Franklin Special School District
Algebra I
2022-2023

Note: Some standards may be assessed using pencil/paper assessments while others may be assessed through teacher observations, checklists, or other methods. Assessment method may be noted on this page.

Course Syllabus

1st Quarter Standards/Objectives		
A1.A.SSE.B.3	**Seeing Structure in Expressions**	Choose and produce an equivalent form of an expression to reveal properties of the quantity represented by the expression.
A1.A.SSE.B.3c	**Seeing Structure in Expressions**	Use the properties of exponents to rewrite exponential expressions.
A1.A.SSE.A.1a	**Seeing Structure in Expressions**	Interpret parts of an expression, such as terms, factors, and coefficients.
A1.A.SSE.A.1	**Seeing Structure in Expressions**	Interpret expressions that represent a quantity in terms of its context.
A1.A.APR.A.1	**Arithmetic with Polynomials and Rational Expressions**	Add and subtract polynomials, Multiply polynomials. Understand that polynomials form a system analagous to integers in that they are closed under addition, subtraction, and multiplication.
A1.A.SSE.A.1.1b	**Seeing Structure in Expressions**	Decompose polynomial expressions and make sense of multiple factors and terms by explaining the meaning of the individual parts focusing on quadratic and exponential expressions.
A1.A.CED.A.1	**Creating Equations**	Create equations and inequalities in one variable and use the me to solve problems.
A1.A.CED.A.4	**Creating Equations**	Solve an equation for a variable.
A1.A.REI.A.1	**Reasoning with Equations and Inequalities**	Justify the steps in solving an equation using the properties of equality.
A1.A.REI.B.2	**Reasoning with Equations and Inequalities**	Solve linear equations and inequalities, including literal equations.
A1.N.Q.A.2	**Quantities**	Identify, interpret, and justify appropriate quantities for modeling.

Franklin Special School District
Algebra I
2022-2023

<table>
<tr><th colspan="3">1st Quarter Standards/Objectives</th></tr>
<tr><td>A1.F.IF.A.1</td><td>Interpreting Functions</td><td>Understand the definition of a function.
Understand the relationship between inputs and outputs of a function.
Identify the domain and range of a function.</td></tr>
<tr><td>A1.F.IF.A.2</td><td>Interpreting Functions</td><td>Use function notation.
Evaluate functions for inputs and outputs.
Interpret function notation in real world situations.</td></tr>
<tr><td>A1.F.IF.C.7</td><td>Interpreting Functions</td><td>Write equivalent forms of functions to reveal different properties, such as the rate of change and initial value.</td></tr>
<tr><td>A1.F.BF.A.1</td><td>Building Functions</td><td>Write a function to describe the relationship between two quantities.</td></tr>
<tr><td colspan="2">Topics covered: {bullet topics here}
● Operations with monomials.
- Integer Exponents and Power Rules
- Modeling with Expressions
- Understand Polynomial Expressions
- Polynomial Operations
- Factoring Polynomials
- Create and solve equations
- Create and solve inequalities
- Relations and Functions
- Patterns and Sequences</td><td>Major assignments:
1) Polynomial Expressions Test
2) Functions and Models Test</td></tr>
<tr><td colspan="3">Notes:</td></tr>
</table>

Franklin Special School District
Algebra I
2022-2023

2nd Quarter Standards/Objectives:		
A1.N.Q.A.1	**Quantities**	Choose and interpret units in formulas. Choose and interpret an appropriate scale for graphs and data displays.
A1.A.CED.A.2	**Creating Equations**	Create equations in two or more variables to represent relationships. Graph equations in two variables.
A1.A.REI.D.5	**Reasoning with Equations and Inequalities**	Understand that the graph of an equation is the set of all solutions to the equation.
A1.A.REI.D.7	**Reasoning with Equations and Inequalities**	Graph linear inequalities in the coordinate plane. Understand and decide whether the boundary line is or is not included in the solution to a linear inequality.
A1.F.IF.B.3	**Interpreting Functions**	Interpret key features of graphs and tables such as the rate of change and initial value. Sketch graphs showing key features given a verbal description.
A1.F.IF.B.4	**Interpreting Functions**	Relate the domain of a function to its graph. Identify the quantitative relationship that the domain of a function describes.
A1.F.IF.B.5	**Interpreting Functions**	Calculate the average rate of change for a function over a specified interval. Interpret the average rate of change for a function over a specified interval. Estimate the rate of change of a function using the graph.
A1.F.IF.C.8	**Interpreting Functions**	Compare properties of functions represented in different ways (algebraically, graphically, tables, verbal descriptions).
A1.F.BF.A.1a	**Building Functions**	Write an explicit rule for a sequence. Write a recursive rule for a sequence. Calculate the term or position in a sequence from context.
A1.F.LE.A.1b	**Linear, Quadratic, and Exponential Models**	Recognize that linear functions have a constant rate of change.

Franklin Special School District
Algebra I
2022-2023

2nd Quarter Standards/Objectives:		
A1.F.LE.A.2	**Linear, Quadratic, and Exponential Models**	Construct arithmetic sequences given a graph, table, description, and ordered pairs.
A1.F.LE.B.4	**Linear, Quadratic, and Exponential Models**	Interpret the slope and intercepts of a linear function in context.
A1.S.ID.A.1	**Interpreting Categorical and Quantitative Data**	Represent data with dot plots, histograms, stem and leaf plots, and box plots.
A1.S.ID.A.2	**Interpreting Categorical and Quantitative Data**	Using statistics to compare center and spread of data. Calculate and compare measures of center (median, mean). Calculate and compare measures of spread (IQR, standard deviation).
A1.S.ID.A.3	**Interpreting Categorical and Quantitative Data**	Interpret differences in shape, center, and spread in the context of data sets. Explain the effects of outliers in data sets.
A1.S.ID.B.4	**Interpreting Categorical and Quantitative Data**	Represent data in two variables using a scatter plot. Describe relationships represented in scatter plots.
A1.S.ID.B.4a	**Interpreting Categorical and Quantitative Data**	Fit a function to data in a scatter plot. Use lines of fit to solve problems in context.
A1.S.ID.B.4b	**Interpreting Categorical and Quantitative Data**	Fit a linear function to a scatter plot that has a linear association.
A1.S.ID.C.5	**Interpreting Categorical and Quantitative Data**	Interpret the slope and rate of change of a linear model in the context of the data.
A1.S.ID.C.6	**Interpreting Categorical and Quantitative Data**	Use technology to find the correlation coefficient for a linear fit. Interpret the correlation coefficient for a linear model.
A1.S.ID.C.7	**Interpreting Categorical and Quantitative Data**	Distinguish between correlation and causation in a relationship.

Franklin Special School District
Algebra I
2022-2023

2nd Quarter Standards/Objectives:	
Topics covered: *{bullet topics here}* ● Linear Functions -Forms of Linear Equations -Modeling with Linear Equations and Inequalities -One-Variable Data Distributions -Linear Modeling and Regression	**Major assignments:** 1) Linear Functions, Equations, and Inequalities Test 2) Statistical Models Test
Notes:	

3rd Quarter Standards/Objectives:		
A1.A.SSE.A.2	**Seeing Structure in Expressions**	Use properties of exponents, including rational exponents, to rewrite an equivalent form of an exponential function to reveal and explain specific information about its approximate rate of growth or decay.
A1.A.SSE.B.3a	**Seeing Structure in Expressions**	Factor a quadratic expression to reveal the zeros of the function it defines.
A1.A.APR.B.2	**Arithmetic with Polynomials and Rational Expressions**	Identify the zeros of a factored polynomial expression. Use the zeros of a function to sketch a graph of the polynomial function it defines.

Franklin Special School District
Algebra I
2022-2023

3rd Quarter Standards/Objectives:		
A1.A.CED.A.3	**Creating Equations**	Represent constraints by equations, inequalities, or systems of equations or inequalities. Interpret whether or not solutions are viable using a model.
A1.A.REI.C.4	**Reasoning with Equations and Inequalities**	Write a system of linear equations to model a situation. Solve a system of linear equations that models a situation.
A1.A.REI.D.6	**Reasoning with Equations and Inequalities**	Explain why the x-coordinates of the points of intersections of 2 graphs are solutions to the system of equations including the equations those graphs represent. Find approximate solutions to systems of equations using technology.
A1.F.IF.C.6	**Interpreting Functions**	Graph functions expressed symbolically. Identify key features of the graph of a function by hand and using technology.
A1.F.IF.C.6a	**Interpreting Functions**	Graph linear and quadratic functions. Identify intercepts, maxima, and minima of functions using a graph.
A1.F.IF.C.6b	**Interpreting Functions**	Graph square root functions. Graph cube root functions. Graph piecewise-defined functions, including step functions and absolute value functions.
A1.F.BF.A.1a	**Building Functions**	Write explicit and recursive rules for geometric sequences. Calculate a term or position number for a geometric sequence from context.
A1.F.BF.B.2	**Building Functions**	Identify the effects of transformations on the graph of a function to include vertical and horizontal shifts and vertical and horizontal compressions. Find the value of the k given the graph of a transformed function. Experiment with transformations using technology.

Franklin Special School District
Algebra I
2022-2023

3rd Quarter Standards/Objectives:		
A1.F.LE.A.1	**Linear, Quadratic, and Exponential Models**	Determine whether a linear or exponential model is appropriate for a given situation.
A1.F.LE.A.1a	**Linear, Quadratic, and Exponential Models**	Recognize that linear functions grow by equal differences over equal intervals while exponential functions grow by equal factors over equal intervals.
A1.F.LE.A.1c	**Linear, Quadratic, and Exponential Models**	Recognize situations that can be modeled with exponential growth or decay.
A1.F.LE.B.4	**Linear, Quadratic, and Exponential Models**	Interpret the parameters of an exponential function in context.
A1.A.REI.D.7	**Reasoning with Equations and Inequalities**	Graph systems of linear inequalities. Recognize that the solutions to linear inequalities lie in the intersection of the corresponding half-planes.
Topics covered: *{bullet topics here}* ● Solving Systems of Linear Equations -Modeling with Linear Systems -Piecewise-Defined Functions -Rational Exponents and Radicals -Geometric Sequences and Exponential Functions -Exponential Equations and Models -Graphing Quadratic Functions -Connecting Intercepts, Zeros, and Factors		**Major assignments:** 1) Linear Systems and Piecewise-Defined Functions Test 2) Exponential Relationships Test

Franklin Special School District
Algebra I
2022-2023

3rd Quarter Standards/Objectives:
Notes:

4th Quarter Standards/Objectives:		
A1.N.Q.A.3	**Quantities**	Choose a level of accuracy when reporting quantities.
A1.A.SSE.B.3b	**Seeing Structure in Expressions**	Rewrite quadratic functions written in standard form in vertex form by completing the square. Use the vertex form of a quadratic function to identify the maximum or minimum value of the function.
A1.A.REI.B.3	**Reasoning with Equations and Inequalities**	Solve quadratic equations and inequalities in one variable.
A1.A.REI.B.3a	**Reasoning with Equations and Inequalities**	Use the method of completing the square to rewrite any quadratic equation in the form (x-p)^2 = q. Derive the quadratic equation.
A1.A.REI.B.3b	**Reasoning with Equations and Inequalities**	Solve quadratic equations by inspection, taking square roots, completing the square, factoring, and using the quadratic formula. Recognize when the quadratic formula gives complex solutions.

Franklin Special School District
Algebra I
2022-2023

4th Quarter Standards/Objectives:		
A1.F.IF.C.7a	**Interpreting Functions**	Factor and complete the square to find the following properties of quadratic functions: zeros, maxima, minima, and symmetry. Interpret properties of the graph of a quadratic function in context.
A1.F.LE.A.3	**Linear, Quadratic, and Exponential Models**	Determine if a relationship represents a linear, quadratic, or exponential function.
Topics covered: *{bullet topics here}* ● Using factors to solve quadratic equations. -Using square roots to solve quadratic equations. -Linear, exponential, and quadratic models.		**Major assignments:** 1) Quadratic Equations and Modeling Test 2) EOC
Notes:		

Procedures for Parental Access for Instructional Materials:

1) Many instructional materials can be accessed digitally via the FSSD website (fssd.org) using your student's unique username and password.
a. Student Resources : FSSD website > Parents & Students > Parent Information > Online Resources > Student
b. Parent Resources: FSSD website > Parents & Students > Parent Information > Online Resources > Parent

2) If additional information is needed regarding instructional materials, a written request may be submitted to your child's teacher. Instructional material review is included in Board Policy 4.400.