

**Trinity Area School District**

<b>Course: Algebra 1 A</b> <b>Grade(s): 9-11</b>	<b>Overview of Course</b> (Briefly describe what students should understand and be able to do as a result of engaging in this course): <b>This course is designed to introduce the introductory elements of algebra: variables, functions (basic, exponential), equations (single-step, multi-step, linear, quadratic), inequalities, graphs, and systems of equations, systems of inequalities, exponents, polynomials, and factoring. In addition, basic probability and statistics will be introduced. Students will spend considerable time evaluating, simplifying, and solving various types of equations using the order of operations. Students will evaluate and graph simple and more complex functions by hand, create scatterplots, compare and contrast parallel and perpendicular lines, use tables to examine data closely, and compare and contrast direct and inverse variation. Students develop a firm grasp of the underlying mathematical concepts while using algebra and concepts of geometry. Consistent problem-solving strategies will be introduced and utilized to assist in developing strong mathematical skills.</b>
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**Overarching Big Ideas, Enduring Understandings, and Essential Questions**  
(These “spiral” throughout the entire curriculum.)

<b>Big Idea</b> (A Big Idea is typically a noun and always transferable within and among content areas.)	<b>Standard(s) Addressed</b> (What Common Core Standard(s) and/or PA Standard(s) addresses this Big Idea?)	<b>Enduring Understanding(s)</b> (SAS refers to Enduring Understandings as “Big Ideas.” EUs are the understandings we want students to carry with them after they graduate. EUs will link Big Ideas together. Consider having only one or two EUs per Big Idea.)	<b>Essential Question(s)</b> (Essential Questions are broad and open ended. Sometimes, EQs can be debated. A student’s answer to an EQ will help teachers determine if he/she truly understands. Consider having only one or two EQs per Enduring Understanding.)
Variable	<p>CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents.</p> <p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities.</p>	Quantities are used to form expressions, equations and inequalities. An expression refers to a quantity but does not make a statement about it. An equation (or an inequality) is a statement about the quantities it mentions. Using variables in place of numbers in equations (or inequalities) allows the statement of relationships among numbers that are unknown or unspecified.	<p>How can you represent quantities, patterns, and relationships?</p> <p>Why do we use variables?</p> <p>How do you represent relationships between quantities that are not equal?</p> <p>What strategies can be used to solve for unknowns in algebraic equations?</p> <p>When are algebraic and numeric expressions used?</p> <p>How do variables help you model real-world situations?</p>

<p>Properties</p>	<p>CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents.</p> <p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.2.HS.D.5 Use polynomial identities to solve problems.</p> <p>CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities.</p>	<p>In the transition from arithmetic to algebra, attention shifts from arithmetic operations (addition, subtraction, multiplication &amp; division) to use of the properties of these operations. All the facts of arithmetic and algebra follow from certain properties.</p>	<p>How are properties related to algebra?</p> <p>How can you simplify expressions involving exponents?</p> <p>How are the properties of real numbers related to polynomials?</p>
<p>Equivalence</p>	<p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p>CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms.</p>	<p>Any algebraic equations can be represented using symbols in an infinite number of ways, where each representation has the same solution. Equivalent equations are equations that have the same solution(s). Mathematical properties of equality and inverse operations can be used to find equivalent equation.</p>	<p>Can equations that appear to be different be equivalent?</p> <p>Can inequalities that appear to be different be equivalent?</p> <p>How can you represent numbers less than 1 using exponents?</p> <p>Can two algebraic expressions that appear to be different be equivalent?</p> <p>How are radical expressions represented?</p> <p>How are rational expressions represented?</p>
<p>Solving Equations &amp; Inequalities</p>	<p>CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems.</p> <p>CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p>	<p>Solving an equation is the process of rewriting the equation to make what it says about its variable(s) as simple as possible. Properties of numbers and quality can be used to transform an equation (or inequality) into equivalent, simpler equations (or inequalities) in order to find solutions. Useful information about equations and inequalities (including</p>	<p>How can you solve equations?</p> <p>How can you solve inequalities?</p> <p>How can you solve a system of equations or inequalities?</p>

	<p>CC.2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context.</p> <p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p>CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms.</p> <p>CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable.</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>	<p>solutions) can be found by analyzing graphs or tables. The numbers and types of solutions vary predictably, based on the type of equation.</p>	<p>How can you solve a quadratic equation?</p> <p>How can you solve a radical equation?</p> <p>How can you solve a rational equation?</p>
<p>Proportionality</p>	<p>CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents.</p> <p>CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems.</p> <p>CC.2.1.HS.F.3 Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data displays.</p>	<p>Proportionality involves a relationship in which the ratio of two quantities remains constant as the corresponding values of the quantities change. In a proportional relationship there are an infinite number of ratios equal to this constant ratio.</p>	<p>What kinds of relationships can proportions represent?</p> <p>What does the slope of a line indicate about the line?</p>

<p>Function</p>	<p>CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents.</p> <p>CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems.</p> <p>CC.2.1.HS.F.3 Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data displays.</p> <p>CC.2.2.HS.D.4 Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs.</p> <p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p> <p>CC.2.2.HS.C.1 Use the concept and notations of functions to interpret and apply them in terms of their context.</p>	<p>A function is a relationship between variables in which each value of the output variable. Functions can be represented in a variety of ways, such as graphs, tables, equations, or words. Each representation is particularly useful in certain situations.</p>	<p>How can you represent and describe functions?</p> <p>What information does the equation of a line give you?</p> <p>What are the characteristics of exponential functions?</p> <p>What are the characteristics of quadratic functions?</p> <p>What are the characteristics of square root functions?</p> <p>What are the characteristics of rational functions?</p>
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	<p>CC. 2.2.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations.</p> <p>CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities.</p> <p>CC. 2.2.HS.C.5 Construct and compare linear, quadratic, and exponential models to solve problems.</p> <p>CC. 2.2.HS.C.6 Interpret functions in terms of the situations they model.</p>		
Modeling	<p>CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems</p> <p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p> <p>CC. 2.2.HS.C.5 Construct and compare linear, quadratic, and exponential models to solve problems.</p> <p>CC. 2.2.HS.C.6 Interpret functions in terms of the situations they model.</p>	<p>Many real-world mathematical problems can be represented algebraically. These representations can lead to algebraic solutions. A function that models a real-world situation can then be used to make estimates or predictions about future occurrences.</p>	<p>Can functions describe real-world situations?</p> <p>How can you make predictions based on a scatter plot?</p> <p>Can systems of equations model real-world situations?</p> <p>How can you use functions to model real-world situations?</p>

<p>Data Collection &amp; Analysis</p>	<p>CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations of measurement when reporting quantities</p> <p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships</p> <p>CC. 2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable.</p> <p>CC.2.4.HS.B.3 Analyze linear models to make interpretations based on the data.</p>	<p>Sampling techniques are used to gather data from real-world situations. If the data are representative of the larger population, inferences can be made about the population. Biased sampling techniques yield data unlikely to be representative of the larger population. Sets of numerical data are described using measures of central tendency and dispersion.</p>	<p>How can collecting and analyzing data help you make decisions or predictions?</p>
<p>Data Representation</p>	<p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships</p> <p>CC. 2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable.</p> <p>CC.2.4.HS.B.2 Summarize, represent, and interpret data on two categorical and quantitative variables.</p> <p>CC.2.4.HS.B.3 Analyze linear models to make interpretations based on the data.</p> <p>CC.2.4.HS.B.4 Recognize and evaluate random processes underlying statistical experiments.</p> <p>CC.2.4.HS.B.5 Make inference and justify conclusions based on sample surveys, experiments, and observational studies.</p>	<p>The most appropriate data representation depends on the type of data- quantitative or qualitative, and univariate or bivariate. Line plots, box plots, and histograms are different ways to show distribution of data over a possible range of values.</p>	<p>How can you make and interpret different representations of data?</p>

	<p>CC. 2.4.HS.B.6 Use the concepts of independence and conditional probability to interpret data</p> <p>CC.2.4.HS.B.7 Apply the rules of probability to compute probabilities of compound events in a uniform probability model.</p>		
Probability	<p>CC.2.4.HS.B.4 Recognize and evaluate random processes underlying statistical experiments.</p> <p>CC.2.4.HS.B.5 Make inference and justify conclusions based on sample surveys, experiments, and observational studies.</p> <p>CC. 2.4.HS.B.6 Use the concepts of independence and conditional probability to interpret data</p> <p>CC.2.4.HS.B.7 Apply the rules of probability to compute probabilities of compound events in a uniform probability model.</p>	<p>Probability expresses the likelihood that a particular event will occur. Data can be used to calculate an experimental probability, and mathematical properties can be used to determine a theoretical probability. Either experimental probability or theoretical probability can be used to make predictions or decisions about future events. Various counting methods can be used to develop theoretical probabilities.</p>	<p>How is probability related to real-world events?</p>

**Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study**  
 (These do NOT “spiral” throughout the entire curriculum, but are specific to each unit.)

<b>Month of Instruction</b> (In what month(s) will you teach this unit?)	<b>Title of Unit</b>	<b>Big Idea(s)</b> (A Big Idea is typically a noun and always transferable within and among content areas.)	<b>Standard(s) Addressed</b> (What Common Core Standard(s) and/or PA Standard(s) addresses this Big Idea?)	<b>Enduring Understanding(s)</b> (SAS refers to Enduring Understandings as “Big Ideas.” EUs are the understandings we want students to carry with them after they graduate. EUs will link Big Ideas together. Consider having only one or two EUs per Big Idea.)	<b>Essential Question(s)</b> (Essential Questions are broad and open ended. Sometimes, EQs can be debated. A student’s answer to an EQ will help teachers determine if he/she truly understands. Consider having only one or two EQs per Enduring Understanding.)	<b>Common Assessment(s)*</b> (What assessments will all teachers of this unit use to determine if students have answered the Essential Questions?)	<b>Common Resource(s)* Used</b> (What resources will all teachers of this unit use to help students understand the Big Ideas?)
August - September	Foundations of Algebra	Properties Variable	CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents.  CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.  CC.2.1.HS.C.3 Write functions or sequences that model	Algebra uses symbols to represent quantities that are unknown or that vary. Mathematical phrases and real-world relationships can be represented using symbols and operations. Powers can be used to shorten the representation of repeated multiplication. The definition of a square root can be used	How can you represent quantities, patterns, and relationships?  Why do we use variables?  How are properties related to algebra?	1.1-1.3 Test 1.4-1.6 Test 2.1-2.3 Test 2.4-2.5 Test Projects (possible) Study Island (where applicable) Netbooks(where applicable)	<u>Algebra 1</u> , Prentice Hall Mathematics, 2007  On-Line Resources  Study Island (where applicable)  <a href="#">Order of Operations War Game</a>  <a href="#">Order of Operations Puzzle</a>



		<p>relationships between two quantities.</p> <p>CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems.</p> <p>CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms.</p> <p>CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>	<p>to find the exact square roots of some nonnegative numbers. The square roots of other nonnegative numbers can be approximated. Numbers can be classified by their characteristics. Relationships that are always true for real numbers are called properties, which are rules used to rewrite and compare expressions.</p>			<p><a href="#">1.1-1.3 Partner Challenge</a></p> <p><a href="#">1.2 Review Game</a></p> <p><a href="#">1.3 Review Game</a></p> <p><a href="#">1.4-1.6 Review Game</a></p> <p><a href="#">2.4-2.5 Jeopardy</a></p> <p><a href="#">2.4 EMH Game</a></p> <p><u>Vocabulary:</u></p> <ul style="list-style-type: none"> <li>• Variable</li> <li>• Algebraic Expression</li> <li>• Equation</li> <li>• Open Sentence</li> <li>• Simplify</li> <li>• Exponent Base</li> <li>• Power</li> <li>• Evaluate</li> <li>• Natural Numbers</li> <li>• Whole Numbers</li> <li>• Integers</li> <li>• Rational Numbers</li> <li>• Irrational Numbers</li> <li>• Real Numbers</li> <li>• Counterexample</li> <li>• Inequality</li> </ul>
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							<ul style="list-style-type: none"> <li>• Opposites</li> <li>• Absolute Value</li> <li>• Distributive Property</li> <li>• Term</li> <li>• Constant</li> <li>• Coefficient</li> <li>• Like Terms</li> <li>• Deductive Reasoning</li> </ul>
October - November	Solving Equations	Equivalence Solving Equations and Inequalities	<p>CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems.</p> <p>CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>CC.2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context.</p> <p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.2.HS.D.3 Extend the knowledge of</p>	<p>Equations can describe, explain, and predict various aspects of the real world. In these lessons, students solve one-step, two-step, and multi-step linear equations as well as equations with variables on both sides. Equivalent equations are equations that have the same solution(s). In these lessons, students learn to use the properties of equality and inverse operations to find equivalent equations.</p>	<p>Can equations that appear to be different be equivalent?</p> <p>How can you solve equations?</p>	<p>3.1-3.3 Test Projects (possible) Study Island (where applicable) Netbooks(where applicable)</p>	<p><u>Algebra 1</u>, Prentice Hall Mathematics, 2007</p> <p>On-Line Resources</p> <p>Study Island (where applicable)</p> <p><a href="#">3.1 EMH Game</a></p> <p><a href="#">3.2 Circuit</a></p> <p><a href="#">Jeopardy 3.1-3.2 Review</a></p> <p><a href="#">Equation Mania 3.6 Review</a></p> <p><a href="#">3.1-3.3 Circuit</a></p> <p><a href="#">3.6 Stations Activity</a></p> <p><a href="#">Holiday Problem Solving</a></p>

			<p>arithmetic operations and apply to polynomials.</p> <p>CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p> <p>CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities.</p>				<p><u>Vocabulary:</u></p> <ul style="list-style-type: none"> <li>• Solution of an equation</li> <li>• Equivalent Equations</li> <li>• Inverse Operations</li> <li>• Identity</li> <li>• No Solution</li> </ul>
December - January	Solving Inequalities	Variable Equivalence Solving Equations & Inequalities	CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems.	An inequality is a mathematical sentence that uses an inequality symbol to compare the values of two expressions. Inequalities	How can you represent relationships between quantities that are not equal?	4.1-4.4 Test 4.5-4.6 Test Projects (possible) Study Island (where applicable)	<p><u>Algebra 1</u>, Prentice Hall Mathematics, 2007</p> <p>On-Line Resources</p>

		<p>CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>CC.2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context.</p> <p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p>CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities</p>	<p>can be represented with symbols. Their solutions can be represented on a number line. Just as equivalent equations can be used to solve equations, equivalent inequalities can be used to solve inequalities. Just as equations can be solved using properties of equality, inequalities can be solved using the properties of inequality.</p>	<p>Can inequalities that appear to be different be equivalent?</p> <p>How can you solve inequalities?</p>	<p>Netbooks(where applicable)</p>	<p>Study Island (where applicable)</p> <p><a href="#">4.1-4.3 Stations Activity</a></p> <p><a href="#">4.1-4.4 Inequality Challenge</a></p> <p><a href="#">4.1-4.4 Circuit</a></p> <p><a href="#">4.1-4.5 Jeopardy Game</a></p> <p><a href="#">4.5 Review Game</a></p> <p><u>Vocabulary:</u></p> <ul style="list-style-type: none"> <li>• Solution of an inequality</li> <li>• Equivalent Inequalities</li> <li>• Compound Inequality</li> </ul>
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			algebraically and graphically.				
February-March	Ratios & Proportions	Proportionality	<p>CC.2.1.HS.F.2 Apply properties of rational and irrational to solve real world or mathematical problems.</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p> <p>CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities.</p>	Ratios and rates can be used to compare quantities and make conversions. If two ratios are equal and a quantity in one of the ratios is unknown, the unknown quantity can be found by writing and solving a proportion. Proportional reasoning can be used to find missing side lengths in similar figures.	What kinds of relationships can proportions represent?	3.4-3.5 Test Projects (possible) Study Island (where applicable) Netbooks(where applicable)	<p><u>Algebra 1</u>, Prentice Hall Mathematics, 2007</p> <p>On-Line Resources</p> <p>Study Island (where applicable)</p> <p><a href="#">3.4 Stations Activity</a></p> <p><u>Vocabulary:</u></p> <ul style="list-style-type: none"> <li>• Ratio</li> <li>• Rate</li> <li>• Unit Rate</li> <li>• Unit Analysis (Dimensional Analysis)</li> <li>• Proportion</li> <li>• Extremes of the proportion</li> <li>• Means of the proportions</li> <li>• Cross Product</li> </ul>
March	Radical Expressions & the Pythagorean Theorem	Equivalence Solving Equations & Inequalities	<p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.2.HS.D.1 Interpret the structure of</p>	Operations can be performed with radical expressions and radical expressions can be simplified using the multiplication and division properties of	<p>How are radical expressions represented?</p> <p>How can you solve a radical equation?</p>	3.8-3.9 & 11.1 Test Projects (possible) Study Island (where applicable) Netbooks(where applicable)	<p><u>Algebra 1</u>, Prentice Hall Mathematics, 2007</p> <p>On-Line Resources</p>

			<p>expressions to represent a quantity in terms of its context.</p> <p>CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable.</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>	<p>square roots. Some radical equations can be solved by squaring both sides and testing the solution.</p>			<p>Study Island (where applicable)</p> <p><a href="#">3.9 Circuit</a></p> <p><u>Vocabulary:</u></p> <ul style="list-style-type: none"> <li>• Square Root</li> <li>• radicand</li> <li>• perfect square</li> <li>• hypotenuse</li> <li>• leg</li> <li>• Pythagorean theorem</li> <li>• conditional</li> <li>• hypothesis</li> <li>• conclusion</li> <li>• converse</li> </ul>
April	Graphs & Functions	Functions Modeling	<p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.1.HS.C.1 Use the concept and notation of functions to interpret and apply them in terms of their context.</p> <p>CC.2.1.HS.C.2 Graph and analyze functions</p>	<p>Graphs can be used to visually represent relationships between two variable quantities as they change. The value of one variable may be uniquely determined by the value of another variable. Such relationships may be represented using words, tables, equations, sets of ordered pairs and</p>	<p>How can you represent and describe functions?</p> <p>Can functions describe real-world situations?</p>	<p>1.4 &amp; 5.1-5.4 Test</p> <p>5.5-5.7 Test</p> <p>Projects (possible)</p> <p>Study Island (where applicable)</p> <p>Netbooks(where applicable)</p>	<p><u>Algebra 1</u>, Prentice Hall Mathematics, 2007</p> <p>On-Line Resources</p> <p>Study Island (where applicable)</p> <p><a href="#">5.1-5.2 Stations Activity</a></p>

		<p>and use their properties to make connections between the different representations.</p> <p>CC.2.1.HS.C.6 Interpret functions in terms of the situations they model.</p> <p>CC.2.1.HS.C.6 Interpret functions in terms of the situations they model.</p> <p>CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable.</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p>	<p>graphs. Functions (linear and non-linear) are a special type of relations where each value in the domain is paired with exactly one value in the range. Some functions can be graphed or represented by equations. The set of all solutions of an equation forms its graph. A graph may include solutions that do not appear in a table. A real-world graph should show only points that make sense in the given situation. Many real world functional relationships can be represented by equations. Equations can be used to find the solution of given real-world problems.</p>			<p><a href="#">5.1-5.3 Stations Activity</a></p> <p><a href="#">5.3-5.4 Stations Activity</a></p> <p><a href="#">5.4-5.5 Stations Activity</a></p> <p><a href="#">5.6-5.7 Stations Activity</a></p> <p><u>Vocabulary:</u></p> <ul style="list-style-type: none"> <li>• Function</li> <li>• Function Rule</li> <li>• Dependent Variable</li> <li>• Independent Variable</li> <li>• Domain</li> <li>• Range</li> <li>• Relation</li> <li>• Vertical-Line Test</li> <li>• Function Notation</li> <li>• Discrete Data</li> <li>• Continuous Data</li> <li>• Direct Variation</li> <li>• Constant of Variation for direct Variation</li> <li>• Inverse Variation</li> <li>• Constant of variation for inverse variation</li> </ul>
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May	Linear Functions	Proportionality Function Modeling	<p>CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.</p> <p>CC.2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically.</p> <p>CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>	<p>Ratios can be used to show relationships between changing quantities, such as vertical and horizontal change. If the ratio of two variables is constant, then the variables have a special relationship called a direct variation. A line on a graph can be represented by linear equations. Forms of linear equations include slope-intercept, point-slope, and standard forms. The relationship between two lines can be determined by comparing their slopes and y-intercepts. Two sets of numerical data can be graphed as ordered pairs. If two sets of data are related, a line on the graphs can be used to estimate or predict values.</p>	<p>What does the slope of a line indicate about the line?</p> <p>What information does the equation of a line give you?</p> <p>How can you make predictions based on a scatter plot?</p>	<p>6.1-6.3 Test 6.4-6.5 Test 6.6-6.7 Test Projects (possible) Study Island (where applicable) Netbooks(where applicable)</p>	<p><a href="#">Algebra 1</a>, Prentice Hall Mathematics, 2007</p> <p>On-Line Resources</p> <p>Study Island (where applicable)</p> <p><a href="#">6.1-6.2 Stations Activity</a></p> <p><a href="#">6.4-6.5 Stations</a></p> <p><a href="#">6.4-6.5 Rev Game</a></p> <p><a href="#">6.6-6.8 Rev Game</a></p> <p><a href="#">6.4-6.5 Multiple Choice Challenge</a></p> <p><a href="#">Line of Best Fit Activity</a></p> <p><u>Vocabulary</u></p> <ul style="list-style-type: none"> <li>• Rate of change</li> <li>• Slope</li> <li>• Parent function</li> <li>• Linear parent function</li> <li>• Y intercept</li> <li>• Slope intercept form</li> <li>• Standard form</li> </ul>
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							<ul style="list-style-type: none"> <li>• X intercept</li> <li>• Point slope form</li> <li>• Parallel lines</li> <li>• Perpendicular lines</li> <li>• Negative reciprocal</li> </ul>
June	Data Analysis & Probability	Data Collection & Analysis Data Representation Probability	<p>CC. 2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable.</p> <p>CC.2.4.HS.B.3 Analyze linear models to make interpretations based on the data.</p> <p>CC.2.4.HS.B.4 Recognize and evaluate random processes underlying statistical experiments.</p> <p>CC.2.4.HS.B.5 Make inference and justify conclusions based on sample surveys, experiments, and observational studies.</p> <p>CC. 2.4.HS.B.6 Use the concepts of independence and conditional probability to interpret data</p>	Different measures can be used to interpret and compare sets of data. When collecting data, it is important for the results to accurately represent the situation. Data can be organized in intervals. Different measures can be used to interpret and compare sets of data. Separating data into subsets is a useful way to summarize and compare data sets. Counting methods can be used to find the number of possible ways to choose objects with and without regard to order. The probability of an event tells us how likely it is that the event will occur. Probabilities can be found by reasoning mathematically or by using experimental data. The probability of a	<p>How can collecting and analyzing data help you make decisions or predictions?</p> <p>How can you make and interpret different representations of data?</p> <p>How is probability related to real-world events?</p>	2.6-2.7 Test Data Analysis Test Projects (possible) Study Island (where applicable) Netbooks(where applicable)	<p><u>Algebra 1</u>, Prentice Hall Mathematics, 2007</p> <p>On-Line Resources</p> <p>Study Island (where applicable)</p> <p><a href="#">2.6-2.7 Stations Activity</a></p> <p><a href="#">Probability Lab</a></p> <p><a href="#">Probability Jeopardy</a></p> <p><a href="#">Data Analysis Jeopardy</a></p> <p><u>Vocabulary:</u></p> <ul style="list-style-type: none"> <li>• Probability</li> <li>• Outcome</li> <li>• Sample Space</li> <li>• Event</li> <li>• Theoretical Probability</li> <li>• Complement of an Event</li> <li>• Odds</li> </ul>

			<p>CC.2.4.HS.B.7 Apply the rules of probability to compute probabilities of compound events in a uniform probability model.</p> <p>CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations of measurement when reporting quantities</p> <p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships</p>	<p>compound event can sometimes be found from expressions of the probabilities of simpler events.</p>			<ul style="list-style-type: none"> <li>• Experimental Probability</li> <li>• Independent Events</li> <li>• Dependent Events</li> <li>• Scatter Plot</li> <li>• Positive Correlation</li> <li>• Negative Correlation</li> <li>• No Correlation</li> <li>• Trend Line</li> <li>• Measures of Central Tendency</li> <li>• Mean</li> <li>• Median</li> <li>• Mode</li> <li>• Outlier</li> <li>• Range</li> <li>• Stem-and-leaf plot</li> </ul>
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\* Some teachers may need to think about the assessments and resources used in order to determine the Big Ideas, Enduring Understandings, and Essential Questions embedded in their courses. At this point in your curriculum mapping, you might want to ignore the “Common Assessments” and “Common Resources Used” columns. However, you may use them if you wish.