

**Title: Honors Algebra 2**

<b>Unit:</b>		<b>Linear Relations and Functions</b>					
<b>Big Ideas:</b>		Solve One Variable Equations & Inequalities					
<b>Unit Essential Questions:</b>		How can we show that algebraic properties and processes are extensions of arithmetic properties and processes, and how can we use algebraic properties and processes to solve problems? How do we write, solve, graph, and interpret linear equations and inequalities to model relationships between quantities?					
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/Activities	Instructional Materials	Assessments
<b>Expressions and Formulas 3 Days</b>	CC2.2.HS.D.2 CC2.2HS.D.8 CC2.2HS.D.9	Variables  Algebraic Expressions  Formula  Order of Operations  Evaluate	How do we apply the Order of Operations to evaluate algebraic expressions?  What are examples of Formulas that have real-world applications?  How do we apply the Order of Operations to evaluate a Formula?	Students will be able to: Identify algebraic expressions.  Describe the Order of Operations.  Substitute appropriate values for variables and apply the Order of Operations to evaluate algebraic expressions.  Use Formulas by substituting appropriate values for appropriate variables and using Order of Operations to determine value of unknown variable. Interpret the answer in the context of the Formula.	Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers.  Complete Practice Worksheet and review answers.	Guided Notes Practice Worksheets Scientific Calculators	Questioning during instruction.  Practice examples on Guided Notes and review answers.  Practice Worksheet.  Homework assignment.  In-Class Assignment following HW review.

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<p><b>Solve Linear Equations</b> 3 Days</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</p>	<p>Open sentence Equation Rational Equation Clear fractions Least Common Multiple (LCM) Solve Inverse operations Solution Distributive Property Like terms Combine like terms</p>	<p>How do we solve equations using the Properties of Equality? How do we apply the Distributive Property when solving equations?</p>	<p>Students will be able to: Apply the Distributive Property as needed within the equation-solving process. Identify and combine like terms as needed within the equation-solving process. Use the Properties of Equality and inverse operations appropriately within the equation-solving process. State the solution of the equation and check the solution in the equation.</p>	<p>Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheet and review answers.</p>	<p>Guided Notes Practice Worksheets Scientific calculators</p>	<p>Questioning during instruction. Practice examples on Guided Notes and answer review. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.</p>
<p><b>Solve Formulas for a Specific Variable (Literal Equations)</b> 2 Days</p>	<p>CC.2.2.HS.D.8</p>	<p>Formula Literal Equation</p>	<p>How do we apply inverse operations when solving Formulas for a specific variable? Why do we solve formulas for a specific variable other than the variable it is already solved for?</p>	<p>Students will be able to: Solve a Formula for a specific variable other than the variable it is solved for by using inverse operations.</p>	<p>Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheets and review answers.</p>	<p>Guided Notes Practice Worksheets Scientific calculators if calculations required.</p>	<p>Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet.</p>

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							Homework Assignment.  In-Class Assignment following HW review.
<b>Solve Absolute Value Equations 2 Days</b>	CC2.2.HS.D.8 CC2.2.HS.D.9 CC2.2.HSD.10	Absolute Value  Extraneous Solution  Empty/Null Set	What is the definition of Absolute Value?  Why is Absolute Value always positive?  What is the process used to solve Absolute Value Equations?  Why do we solve two equations or have “two cases” when solving an Absolute Value Equation?  In what situation does an Absolute Value Equation require only one case?  In what situation does an Absolute Value Equation have no solution?  What situation implies that a value is an Extraneous Solution?	Students will be able to: Determine if the Absolute Value Equation requires one case, two cases, or has no solution.  Solve an Absolute Value Equation.  Determine if a value is an Extraneous Solution by checking the potential answers in the Absolute Value Equation.	Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers.  Complete Practice Worksheets and review answers.	Guided Notes Practice Worksheets Scientific calculators	Questioning during instruction.  Practice examples on Guided Notes.  Practice Worksheet.  Homework Assignment.  In-Class Assignment following HW review.
<b>Solve Linear Inequalities in One Variable 2 Days</b>	CC2.2HS.D.8 CC2.2HS.D.9 CC2.2HSD.10	Inequality Symbols  Set-builder Notation  Interval Notation	How do we use inverse operations when solving Linear Inequalities in one variable?  How do we apply the Properties of Inequalities when solving linear inequalities in one variable?  How do we read the inequality symbols?  How do we represent a solution on a number line?  How do we write a solution in set-builder notation?	Students will be able to: Read and use inequality symbols correctly.  Solve a Linear Inequality in one variable using inverse operations and applying Properties of Inequalities.	Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers.  Complete Practice Worksheets and review answers.	Guided Notes.  Practice Worksheets.  Scientific calculator.	Questioning during instruction.  Practice examples on Guided Notes.  Practice Worksheet.  Homework Assignment.

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			How do we write a solution in Interval Notation?	Graph the solution on a number line using an open or closed circle on the boundary value and shading the number line appropriately to demonstrate the values included in the solution.  Write the solution in Set-builder Notation. Write the solution in Interval Notation.  Interpret the solution.			In-Class Assignment following HW review.
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<p><b>Solve Compound Inequalities</b> 2 Days</p>	<p>CC.2.HS.D.8 CC.2.HS.D.9 CC.2.HS.D.10</p>	<p>Compound Inequality  Conjunction (and)  Disjunction (or)  Intersection  Union</p>	<p>How do we use inverse operations when solving compound inequalities?  How do we determine if a Compound Inequality is a Conjunction or a Disjunction?  On a number line, how do we determine the solution to a conjunction?  On a number line, how do we determine the solution to a disjunction?  In what situation does a conjunction have no solution?  In what situation is the solution to a disjunction all real numbers?  How do we write the solution in interval notation for a conjunction? Disjunction?</p>	<p>Students will be able to: Determine if the Compound Inequality is a Conjunction or a Disjunction.  Solve a compound inequality using inverse operations.  Graph the solution on a number line and interpret the solution from the number line as needed. Write the solution in set-builder and interval notation.</p>	<p>Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers.  Complete Practice Worksheets and review answers.</p>	<p>Guided Notes. Practice Worksheets.  Scientific calculator.</p>	<p>Questioning during instruction.  Practice examples on Guided Notes.  Practice Worksheet.  Homework Assignment.  In-Class Assignment following HW review.</p>
<p><b>Solve Absolute Value Inequalities</b> 2 Days</p>	<p>CC.2.2.HS.D.8 CC.2.2.HS.D.9 CC.2.2.HS.D.10</p>	<p>Compound Inequality  Conjunction  Disjunction  Intersection  Union</p>	<p>How do we isolate the Absolute Value part of the inequality?  How do we determine if the inequality is a conjunction or disjunction?  How do we create two cases when solving an Absolute Value Inequality?  On a number line, how do we determine the solution to a conjunction?  On a number line, how do we determine the solution to a disjunction?  How do we write the solution in interval notation for a conjunction? Disjunction?</p>	<p>Students will be able to:  Isolate the Absolute Value part of the inequality using inverse operations.  Determine if the inequality is a conjunction or disjunction after isolating Absolute Value.  Create two cases to solve the inequality and solve.</p>	<p>Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers.  Complete Practice Worksheets and review answers.</p>	<p>Guided Notes. Practice Worksheets.  Scientific calculator.</p>	<p>Questioning during instruction.  Practice examples on Guided Notes.  Practice Worksheet.  Homework Assignment.  In-Class Assignment following HW review.</p>

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				Graph the solution to each inequality on a number line and interpret the solution.  Write the solution in set-builder and interval notations.			
<b>Chapter Test 2 Days</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test. Scientific calculator.	Test.
<b>Unit:</b>	Linear Relations and Functions						
<b>Big Ideas:</b>	Linear Relations and Functions						
<b>Unit Essential Questions:</b>	How do you decide which functional representation to choose when modeling a real-world situation and how would you explain your solution to the problem?						
<b>Relations and Functions 3 Days</b>	CC.2.2.HS.C.1 CC.2.2.HS.C.2 CC.2.2.HS.C.6	Relation  Domain	How do we determine the domain and range of a relation/function given a table/mapping/set of ordered pairs?  How do we determine the domain and	Students will be able to: Determine the domain and	Complete Guided Notes with Teacher guidance initially; complete examples	Guided Notes  Practice Worksheets	Questioning during instruction.

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	<p>Range</p> <p>Set of ordered pairs</p> <p>Table</p> <p>Function</p> <p>Mapping</p> <p>Interval Notation</p> <p>One-to-one Function (Injective)</p> <p>Onto Function (Surjective)</p> <p>Bijjective</p> <p>Vertical Line Test</p> <p>Horizontal Line Test</p> <p>Continuous Function</p> <p>Discrete Function</p> <p>Domain restriction</p> <p>Excluded values</p>	<p>range given a graph of a relation/function?</p> <p>How do we determine if a set of ordered pairs/table/mapping represents a function?</p> <p>How do we use the Vertical Line Test to determine if a graph represents a function?</p> <p>How do we determine if a set of ordered pairs/mapping/table represents a one-to-one function? Onto function?</p> <p>How do we use the Horizontal Line Test to determine if a graph represents a one-to-one function?</p> <p>What is a continuous function?</p> <p>What is a discrete function?</p> <p>How do we use function notation to evaluate a function?</p> <p>How do we use Interval Notation to state Domain and Range?</p> <p>What is domain restriction?</p> <p>What two types of functions do we study that require a domain restriction?</p>	<p>range of a relation/function given multiple representations. Use interval notation to state domain and range as appropriate.</p> <p>Determine if a relation is a function given multiple representations.</p> <p>Use Vertical Line Test appropriately.</p> <p>Determine if a function one-to-one, onto, both, or neither given multiple representations.</p> <p>Use Horizontal Line Test appropriately.</p> <p>Determine if a graph represents a discrete or continuous function.</p> <p>Determine domain restriction/excluded values as needed.</p>	<p>individually and review answers.</p> <p>Complete Practice Worksheets and review answers.</p>	<p>Practice examples on Guided Notes.</p> <p>Practice worksheets.</p> <p>Homework Assignment.</p> <p>In-Class Assignment following HW review.</p>
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<p><b>Function Inverses 1 Day</b></p>	<p>CC.2.2HS.C.4 CC.2.2HS.C.6</p>	<p>Inverse of a Function</p>	<p>What is the Inverse of a Relation/ Function?</p> <p>How do we determine the inverse of a relation/function given set of ordered pairs/mapping/table?</p> <p>How do we determine the inverse of a function given the function?</p>	<p>Students will be able to: Determine the inverse of a relation/function given set of ordered pairs/table/ mapping.</p> <p>Determine the inverse of a function given the function.</p>	<p>Complete Guided Notes with Teacher guidance initially;complete examples individually and review answers.</p> <p>Complete Practice worksheet and review answers.</p>	<p>Guided Notes. Practice worksheets. Scientific calculator as needed.</p>	<p>Questioning during instruction.</p> <p>Practice examples on Guided Notes.</p> <p>Practice worksheets. Homework Assignment.</p> <p>In-class Assignment following HW review.</p>
<p><b>Evaluate Functions 2 Days</b></p>	<p>CC2.2.HS.C.1 CC2.2.HS.C.3</p>	<p>Function Notation</p>	<p>What is function notation?</p> <p>How do we read function notation?</p>	<p>Students will be able to: Evaluate a function when presented using function notation.</p>	<p>Complete Guided Notes with Teacher guidance initially;complete examples individually and review answers.</p> <p>Complete Practice Worksheet and review answers.</p>	<p>Guided Notes. Practice Worksheets. Scientific calculator.</p>	<p>Questioning during instruction.</p> <p>Practice examples on Guided Notes.</p> <p>Practice worksheets.</p> <p>Homework Assignment.</p> <p>In-Class Assignment following HW review.</p>
<p><b>Function Operations 2 Days</b></p>	<p>CC.2.2HS.C.1 CC.2.2HS.C.2</p>	<p>Function Operations  Notations for function operations</p>	<p>What operations do we perform with functions?</p> <p>What are the two types of function operation examples we can complete?</p> <p>What are the notations used to denote the different operations?</p>	<p>Students will be able to: Determine the operation to be completed by recognition of notation.</p>	<p>Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers.</p> <p>Complete Practice Worksheet and review answers.</p>	<p>Guided Notes. Practice Worksheets. Scientific calculator.</p>	<p>Questioning during instruction.</p> <p>Practice examples on Guided Notes.</p>

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				<p>Perform the indicated operations: add, subtract, multiply, divide.</p> <p>Perform function operations with functions and domain values.</p> <p>State domain restriction as needed when dividing functions.</p>			<p>Practice worksheets.</p> <p>Homework Assignment.</p> <p>In-class Assignment following HW review.</p>
<p><b>Function Composition</b> 3 Days</p>	<p>CC.2.2HS.C.1 CC.2.2HS.C.2 CC.2.2HS.C.6</p>	<p>Function Composition</p> <p>Identity Function</p> <p>Function composition notations</p>	<p>What does it mean to compose something?</p> <p>What is function composition?</p> <p>Is function composition commutative?</p> <p>Given the composition, which function do we start with?</p> <p>What is the process used to compose two functions?</p> <p>From which function is the domain of the composed function?</p> <p>From which function is the range of the composed function?</p> <p>How do we use function composition to prove that two functions are inverses?</p>	<p>Students will be able to:</p> <p>Read and interpret the different notations used for function composition.</p> <p>Perform the composition appropriately.</p> <p>Prove that two functions are inverses by showing that both compositions are the Identity function.</p>	<p>Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers.</p> <p>Complete Practice worksheet and review answers.</p>	<p>Guided Notes.</p> <p>Practice Worksheets.</p>	<p>Questioning during instruction.</p> <p>Practice examples on Guided Notes.</p> <p>Practice Worksheets.</p> <p>Homework Assignment.</p> <p>In-Class Assignment following HW review.</p>
<p><b>Special Functions</b> 2 Days</p>	<p>CC.2.2HS.C.2 CC2.2.HS.C.1</p>	<p>Constant Function</p> <p>Identity Function</p> <p>Absolute Value Function</p>	<p>What is a constant function and what is the graph of a constant function?</p> <p>What is the Identity Function and what is the graph of the Identity Function?</p> <p>What is the shape of the graph of an Absolute Value Function?</p>	<p>Students will be able to:</p> <p>Identify and graph a constant function.</p>	<p>Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers.</p>	<p>Guided Notes.</p> <p>Practice Worksheets.</p> <p>Graph paper.</p>	<p>Questioning during instruction.</p> <p>Practice examples on Guided Notes.</p>

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		<p>Quadratic Function</p> <p>Step Function</p> <p>Greatest Integer Function</p>	<p>How is a quadratic function identified and what is the name of the graph of a quadratic function? What is the shape?</p> <p>How do we identify the graph of a step function?</p> <p>How do we determine the “greatest integer”?</p> <p>Why is the graph of the greatest integer function a step function?</p>	<p>Identify and graph the Identity Function.</p> <p>Graph an Absolute value Function by making a table.</p> <p>Graph a Quadratic Function by making a table.</p> <p>Identify a Step Function.</p> <p>Determine the Greatest Integer.</p> <p>Graph a Greatest Integer Function by making a table.</p>	<p>Complete Practice Worksheet and review answers.</p>		<p>Practice Worksheets.</p> <p>Homework Assignment.</p> <p>In-Class Assignment following HW review.</p>
<p><b>Piecewise Functions</b> 3 Days</p>	CC2.2HS.C.2	<p>Piecewise Function</p> <p>Domain restriction</p>	<p>How do we evaluate a piecewise function?</p> <p>How do we identify a piecewise function? How do we identify the graph of a piecewise function?</p> <p>How do we apply the domain restrictions in a piecewise function?</p> <p>How do we graph a piecewise function?</p> <p>How do we write a piecewise function given a graph?</p> <p>What information must be included when writing a piecewise function given a graph?</p>	<p>Students will be able to: Evaluate a piecewise function.</p> <p>Graph a piecewise function.</p> <p>Write a piecewise function given a graph.</p>	<p>Complete Guided Notes with Teacher guidance initially;complete examples on Guided Notes and review answers.</p> <p>Complete Practice Worksheet and review answers.</p>	<p>Guided Notes. Practice Worksheet. Scientific calculator. Graph paper. Ruler.</p>	<p>Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.</p>
<p><b>Function Transformations</b></p>	CC2.2HS.C.4	<p>Family of Graphs</p>	<p>What is the Parent Function? What is the Parent Graph? What is a Transformation? What is a Translation and how do we</p>	<p>Students will be able to:</p>	<p>Complete Guided Notes with Teacher Guidance initially;complete examples</p>		<p>Questioning during instruction.</p>

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<p><b>3 Days</b></p>		<p>Parent Function</p> <p>Parent Graph</p> <p>Transformation</p> <p>Translation</p> <p>Slide</p> <p>Glide</p> <p>Shift</p> <p>Reflection</p> <p>Dilation</p> <p>Stretch</p> <p>Compression</p>	<p>identify it given a function?</p> <p>What is a reflection and what are the two types of reflections that we discussed?</p> <p>How do we identify the type of reflection given a function?</p> <p>What is a dilation and what are the two types that we discussed?</p> <p>How do we identify a stretch and a compression given a function?</p>	<p>Identify a parent function and a parent graph of an Absolute value Function and Quadratic Function.</p> <p>Identify the transformations of the parent function and sketch the graph of the function.</p>	<p>on Guided Notes and review answers.</p> <p>Complete Practice Worksheet and review answers.</p>		<p>Practice examples on Guided Notes.</p> <p>Practice Worksheet.</p> <p>Homework Assignment.</p> <p>In-Class Assignment following HW review.</p>
<p><b>Chapter 2 Test</b></p> <p><b>2 Days</b></p>	<p>All above stated Standards.</p>	<p>All above vocabulary required for concept mastery.</p>	<p>All above stated questions.</p>	<p>All above stated skills.</p>	<p>Complete Test.</p>	<p>Test.</p> <p>Scientific Calculator.</p> <p>Ruler.</p>	<p>Test</p>
<p><b>Unit:</b></p>	<p>Linear Relations &amp; Functions</p>						
<p><b>Big Ideas:</b></p>	<p>Linear Equations</p>						
<p><b>Unit Essential Questions:</b></p>	<p>How do you decide which functional representation to choose when modeling a real world situation and how would you explain your solution to the problem?</p>						

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<p><b>Rate of Change and Slope 1 Day</b></p>	<p>CC2.2HS.D10 CC2.2HS.D.7</p>	<p>Rate of Change  Slope</p>	<p>What is rate of change and how do we determine rate of change?  How do we describe what the slope of a line is?  How do we determine the slope of a line analytically?  How do we determine the slope of a line algebraically?  What is the formula for slope?</p>	<p>Students will be able to: Determine the rate of change.  Determine the slope of a line analytically and algebraically.</p>	<p>Complete Guided Notes with Teacher guidance initially;complete examples individually and review answers. Complete Practice Worksheet and review answers.</p>	<p>Guided Notes. Practice Worksheet. Calculator.</p>	<p>Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.</p>
<p><b>Writing Linear Equations 2 Days</b></p>	<p>CC2.2HS.D.7 CC2.2HS.D10</p>	<p>x-intercept  y-intercept  Point-Slope Form  Standard Form  Slope Intercept Form  Parallel lines  Perpendicular lines</p>	<p>How do we determine if an equation represents a linear equation?  What ordered pair represents the x-intercept? y-intercept?  How do we determine the x and y intercepts algebraically?  What is the formula for Point-Slope Form?  What is the formula for Standard Form?  What are the criteria for Standard Form?  What is the formula for Slope-Intercept Form?  What is the relationship between the slopes of parallel lines?  What is the relationship between the slopes of perpendicular lines?</p>	<p>Students will be able to: Determine if an equation is linear. Determine the x and y intercepts of a line. Given a point and slope or two points, write the equation of a line in Point-Slope Form, Slope-Intercept Form, and Standard Form. Rewrite equations in a specifically defined form given any form. Write the equation of a line given information regarding a parallel or perpendicular line.</p>	<p>Complete Guided Notes with Teacher guidance initially;complete examples individually and review answers. Complete Practice Worksheet and review answers. Delta Math Assignment.</p>	<p>Guided Notes. Practice Worksheet. Calculator.</p>	<p>Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.</p>
<p><b>Graphing Linear Equations</b></p>	<p>CC2.2HS.D.7 CC2.2HSD.10</p>	<p>Slope Intercept Form</p>	<p>What is the best form of a linear equation to be in when graphing a line?</p>	<p>Students will be able to:</p>	<p>Complete Guided Notes with Teacher guidance initially;complete examples</p>	<p>Guided Notes. Practice Worksheet. Ruler.</p>	<p>Questioning during instruction.</p>

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<p><b>1 Day</b></p>		<p>y-intercept Slope</p>	<p>What is the process used to graph a line when given Slope-Intercept Form?</p>	<p>Graph a line given any form of a linear equation.  Rewrite an equation in Slope-Intercept Form to facilitate ease of graphing.</p>	<p>individually and review answers. Complete Practice Worksheet individually and review answers.</p>	<p>Graph paper.</p>	<p>Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.</p>
<p><b>Graphing Linear Inequalities 1 Day</b></p>	<p>CC2.2HS.D.7 CC2.2HSD.10</p>	<p>Linear Inequality in Two Variables  Boundary line  Dashed Line  Solid Line  Test point  Shaded region  Solution region</p>	<p>What is the process used to graph a linear inequality in two variables?  How do we determine if the boundary line is a dashed line or a solid line?  How do we determine the region to shade that contains the ordered pairs that are solutions to the inequality?  What is the easiest test point to use and can we use this test point for every inequality?</p>	<p>Students will be able to: Graph the boundary line for the inequality and represent it appropriately (dashed or solid). Test an appropriate point in the inequality and shade accordingly to represent the region that contains the ordered pairs that are solutions to the inequality. State ordered pairs that are solutions.</p>	<p>Complete Guided Notes with teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheet individually and review answers.</p>	<p>Guided Notes. Ruler. Practice Worksheet. Graph paper.</p>	<p>Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.</p>
<p><b>Scatter Plots 1 Day</b></p>	<p>CC2.4HS.B.3</p>	<p>Scatter Plot  Independent variable  Dependent variable  Positive Correlation</p>	<p>What is a scatter plot?  How do we determine the independent variable? Dependent variable?  What is a best-fit line?  How do we determine positive or negative correlation between the two variables?  How do we write the Prediction Equation and then apply it?</p>	<p>Students will be able to: Draw a best fit line based on data points. Write a prediction equation in Slope-Intercept Form. Use the Prediction Equation to</p>	<p>Complete Guided Notes with teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheet individually and review answers.</p>	<p>Guided Notes. Ruler. Practice Worksheet. Graph paper.</p>	<p>Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment.</p>

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		Negative Correlation  Best-Fit Line  Prediction Equation		determine unknown values.			In-Class Assignment following HW review.
<b>Chapter 3 Test 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test. Scientific calculator. Ruler.	Test.
<b>Unit:</b>	Linear Relations & Functions						
<b>Big Ideas:</b>	Systems of Equations & Inequalities						
<b>Unit Essential Questions:</b>	How do you write, solve, and interpret systems of two linear equations & inequalities using graphing and algebraic techniques?						
<b>Solve Systems of Equations by Graphing 1 Day</b>	CC2.2HS.D.7 CC2.2HS.D.8 CC2.2HS.D.9 CC2.2HS.D.10	Point of Intersection  Consistent System  Inconsistent System  Dependent System	How do we solve a system of equation by graphing?  Where is the solution to a system of equations when we solve by graphing?  How many situations can occur when solving a system of equations?  How do we state the solution in each of these cases?	Students will be able to:  Graph two lines and determine the point of intersection which is the solution to the system of equations.	Complete Guided Notes with teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheet individually and review answers.	Guided Notes. Ruler. Practice Worksheet. Graph paper.	Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment

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		Independent System  Slope-Intercept Form		Classify the system as consistent, inconsistent, dependent, independent.			following HW review.
<b>Solve Systems of Equations using Substitution 1 Day</b>	CC2.2HS.D.7 CC2.2HS.D.8 CC2.2HS.D.9 CC2.2HS.D.10	Substitution Method	In what situation is Substitution the method of choice for solving a system of equations?  How do we solve a system of equations using Substitution?	Students will be able to: Solve a system of equations using the Substitution Method.	Complete Guided Notes with teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheet individually and review answers.	Guided Notes. Practice Worksheet. Scientific calculator.	Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.
<b>Solve Systems of Equations using Elimination 1 Day</b>	CC2.2HS.D.7 CC2.2HS.D.8 CC2.2HS.D.9 CC2.2HS.D.10	Elimination Method  Standard Form	What form should the equations be in when using the Elimination Method?  What is the goal we must meet so that Elimination will work?	Students will be able to: Solve a system of equations using the Elimination Method.	Complete Guided Notes with teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheet individually and review answers. Complete Delta Math Assignment.	Guided Notes. Practice Worksheet. Scientific calculator.	Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.
<b>Solve Systems of Inequalities by Graphing 1 Day</b>	CC2.2HSD.10	Shaded Region  Intersection	What form should the inequalities be in to graph the boundary lines?  How do we determine if the boundary line is dashed or solid?  Where is the solution to the system of inequalities located?	Students will be able to:  Graph the boundary line of each inequality using appropriate line.  Shade the region containing the ordered pairs that	Complete Guided Notes with teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheet individually and review answers.	Guided Notes. Practice Worksheet. Scientific calculator. Ruler.	Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment.

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				are solutions for each inequality.  Determine the region that is the intersection of both inequalities that contains the solutions.			In-Class Assignment following HW review.
<b>Optimization with Linear Programming 4 Days</b>	CC2.2HS.D.7 CC2.2HS.D.8 CC2.2HS.D10 CC2.2HS.C.3 CC2.2HS.C.6	Linear Programming  Feasible Region  Polygonal Region  Vertices  Function  Constraints  Maximum Value  Minimum Value	What is the application of Linear Programming?  What are the constraints?  How do we represent the constraints on the graph?  What is the feasible region?  What are the vertices of the feasible region?  What is the function?  Where do the maximum and minimum values occur?  How do we determine the maximum and minimum values?	Students will be able to:  Graph the boundary lines using the given constraints.  Shade the polygonal or feasible region.  Determine the vertices of the feasible region.  Evaluate the function using the vertices to determine the maximum and minimum values.	Complete Guided Notes with teacher guidance initially; complete examples individually and review answers. Complete Practice Worksheet individually and review answers.	Guided Notes. Practice Worksheet. Scientific calculator. Ruler.	Questioning during instruction. Practice examples on Guided Notes. Practice Worksheet. Homework Assignment. In-Class Assignment following HW review.
<b>Solve Systems of 3 Equations in 3 Variables 2 Days</b>	CC2.2HS.D.8 CC2.2HS.D.9 CC2.2HS.D10	Ordered triple  Three dimensional coordinate axis system  z-axis	How do we solve a system of three equations in three variables?	Students will be able to: Solve a system of three equations in three variables using Elimination. State the solution as an ordered triple.	Complete Guided Notes with teacher guidance initially; complete examples individually and review answers. Complete Practice WS individually and review answers.	Guided Notes. Practice WS. Calculator.	Questioning during instruction. Practice examples on Guided Notes. Practice WS. HW Assignment. IC Assignment following HW review.

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<b>Chapter 4 Test 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test. Scientific calculator. Ruler.	Test.
<b>Unit</b>	Quadratic, Polynomial, and Radical Functions & Relations						
<b>Big Ideas</b>	Polynomials						
<b>Unit Essential Questions</b>	How can you extend algebraic properties and processes to quadratic, exponential, and polynomial expressions & equations and then apply them to solve real world problems?						
<b>Exponent Laws 3 Days</b>	CC2.2HS.D.2 CC2.2HS.D.3 CC2.2.HS.F.1	Exponent. Power. Base. Monomial. Degree of Monomial. Coefficient. Simplify.	How do we determine the degree of a monomial? How do we evaluate a power? How do we multiply monomials? How do we divide monomials? How do we simplify an expression that is a power to a power?	Students will be able to: Determine the degree of a monomial. Evaluate a power. Multiply, divide monomials. Simplify a power to a power monomial expression.	Complete Guided Notes with Teacher guidance initially; complete examples individually and review answers. Complete Practice WS individually and review answers.	Guided Notes. Practice WS. Scientific calculator.	Questioning during instruction. Practice examples on Notes. Practice WS. HW Assignment. IC Assignment following HW review.
<b>Operations with Polynomials 2 Days</b>	CC2.2HS.D.2 CC2.2HS.D.3 CC2.2.HS.F.1	Polynomial Binomial Trinomial Simplify	How do we determine the degree of a polynomial? How do we add, subtract, multiply polynomials?	Students will be able to:	Complete Guided Notes; complete examples individually and review answers.	Guided Notes. Practice WS. Scientific calculator.	Questioning during instruction. Practice examples on

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		Like terms Degree of a Polynomial		Determine the degree of a polynomial. Add, subtract, multiply polynomials.	Complete Practice WS individually and review answers.		Notes and WS.HW Assignment. In-class Assignment after HW review.
<b>Polynomial Division 3 Days</b>	CC2.2HS.D.2 CC2.2HS.D.3 CC2.2HS.F.1	Long Division Synthetic Division Dividend Divisor Quotient	What is the process for long division when we divide polynomials? What is the process for synthetic division when dividing polynomials? What is a requirement of the divisor when using synthetic division?	Students will be able to: Use long division and synthetic division to determine the quotient when dividing polynomials.	Complete Guided Notes;complete examples individually and review answers.Complete Practice WS individually and review answers.	Guided Notes. Calculator. Practice WS	Questioning during instruction. Practice examples on Notes and WS. HW Assignment. IC Assignment following HW review.
<b>Factoring Polynomials 3 Days</b>	CC2.2.HS.D.1 CC2.2.HS.D.2 CC2.2HS.D.3	Factoring. Greatest Common Factor (GCF). Distributive Property. Factor by Grouping. Perfect Squares. Perfect Cubes. Special Products. Difference of 2 Squares. Difference of 2 Cubes. Sum of 2 Cubes. General Trinomial. Reverse FOIL. Product/Sum Factoring. Leading Coefficient.	What is Factoring? What are the different types of Special Products? What are Perfect Squares? What are Perfect Cubes? How do we identify polynomials that are Special Products? What are the formulas for the Special Products? What is a General Trinomial with a leading coefficient of 1? How do we factor a general trinomial with a leading coefficient of 1? What is a general trinomial with a leading coefficient greater than 1 what method is used to factor it? How do we check the Factored Form for correctness?	Students will be able to: Recognize the type of Factoring required for the polynomial. Apply the appropriate factoring method. Simplify the factored form to check for correctness.	Complete Guided Notes;complete examples individually and review answers. Complete Practice WS individually and review answers.	Guided Notes. Calculator. Practice WS.	Questioning during instruction. Practice examples on Notes and WS. HW Assignment. IC Assignment following HW review.

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		Guess and Check Method. Factored Form.					
<b>Chapter 5 Test 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test. Scientific calculator.	Test.
<b>Unit:</b>	Quadratic, Polynomial, and Radical Functions & Relations						
<b>Big Ideas:</b>	Radical Expressions & Equations						
<b>Unit Essential Questions:</b>	How can you extend algebraic properties and processes to quadratic, exponential, and polynomial expressions & equations and then apply them to solve real world problems?						
<b>Simplify Radical Expressions 2 Days</b>	CC2.2HS.D.2 CC2.1.HS.F.1	Radical. Radicand. Index. Radical expression. Perfect square/perfect cube factor. Simplify radical expression.	What does it mean to simplify a radical expression? How do we know if a radical expression is completely simplified?	Students will be able to: Recognize a perfect square/perfect cube. Identify perfect square/perfect cube factors of radicands. Simplify a radical expression by	Complete Guided Notes; complete examples individually and review; complete WS and review answers.	Guided Notes. Scientific calculator. Practice WS.	Questioning during instruction. Practice examples on Notes/WS. HW Assignment. IC Assignment following HW review.

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				extracting the largest nth root factor.			
<b>Add/Subtract Radical Expressions 1 Day</b>	CC2.2.HS.D.2 CC2.1.HS.F.1	Like radical expressions	What are considered like terms regarding radical expressions? How do we add/subtract like radical expressions?	Students will be able to: Simplify radical expressions as needed. Recognize like radical expressions. Add/subtract like radical expressions.	Complete Guided Notes;complete examples individually and review;complete WS and review answers.	Guided Notes. Scientific calculator. Practice WS.	Questioning during instruction. Practice examples on Notes/WS. HW Assignment. IC Assignment following HW review.
<b>Multiply Radical Expressions 2 Days</b>	CC2.2.HS.D.2 CC2.1.HS.F.1	Distributive Property. FOIL or Distribute twice.	What is required in order to multiply radical expressions? How do we multiply monomial radical expressions? How do we apply the Distributive Property? When do we apply the FOIL Method?	Students will be able to: Multiply radical expressions and simplify as needed which may require simplifying radical expressions,add/ subtract radical expressions.	Complete Guided Notes;complete examples individually and review;complete WS and review answers.	Guided Notes. Scientific calculator. Practice WS.	Questioning during instruction. Practice examples on Notes/WS. HW Assignment. IC Assignment after HW review.
<b>Divide Radical Expressions 2 Days</b>	CC2.2.HS.D.2 CC2.1.HS.F.1	Rationalize the denominator. Binomial denominator. Conjugate.	How do we divide expressions with a single radical in the denominator? How do we determine the conjugate of a binomial radical expression? Why do we multiply by the conjugate when we have a binomial denominator? When we FOIL two conjugates, what type of an answer do we always have?	Students will be able to: Divide expressions with monomial radical denominators. Divide expressions with binomial denominators that have one or two radicals by multiplying by the conjugate.	Complete Guided Notes;complete examples individually and review;complete WS and review.	Guided Notes. Scientific calculator. Practice WS.	Questioning during instruction. Practice examples on Notes/WS. HW Assignment. IC Assignment after HW review.
<b>Rational Exponents 2 Days</b>	CC2.2.HS.D.2 CC2.1.HS.F.1	Rational Exponent	What is a rational exponent? How do we rewrite an expression with a rational exponent as a radical? How do we rewrite a radical expression using rational exponents?	Students will be able to: Rewrite a radical expression using	Complete Guided Notes;complete examples individually and review;complete WS and review.	Guided Notes. Scientific calculator. Practice WS.	Questioning during instruction.

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			How do we simplify expressions that have rational exponents?	rational exponents. Rewrite an expression with rational exponents using a radical. Simplify expressions containing rational exponents.			Practice examples on Notes/WS. HW Assignment. IC Assignment after HW review.
<b>Solve Radical Equations &amp; Inequalities 3 Days</b>	CC2.2.HS.D.7 CC2.2.HS.D.8 CC2.2.HS.D.9	Extraneous Solution. Interval check. Domain restriction.	How do we solve a radical equation? What is an extraneous solution? How do we check the solution to a radical inequality?	Students will be able to: Solve a radical equation and check for extraneous solutions. Determine approach required for solving radical equation. Solve a radical inequality including stating domain restriction and completing interval check of solution.	Complete Guided Notes;complete examples individually and review;complete WS and review.	Guided Notes. Scientific calculator. Practice WS.	Questioning during instruction. Practice examples on Notes/WS. HW Assign. IC Assign. after HW review.
<b>Test. 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test. Scientific calculator.	Test.
<b>Unit:</b>	Quadratic, Polynomial ,and Radical Functions & Relations						

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<b>Big Ideas:</b>	Complex Numbers						
<b>Unit Essential Questions:</b>	How can you extend algebraic properties and processes to quadratic, exponential, and polynomial expressions & equations and then apply them to solve real world problems?						
<b>Simplify Complex Numbers 2 Days</b>	CC2.1.HS.F.6 CC2.1.HS.F.7 CC2.2.HS.D.2	Imaginary unit $i$ Complex Number. Powers of $i$ .	What is the imaginary unit, what is it equivalent to, and how do we apply it? What is a complex number and what is the general form of a complex number? What is the first step to simplifying a negative radicand of a square (even) root?	Students will be able to: Simplify negative radicands of even roots using the imaginary unit. Simplify powers of $i$ to one of the four possible forms.	Complete Guided Notes;complete exs. individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction. Practice exs. on Notes/WS. HW Assign. IC Assign. after HW review.
<b>Addition/ Subtraction of Complex Numbers 1 Day</b>	CC2.2.HS.D.3 CC2.2.HS.D.2 CC2.1.HS.F.6	Like terms Imaginary part Real part	How do we add and subtract complex numbers?	Students will be able to: Identify imaginary and real parts of a complex number and add/subtract as indicated.	Complete Guided Notes;complete exs.individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction. Practice exs. on Notes/WS. HW Assign. IC Assign. after HW review.
<b>Multiplication of Complex Numbers 2 Days</b>	CC2.2HS.D.3 CC2.2.HS.D.2 CC2.1.HS.F.6	FOIL. Complex Conjugate. Distributive Property.	How do we multiply complex numbers? How do we identify complex conjugates? What is the product of two complex conjugates?	Students will be able to: Multiply and simplify imaginary numbers including using	Complete Guided Notes;complete exs. individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction. Practice exs.on Notes/WS. HW Assign.

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				power to power exponent rules. Multiply complex numbers including using the Distributive Property and FOIL.			IC Assign. after HW review.
<b>Division of Complex Numbers 2 Days</b>	CC2.2.HS.D.3 CC2.2.HS.D.2 CC2.1.HS.F.6	Complex Conjugate. Rationalize denominator.	How do we rationalize the denominator of a complex quotient? How do we determine the complex conjugate? What is the product of two complex conjugates?	Students will be able to: Simplify a complex quotient by multiplying by the complex conjugate.	Complete Guided Notes;complete exs.individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction. Practice exs. on Notes/WS. HW Assign.;IC Assign.after HW review.
<b>Test. 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test. Scientific calculator.	Test.
<b>Unit:</b>	Quadratic, Polynomial, and Radical Functions & Relations						
<b>Big Ideas:</b>	Quadratic Functions						
<b>Unit Essential Questions:</b>	How can you extend algebraic properties and processes to quadratic, exponential, and polynomial expressions & equations and then apply them to solve						

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	real world problems?						
<b>Graphing Quadratic Functions</b> 2 Days	CC2.2HS.D10 CC2.2HS.D.7 CC2.2HS.C.6 CC2.2HS.C.5 CC2.2.HS.C.2 CC2.1.HS.F.3	Quadratic Function. Parabola. Axis of Symmetry. AOS. Vertex. Maximum Value. Minimum Value. Reflection. Table of Values. Symmetry. Roots. Zeroes.	What is the degree of a Quadratic Function? What is the name of the graph of a quadratic function? What is the Axis of Symmetry and how is it applied when graphing? What is the vertex of a parabola? When does a quadratic have a minimum value? When does a quadratic have a maximum value? When making a table of values, how do we strategically choose the domain values? What are the most important x values? What are these values referred to as? Where are these values located on the graph?	Students will be able to: Graph the parabola representing a quadratic function by: determining the AOS,vertex; making a table of values and determining the roots; plotting points using symmetry. Determine if a quadratic has a maximum or minimum value.	Complete Guided Notes;complete exs.individually and review;complete WS and review.	Guided Notes. Scientific calculator. Graph paper. WS.	Questioning during instruction ;Practice exs. on Notes/WS; HW Assign.;IC Assign. after HW review.
<b>Solve Quadratic Equations by Graphing</b> 2 Days	CC2.2.HSD10 CC2.2.HS.D.7 CC2.2HS.C.2 CC2.2HS.C.5 CC2.1.HS.F.3	Quadratic Equation. Roots. Zeroes. Solutions. 2 Real Roots. 1 real Root. Complex Roots.	When solving a quadratic equation, what must the equation be set equal to and why? On the graph of a quadratic, where are the solutions located? When does a quadratic have one real root?	Students will be able to: Solve a quadratic equation by applying the method learned for graphing quadratics.	Complete Guided Notes;complete exs. individually and review;complete WS and review.	Guided Notes. Scientific calculator. Graph paper. WS.	Questioning during instruction; Practice exs. on Notes/WS; HW Assign;IC Assign.after HW review.
<b>Solve Quadratic Equations by Factoring</b> 1 Day	CC2.2.HS.D.4 CC2.2.HS.D.3 CC2.2.HS.D.2 CC2.2.HS.D.8 CC2.2HS.D10	Factoring. Trinomial. Guess and Check Method. Difference of Two Squares. Zero Product Property.	How do we factor a quadratic with a leading coefficient of 1? Greater than 1? Once factored, how do we determine the solutions?	Students will be able to: Identify the factoring method to be applied. Factor the quadratic. Determine the solutions once in factored form.	Complete Guided Notes;complete exs. individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; Practice exs. on Notes/WS; HW Assign.;IC Assign. after HW review.
<b>Solve Quadratic Equations by</b>	CC2.1.HS.F.7 CC2.1.HS.F.2 CC2.2.HS.D.2	Completing the Square.	What is the process used for Completing the Square?	Students will be able to:	Complete Guided Notes;complete exs. individually and	Guided Notes. Scientific calculator. WS.	Questioning during instruction;

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<p><b>Completing the Square</b> 2 Days</p>	<p>CC2.2HS.D10 CC2.2HS.D.8 CC2.1.HS.F.7 CC2.1.HS.F.6 CC2.2.HS.D.4</p>	<p>Perfect Square Trinomial.</p>		<p>Create a Perfect Square Trinomial and solve a quadratic equation by Completing the Square.</p>	<p>review;complete WS and review.</p>		<p>practice ex. on Notes/WS; HW Assign.;IC Assign. after HW review.</p>
<p><b>Solve Quadratic Equations using the Quadratic Formula</b> 2 Days</p>	<p>CC2.2HS.D.8 CC2.2HSD.10 CC2.2.HS.D.4</p>	<p>Quadratic Formula. Discriminant Value.</p>	<p>What is the Quadratic Formula? What is the Discriminant Value and what is the implication of it? How was the Quadratic Formula derived?</p>	<p>Students will be able to: State the Quadratic Formula. Determine the Discriminant Value and make a statement regarding the solutions based on this value. Solve a Quadratic Equation using the Quadratic Formula.</p>	<p>Complete Guided Notes;complete exs. individually and review;complete WS and review.</p>	<p>Guided Notes. Scientific calculator. WS.</p>	<p>Questioning during instruction; practice ex. on Notes/WS; HW Assign.;IC Assign. after HW review.</p>
<p><b>Transforming Quadratic Functions</b> 2 Days</p>	<p>CC2.2HS.C.4</p>	<p>Vertex Form. Transformation Reflection. Translation Shift. Slide. Dilation. Stretch. Compression.</p>	<p>What is the Vertex Form of a Quadratic Function? How do we rewrite a Quadratic Function from General Form to Vertex Form? What are the transformations that can be determined from Vertex Form? How do we determine each of these transformations based on Vertex Form?</p>	<p>Students will be able to: Given a Quadratic Function in General Form, rewrite in Vertex Form by Completing the Square. Determine the transformations of the parabola using Vertex Form. Sketch a parabola using Vertex Form.</p>	<p>Complete Guided Notes;complete exs. individually and review;complete WS and review.</p>	<p>Guided Notes. Scientific calculator. WS.</p>	<p>Questioning during instruction; practice ex. on Notes/WS; HW Assign.;IC Assign. after HW review.</p>
<p><b>Test.</b> 1 Day</p>	<p>All above stated Standards.</p>	<p>All above vocabulary required for</p>	<p>All above stated questions.</p>	<p>All above stated skills.</p>	<p>Complete Test.</p>	<p>Test.</p>	<p>Test.</p>

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		concept mastery.					
<b>Unit:</b>	Quadratic, Polynomial, and Radical Functions & Relations						
<b>Big Ideas:</b>	Polynomial Functions						
<b>Unit Essential Questions:</b>	How can you extend algebraic properties and processes to quadratic, exponential, and polynomial expressions & equations and then apply them to solve real world problems?						
<b>Polynomial Functions 2 Days</b>	CC2.2HS.D.4 CC2.2.HS.D.5  CC2.2HS.C.2 CC2.1.HS.F.7	Polynomial Function in one variable. Degree. Linear. Quadratic. Cubic. Quartic. Quintic. General Polynomial. Even degree. Odd degree. Real Roots. End behavior. Positive infinity. Negative infinity.	How do we determine the degree of a polynomial? What is the degree of a: Linear Function? Quadratic Function? Cubic Function? Quartic Function? Quintic Function? General Polynomial Function? In general, what is the end behavior of an even degree polynomial? Odd degree? On the graph, where do real solutions occur? How many possible real solutions can an even degree polynomial have? How many possible real solutions can an odd degree polynomial have?	Students will be able to: Identify the degree of a polynomial in one variable. Name the polynomial based on the degree. Describe the end behavior of even and odd degree functions. State the possible number of real roots that a polynomial has. Given a graph, state if the	Complete Guided Notes;complete exs. individually and review; complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.;IC Assign. after HW review.

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		Evaluate a polynomial function.		polynomial is an even or odd degree polynomial.			
<b>Remainder and Factor Theorems 2 Days</b>	CC2.2HS.D.3 CC2.2HS.D.4 CC2.2HS.D.5 CC2.1HS.F.7	Remainder Theorem. Factor Theorem. Synthetic Substitution. Synthetic Division. Factor of a Polynomial Function. Root of a Polynomial.	What process is employed when using the Remainder Theorem? How is the Remainder Theorem used to evaluate a function?	Students will be able to: Use Synthetic Substitution and the Remainder Theorem to evaluate a function. Determine if a binomial is a factor of a polynomial using the Factor Theorem and Synthetic Division. Determine the remaining factors of a polynomial given one binomial factor.	Complete Guided Notes;complete exs. individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.;IC Assign. after HW review.
<b>Descartes' Rule of Signs 2 Days</b>	CC2.2.HS.D.5 CC2.2HA.D.4 CC2.2HS.D.3 CC2.1HS.F.7	Descartes' Rule of Signs. Coefficient. Sign change. Positive real roots. Negative real roots. Complex roots.	Why do we use Descartes' Rule of Signs? What values in the polynomial function are used in Descartes' Rule of Signs? What do we look for when applying Descartes' Rule of Signs? How do we determine the possible number of positive real roots? What is done differently when determining the possible number of negative roots as compared to the positive? Counting the number of sign changes, how do we state the possible number of roots?	Students will be able to: Use Descartes' Rule of Signs to determine the possible number of positive real roots, negative real roots, and complex roots of a polynomial.	Complete Guided Notes;complete exs. individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Rational Root Theorem 2 Days</b>	CC2.2HS.D.3 CC2.2.HS.D.4 CC2.2HS.D.5 CC2.1HS.F.7	Rational Root Theorem. Factors of "p" value. Factors of "q" value.	Why do we use the Rational Root Theorem? How do we generate the list of possible rational roots? Why do we use Descartes' Rule of Signs song with the Rational Root Theorem? How do we determine the actual roots	Students will be able to: Use the Rational Root Theorem to generate a list of possible rational roots.	Complete Guided Notes;complete exs. individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.;

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		Possible Rational Roots:p/q Synthetic Division	using the list of possible roots?	Use Descartes' Rule of Signs to provide direction when determining actual roots. Use Synthetic Division to determine if a value is a root.			IC Assign. after HW review.
<b>Solve Polynomial Equations 2 Days</b>	CC2.2HS.D.3 CC2.2HS.D.4 CC2.2HS.D.5 CC2.2HS.F.7 CC2.2HS.D.9 CC2.2HS.D10 CC2.2.HS.D.2	Roots		Students will be able to: Solve a polynomial equation.	Complete Guided Notes;complete exs.individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.;IC Assign. after HW review.
<b>Write a Polynomial Function given Roots 2 Days</b>	CC2.2HS.D.2 CC2.2HS.D.3 CC2.2HSD.10 CC2.1HS.F.6	Roots of a polynomial. Polynomial Function.	How do we write the polynomial function if given the roots?	Students will be able to: Write a Polynomial Function given the roots.	Complete Guided Notes;complete exs. individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Test 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test. Scientific calculator.	Test.
<b>Unit:</b>	Advanced Functions & Relations						
<b>Big Ideas:</b>	Rational Expressions						
<b>Unit Essential Questions:</b>	How can expressions, equations, and						

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	inequalities be used to quantify, solve, model and/or analyze mathematical situations?						
<b>Simplify Rational Expressions 2 Days</b>	CC2.2HS.D.2 CC2.2HS.D.3 CC2.2HS.D.6	Rational Expression. Factoring. Common factors. Numerator. Denominator.	What does it mean to simplify a rational expressions? How do we simplify a rational expression and what algebraic technique do we use if the rational expression contains a polynomial in the numerator and/or denominator?	Students will be able to: Simplify a rational expression by simplifying the numerator and denominator using factoring techniques if needed and dividing common monomial and/or binomial factors.	Complete Guided Notes; complete exs. individually and review; complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Multiply/Divide Rational Expressions 2 Days</b>	CC2.2HS.D.2 CC2.2HS.D.3 CC2.2HS.D.6	Product. Quotient. Reciprocal.	How do we multiply Rational Expressions? How do we divide Rational Expressions?	Students will be able to: Multiply Rational Expressions. Divide Rational Expressions.	Complete Guided Notes; complete exs. individually and review; complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Complex Fractions 2 Days</b>	CC2.2HS.D.2 CC2.2HS.D.3 CC2.2HS.D.6	Complex Fraction.	What operation is implied in a fraction? How do we simplify a complex fraction?	Students will be able to: Simplify a complex fraction.	Complete Guided Notes; complete exs. individually and review; complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Add/Subtract Rational Expressions 2 Days</b>	CC2.2HS.D.1 CC2.2HS.D.2	Least Common Multiple (LCM) Least Common Denominator (LCD)	What is a Least Common Multiple? Least Common Denominator? How do we determine the LCM/LCD of polynomials? How do we convert rational expressions so that the denominator is common?	Students will be able to: Determine the LCM/LCD of polynomials.	Complete Guided Notes; complete exs. individually and review; complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction;

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		Like Terms.	How do we add/subtract Rational Expressions?	Convert rational expressions to have common denominator and add numerators by combining like terms.			practice ex. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Solve Rational Equations 2 Days</b>	CC2.2HS.D.9 CC2.2HSD.10 CC2.2HS.D.2 CC2.2HS.D.1	Common Denominator	How do we solve Rational Equations?	Students will be able to: Solve Rational Equations.	Complete Guided Notes;complete exs.individually and review;complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice ex. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Test. 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test.	Questioning during instruction; practice ex. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Unit:</b>	Advanced Functions and Relations						
<b>Big Ideas:</b>	Exponentials and Logarithms						
<b>Unit Essential Questions:</b>	How is mathematics used to quantify, compare, represent, and model numbers?						

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<p><b>Graphing Exponential Functions</b> 2 Days</p>	<p>CC2.2HSC.6 CC2.2HSC.5 CC2.2HSC.1 CC2.2HS.C.2</p>	<p>Exponential Function. Exponential growth. Asymptote. Growth factor. Exponential Decay. Decay factor.</p>	<p>What is an exponential function? What is exponential growth? What is an asymptote on a graph? What is a growth factor? What is exponential decay? What is a decay factor?</p>	<p>Students will be able to: Graph exponential functions. State domain and range of an exponential function. Determine amounts using growth and decay factors. Apply exponential growth and decay to real world applications.</p>	<p>Complete Guided Notes;complete exs. individually and review;complete WS and review.</p>	<p>Guided Notes. Scientific calculator/graphing calculator. WS.</p>	<p>Questioning during instruction ;practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.</p>
<p><b>Logarithms and Logarithmic Functions</b> 2 days</p>	<p>CC2.2HS.C.6 CC2.2HSC.5 CC2.2HS.C.1 CC2.2HSC.2</p>	<p>Logarithm. Logarithmic Function. log Inverse of Exponential Function.</p>	<p>What is a logarithm? What is a logarithmic function? How do we convert from logarithmic form to exponential form? How do we convert from exponential form to logarithmic form? How do we evaluate a logarithmic expression?</p>	<p>Students will be able to: Convert from a logarithmic exp. to an exponential exp. and vice versa. Evaluate a logarithmic expression.</p>	<p>Complete Guided Notes;complete exs. individually and review;complete WS and review.</p>	<p>Guided Notes. Scientific calculator. WS.</p>	<p>Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.</p>
<p><b>Properties of Logarithms</b> 3 Days</p>	<p>CC2.2HSC.6 CC2.2HSC.5 CC2.2HSC.1 CC2.2HSC.2</p>	<p>Product Property of Logarithms. Quotient Property of Logarithms. Power Property of Logarithms.</p>	<p>How do we apply the Product Property? How do we apply the Quotient Property? How do we apply the Power Property? How do we solve Logarithmic Equations?</p>	<p>Students will be able to: Apply the Properties of Logarithms to simplify logarithmic expressions and solve logarithmic equations.</p>	<p>Complete Guided Notes;complete exs. individually and review;complete WS and review.</p>	<p>Guided Notes. Scientific calculator. WS.</p>	<p>Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.</p>
<p><b>Common Logarithms</b> 2 Days</p>	<p>CC2.2HS.C.6 CC2.2HS.C.5 CC2.2HSC.1 CC2.2HSC.2</p>	<p>Common Logarithm. Base 10 logarithm. Change of Base Formula.</p>	<p>What is a Common Logarithm? What is the base of a common logarithm? Why do we use the Change of Base Formula?</p>	<p>Students will be able to: Evaluate common logarithms using a calculator.</p>	<p>Complete Guided Notes;complete exs.individually and review; complete WS and review.</p>	<p>Guided Notes. Scientific calculator. WS.</p>	<p>Questioning during instruction; practice exs. on Notes/WS; HW Assign.;</p>

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				Use the Change of Base Formula to evaluate a logarithmic expression.			IC Assign. after HW review.
<b>Applications of Growth and Decay 2 Days</b>	CC2.2HS.C.1 CC2.2HSC.2 CC2.2HSC.3 CC2.2HS.C.4 CC2.2HS.C.5 CC2.2HS.C.6	Exponential growth. Growth factor. Exponential Decay. Decay factor.	What is an example of exponential growth? What is an example of exponential decay? What is the decay factor?	Students will be able to: Solve Applications related to exponential growth and exponential decay.	Complete Guided Notes;complete exs.individually and review; complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Test 1 Day.</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test. Scientific calculator.	Test.
<b>Unit:</b>	Discrete Mathematics						
<b>Big Ideas:</b>	Probability & Statistics						
<b>Unit Essential Questions:</b>	In what ways are the mathematical attributes of objects or processes measured,cal culated,and/or interpreted? How can data be organized and represented to provide insight into the relationship between quantities?						

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<p><b>Measures of Central Tendency</b> 2 Days</p>	<p>CC2.4HS.B.1 CC2.4HS.B.3 CC2.4HS.B.5</p>	<p>Statistics. Measures of Central Tendency. Mean. Median. Mode.</p>	<p>What are Statistics? What are the three measures of central tendency? How is the Mean calculated? How is the Median determined? How is the Mode determined?</p>	<p>Students will be able to: Define Statistics. State the three measures of central tendency. Calculate the Mean. Determine the Median. Determine the Mode.</p>	<p>Complete Guided Notes;complete exs. individually and review;complete WS and review.</p>	<p>Guided Notes. Scientific calculator. WS.</p>	<p>Questioning during instruction; practice exs.on Notes/WS ;HW Assign.;IC Assign.after HW review.</p>
<p><b>Measures of Variability</b> 3 Days</p>	<p>CC2.4HS.B.1 CC2.4HS.B.3 CC2.4HS.B.5</p>	<p>Measures of Spread or Variation. Range. Variance. Standard Deviation.</p>	<p>How is the range determined? How is the variance calculated? How is the standard deviation calculated?</p>	<p>Students will be able to: Determine the range. Calculate the variance. Calculate the standard deviation.</p>	<p>Complete Guided Notes;complete exs.individually and review;complete WS and review.</p>	<p>Guided Notes. Scientific calculator. WS.</p>	<p>Questioning during instruction; practice exs.on Notes/WS; HW Assign.;IC Assign.after HW review.</p>
<p><b>Populations, Samples, and Hypotheses</b> 2 Days</p>	<p>CC2.4HS.B.4 CC2.4HS.B.3 CC2.4HS.B.5</p>	<p>Population Samples Hypotheses Parameter Statistic</p>	<p>What is a population? What is a sample? What is a hypothesis? What is a parameter? What is a statistic?</p>	<p>Students will be able to: Distinguish between populations and samples. Find a sample proportion. Use a simulation to test a hypothesis.</p>	<p>Complete Guided Notes;complete exs.individually and review;complete WS and review.</p>	<p>Guided Notes. Scientific calculator. WS.</p>	<p>Questioning during instruction;pr actice exs.on Notes/WS ;HW Assign;IC after HW review.</p>
<p><b>Collecting Data</b> 2 Days</p>	<p>CC2.4HS.B.4 CC2.4HS.B.3 CC2.4HS.B.5</p>	<p>Random Sample. Self-selected sample. Systematic sample. Stratified sample. Cluster sample.</p>	<p>What is a Random Sample? What is a Self-selected sample? What is a Systematic sample? What is a Stratified sample? What is a Cluster sample? What is Convenience simple? What is bias? What is an Unbiased/Biased sample? What are four methods for collecting data? What are biased questions?</p>	<p>Students will be able to: Identify types of sampling methods in statistical studies. Analyze methods of collecting data. Describe bias in sampling and in survey questions.</p>	<p>Complete Guided Notes;complete exs.individually and review;complete WS and review.</p>	<p>Guided Notes. WS.</p>	<p>Questioning during instruction;pr actice exs.on Notes/WS ;HW Assign.</p>

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		Convenience sample. Bias. Unbiased sample. Biased sample. Experiment. Observational study. Survey. Simulation. Biased questions.					
<b>Experimental Design 2 Days</b>	CC2.4HS.B.4 CC2.4HS.B.3 CC2.4HS.B.5	Controlled experiment. Treatment group. Control group. Placebo. Randomization Randomized comparative experiment.	What is a controlled experiment? What is a treatment group? What is a control group? What is a placebo? What is Randomization? What is a Randomized comparative experiment?	Students will be able to: Assess the validity of an experiment's results. Design an experiment or observational study. Analyze experimental designs.	Complete Guided Notes;complete exs.individually and review;complete WS and review.	Guided Notes. WS.	Questioning during instruction;pr actice exs.on Notes/WS; HW Assign.
<b>Test. 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test.	Test.
<b>Unit:</b>	Trigonometry						
<b>Big Ideas:</b>	Trigonometric Functions						
<b>Unit Essential Questions:</b>	How can expressions, equations,and inequalities be used to quantify,solve,						

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	model, and/or analyze mathematical situations?						
<b>Right Triangle Trigonometry 3 Days</b>	CC2.2HS.C.9 CC2.3HS.A.7 CC2.2HSC.7 CC2.2HSC.8 CC2.2HSC.6	Right Triangle Right Angle. Trigonometry Trigonometric Ratio. Trigonometric Function. Adjacent side. Opposite side. Hypotenuse. Sine (sin) Cosine (cos) Tangent (tan) Cosecant (csc) Secant (sec) Cotangent (cot) Reciprocal Functions. Inverse Trig Ratios. Inverse sine. Inverse cosine. Inverse tangent. Angle of Elevation. Angle of Depression.	What is a right triangle? What is a reference angle? What are six trigonometric functions in right triangles? What is the ratio of side lengths for the sine function? Cosine function? Tangent function? What are the reciprocal functions and what are the ratios for these functions? What is an angle of elevation? What is an angle of depression?	Students will be able to: Label the sides of a right triangle given a reference angle. State the six trig ratios. State the ratios of side lengths for each trig ratio. State the ratios of the inverse trig functions. Solve applications involving an angle of elevation or an angle of depression.	Complete Guided Notes; complete exs. individually and review; complete WS and review.	Guided Notes. Scientific calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.; IC Assign. after HW review.
<b>Angles and Radian Measure 3 Days</b>	CC2.2HSC.7 CC2.1HS.F.4	Standard Position. Initial side. Terminal side. Degrees. Radian.	What is an angle in standard position? What is a radian? How do we convert degrees to radians? Radians to degrees?	Students will be able to: Convert radians to degrees. Convert degrees to radians.	Complete Guided Notes; complete exs. individually and review; complete WS and review.	Guided Notes. Calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.
<b>Trig Functions of Any Angle 3 Days</b>	CC2.2HSC.8 CC2.2HSC.9 CC2.2HSC.7 CC2.2HS.C.6	Quadrantal Angles. Reference Angle.	What is a Quadrantal Angle? What is a Reference Angle?	Students will be able to: Determine values of Trig Functions for general angles.	Complete Guided Notes; complete exs. individually and review; complete WS and review.	Guided Notes. Calculator. WS.	Questioning during instruction; practice exs. on Notes/WS; HW Assign.

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				Determine values of trig Functions by using reference angles.			
<b>Graphing Sine and Cosine Functions 2 Days</b>	CC2.2HSC.4 CC2.2HSC.1 CC2.2HSC.2	Periodic Period. Cycle. Amplitude.	What is a periodic function? What is another word for a period? What is the amplitude?	Students will be able to: Determine the period and amplitude of sine and cosine functions.	Complete Guided Notes;complete exs.individually and review;complete WS and review.	Guided Notes. WS. Calculator.	Questioning during instruction; practice exs.on Notes/WS ;HW Assign.
<b>Modeling with Trig Functions 2 Days</b>	CC2.2HSC.1 CC2.2HSC.2 CC2.2HSC.3 CC2.2HSC.5 CC2.2HSC.6 CC2.2HSC.8	Frequency. Sinusoids.	What is frequency? What are sinusoids?	Students will be able to: Write and graph trig functions using frequency. Write trig functions for a given graph. Find trig model for a set of data using technology.	Complete Guided Notes;complete exs.individually and review;complete WS and review.	Guided Notes. WS. Calculator.	Questioning during instruction; practice exs.on Notes/WS ;HW Assign.
<b>Test 1 Day</b>	All above stated Standards.	All above vocabulary required for concept mastery.	All above stated questions.	All above stated skills.	Complete Test.	Test.	Test.