

Options EHS Algebra 2B 2020		Scope and Sequence
Unit	Lesson	Objectives
Polynomials		
Addition and Subtraction of Polynomials		
		Perform addition and subtraction of polynomials.
Multiplication of Polynomials		
		Perform multiplication of polynomials.
Sum and Difference of Two Cubes		
		Recognize a perfect cube and find its cube root.
		Factor the sum or difference of two cubes.
Factoring Polynomials Completely		
		Analyze the structure of a polynomial to write it in completely factored form.
Division of Polynomials		
		Use long division to find quotients of polynomials
		Use inverse operations to check the result of polynomial division
Simplifying Polynomial Expressions		
		Simplify expressions involving operations with polynomials.
Composition of Polynomial Functions		
		Write the composition of polynomial functions.
		Evaluate the composition of polynomial functions.
Graphs of Polynomial Functions		
		Identify the key features of a polynomial function from a given graph.
		Describe the key features of a polynomial function.
Synthetic Division and the Remainder		

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	Theorem	
		Use synthetic division to divide a polynomial by a linear factor.
		Apply the remainder theorem.
	The Rational Roots Theorem	
		Use the rational root theorem to determine possible roots of a polynomial function.
		Determine the roots of and factor a polynomial function.
	The Fundamental Theorem of Algebra	
		Apply the fundamental theorem of algebra to determine the number of roots of a polynomial function.
		Use the complex conjugate theorem to factor and solve polynomial equations.
	Writing Polynomial Functions from Complex Roots	
		Write polynomial functions from complex roots.
	Graphing Polynomial Functions	
		Graph polynomial functions using key features.
Rational Functions		
	Negative Exponents	
		Evaluate numeric expressions using laws of integer exponents.
		Simplify single-variable expressions using laws of integer exponents.
	Simplifying Rational Expressions	
		Simplify rational expressions using laws of integer exponents.
	Multiplying and Dividing Rational Expressions	
		Perform multiplication and division of rational expressions.

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	Adding and Subtracting Rational Expressions	
		Perform addition and subtraction of rational expressions.
		Simplify complex rational expressions containing sums or differences.
	Rational Equations	
		Solve rational equations and determine extraneous solutions.
		Use rational equations to model and solve real-world problems.
		Determine the reasonableness of a solution to a rational equation.
	Vertical Asymptotes of Rational Functions	
		Determine the vertical asymptotes and holes in the graph of a rational function having the x-axis as its only horizontal asymptote.
		Solve problems involving inverse variation.
	Graphing Rational Functions	
		Determine the horizontal asymptotes of a rational function.
		Graph rational functions that have only vertical or horizontal asymptotes.
	Unit Test	
Radical Functions		
	Graphing Radical Functions	
		Relate transformations to the graphs of square root and cube root functions to their parent function.
		Determine the domain and range of square root and cube root functions.
	Simplifying Perfect Roots	
		Identify numbers and variable expressions that are perfect powers.
		Simplify perfect roots.

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	Simplifying Nonperfect Roots	
		Simplify nonperfect roots without rationalizing.
	Rational Exponents	
		Evaluate numeric expressions using properties of rational exponents.
		Simplify algebraic expressions using properties of rational exponents.
	Adding and Subtracting Radicals	
		Identify like radicals.
		Add and subtract radical expressions.
	Multiplying Radicals	
		Perform multiplication of radical expressions.
	Dividing Radicals	
		Perform division of radical expressions, rationalizing the denominator when necessary.
	Radical Equations and Extraneous Roots	
		Model and solve mathematical and real-world problems using radical equations, and determine extraneous roots.
	Solving Equations Containing Two Radicals	
		Solve equations containing two radicals, and determine extraneous solutions.
	Unit Test	
Exponential and Logarithmic Functions		
	Graphing Exponential Functions	
		Identify exponential functions.
		Determine the domain and range of exponential functions.
		Graph exponential functions.

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	Solving Exponential Equations by Rewriting the Base	
		Solve exponential equations by rewriting bases.
	Graphing Logarithmic Functions	
		Identify logarithmic functions.
		Determine the domain and range of logarithmic functions.
		Identify and analyze the graphs of logarithmic functions.
	Evaluating Logarithmic Expressions	
		Evaluate logarithmic expressions by converting between logarithmic and exponential forms.
		Solve logarithmic equations by converting between logarithmic and exponential forms.
		Evaluate common logarithms using a calculator.
	Properties of Logarithms	
		Evaluate, expand, and simplify logarithmic expressions using properties of logarithms.
	Solving Equations using Properties of Logarithms	
		Apply properties of logarithms to solve logarithmic equations.
		Determine extraneous solutions of logarithmic equations.
	Base e	
		Apply properties of logarithms and exponents to solve exponential and logarithmic equations having base e.
		Analyze exponential and logarithmic functions in base e to determine key features of the graph.
		Determine the domain and range of exponential and logarithmic functions in base e.
	Unit Test	
Trigonometric Functions		

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	Angles in Standard Position	Identify characteristics of angles in standard position.
		Determine angles that are coterminal.
	Radian Measure	Convert between degree and radian measure.
		Use the definition of radian measure to calculate arc lengths, radii, and angle measures.
	Right Triangle Trigonometry	Use the Pythagorean theorem, and the trigonometric functions and their inverses to solve right triangles.
		Use special right triangle relationships to solve right triangles.
	The Unit Circle	Find the sine, cosine, and tangent values of angle measures using the unit circle.
		Compare sine, cosine, and tangent values for angles having the same reference angle.
	Unit Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	