Options EHS Algebra 1B 2020	Scope and Sequence
Unit **Lesson**	**Objectives**
Exponential Functions	
Exponential Growth Functions	
	Identify an exponential growth function given tables, graphs, and function rules, determining the rate of change.
	Graph an exponential growth function, and state the domain and range.
	State the domain and range of an exponential growth function.
	Write an exponential growth function to model a real-world problem, pointing out constraints in the modeling context.
Exponential Decay Functions	
	Identify an exponential decay function given tables, graphs, and function rules, determining the rate of change.
	Graph an exponential decay function, and state the domain and range.
	Write an exponential decay function to model a real-world problem, pointing out constraints in the modeling context.
	Relate exponential growth and decay functions using laws of exponents and reflections over the y-axis.
Vertical Stretches and Shrinks of Exponential Functions	
	Graph a vertically dilated exponential growth or decay function given a table, equation, or scenario.
	Determine the parameters and create an equation for a vertically dilated exponential growth or decay function given a table, equation, or scenario.
Reflections of Exponential Functions	
	Graph reflections of exponential functions.
	Analyze key aspects of exponential functions that have been reflected across an axis.
Translations of Exponential Functions	
	Graph translations of exponential functions.
	Analyze key aspects of exponential functions that have been translated.

Options EHS Algebra 1B 2020	Scope and Sequence
Unit **Lesson**	**Objectives**
Exponential Functions with Radical Bases	
	Simplify and evaluate exponential expressions having whole number bases and fractional exponents.
	Transform expressions in radical form to exponential form and vice versa.
	Determine the key aspects of an exponential function having a radical base by rewriting it using the properties of exponents.
Geometric Sequences	
	Write recursive and explicit rules for geometric sequences using function notation.
	Graph and analyze geometric sequences as a special case of exponential functions with the domain restricted to natural numbers.
Unit Test	
Polynomial Expressions	
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.
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	

Options EHS Algebra 1B 2020	Scope and Sequence
Unit Lesson	Objectives
	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.
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 (Continued)	
	Determine if a trinomial with a leading coefficient of 1 and a negative 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 negative 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.

Options EHS Algebra 1B 2020	Scope and Sequence
Unit Lesson	**Objectives**
	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.
Factoring Polynomials Completely	
	Analyze the structure of a polynomial to write it in completely factored form.
Unit Test	
Quadratic Functions	
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 $y = x^2$.

Options EHS Algebra 1B 2020	Scope and Sequence
Unit Lesson	**Objectives**
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.
	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.
Unit Test	
Quadratic Equations	
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	

Options EHS Algebra 1B 2020	Scope and Sequence
Unit **Lesson**	**Objectives**
Root Property	
	Use the square root property to solve quadratic equations.
Solving Quadratic Equations: Completing the Square	
	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	
Data Analysis	
Describing Data	

Options EHS Algebra 1B 2020	Scope and Sequence
Unit Lesson	**Objectives**
	Identify various data collection methods and analyze various displays of data.
	Determine if a sample fairly represents the population as a whole or if there is bias.
	Informally describe the shape, center, and variability of a distribution based on a dot plot, histogram, or box plot.
Two-Way Tables	
	Display data in a two-way frequency table given a scenario or Venn diagram, and identify joint and marginal frequencies.
	Calculate relative frequencies and display them in a two-way relative frequency table.
	Interpret joint and marginal relative frequencies in the context of the data.
Relative Frequencies and Association	
	Create conditional relative frequency tables, by row and by column.
	Interpret conditional relative frequencies in the context of the data.
	Determine whether there is an association between two variables by analyzing conditional relative frequencies.
Measures of Center	
	Calculate the mean and median for a set of data using technology when appropriate.
	Compare the mean and median of a set of data that is symmetrical and for a set of data that is not symmetrical, determining which is a better measure of center for a given data set.
	Create a dot plot or histogram for a set of data.
	Discuss the effect of outliers on measures of center.

Options EHS Algebra 1B 2020		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Box Plots	
		Create and interpret box plots.
		Analyze box plots for symmetry and outliers.
		Compare box plots.
	Unit Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	