.1.4 Use estimation strategies in problem-solving situations.		**Essential Question:** How can we use estimation to find approximate answers to a given problem?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.1.1.4.1 Use estimation to solve problems.	**CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations. **CC.2.2.HS.D.9** Use reasoning to solve equations and justify the solution method.	**Big Ideas Algebra 1 Textbook Chapter 2**	District Created Curriculum based assessment
Vocabulary Estimation			

Operations and Linear Equations & Inequalities			
Big Idea **A1.1.1 Operations with Real Numbers and Expressions**			
A1.1.1.5 Simplify expressions involving polynomials.		**Essential Question:** How can we use algebraic properties to simplify polynomial expressions?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.1.1.5.1 Add, subtract, and/or multiply polynomial expressions (express answers in simplest form). Note: Nothing larger than a binomial multiplied by a trinomial. **A1.1.1.5.2** Factor algebraic expressions, including difference	**CC.2.2.HS.D.1** Interpret the structure of expressions to represent a quantity in terms of its context. **CC.2.2.HS.D.2** Write expressions in equivalent forms to solve problems. **CC.2.2.HS.D.3** Extend the knowledge of	**Big Ideas Algebra 1 Textbook Chapter 7**	District Created Curriculum based assessment

of squares and trinomials. Note: Trinomials are limited to the form $ax2 + bx + c$ where a is equal to 1 after factoring out all monomial factors. **A1.1.1.5.3** Simplify/reduce a rational algebraic expression.	arithmetic operations and apply to polynomials. **CC.2.2.HS.D.5** Use polynomial identities to solve problems. **CC.2.2.HS.D.6** Extend the knowledge of rational functions to rewrite in equivalent forms.		
Vocabulary Polynomial, binomial, trinomial, rational expression, difference of squares,			

Linear Functions and Data Organizations			
Big Idea **A1.1.2 Linear Equations**			
A1.1.2.1 Write, solve, and/or graph linear equations using various methods.		**Essential Question:** How can we write, solve, and/or graph linear equations?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.1.2.1.1 Write, solve, and/or apply a linear equation (including problem situations). **A1.1.2.1.2** Use and/or identify an algebraic property to justify any step in an equation-solving process. Note: Linear equations only. **A1.1.2.1.3** Interpret solutions to problems in the context of the problem situation. Note: Linear equations only.	**CC.2.1.HS.F.3** Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data displays. **CC.2.1.HS.F.4** Use units as a way to understand problems and to guide the solution of multi-step problems. **CC.2.1.HS.F.5** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. **CC.2.2.8.B.3**	**Big Ideas Algebra 1 Textbook** **Chapter 1** **Chapter 3** **Chapter 4**	District Created Curriculum based assessment

	Analyze and solve linear equations and pairs of simultaneous linear equations. **CC.2.2.8.C.1** Define, evaluate, and compare functions. **CC.2.2.8.C.2** Use concepts of functions to model relationships between quantities. **CC.2.2.HS.C.3** Write functions or sequences that model relationships between two quantities. **CC.2.2.HS.D.7** Create and graph equations or inequalities to describe numbers or relationships. **CC.2.2.HS.D.8** Apply inverse operations to solve equations or formulas for a given variable. **CC.2.2.HS.D.9** Use reasoning to solve equations and justify the solution method. **CC.2.2.HS.D.10** Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.		
Vocabulary Slope, y-intercept, linear equation, slope-intercept form, standard form, point-slope form			

Operations and Linear Equations & Inequalities			
Big Idea **A1.1.2** Linear Equations			
A1.1.2.2 Write, solve, and/or graph systems of linear equations using various methods.		**Essential Question:** How can we write, solve, and/or, graph systems of linear equations to solve real world problems?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.1.2.2.1 Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination. Note: Limit systems to two linear equations. **A1.1.2.2.2** Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear equations.	**CC.2.1.HS.F.5** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. **CC.2.2.8.B.3** Analyze and solve linear equations and pairs of simultaneous linear equations. **CC.2.2.HS.D.7** Create and graph equations or inequalities to describe numbers or relationships. **CC.2.2.HS.D.9** Use reasoning to solve equations and justify the solution method. **CC.2.2.HS.D.10** Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.	**Big Ideas Algebra 1 Textbook** **Chapter 1** **Chapter 3** **Chapter 4** **Chapter 5**	District Created Curriculum based assessment

Vocabulary
Systems of equations, elimination method, substitution method, graphing method

Operations and Linear Equations & Inequalities

Big Idea
A1.1.3 Linear Inequalities

A1.1.3.1 Write, solve, and/or graph linear inequalities using various methods.	**Essential Question:** How can we write, solve, and/or graph linear inequalities to solve real world problems?

Concepts	Competencies	Resources	Assessments
A1.1.3.1.1 Write or solve compound inequalities and/or graph their solution sets on a number line (may include absolute value inequalities). **A1.1.3.1.2** Identify or graph the solution set to a linear inequality on a number line. **A1.1.3.1.3** Interpret solutions to problems in the context of the problem situation. Note: Linear inequalities only.	**CC.2.1.HS.F.5** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. **CC.2.2.HS.D.7** Create and graph equations or inequalities to describe numbers or relationships. **CC.2.2.HS.D.9** Use reasoning to solve equations and justify the solution method. **CC.2.2.HS.D.10** Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.	**Big Ideas Algebra 1 Textbook Chapter 2**	District Created Curriculum based assessment

Vocabulary
Inequality, compound inequality, absolute value inequality, solution set,

Operations and Linear Equations & Inequalities

Big Idea
A1.1.3 Linear Inequalities

A1.1.3.2 Write, solve, and/or graph systems of linear inequalities using various methods.		**Essential Question:** How can we write, solve, and/or graph systems of linear inequalities?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.1.3.2.1 Write and/or solve a system of linear inequalities using graphing. Note: Limit systems to two linear inequalities. **A1.1.3.2.2** Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear inequalities.	**CC.2.1.HS.F.5** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. **CC.2.2.HS.D.7** Create and graph equations or inequalities to describe numbers or relationships. **CC.2.2.HS.D.10** Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.	**Big Ideas Algebra 1 Textbook** **Chapter 5**	District Created Curriculum based assessment
Vocabulary System of linear inequalities, solution region			

Linear Functions and Data Organizations			
Big Idea **A1.2.1 Functions**			
A1.2.1.1 Analyze and/or use patterns or relations.		**Essential Question:** How can we recognize and use patterns to make predictions?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically **A1.2.1.1.2** Determine whether a	**CC.2.2.8.C.1** Define, evaluate, and compare functions. **CC.2.2.8.C.2** Use concepts of functions to model relationships between	**Big Ideas Algebra 1 Textbook** **Chapter 3** **Chapter 4**	District Created Curriculum based assessment

relation is a function, given a set of points or a graph. **A1.2.1.1.3** Identify the domain or range of a relation (may be presented as ordered pairs, a graph, or a table).	quantities. **CC.2.2.HS.C.1** Use the concept and notation of functions to interpret and apply them in terms of their context. **CC.2.2.HS.C.2** Graph and analyze functions and use their properties to make connections between the different representations. **CC.2.2.HS.C.3** Write functions or sequences that model relationships between two quantities. **CC.2.4.HS.B.2** Summarize, represent, and interpret data on two categorical and quantitative variables		
Vocabulary Domain, region, relation, function			
Big Idea **A1.2.1 Functions**			
A1.2.1.2 Interpret and/or use linear functions and their equations, graphs, or tables.		**Essential Question:** How can students represent linear functions in multiple ways?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.2.1.2.1 Create, interpret, and/or use the equation, graph, or table of a linear function. **A1.2.1.2.2** Translate from one representation of a linear	**CC.2.1.HS.F.3** Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data displays.	**Big Ideas Algebra 1 Textbook** **Chapter 3** **Chapter 4**	District Created Curriculum based assessment

function to another (i.e., graph, table, and equation).	**CC.2.1.HS.F.4** Use units as a way to understand problems and to guide the solution of multi-step problems. **CC.2.2.8.B.2** Understand the connections between proportional relationships, lines, and linear equations. **CC.2.2.8.C.1** Define, evaluate, and compare functions. **CC.2.2.8.C.2** Use concepts of functions to model relationships between quantities. **CC.2.2.HS.C.2** Graph and analyze functions and use their properties to make connections between the different representations. **CC.2.2.HS.C.3** Write functions or sequences that model relationships between two quantities. **CC.2.2.HS.C.4** Interpret the effects transformations have on functions and find the inverses of functions. **CC.2.2.HS.C.6** Interpret functions in terms of the situations they model. **CC.2.4.HS.B.2**		

	Summarize, represent, and interpret data on two categorical and quantitative variables.		
Vocabulary: function, function notation, domain, range, slope, y-intercept, slope-intercept form			

Linear Functions and Data Organizations			
Big Idea **A1.2.2:** Coordinate Geometry			
A1.2.2.1: Describe, compute, and/or use the rate of change (slope) of a line.		**Essential Question:** How can we find and use the rate of change of a linear function?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.2.2.1.1: Identify, describe, and/or use constant rates of change **A1.2.2.1.2:** Apply the concept of linear rate of change (slope) to solve problems **A1.2.2.1.3:** Write or identify a linear equation when given • the graph of the line, • two points on the line, or • the slope and a point on the line. Note: Linear equation may be in point-slope, standard, and/or slope-intercept form. **A1.2.2.1.4:** Determine the slope and/or y-intercept represented by a linear equation or graph.	**CC.2.2.8.C.2** Use concepts of functions to model relationships between quantities. **CC.2.2.HS.C.1** Use the concept and notation of functions to interpret and apply them in terms of their context. **CC.2.2.HS.C.2** Graph and analyze functions and use their properties to make connections between the different representations. **CC.2.2.HS.C.3** Write functions or sequences that model relationships between two quantities. **CC.2.2.HS.C.5** Construct and compare linear,	**Big Ideas Algebra 1 Textbook** **Chapter 3** **Chapter 4**	District Created Curriculum based assessment

	quadratic, and exponential models to solve problems. **CC.2.2.HS.C.6** Interpret functions in terms of the situations they model. **CC.2.4.HS.B.1** Summarize, represent, and interpret data on a single count or measurement variable.		
Vocabulary Slope, y-intercept, point-slope form, standard form, slope-intercept form			
Linear Functions and Data Organizations			
Big Idea **A1.2.2:** Coordinate Geometry			
A1.2.2.2: Analyze and/or interpret data on a scatter plot.		**Essential Question:** How can we find and use the line of best fit for a scatter plot?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.2.2.2.1: Draw, identify, find, and/or write an equation for a line of best fit for a scatter plot.	**CC.2.2.HS.C.6** Interpret functions in terms of the situations they model. **CC.2.4.8.B.1** Analyze and/or interpret bivariate data displayed in multiple representations. **CC.2.4.HS.B.2** Summarize, represent, and interpret data on two categorical and quantitative variables. **CC.2.4.HS.B.3** Analyze linear models to make interpretations based on the data.	**Big Ideas Algebra 1 Textbook Chapter 4**	District Created Curriculum based assessment
Vocabulary Scatter plot, line of best fit, linear regression			

Linear Functions and Data Organizations			
Big Idea **A1.2.3:** Data Analysis			
A1.2.3.1: Use measures of dispersion to describe a set of data.		**Essential Question:** How is mathematics used to quantify, compare, represent, and model numbers?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.2.3.1.1: Calculate and/or interpret the range, quartiles, and interquartile range of data.	**CC.2.4.HS.B.1** Summarize, represent, and interpret data on a single count or measurement variable. **CC.2.4.HS.B.3** Analyze linear models to make interpretations based on the data.	**Big Ideas Algebra 1 Textbook Chapter 11**	District Created Curriculum based assessment
Vocabulary Range, interquartile range, quartiles, mean, median, mode			

Linear Functions and Data Organizations			
Big Idea **A1.2.3:** Data Analysis			
A1.2.3.2: Use data displays in problem solving settings and/or to make predictions		**Essential Question:** How can we display data in various ways to make predictions?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.2.3.2.1: Estimate or calculate to make predictions based on a circle, line, bar graph, measure of central tendency, or other representation. **A1.2.3.2.2** :Analyze data, make predictions, and/or answer questions based on displayed data (box-and-whisker plots, stem-and-leaf plots, scatter plots, measures of central tendency, or other	**CC.2.4.HS.B.1** Summarize, represent, and interpret data on a single count or measurement variable. **CC.2.4.HS.B.3** Analyze linear models to make interpretations based on the data. **CC.2.4.HS.B.5** Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.	**Big Ideas Algebra 1 Textbook Chapter 11**	District Created Curriculum based assessment

representations). **A1.2.3.2.3:** Make predictions using the equations or graphs of best-fit lines of scatter plots.			
Vocabulary Box and whisker plot, scatter plot, stem-and-leaf plot			

Linear Functions and Data Organizations			
Big Idea **A1.2.3:** Data Analysis			
A1.2.3.3: Apply probability to practical situations.		**Essential Question:** How can we find the probability of singular and compound events?	
Concepts	**Competencies**	**Resources**	**Assessments**
A1.2.3.3.1: Find probabilities for compound events (e.g., find probability of red and blue, find probability of red or blue) and represent as a fraction, decimal, or percent.	**CC.2.4.7.B.3** Investigate chance processes and develop, use, and evaluate probability models. **CC.2.4.HS.B.4** Recognize and evaluate random processes underlying statistical experiments. **CC.2.4.HS.B.7** Apply the rules of probability to compute probabilities of compound events in a uniform probability model.	**Supplemental Materials** **Big Ideas Algebra 2 Textbook** **Chapter 10**	District Created Curriculum based assessment
Vocabulary Probability, compound events, independent events, dependent events			