Options EHS Applied Math A		Scope and Sequence
Unit	**Lesson**	**Objectives**
Extending the Number System		
	Function Notation	
		Interpret function notation that models a real-world situation.
		Identify the input and output of a functional relationship, pointing out constraints on the domain and range.
		Use function notation to represent a functional relationship.
	Evaluating Functions	
		Analyze a function represented by an equation, table, or graph to determine the output when given the input, and vice versa.
		Find input and output values of two functions graphed in the same coordinate plane.
		Write the inverse of a given linear function.
	Literal Equations	
		Rearrange a literal equation to highlight a quantity of interest and use it to solve problems.
	Translations of Exponential Functions	
		Graph translations of exponential functions.
		Analyze key aspects of exponential functions that have been translated.
	Introduction to Polynomials	
		Identify a polynomial and its equivalent forms.
		Classify a polynomial by degree and number of terms.
	Adding and Subtracting Polynomials	
		Add and subtract polynomials, determining the degree and number of terms of the sum or difference.
		Find and evaluate polynomial sums or differences that model real-world situations.

Unit	Lesson	Objectives
	Multiplying Monomials and Binomials	
		Multiply a binomial by a monomial or binomial algebraically and by using geometric models.
		Identify a product that results in the difference of squares or a perfect square trinomial.
	Multiplying Polynomials and Simplifying Expressions	
		Multiply a binomial by a trinomial algebraically and by using geometric models.
		Interpret the structure of an expression involving addition, subtraction, and multiplication of polynomials in order to write it as a single polynomial in standard form.
	Unit Test	
Nonlinear Functions		
	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.
	Linear Piecewise Defined Functions	
		Relate the graph of a piecewise-defined function to its algebraic representation, limiting it to linear functions over its domain.
		Evaluate a piecewise-defined function that is defined by linear functions over all intervals of its domain.
		Graph a piecewise-defined function that is defined by linear functions over all intervals of its domain.
		State the domain and range of linear piecewise-defined functions.

Options EHS Applied Math A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Step Functions	
		Interpret a step function in terms of the problem it models.
		Evaluate a step function.
		Graph a step function.
		State the domain and range of step 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.
	The Square Root Function	
		Simplify a square root whose radicand is a perfect square.
		Graph the square root function and reflections over the axes.
		State the domain and range of square root functions.
	The Cube Root Function	
		Graph the cube root function, and translations and reflections of it.
		State the key features of the cube root function, and translations and reflections of it.
	Rewriting Exponential Functions	
		Write exponential functions and expressions in equivalent forms, using the properties of exponents to justify steps.
		Use alternative forms of an exponential function to highlight different information about that function and the real-world situation it models.
	Unit Test	
Polynomial Expressions		

Options EHS Applied Math A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Factoring Polynomials: GCF	
		Determine the greatest common monomial factor of two or more terms.
		Write a polynomial as the product of a monomial and polynomial having the same number of terms.
		Determine an appropriate way to factor a polynomial for a given context.
	Factoring Polynomials: Double Grouping	
		Factor a polynomial by double grouping or indicate that the polynomial is prime.
	Factoring Trinomials: a = 1	
		Determine if a trinomial with a leading coefficient of 1 and a positive constant is factorable and, if so, write it in factored form.
		Relate the factorization of a trinomial with a leading coefficient of 1 and a positive constant to a geometric model.
	Factoring Trinomials: a > 1	
		Determine if a trinomial with a leading coefficient greater than 1 is factorable and, if so, write it in factored form.
		Relate the factorization of a trinomial with a leading coefficient greater than 1 to a geometric model.
	Factoring Polynomials: Difference of Squares	
		Identify a monomial that is a perfect square and find the square root.
		Determine if a polynomial is factorable by recognizing that it is a difference of two squares and, if so, applying the identity.
	Factoring Polynomials: Sum and Difference of Cubes	
		Identify a monomial that is a perfect cube and find the cube root.
		Determine if a polynomial is factorable by recognizing that it is a sum or difference of two cubes and, if so, applying the identity.
	Unit Test	

Options EHS Applied Math A		Scope and Sequence
Unit	**Lesson**	**Objectives**
Quadratic Functions and Modeling		
	Introduction to Quadratic Functions	
		Identify a quadratic function and the values of the coefficients and constant from the standard form.
		Evaluate a quadratic function using tables, graphs, and equations.
		Calculate the rate of change of a quadratic function over an interval of its domain, and compare it to linear and exponential functions.
	Quadratic Functions: Standard Form	
		Graph a quadratic function given in standard form, identifying the key features of the graph.
	Quadratic Functions: Factored Form	
		Multiply a binomial by a monomial or binomial algebraically and by using geometric models.
		Identify a product that results in the difference of squares or a perfect square trinomial.
	Quadratic Functions: Vertex Form	
		Graph a quadratic function given in vertex form, identifying the key features of the graph.
		Relate the parameters of a quadratic function in vertex form to transformations of the graph y = x2.
	Completing the Square	
		Relate the geometric model of completing the square to the algebraic process.
		Write quadratic functions given in standard form and with a = 1 into vertex form by completing the square.
		Determine key aspects of the graph of a quadratic function given in standard form and with a = 1 by writing it in vertex form.
		Relate the parameters of a quadratic function in vertex form to transformations of the graph y = x2.
	Completing the Square (Continued)	
		Write quadratic functions given in standard form into vertex form by completing the square.
		Determine key aspects of the graph of a quadratic function given in standard form by writing it in vertex form.

Options EHS Applied Math A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Relate the parameters of a quadratic function in vertex form to transformations of the graph y = x2.
	Modeling with Quadratic Functions	
		Write quadratic functions to model problems.
		Use quadratic functions to solve mathematical and real-world problems.
	Comparing Exponential, Linear, and Quadratic Growth	
		Use tables and graphs to compare the growth of an exponential function to the growth of a linear function over equal intervals.
		Use tables and graphs to compare the growth of an exponential function to the growth of a quadratic or a polynomial function over equal intervals.
		Use tables and graphs to show that exponential functions grow by equal factors over equal intervals.
	Unit Test	
Expressions and Equations: Part One		
	Solving Quadratic Equations: Zero Product Property	
		Solve problems by factoring quadratic equations given in standard form.
		Write quadratic equations given rational solutions.
	Solving Quadratic Equations: Factoring	
		Write a quadratic equation that models a scenario.
		Solve problems by rewriting quadratic equations in standard form and factoring, pointing out the solutions that are viable or not viable in a modeling context.
	Solving Quadratic Equations: Square Root Property	
		Use the square root property to solve quadratic equations.
	Solving Quadratic Equations: Completing the Square	

Options EHS Applied Math A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Solve a quadratic equation whose leading coefficient is 1 by completing the square.
	Solving Quadratic Equations: Completing the Square (Continued)	
		Solve a quadratic equation whose leading coefficient is greater than 1 by completing the square.
	Introduction to the Quadratic Formula	
		Justify the steps used to derive the quadratic formula by completing the square.
		Determine the values of a, b, and c from a given quadratic equation in standard form.
		Recognize an expression that uses the quadratic formula to find the solutions of a quadratic equation.
		Relate the discriminant in the quadratic formula to the types of solutions of a quadratic equation.
	Solving Quadratic Equations: Quadratic Formula	
		Solve a quadratic equation using the quadratic formula.
		Determine the number of real zeros of a quadratic function by finding the values of a, b, and c, and then calculating the discriminant.
	Modeling with Quadratic Equations	
		Write and solve quadratic equations to model real-world scenarios, estimating where appropriate and identifying solutions that are not viable in terms of the context.
	Unit Test	
Expressions and Equations: Part Two		
	Solving Linear-Quadratic Systems	
		Solve a system of equations consisting of a line and a parabola algebraically and graphically, using technology where appropriate.
	Complex Numbers	
		Represent square roots of negative numbers as multiples of i.

Options EHS Applied Math A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		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	
		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.
	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.
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	