

ALGEBRA 2

Concepts	Competencies	Key Vocabulary
<p>Complex Number System</p>	<p>Represent and/or use imaginary numbers in equivalent forms.</p> <p>Simplify/evaluate expressions involving imaginary numbers.</p> <p>Perform arithmetic operations and apply to complex numbers.</p> <p>Apply concepts of complex numbers in polynomial identities and quadratic equations to solve problems.</p> <p>References:</p> <p>PACCS (CC.2.1.HS.F.6), (CC.2.1.HS.F.7)</p> <p>EC (A2.1.1.1.1), (A2.1.1.1.2), (A2.1.1.2.1), (A2.1.1.2.2)</p>	<p>Absolute Value</p> <p>Arithmetic Sequence</p> <p>Asymptote</p> <p>Binomial</p> <p>Combination</p> <p>Common Logarithm</p> <p>Complex Number System</p> <p>Compound Events</p> <p>Dependent/Independent Events</p> <p>Difference of Squares</p> <p>Dilation</p> <p>Domain</p> <p>Exponential</p> <p>Exponential Decay</p> <p>Exponential Function</p> <p>Exponential Growth</p> <p>Expression</p> <p>Extrema</p> <p>Fundamental Counting Principle</p> <p>Geometric Sequence</p> <p>Imaginary Number</p> <p>Increasing/Decreasing Intervals</p> <p>Intercept</p> <p>Inverse of a Function</p> <p>Linear</p> <p>Logarithm</p> <p>Mean</p> <p>Median</p> <p>Mode</p> <p>Monomial</p> <p>Natural Logarithm</p> <p>Negative Exponents</p> <p>Observational Study</p> <p>Odds</p> <p>Outcomes</p> <p>Perfect Square Trinomial</p> <p>Permutation</p> <p>Polynomial</p> <p>Polynomial Identity</p>
<p>Polynomial and Rational Expressions</p>	<p>Perform arithmetic operations on polynomials</p> <p>Solve equations involving rational expressions</p> <p>Understand the relationship between zeros and factors of polynomials</p> <p>Rewrite rational expressions</p> <p>Use polynomial identities to solve problems</p> <p>Simplify/factor expressions involving polynomials</p> <p>References:</p> <p>PACCS (CC.2.1.HS.F1), (CC.2.1.HS.D1), (CC.2.1.HS.D2), (CC.2.1.HS.D.3), (CC.2.1.HS.D.4), (CC.2.1.HS.D.5), (CC.2.1.HS.D.6),</p> <p>EC</p>	<p>Geometric Sequence</p> <p>Imaginary Number</p> <p>Increasing/Decreasing Intervals</p> <p>Intercept</p> <p>Inverse of a Function</p> <p>Linear</p> <p>Logarithm</p> <p>Mean</p> <p>Median</p> <p>Mode</p> <p>Monomial</p> <p>Natural Logarithm</p> <p>Negative Exponents</p> <p>Observational Study</p> <p>Odds</p> <p>Outcomes</p> <p>Perfect Square Trinomial</p> <p>Permutation</p> <p>Polynomial</p> <p>Polynomial Identity</p>

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Equations and Inequalities	<p>(A2.1.2.1.2), (A2.1.3.1.2),(A2.1.2.2.1), (A2.1.2.2.2)</p> <p>Create and/or solve equations (including literal, polynomial, rational, radical, exponential, and logarithmic) both algebraically and graphically.</p> <p>Use and/or explain reasoning while solving equations, and justify the solution method.</p> <p>Determine how a change in one variable relates to a change in a second variable.</p> <p>Use exponents, roots, and/or absolute values to represent equivalent forms or to solve problems.</p> <p>References:</p> <p>PACCS (CC.2.1.HS.F.1), (CC.2.1.HS.D.1), (CC.2.1.HS.D.2), EC (A2.1.2.1.3), (A2.1.2.1.4), (A2.1.2.2.2), (A2.1.3.1.1), (A2.1.3.1.3), (A2.1.3.1.4), (A2.1.3.2.1), (A2.1.3.2.2), (A2.2.2.1.2), (A2.2.2.1.3)</p>	<p>Probability</p> <p>Quadratic Formula</p> <p>Quadratic Function</p> <p>Radical Functions</p> <p>Range (Note: 2 different meanings)</p> <p>Rational Functions</p> <p>Reflection</p> <p>Regression Models</p> <p>Root Functions</p> <p>Sample Survey</p> <p>Scatterplot</p> <p>Standard Deviation</p> <p>Statistical Experiment</p> <p>Transformation</p> <p>Translations</p> <p>Trinomial</p> <p>Unit Circle</p>
Equations and Inequalities	<p>Create and/or solve equations (including literal, polynomial, rational, radical, exponential, and logarithmic) both algebraically and graphically.</p> <p>Use and/or explain reasoning while solving equations, and justify the solution method.</p> <p>Determine how a change in one variable relates to a change in a second variable.</p> <p>Use exponents, roots, and/or absolute values to represent equivalent forms or to solve problems.</p> <p>(CC.2.2.HS.D.7), (CC.2.2.HS.D.8), (CC.2.2.HS.D.9), (CC.2.2.HS.D.10) EC (A2.1.2.1.3), (A2.1.2.1.4), (A2.1.2.2.2), (A2.1.3.1.1), (A2.1.3.1.3), (A2.1.3.1.4), (A2.1.3.2.1), (A2.1.3.2.2), (A2.2.2.1.2), (A2.2.2.1.3)</p>	
Functions	<p>Use the concept and notation of function to interpret and apply them in terms of their context.</p>	

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	<p>Create and/or analyze functions using multiple representations (graph, table, and equation).</p> <p>Create a function and/or sequence that models a relationship between two quantities.</p> <p>Create new functions from existing functions (transformations and/or inverses of functions).</p> <p>Construct and compare linear, quadratic, exponential, and logarithmic models to solve problems.</p> <p>Interpret functions in terms of the situations they model.</p> <p>Using the unit circle, extend the domain of trigonometric functions to all real numbers.</p> <p>Use trigonometric functions to model periodic phenomena.</p> <p>Prove the Pythagorean identity and use it to calculate trigonometric ratios.</p> <p>References:</p> <p>PACCS (CC.2.2.HS.C.1), (CC.2.2.HS.C.2), (CC.2.2.HS.C.3), (CC.2.2.HS.C.4), (CC.2.2.HS.C.5), (CC.2.2.HS.C.6), (CC.2.2.HS.C.7), (CC.2.2.HS.C.8), (CC.2.2.HS.C.9)</p> <p>EC (A2.2.1.1.3), (A2.2.1.1.4), (A2.2.2.1.1), (A2.2.2.1.2), (A2.2.2.1.3), (A2.2.2.1.4), (A2.2.2.2.1)</p>	
<p>Data and Probability</p>	<p>Analyze a set of data for a pattern, and represent the pattern with an algebraic rule and/or a graph.</p> <p>Summarize, represent, and interpret single-variable data (including standard deviation) and two-variable data.</p> <p>Analyze and/or interpret data on a scatter plot</p>	

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	<p>and/or use it to make predictions (e.g., regression).</p> <p>Recognize and evaluate random processes underlying statistical experiments.</p> <p>Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.</p> <p>Use the concepts of independence and conditional probability to interpret data.</p> <p>Apply the rules of probability to compute probabilities of compound events.</p> <p>Calculate probability and/or odds.</p> <p>Use combinations, permutations, and the fundamental counting principle to solve problems involving probability.</p> <p>References:</p> <p>PACCS (CC.2.3.HS.B.1), (CC.2.4.HS.B.2), (CC.2.4.HS.B.3), (CC.2.4.HS.B.4), (CC.2.4.HS.B.5), (CC.2.4.HS.B.6), (CC.2.4.HS.B.7), (CC.2.4.HS.F.3), (CC.2.4.HS.F.5)</p> <p>EC (A2.2.1.1.1), (A2.2.1.1.2), (A2.2.3.1.1), (A2.2.3.1.2), (A2.2.3.2.1), (A2.2.3.2.2), (A2.2.3.2.3)</p>	