

# Adair County High School

2020-2021

## 9-12 MATH STANDARDS - Conceptual Category-Algebra / PACING GUIDE

### 5 Key Skills

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#### Algebra-Seeing Structure in Expressions Cluster: [Interpret the structure of expressions](#)

Standard	Learning Target We are learning to.....	Window of Instruction (weeks)	Essential Vocabulary	Resources	Course Name
<b>KY.HS.A.1</b> Interpret expressions that represent a quantity in terms of its context ★ (MP.2, MP.6)					
a. Interpret parts of an expression, such as terms, factors and coefficients.	<b>identify parts of an expression.</b>	<b>Unit - Algebra Basics</b>	<b>Expressions Terms Factors Coefficients Like terms Constant</b>	<b>All Things Algebra I - Algebra Basics KUTA Software</b>  <b>All Things Algebra II - Equations and Inequalities KUTA Software</b>  <b>KUTA Software Pre Calculus/Larson and Hostetler Unit Prerequisites</b>	<b>Algebra I</b>
		<b>Unit - Equations &amp; Inequalities</b>			<b>Algebra II</b>
		<b>Unit - Prerequisites</b>			<b>Pre-Calculus</b>
b. Interpret complicated expressions, given a context, by viewing one or more of their parts as a single entity.	<b>Interpret mathematical expressions by expanding into individual components.</b>	<b>Unit - Equations &amp; Inequalities</b>	<b>Compound Interest Formula Perimeter formula</b>	<b>KUTA Software All Things Algebra II - Equations and Inequalities</b>  <b>KUTA Software Pre Calculus/Larson and Hostetler Unit Prerequisites</b>	<b>Algebra 1</b>
		<b>Unit - Prerequisites</b>			<b>Algebra II</b>  <b>Pre Calculus</b>
<b>KY.HS.A.2</b> (MP.7, MP.8)	<b>Rewrite expressions in</b>	<b>Unit -</b>	<b>Expressions</b>	<b>All Things Algebra I - Polynomials &amp; Factoring</b>	<b>Algebra I</b>

Use the structure of an expressions to identify ways to rewrite it and consistently look for opportunities to rewrite expressions in equivalent forms.	<b>simplified and/or equivalent forms.</b>	<b>Polynomials &amp; Factoring</b>  <b>Unit - Rational Expression &amp; Equations</b>  <b>Unit - Prerequisites</b>	<b>Like terms</b> <b>Factored form</b> <b>Standard form</b> <b>Vertex Form</b> <b>Simplify</b> <b>Equivalent</b>	<b>KUTA Software</b>  <b>All Things Algebra II -Rational Expression &amp; Equations</b>  <b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Prerequisites</b>	<b>Algebra II</b>  <b>Pre-Calculus</b>
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**Algebra-Seeing Structure in Expressions**  
**Cluster: [Write expressions in equivalent forms to solve problems.](#)**

<b>Standard</b>	<b>Learning Target We are learning to.....</b>	<b>Window of Instruction (weeks)</b>	<b>Essential Vocabulary</b>	<b>Resources</b>	<b>Course Name</b>
<b>KY.HS.A.3</b> Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression ★ (MP.5, MP.7)					
<b>a.</b> Write the standard form of a given polynomial and identify the terms, coefficients, degree, leading coefficient and constant term.	<b>write polynomials in standard form.</b>  <b>classify polynomials.</b>	<b>Unit - Polynomials &amp; Factoring</b>  <b>Unit - Polynomial Functions</b>  <b>Unit - Polynomial &amp; Rational Functions</b>	<b>Terms</b> <b>Coefficients</b> <b>Degree</b> <b>Leading Coefficient</b> <b>Constant</b> <b>Exponents</b>	<b>KUTA Software</b> <b>All Things Algebra I- Polynomials &amp; Factoring</b>  <b>KUTA Software</b> <b>All Things Algebra II - Polynomial Functions</b>  <b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions</b>	<b>Algebra I</b>  <b>Algebra II</b>  <b>Pre-Calculus</b>
<b>b.</b> Factor a quadratic expression to reveal the zeros of the function it defines.	<b>Factor quadratic expressions</b>  <b>Identify zeros of a quadratic function</b>	<b>Unit - Solving Quadratics &amp; Complex Numbers</b>  <b>Unit - Polynomial &amp; Rational Functions</b>	<b>Factor</b> <b>Zeros</b> <b>roots</b> <b>Solutions</b> <b>X-intercept</b> <b>Quadratic</b> <b>Zero Product Property</b>	<b>KUTA Software</b> <b>All Things Algebra II - Solving Quadratics and Complex Numbers</b>  <b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions</b>	<b>Algebra 1</b>  <b>Algebra II</b>  <b>Pre Calculus</b>

c. Use the properties of exponents to rewrite exponential expressions.	<b>Rewrite exponential expressions using the properties of exponents.</b>	<b>Unit - Exponent Rules</b> <b>Unit - Radical Functions</b>	<b>Product Rule</b> <b>Quotient Rule</b> <b>Negative Exponent Rule</b> <b>Zero Exponent Rule</b> <b>Power Rule</b>	<b>KUTA Software</b> <b>All Things Algebra I - Exponent Rules</b>  <b>KUTA Software</b> <b>All Things Algebra II - Radical Functions</b>	<b>Algebra I</b>  <b>Algebra II</b>
d. (+) Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	<b>Complete the square.</b> <b>Identify maximum and minimum values.</b>	<b>Unit - Solving Quadratics &amp; Complex Numbers</b>  <b>Unit - Polynomial &amp; Rational Functions</b>	<b>Complete the Square</b> <b>Quadratic</b> <b>Maximum</b> <b>Minimum</b> <b>Vertex</b>	<b>Kuta Software</b> <b>All Things Algebra II - Solving Quadratics and Complex Numbers</b>  <b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions</b>	<b>Algebra II</b>  <b>Pre-Calculus</b>
<b>KY.HS.A.4</b> (MP.1, MP.4) Derive the formula for the sum of a finite geometric series (when the common ratio is not 1) and use the formula to solve problems. ★	<b>Evaluate geometric series using finite/infinite summation formulas.</b>	<b>Unit - Sequences &amp; Series</b>  <b>Unit - Sequence, Series, &amp; Probability</b>	<b>Geometric Sequence</b> <b>Geometric Series</b> <b>Common Ratio</b>	<b>Kuta Software</b> <b>All Things Algebra II - Sequences and Series</b>  <b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Sequences, Series, and Probability</b>	<b>Algebra 1</b>  <b>Algebra II</b>  <b>Pre Calculus</b>

### Algebra-Arithmetic and Polynomials and Rational Expressions

#### Cluster: Perform arithmetic operations on polynomials

<b>Standard</b>	<b>Learning Target</b> <b>We are learning to.....</b>	<b>Window of Instruction</b> <b>(weeks)</b>	<b>Essential Vocabulary</b>	<b>Resources</b>	<b>Course Name</b>
<b>KY.HS.A.5</b> (MP.7, MP.8) Add, subtract and multiply polynomials	<b>Add polynomials</b> <b>Subtract polynomials</b> <b>Multiply polynomials</b> <b>Divide polynomials</b>	<b>Unit - Polynomials &amp; Factoring</b>	<b>Polynomials</b> <b>Like terms / Like variables</b> <b>Distributive Property</b>	<b>KUTA Software</b> <b>All Things Algebra I - Polynomials &amp; Factoring</b>  <b>KUTA Software</b> <b>All Things Algebra II - Polynomial Functions</b>	<b>Algebra I</b>

		Unit - Polynomial Functions		KUTA Software Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions	Algebra II
		Unit - Polynomial & Rational Functions			Pre-Calculus

**Algebra-Arithmetic and Polynomials and Rational Expressions**

Cluster: Understand the relationship between zeros and factors of polynomials

Standard	Learning Target We are learning to.....	Windows of instruction (weeks)	Essential Vocabulary	Resources	Course Name
<b>KY.HS.A.6 (+)</b> (MP.1, MP.8) Know and apply the Remainder Theorem	<b>Use long and synthetic division to find zeros</b> <b>Apply the Remainder Theorem</b> <b>Connect the Remainder Theorem to long or synthetic division</b>	Unit - Polynomial & Rational Functions	Remainder Theorem Long Division Synthetic Division Evaluate	KUTA Software Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions	Pre-Calculus
<b>KY.HS.A.7</b> (MP.2, MP.5, MP.7) Identify roots of polynomials when suitable factorizations are available. Know these roots become the zeros (x-intercepts) for the corresponding polynomial function.	<b>Make the connection between zeros and x-intercepts</b>	Unit - Polynomial Functions  Unit - Polynomial & Rational Functions	Roots Zeros X-intercept Solutions Factors	KUTA Software All Things Algebra II - Polynomial Functions  KUTA Software Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions	Algebra 1  Algebra II  Pre Calculus

**Algebra-Arithmetic and Polynomials and Rational Expressions**

Cluster: Use polynomial identities to solve problems

Standard	Learning Target We are learning to.....	Windows of Instruction (weeks)	Essential Vocabulary	Resources	Course Name
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<b>KY.HS.A.8 (+)</b> (MP.2, MP.3, MP.6) Prove polynomial identities and use them to describe numerical relationships	<b>prove polynomial identities and use them to describe numerical relationships</b>				NA
<b>KY.HS.A.9 (+)</b> (MP.7, MP.8) Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of $x$ and $y$ for a positive integer $n$ , where $x$ and $y$ are any numbers, with coefficients determined for example by Pascal's Triangle.	<b>know and apply the Binomial Theorem for the expansion of <math>(x + y)^n</math>.</b>	<b>Unit - Sequences, Series, and Probability</b>	<b>Pascal's Triangle Combinations Binomial Theorem Binomial Coefficient</b>	<b>KUTA Software Pre Calculus/Larson and Hostetler Unit Sequences, Series, and Probability</b>	<b>Pre Calculus</b>

### Algebra-Arithmetic and Polynomials and Rational Expressions

#### Cluster: Rewrite rational expressions

<b>Standard</b>	<b>Learning Target We are learning to.....</b>	<b>Window of Instruction (weeks)</b>	<b>Essential Vocabulary</b>	<b>Resources</b>	<b>Course Name</b>
<b>KY.HS.A.10 (+)</b> (MP.7, MP.8) Rewrite simple rational expressions in different forms.	<b>Rewrite simple rational expressions in different forms.</b>	<b>Unit - Polynomial &amp; Rational Functions</b>	<b>Rational Expression Common denominator Division by Zero</b>	<b>KUTA Software Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions</b>	<b>Pre-Calculus</b>
<b>KY.HS.A.11 (+)</b> (MP.2, MP.3) Add, subtract, multiply and divide rational algebraic expressions.	<b>Add, subtract, multiply and divide rational algebraic expressions.</b>	<b>Unit - Rational Functions  Unit - Polynomial &amp; Rational Functions</b>	<b>Rational Expression Common denominator Division by Zero Reciprocal</b>	<b>KUTA Software All Things Algebra II - Rational Functions  KUTA Software Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions</b>	<b>Algebra II  Pre-Calculus</b>

### Algebra - Creating Equations ★

#### Create equations that describe numbers of relationships

<b>Standard</b>	<b>Learning Target We are learning to.....</b>	<b>Window of Instruction (weeks)</b>	<b>Essential Vocabulary</b>	<b>Resources</b>	<b>Course Name</b>
<b>KY.HS.A.12</b> (MP.1, MP.4) Create equations and inequalities in	<b>create equations and inequalities in one variable</b>	<b>Unit - Equations &amp; Inequalities</b>	<b>Equations Inequalities</b>	<b>KUTA Software All Things Algebra I - Equations and Inequalities</b>	<b>Algebra I</b>

<p>one variable and use them to solve problems.</p>	<p><b>and use them to solve problems.</b></p>	<p><b>Unit - Equations &amp; Inequalities</b></p> <p><b>Unit - Functions &amp; Their Graphs</b></p>	<p><b>Variable</b></p>	<p><b>KUTA Software</b> <b>All Things Algebra II - Equations and Inequalities</b></p> <p><b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit - Functions and Their Graphs</b></p>	<p><b>Algebra II</b></p> <p><b>Pre-Calculus</b></p>
<p><b>KY.HS.A.13</b> (MP.2, MP.5) Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales</p>	<p><b>create equations in two or more variables.</b></p> <p><b>graph equations on coordinate axes.</b></p>	<p><b>Unit - Multi-Step Equations and Inequalities</b></p> <p><b>Unit - Equations and Inequalities</b></p> <p><b>Unit - Functions and Their Graphs</b></p>	<p><b>Equations</b> <b>Inequalities</b> <b>Variable</b></p>	<p><b>KUTA Software</b> <b>All Things Algebra I - Multi-Step Equations and Inequalities</b></p> <p><b>KUTA Software</b> <b>All Things Algebra II - Equations and Inequalities</b></p> <p><b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Functions and Their Graphs</b></p>	<p><b>Algebra I</b></p> <p><b>Algebra II</b></p> <p><b>Pre-Calculus</b></p>
<p><b>KY.HS.A.14</b> (MP.4, MP.5) Create a system of equations or inequalities to represent constraints within a modeling context. Interpret the solution(s) to the corresponding system as viable or nonviable options within the context.</p>	<p><b>create a system of equations or inequalities.</b></p> <p><b>interpret the solution(s) to the corresponding system.</b></p>	<p><b>Unit - Equations and Inequalities</b></p> <p><b>Unit - Systems of Equations and Inequalities</b></p>	<p><b>Linear Programming</b> <b>Linear Inequalities</b> <b>Feasible Region</b> <b>Vertices</b> <b>Maximize</b> <b>Minimize</b></p>	<p><b>KUTA Software</b> <b>All Things Algebra II - Equations and Inequalities</b></p> <p><b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Systems of Equations and Inequalities</b></p>	<p><b>Algebra 1</b></p> <p><b>Algebra II</b></p> <p><b>Pre Calculus</b></p>
<p><b>KY.HS.A.15</b> (MP.2, MP.7) Rearrange formulas to solve a literal equation, highlighting a quantity of interest, using the same reasoning as in solving equations.</p>	<p><b>rearrange formulas to solve a literal equation, using the same reasoning as in solving equations.</b></p>	<p><b>Unit - Multi-Step Equations and Inequalities</b></p> <p><b>Unit - Equations and Inequalities</b></p>	<p><b>Literal Equations</b> <b>Solving</b></p>	<p><b>KUTA Software</b> <b>All Things Algebra I - Multi-Step Equations and Inequalities</b></p> <p><b>KUTA Software</b> <b>All Things Algebra II - Equations and Inequalities</b></p>	<p><b>Algebra I</b></p> <p><b>Algebra II</b></p>

**Algebra - Reasoning with Equations and Inequalities**

**Cluster: Understand solving equations as a process of reasoning and explain the reasoning**

<b>Standard</b>	<b>Learning Target We are learning to.....</b>	<b>Window of Instruction (weeks)</b>	<b>Essential Vocabulary</b>	<b>Resources</b>	<b>Course Name</b>
<b>KY.HS.A.16</b> (MP.1, MP.3) Understand each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	<b>understand each step in solving a simple equation.</b>  <b>construct a viable argument to justify a solution method.</b>	<b>Unit - Multi-Step Equations and Inequalities</b>	<b>Inverse Operations Equality</b>	<b>KUTA Software All Things Algebra I - Multi-Step Equations and Inequalities</b>	<b>Algebra I</b>
<b>KY.HS.A.17</b> Solve and justify equations in one variable. Justify the solutions and give examples showing how extraneous solutions may arise (MP.3, MP.5, MP.7)					
<b>a.</b> Solve rational equations written as proportions in one variable	<b>solve rational equations written as proportions in one variable..</b>	<b>Unit - Rational Expressions and Equations</b>	<b>Rational Expression Common denominator Division by Zero Reciprocal Proportion</b>	<b>KUTA Software All Things Algebra I - Rational Expressions and Equations</b>	<b>Algebra I</b>
<b>b.</b> Solve radical equations in one variable.	<b>solve radical equations in one variable.</b>	<b>Unit - Exponent Rules</b>  <b>Unit - Radical Functions</b>	<b>Radical Plus or minus Index Radicand</b>	<b>KUTA Software All Things Algebra I - Exponent Rules</b>  <b>KUTA Software All Things Algebra II - Radical Functions</b>	<b>Algebra I</b>  <b>Algebra II</b>

**Algebra - Reasoning with Equations and Inequalities**

**Cluster: Solve equations and inequalities in one variable**

<b>Standard</b>	<b>Learning Target We are learning to.....</b>	<b>Windows of Instruction (weeks)</b>	<b>Essential Vocabulary</b>	<b>Resources</b>	<b>Course Name</b>
<b>KY.HS.A.18</b> (MP.2, MP.7) Solve linear equations and inequalities in one variable, including literal equations with coefficients represented by letters.	<b>solve linear equations, inequalities, and literal equations in one variable.</b>	<b>Unit - Equations and Inequalities</b>  <b>Unit - Equations and Inequalities</b>	<b>Coefficients Literal Equations Linear Equations</b>	<b>KUTA Software All Things Algebra I - Equations and Inequalities</b>  <b>KUTA Software All Things Algebra II - Equations and Inequalities</b>	<b>Algebra I</b>  <b>Algebra II</b>

<b>KY.HS.A.19</b> Solve quadratic equations in one variable. (MP.1, MP.8)					
a. Solve quadratic equations by taking square roots, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers $a$ and $b$ .	<b>Solve quadratic equations using a variety of methods and identify complex solutions.</b>	Unit - Quadratic Equations  Unit - Solving Quadratics and Complex Numbers  Unit - Polynomial and Rational Functions	Quadratic Quadratic Formula Factor Complex Solutions Imaginary Numbers	KUTA Software All Things Algebra I - Quadratic Equations  KUTA Software All Things Algebra II - Solving Quadratics and Complex Numbers  KUTA Software Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions	Algebra I  Algebra II  Pre-Calculus
b. (+) Use the method of completing the square to transform any quadratic equation in $x$ into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.	<b>Complete the square and derive the quadratic formula.</b>	Unit - Solving Quadratics and Complex Numbers  Unit - Polynomial and Rational Functions	Complete the Square Factor Perfect Square Trinomial Quadratic Equation	KUTA Software All Things Algebra II - Solving Quadratics and Complex Numbers  KUTA Software Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions	Algebra II  Pre-Calculus
c. (+) Solve quadratic equations by completing the square.	<b>solve quadratic equations by completing the square.</b>	Unit - Solving Quadratics and Complex Numbers  Unit Polynomial and Rational Functions	Complete the Square Factor Perfect Square Trinomial Quadratic Equation	KUTA Software All Things Algebra II - Solving Quadratics and Complex Numbers  KUTA Software Pre Calculus/Larson and Hostetler Unit Polynomial and Rational Functions	Algebra II  Pre-Calculus

### Algebra - Reasoning with Equations and Inequalities

#### Cluster: [Solve systems of equations](#)

<b>Standard</b>	<b>Learning Target We are learning to.....</b>	<b>Windows of Instruction (weeks)</b>	<b>Essential Vocabulary</b>	<b>Resources</b>	<b>Course Name</b>
<b>KY.HS.A.20</b> Solve systems of linear equations in two variables. (MP.3, MP.6)					
a. Understand a system of two equations in two variables has the same solution as a new system formed by replacing one of the original equations with an	<b>Identify equivalent equations and their solutions in a system of equations.</b>	Unit - Systems of Equations and Inequalities	Elimination Intercepts Independent Dependent	KUTA Software All Things Algebra I - Systems of Equations and Inequalities	Algebra I



equivalent equation.		Unit - Linear Functions and Systems  Unit - Systems of Equations and Inequalities	Consistent	KUTA Software All Things Algebra II - Linear Functions and Systems  KUTA Software Pre Calculus/Larson and Hostetler Unit Systems of Equations and Inequalities	Algebra II   Pre-Calculus
b. Solve systems of linear equations with graphs, substitution and elimination, focusing on pairs of linear equations in two variables.	Solve system of linear equations.	Unit - Systems of Equations and Inequalities  Unit - Linear Functions and Systems  Unit - Systems of Equations and Inequalities	Substitution Elimination Linear Equations Intercepts Point of Intersection	KUTA Software All Things Algebra I - Systems of Equations and Inequalities  KUTA Software All Things Algebra II - Linear Functions and Systems  KUTA Software Pre Calculus/Larson and Hostetler Unit Systems of Equations and Inequalities	Algebra I   Algebra II   Pre-Calculus
KY.HS.A.21 (MP.3, MP.6) Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.	Solve systems with linear and quadratic equations.	Unit - Linear Functions and Systems  Unit - Systems of Equations and Inequalities	Quadratic Equation Point(s) of Intersection	KUTA Software All Things Algebra II - Linear Functions and Systems  KUTA Software Pre Calculus/Larson and Hostetler Unit Systems of Equations and Inequalities	Algebra 1   Algebra II   Pre Calculus
<b>KY.HS.A.22</b> Use matrices to solve a system of equations. (MP.4, MP.7)					
a. Represent a system of linear equations as a single matrix equation in a vector variable.	Represent a system of linear equations with matrices.	Unit - Systems of Equations and Inequalities  Unit - Linear Functions and Systems	Matrix Identity Matrix Inverse Matrix Determinant	KUTA Software All Things Algebra I - Systems of Equations and Inequalities  KUTA Software All Things Algebra II - Linear Functions and Systems  KUTA Software	Algebra I     Algebra II

		<b>Unit - Matrices and Determinants</b>		<b>Pre Calculus/Larson and Hostetler Unit Matrices and Determinants</b>	<b>Pre-Calculus</b>
<b>b.</b> Find the inverse of a matrix if it exists.	<b>Find the inverse of a matrix, if it exists.</b>	<b>Unit - Systems of Equations and Inequalities</b>  <b>Unit - Linear Functions and Systems</b>  <b>Unit - Matrices and Determinants</b>	<b>Matrix Inverse Matrix Determinant</b>	<b>KUTA Software All Things Algebra I - Systems of Equations and Inequalities</b>  <b>KUTA Software All Things Algebra II - Linear Functions and Systems</b>  <b>KUTA Software Pre Calculus/Larson and Hostetler Unit Matrices and Determinants</b>	<b>Algebra I</b>  <b>Algebra II</b>  <b>Pre-Calculus</b>
<b>c.</b> Use matrices to solve systems of linear equations (using technology for matrices of dimension 3 x 3 or greater).	<b>Use matrices to solve systems of linear equations.</b>	<b>Unit - Systems of Equations and Inequalities</b>  <b>Unit - Linear Functions and Systems</b>  <b>Unit - Matrices and Determinants</b>	<b>Matrix Algebra Equation Identity Matrix</b>	<b>KUTA Software All Things Algebra I - Systems of Equations and Inequalities</b>  <b>KUTA Software All Things Algebra II - Linear Functions and Systems</b>  <b>KUTA Software Pre Calculus/Larson and Hostetler Unit Matrices and Determinants</b>	<b>Algebra I</b>  <b>Algebra II</b>  <b>Pre-Calculus</b>

**Algebra - Reasoning with Equations and Inequalities**

Cluster: Represent and solve equations and inequalities graphically

<b>Standard</b>	<b>Learning Target We are learning to....</b>	<b>Windows of Instruction (weeks)</b>	<b>Essential Vocabulary</b>	<b>Resources</b>	<b>Course Name</b>
<b>KY.HS.A.23</b> (MP.1, MP.4) Understand that the graph of an equation in two variables is the set	<b>That the graph of an equation represents all</b>	<b>Unit - Relations and Functions</b>	<b>Solutions X-intercepts</b>	<b>KUTA Software All Things Algebra I - Relations and Functions</b>	<b>Algebra I</b>

of all its solutions plotted in the coordinate plane.	<b>of the solutions to that equation.</b>	<b>Unit - Parent Functions and Transformations</b>  <b>Unit - Functions and Their Graphs</b>	<b>Input (domain)</b> <b>Output (range)</b>	<b>KUTA Software</b> <b>All Things Algebra II - Parent Functions and Transformations</b>  <b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Functions and Their Graphs</b>	<b>Algebra II</b>   <b>Pre-Calculus</b>
<b>KY.HS.A.24 (MP.3.MP.5)</b> Justify that the solutions of the equations $f(x)=g(x)$ are the x-coordinates of the points where the graphs of $y=f(x)$ and $y=g(x)$ intersect. Find the approximate solutions graphically, using technology or tables. ★	<b>Justify that the solutions of the equations <math>f(x)=g(x)</math> are the x-coordinates of the points where the graphs of <math>y=f(x)</math> and <math>y=g(x)</math> intersect.</b>	<b>Unit - Systems of Equations and Inequalities</b>  <b>Unit - Linear Functions and Systems</b>  <b>Unit - Systems of Equations and Inequalities</b>	<b>Solutions</b> <b>Vertices</b> <b>Intercepts</b> <b>Function Notation</b>	<b>KUTA Software</b> <b>All Things Algebra I - Systems of Equations and Inequalities</b>  <b>KUTA Software</b> <b>All Things Algebra II - Linear Functions and Systems</b>  <b>KUTA Software</b> <b>Pre Calculus/Larson and Hostetler Unit Systems of Equations and Inequalities</b>	<b>Algebra I</b>   <b>Algebra II</b>   <b>Pre-Calculus</b>
<b>KY.HS.A.25</b> Graph linear inequalities in two variables. (MP.5, MP.6)					
<b>a.</b> Graph the solutions to a linear inequality as a half-plane (excluding the boundary in the case of a strict inequality).	<b>graph the solutions to a linear inequality as a half-plane.</b>	<b>Unit - Multi-Step equations and Inequalities</b>  <b>Unit - Equations and Inequalities</b>	<b>Linear Inequality</b> <b>Half-plane</b> <b>Greater than</b> <b>Less than</b> <b>Greater than or equal to</b> <b>Less than or equal to</b> <b>Solution Set</b>	<b>KUTA Software</b> <b>All Things Algebra I - Multi-Step Equations and Inequalities</b>  <b>KUTA Software</b> <b>All Things Algebra II - Equations and Inequalities</b>	<b>Algebra I</b>   <b>Algebra II</b>
<b>b.</b> Graph the solution set to a system of linear inequalities as the intersection of the corresponding half-planes	<b>graph the solution set to a system of linear inequalities.</b>	<b>Unit - Multi-Step Equations and Inequalities</b>  <b>Unit - Equations and Inequalities</b>	<b>Linear Inequality</b> <b>Half-plane</b> <b>Greater than</b> <b>Less than</b> <b>Greater than or equal to</b> <b>Less than or equal to</b> <b>Solution Set</b>	<b>KUTA Software</b> <b>All Things Algebra I - Multi-Step Equations and Inequalities</b>  <b>KUTA Software</b> <b>All Things Algebra II - Equations and Inequalities</b>	<b>Algebra I</b>   <b>Algebra II</b>

