

Options EHS Algebra 2A 2020		Scope and Sequence
Unit	Lesson	Objectives
Introduction to Functions		
	Inequalities	<p>Solve one-variable linear inequalities, including compound inequalities, and represent the solution sets graphically and algebraically.</p> <p>Create one-variable linear inequalities in one variable and use them to solve problems.</p>
Relations and Functions		
		<p>Represent a relation in multiple ways, including equations, graphs, words, and tables of values.</p> <p>Determine if a relation is a function.</p> <p>Determine if the function is one-to-one.</p> <p>Determine the domain and range of a relation.</p> <p>Evaluate function rules.</p>
Function Operations		
		<p>Combine functions using arithmetic operations, expressing the results both algebraically and graphically.</p> <p>Evaluate sums, differences, products, and quotients of functions.</p>
Composition of Functions		
		<p>Write an expression for the composition of functions.</p> <p>Find the domain of the composition of functions.</p> <p>Evaluate the composition of functions.</p>
Symmetry		
		<p>Determine the symmetry of a relation from a graph.</p> <p>Determine the symmetry of a function algebraically.</p>
Transformations of Functions		

Unit Lesson**Objectives**

Identify a function as belonging to a family of functions.

Analyze a function rule or graph to determine transformations of the parent function.

Function Inverses

Find the inverse of a function.

Use composition to verify that functions are inverses.

Rate of Change

Calculate the average rate of change of a function over a specified interval.

Interpret the average rate of change of a function over a specified interval.

Solve problems involving direct variation.

Two-Variable Linear Inequalities

Write a linear inequality to model a relationship between two quantities.

Interpret the solution set of a two-variable linear inequality.

Graph two-variable linear inequalities.

Unit Test

Absolute Value Functions

Absolute Value Functions

Analyze absolute value functions to determine key features of the graph.

Model and solve mathematical and real-world problems with absolute value functions.

Absolute Value Functions and Translations

Graph the absolute value function and its translations.

Analyze key features of the absolute value function and its translations.

Reflections and Dilations of Absolute Value Functions

Unit Lesson**Objectives**

Graph reflections and dilations of the absolute value function.

State the domain and range of reflections and dilations of the absolute value function.

Solving Absolute Value Equations

Solve absolute value equations using tables or algebra, pointing out solutions that are viable or not viable in a modeling context.

Create absolute value equations to model and solve problems.

Absolute Value Inequalities

Rewrite absolute value inequalities as compound inequalities.

Solve absolute value inequalities graphically and algebraically.

Quadratics and Complex Numbers

Solving Quadratic Equations by Factoring

Find real solutions for quadratic equations using the zero product property.

Use key attributes of a quadratic function to solve word problems.

Quadratic Inequalities

Find real solutions of quadratic inequalities algebraically and graphically.

Create quadratic inequalities in one variable and use them to solve problems.

Complex Numbers

Represent square roots of negative numbers as multiples of i .

Represent complex numbers in the form $a + bi$ or in the complex plane.

Simplify powers of i using their cyclic nature.

Determine the absolute value of a complex number.

Operations with Complex Numbers

Unit Lesson**Objectives**

Identify the field properties of complex numbers.

Perform addition, subtraction, and multiplication of complex numbers.

Completing The Square

Recognize the pattern of a perfect-square trinomial as the square of a binomial.

Use the square root property to solve equations.

Find complex solutions to quadratic equations by completing the square.

The Quadratic Formula

Find real and complex solutions of quadratic equations using the quadratic formula.

Use the discriminant to determine the number and type of roots of a quadratic equation.

Modeling with Quadratic Equations

Use quadratic equations to model and solve real-world problems.

Transformations of Quadratic Functions

Use completing the square to write quadratic functions in the form $y = a(x - h)^2 + k$.

Describe the effects of changes in a , h , and k to the graph of a function in the form $y = a(x - h)^2 + k$.

Square Root Functions

Find the inverse of a quadratic function.

Find the domain of a square root function.

Unit Test

Systems

Solving Linear Systems Graphically

Solve systems of two-variable linear equations graphically.

Classify systems of two-variable equations as dependent, independent, consistent, or inconsistent.

Unit Lesson**Objectives**

Solve systems of two-variable linear inequalities.

Solving Linear Systems by Elimination

Solve systems of two-variable linear equations using elimination.

Solving Linear Systems by Substitution

Solve systems of two-variable linear equations using substitution.

Solving 3 x 3 Linear Systems

Classify systems of three-variable equations as dependent, independent, consistent, or inconsistent.

Solve 3 × 3 linear systems algebraically.

Mixed Degree Systems

Solve linear-quadratic systems of equations.

Solve quadratic-quadratic systems of equations.

Determine the reasonableness of solutions to systems of a linear equation and a quadratic equation in two variables.

Unit Test

Cumulative Exam

Cumulative Exam Review

Cumulative Exam