Algebra 1 AAC HS
Overview
2025-2026

This document is designed to provide parents/guardians/community an overview of the curriculum taught in the FBISD classroom. This document supports families in understanding the learning goals for the course, and how students will demonstrate what they know and are able to do. The overview offers suggestions or possibilities to reinforce learning at home.

Included at the end of this document, you will find:

- A glossary of curriculum components
- The content area instructional model
- Parent resources for this content area

To advance to a particular grading period, click on a link below.

At Home Connections

The following are suggestions for reinforcing number sense and mathematical reasoning at home. These ideas can be used throughout the school year. You will find additional ideas to reinforce learning at home within each unit below.

- Ask questions that require students to describe and elaborate on their thinking and reasoning. Topics can be about everyday things as well as mathematics.
- Engage students in situations that challenge them to inquire and persevere through questioning.
- Play card games with students.
- Play games with students such as Mancala, Yahtzee, Blokus, Rack-O, Mastemind, etc.
- Work number puzzles such as Sudoku, KenKen, Kakuro, or Numbrix.

Process Standards

The process standards describe ways in which students are expected to engage in the content. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use knowledge learned efficiently and effectively in daily life.

A.1A Apply mathematics to problems arising in everyday life, society, and the workplace
A.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
A.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems
A.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
A.1E Create and use representations to organize, record, and communicate mathematical ideas
A.1F Analyze mathematical relationships to connect and communicate mathematical ideas
A.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

Grading Period 1

Unit 1: Solving Linear Equations and Inequalities

Estimated Date Range: Aug. 12 – Aug. 29 (14 total school days)
Instructional & Re-engagement Days in Unit: 13 days

Assessments

STATE/NATIONAL ASSESSMENTS	DISTRICT ASSESSMENTS	COMMON FORMATIVE ASSESSMENTS (CFAs)
N/A	N/A	Unit 1, A.5A (1 day) Testing Window Aug. 25 – Aug. 29

Unit Overview:
In this unit, students will also apply their prior knowledge of solving linear equations to solve linear equations, inequalities and literal equations. Students will solve linear equations and inequalities that include variables on both sides of the equation or inequality and include the distributive property.

At home connections:

- Have students explain real-world situations in which using an equation would be helpful.
- Have students explain their reasoning and method to solve a real-world and mathematical problems.

Concepts within Unit #1 Link to TEKS	Success Criteria for this concept
Establishing a Positive Mathematics TEKS: A.1A, A.1B, A.1C, A.1D, A.1E, A.1G, A.1G	• Demonstrate active listening skills while sharing in the community circle. • Make positive and supportive connections with my peers. • Engage in circle dialogues using the circle guidelines. • Share my math ideas and strategies when given a problem during the number sense routine. • Explain what a Respect Agreement is and why it is created. • Work in a group to solve a mathematical problem. • Describe strategies that I can use to solve math problems. • Provide feedback to my peers using guidelines and a protocol.
Concept #1: Solving Equations and Inequalities TEKS: A.5A, A.5B, A.12E	• Solve linear equations with variables on both sides and including distributive property using graphs, models and algebraically. • Determine the reasonableness of solutions to equations. • Solve linear inequalities with variables on both sides including distributive property using graphs, models and algebraically. • Determine the reasonableness of solutions to inequalities. • Solve literal equations including mathematical, geometrical, and scientific formulas. • Justify each step of solving linear equations with properties.

Unit 2: Graphing and Writing Linear Functions (Continues in Grading Period 2) Estimated Date Range: Sept. 2 – Oct.24 (32 total school days) Instructional & Re-engagement Days in Unit: 28 days (24 days in GP1 and 4 days in GP2)		
Assessments		
STATE/NATIONAL ASSESSMENTS N/A	**DISTRICT ASSESSMENTS** NWEA MAP BOY (9/9 – 9/11) 3 days	**COMMON FORMATIVE ASSESSMENTS (CFAs)** Unit 2, A.3C, A.2A, A.2C (1 day) Testing Window Oct. 6 – Oct. 24

Unit Overview:
In this unit, students will be introduced to arithmetic sequences. Students will write arithmetic sequences from multiple representations. Additionally, students will expand their knowledge of linear functions from prior grade levels. Students will determine the rate of change and slope from multiple representations and from multiple forms of linear equations. Students will graph and write linear equations in multiple forms. Students will analyze key features of linear functions from multiple representations in real-word and mathematical situations. Students will also determine the linear regression model from data. The last part of the unit will have students writing and graphing linear inequalities.

At home connections:

- Discuss sequences that occur in nature.
- Have students explain their reasoning and method to solve a real-world and mathematical problem.
- Discuss rate and slope and have students describe real world examples. (such as speed)
- Have students determine a linear situation and then collect data, create a table, create a graph, and make predictions. Ex: Students measure the number of stairs and the vertical height for each certain number of stairs. (i.e., what is the height of 2 stairs, 3 stairs, etc.)

Concepts within Unit # 2 Link to TEKS	**Success Criteria for this concept**

Concept #1: Intro to Functions
(Determining Functions and Arithmetic sequences)
TEKS: A.12A, A.12B, A.12C, A.12D
	• Define a function in terms of the relationship between independent and dependent variables.
	• Determine if a relation is a function from tables, graphs, mappings, equations, and verbal descriptions.
	• Determine the value of a function from its graph for linear.
	• Determine the value of a function written in function notation for linear.
	• Explain the connection between finding the value of a function algebraically and graphically.
	• Determine the value of function in real world situations and interpret its meaning in the context of the situation.
	• Identify terms of an arithmetic sequence when given:
	  • At least four terms of the sequence
	  • One term and the common difference
	  • A recursive equation in function form
	  • A visual pattern that represents an arithmetic sequence
	  • A real-world situation that represents an arithmetic sequence
	• Find the common difference of an arithmetic sequence given:
	  • At least four terms of the sequence
	  • A visual pattern that represents an arithmetic sequence
	  • A real-world situation that represents an arithmetic sequence
	• Write a formula for the nth term of an arithmetic sequence when given:
	  • The common difference and the first term

	• At least four terms of the sequence • A visual pattern that represents an arithmetic sequence • A real-world situation that represents an arithmetic sequence
Concept #2: Rate of Change and Slope TEKS: A.3A, A.3B, A.3C	• Determine the slope of a line given two points. • Determine the slope of a line given a table. • Determine the slope of a line from a graph. • Determine the slope of a line from an equation in slope-intercept form. • Determine the slope of a line from an equation in standard form. • Determine the slope of a line from an equation in point-slope form. • Describe the meaning of the rate of change or slope in real world context. • Calculate the rate of change with coordinates involving variables. • Justify thinking when calculating rate of change/slope. • Create a table/verbal description that would represent a certain rate of change. • Justify any two points on the graph of a linear function will provide equivalent ratios of the vertical change to the horizontal change.
Concept #3: Graphing Linear Equations TEKS: A.2A, A.3C, A.3E	• Graph a line from a verbal description, a table or a list of points, and equation in slope-intercept form, an equation in point-slope form, an equation in standard form. • Identify the slope, y-intercept, x-intercept, zero, domain and range of the graph of a linear function. • Describe the meaning of the key features (slope, intercepts, zero, domain and range) in context of a real-world situation. • Graph equations in both mathematical and real-world situations. • Create graphs that represent key feature restrictions. • Justify graphing with another method for standard form. • Compare graphs of linear equations by analyzing key features when a change is applied to the original linear equation. • Create a linear graph that represents certain domain and range restrictions. • Compare graphs of linear equations by analyzing domain and range when a change is applied to the original linear equation. • Alter given situations to change it from continuous to discrete and vice versa.
Concept #4: Writing Linear Equations TEKS: A.2B, A.2C, A.2D, A.2E, A.2F, A.2G	• Write direct variation problems from multiple representations • Solve and determine the reasonableness of direct variation problems. • Write an equation in point-slope, standard, or slope-intercept form given a point and slope or two points. • Write a linear equation from a table, graph or verbal description. • Given a point and a line (from a graph, equation, table or other representation), write an equation parallel or perpendicular to the given line that goes though the given point. • Write equation of vertical and horizontal lines parallel and perpendicular to the x and y-axis and determine if the slope is zero or undefined. • Write equations in both mathematical and real-world situations. • Write linear equations in standard, point-slope, and slope-intercept form. • Describe the advantages of each form of linear equation.
Concept #5: Linear Regression TEKS: A.4A, A.4B, A.4C	• Use technology to calculate the correlation coefficient, *r*. • Interpret the strength of the linear association based on the correlation coefficient. • Compare and contrast association and causation. • Given a scatterplot, draw an appropriate trend line.

	• Using Multiple Representation, create a scatterplot without technology and draw an appropriate trend line. • Using Multiple Representation, to create a scatterplot with an appropriate trend line with technology. • Determine a linear model by writing an equation for the line of best fit by hand. • Use technology to determine the linear regression model for a set of data. • Use a linear regression model to make predictions about both the independent and dependent variables. • Interpret the reasonableness of my predictions in the context of the data.

Grading Period 2

Unit 2: Graphing and Writing Linear Functions (Continued)

Estimated Date Range: Sept. 2 – Oct.24 (32 total school days)
Instructional & Re-engagement Days in Unit: 28 days (24 days in GP1 and 4 days in GP2)
See grading period 1 for details

Unit 3: Systems of Linear Equations and Inequalities

Estimated Date Range: Oct. 27 – Dec. 19 (35 total school days)
Instructional & Re-engagement Days in Unit: 30 days

Assessments

STATE/NATIONAL ASSESSMENTS	DISTRICT ASSESSMENTS	COMMON FORMATIVE ASSESSMENTS	Semester Exams
N/A	N/A	Unit 3, A.2I, A.5C, A.3D (1 day) Testing Window (12/2 – 12/12)	(4 days) Testing Window (12/16 – 12/19)

Unit Overview:
In this unit, students will write and solve systems of two linear equations in two variables. Students will write and solve systems from tables, graphs and verbal descriptions for both mathematical and real-world situations. Students will solve systems using tables, graphs, and algebraically. Students will also graph systems of linear inequalities.

At home connections:
- Discuss situations that you could use a system of equations to solve. Ex: Which cell phone company is the best cost based on a certain attribute such as: speed, number of minutes, amount of data, etc.
- Have students explain their reasoning and method to solve real-world and mathematical problems.

Concepts within Unit # 3 Link to TEKS	Success Criteria for this concept
Concept #1: Representing Systems of Equations TEKS: A.2I, A.3F, A.3G	• Verify a coordinate pair is a solution to system of equations by checking to make sure is satisfies both equations. • Recognize the solution to a system of linear equations is the point of intersection of the two lines. • Write a system of equations from a graph, table, or verbal description. • Graph a system of linear equation and if the lines intersect identify the point of intersection as the solutions. • Graph a system of linear equations and if the lines are parallel identify that there is no solution. • Graph a system of linear equations and if the lines coincide determine that there are infinitely many solutions. • Make the connection between the solution from the graph and the solution from a table. • Estimate the solution to a graph of systems of linear equations.

	• Estimate using technology the solution to a graphed system of equations. • Describe the meaning of a solution to a graphed system of equation that describes a real-world situation. • Research real-world situations of system of linear equations and represent the situation using a verbal description, equation and graph.
Concept #2: Solving Systems of Equations TEKS: A.5C	• Make connections between solving systems with models and solving systems algebraically. • Solve systems of equations using substitution and by elimination. • Solve systems algebraically that have no solutions or infinitely many solutions. • Solve systems written in function notation. • Choose the best method (table, graph, elimination, substitution) to solve a system of equations. • Analyze the reasonableness of the solution to a system of equations. • Given a system of equations, justify which method would be most efficient and why. • Complete a system of linear equations project.
Concept #3: Linear Inequalities in 2 Variables TEKS: A.2H, A.3D, A.3H	• Verify a coordinate pair is in the solution set to a linear inequality. • Graph a linear inequality on a coordinate plane. • Write a linear inequality in two variables from a table. • Write a linear inequality in two variables from a graph. • Write a linear inequality in two variables from a verbal description. • Verify a solution to a system of linear inequalities. • Given certain points in a solution set to a linear inequality, create a graph and write a linear inequality that would satisfy the conditions.
Concept #3: Systems of Linear Inequalities TEKS: A.3H	• Graph the solution set of a system of two linear inequalities in mathematical situations. • Graph the solution set of a system of two linear inequalities in real-world situations. • Verify a coordinate pair is in the solution set to a system of linear inequalities.

Grading Period 3

Unit 4: Operations of Polynomial Functions

Estimated Date Range: Jan. 8 – Feb. 6 (21 total school days)

Instructional & Re-engagement Days in Unit: 18 days

Assessments

STATE/NATIONAL ASSESSMENTS	DISTRICT ASSESSMENTS	COMMON FORMATIVE ASSESSMENTS
N/A	NWEA MAP MOY (1/27 – 1/29) 3 days	N/A

Unit Overview:

In this unit, students will apply their prior knowledge of operations of numbers to operations of polynomials including monomials. In middle school students applied properties, including the distributive property, associative and commutative properties, and used these properties to generate equivalent expressions. Students will add and subtract polynomials, multiply monomials and polynomials, divide polynomials and monomials and factor polynomials. The focus will be on operations of polynomials of degree one and two and laws of exponents. Instruction will closely follow the CRA model. Students will first perform operations of polynomials using algebra tiles, then transition to operations using area models and pictorial representations and lastly perform operations using algebraic methods.

At home connections:

- Discuss area of rectangles and how it relates to multiplying, dividing and factoring polynomials.

Concepts within Unit # 4 Link to TEKS	Success Criteria for this concept
Concept #1: Simplifying Numeric and Algebraic Expressions using Laws of Exponents TEKS: A.11B	• Explain the negative and zero exponent properties through tables and expanded notation. • Apply the negative and zero exponent properties to mathematical problems. • Explain the multiplication property of exponents through expanded notation. • Apply the multiplication property of exponents to monomials. • Discover the power property of exponents through exploration. • Apply the power property of exponents to monomials. • Explain the division property of exponents through expanded notation. • Apply the division property of exponents to monomials. • Create an expression that would simplify to a given answer and justify what law of exponent was used when simplifying the expression.
Concept #2: Adding and Subtracting Polynomials TEKS: A.10A	• Classify polynomials by degree and type (monomial, binomial, etc.) • Rewrite polynomials in standard form. • Add and subtract polynomials concretely (using algebra tiles) • Add and subtract polynomials using a graphic organizer or pictorial representation. • Add and subtract polynomials abstractly (algebraically - horizontally and/or vertically) • Solve adding and subtracting polynomial problems that include a geometric context.

Concept #2: Multiplying Polynomials
TEKS: A.10B
	• Multiply polynomials concretely (using algebra tiles)
	• Multiply polynomials using a graphic organizer or an area model.
	• Multiply polynomials abstractly (algebraically)
	• Solve multiplying monomial and polynomial problems that include a geometric context.
	• Choose the best method to solve a multiplication of polynomial problem including:
	  ○ Monomial times a polynomial
	  ○ Binomial times a binomial
	  ○ Binomial squared
	  ○ Binomial times a polynomial

Concept #3: Dividing Polynomials TEKS: A.10C	• Divide a polynomial by a monomial using exponent properties. • Solve dividing monomial and polynomial problems that include a geometric context. • Divide polynomials concretely (using algebra tiles) • Divide polynomials using a graphic organizer. • Divide polynomials abstractly (algebraically) • Choose the best method to solve a division of polynomials problem including: ○ Polynomial divided by a monomial

	○ Polynomial divided by a binomial
Concept #4: Factoring Polynomials TEKS: A.10E, A.10D, A.10F	• Factor a monomial (the GCF) from a polynomial. • Factor trinomials concretely (using algebra tiles) • Factor trinomials using a graphic organizer or an area model. • Factor trinomials abstractly (algebraically using a method such as factor by grouping) • Factor the difference of two squares. • Choose the best method to factor a trinomial completely. • Make connections between factoring and long division. • Solve factoring trinomial problems that include a geometric context. • Justify the determined factors of a quadrilateral by multiplying the polynomials. • Given a trinomial that is not factorable, change one term to make it factorable. • Factor a cubic function with a GCF of *x*.

Unit 5: Graphs of Quadratic Functions

Estimated Date Range: Feb. 9 – Mar. 5 (17 total school days)
Instructional & Re-engagement Days in Unit: 16 days

Assessments

STATE/NATIONAL ASSESSMENTS	DISTRICT ASSESSMENTS	COMMON FORMATIVE ASSESSMENTS
K-12 TELPAS Window (2/17 – 3/27)	N/A	Unit 5, A.7A, A.6A, & A.7C (1 day) Testing Window Feb. 18 – Feb. 27

Unit Overview:

In this unit, students will analyze graphs of quadratic functions. Students will graph quadratic functions in several ways - by making tables, with technology, and by graphing with transformations. Students will also explore transformation of linear functions. Students will identify and analyze the key features of the graphs they create. Context will be mathematical and real world. Students will also utilize the graph and data of a quadratic function to write its related equation.

At home connections:

- Have students research applications of quadratic functions.

Concepts within Unit # 6 Link to TEKS	Success Criteria for this concept
Concept #1: Graphing Quadratic Functions TEKS: A.6A, A.7A, A.7C	• Graph a quadratic function using a table. • Graph a quadratic function using technology. • Identify key features of quadratic functions from graphs. • Graph a quadratic function from transformations from the parent quadratic graph. • Identify the changes in key features of a transformed quadratic function. • Explain the meaning of key features in context of a real-world situation. • Make connections between the equation of a quadratic and the key features of its related graph.

	• Graph a Linear function from transformations from the parent linear graph. • Determine the value of a function from its graph for quadratic functions. • Justify algebraically key features determined from the graphs of quadratic functions (excluding x-intercepts and zeros) • Compare graphs of quadratic functions in real-world situations by analyzing key attributes when changes are made in the real-world situation. • Compare the domain and range of the parent function with the transformed function. • Interpret real-world meaning of the domain and range. • Given a graph of a transformed function describe needed transformations to transform it to its parent function.
Concept #1: Writing Quadratic Functions TEKS: A.6B, A.6C, A.7B	• Write an equation given the graph of the related function by using the vertex and a point on the graph. • Write an equation from a verbal description that includes the vertex and a point on the graph of the related function. • Write an equation given the graph of the related function using the zeros and a point on the graph. • Write an equation from a verbal description that includes the solutions and a point on the graph of the related function. • Rewrite an equation that is in vertex form into standard form. • Determine the value of a function written in function notation for quadratic functions. • Explain the connection between finding the value of a function algebraically and graphically.
Concept #2: Quadratic Regression TEKS: A.8C	• Create a scatter plot with and without technology. • Use technology to determine the quadratic regression model for a set of data. • Write a quadratic model for given data and then solve the corresponding quadratic equation to solve problems. • Use a quadratic regression model to make predictions about the independent and dependent variable. • Interpret the reasonableness of my predictions in the context of the data.

Unit 6: Solving Quadratic Equations (Continues in Grading Period 4)

Estimated Date Range: Mar. 9 – Apr. 7 (16 total school days)

Instructional & Re-engagement Days in the Unit: 15 days (5 days in GP3 and 10 days in GP4)

For details, see grading period 4

Grading Period 4

Unit 6: Solving Quadratic Equations (Continued)

Estimated Date Range: Mar. 9 – Apr. 7 (16 total school days)

Instructional & Re-engagement Days in the Unit: 15 days (5 days in GP3 and 10 days in GP4)

Assessments

STATE/NATIONAL ASSESSMENTS	DISTRICT ASSESSMENTS	COMMON FORMATIVE ASSESSMENTS
K-12 TELPAS Window (2/17 – 3/27)	N/A	Unit 6, A.8A (1 day) Testing Window Mar. 30 – Apr. 7

Unit Overview:
In this unit, students will further extend their knowledge on quadratic functions. In the previous unit, students graphed and wrote quadratic functions. In this unit, students will solve quadratic equations by graphing, factoring, and applying the quadratic formula. Students will also make connections between the solutions of a quadratic equation and the zeros of the graphs of its related function. Students will begin the unit by simplifying numerical square roots and by simplifying numeric and algebraic radical expressions. In 8th grade, students were exposed to estimating square roots.

At home connections:

- Have students use quadratic equations to solve a problem that they design, such as what could be the widths of a frame for different size photographs.
- Have students use quadratics to solve problems such the maximum height of a ball thrown from one person to another.

Concepts within Unit # 6 **Link to TEKS**	**Success Criteria for this concept**
Concept #1: Solving Quadratic Equations by Graphing and Factoring TEKS: A.7B, A.8A	• Utilize the zero property of multiplication to solve a factored quadratic equation. • Solve a quadratic equation by factoring. • Make connections to the linear factors of a quadratic equation and the zeros of the graph of the related quadratic function. • Solve a quadratic equation (that is equal to zero) by graphing the related function and making connections between the solution to the equation and zeros of the graph. • Solve a quadratic equation by graphing both sides of the equation and examining the points of intersection of the graphs that represent the two sides of the equation. • Interpret solutions to quadratic equations that have real world context. • Justify each step of solving quadratic equations by factoring. • Factor quadratic equations when the value of a is given as a fraction.
Concept #2: Simplifying Radical Expressions TEKS: A.11A	• Simplify square root expressions using a geometric approach. • Simplify square root expressions in which a radical is multiplied or divided by a scalar. • Convert a radical expression into exponential form with rational exponents. • Simplify numeric and algebraic radicals by converting to exponential form and then applying exponent properties. • Solve application problems that involve radical expressions.
Concept #3: Solve Quadratic Equations by Square Root Method TEKS: A.8A	• Solve quadratic equations • Solve simple quadratics (i.e. x2=25), by taking square roots. • Solve quadratic equation in vertex form by taking square roots. • Solve simple quadratics (i.e. x2=25), by taking square roots. • Solve quadratic equation in vertex form by taking square roots.

	• Justify each step of solving quadratic equations by square roots.
Concept #4: Solve Quadratic Equations by Quadratic Formula TEKS: A.8A	• Solve quadratic equations by applying the quadratic formula. • Make connections between the solutions of a quadratic equation and the zeros of the graph of its related function. • Solve real world problems, such as problems dealing with area and motion, by solving quadratic equations by applying the quadratic formula. • Interpret solutions to quadratic equations that have real world context. • Explain the reasonableness of the solution to a problem involving quadratic equations. • Discover with discriminants when a quadratic equation will be factorable and have real solutions. • Given a quadratic equation, justify which method they would use to solve it .

Unit 7: Exponential Functions

Estimated Date Range: Apr. 8 – May 1 (18 total school days)
Instructional & Re-engagement Days in Unit: 15 days

Assessments

STATE/NATIONAL ASSESSMENTS	DISTRICT ASSESSMENTS	COMMON FORMATIVE ASSESSMENTS
STAAR English 1 EOC (4/7) 1 day STAAR Biology EOC (4/14) 1 day STAAR Algebra I EOC (4/21) 1 day	N/A	N/A

Unit Overview:
In this unit, students will extend their knowledge of functions by analyzing key features of functions to exponential functions. Students will write and graph exponential functions. Students will graph exponential functions from tables and features of the equation. All exponential functions will be in the form $y = ab^x$. Students will write equations for mathematical and real-world situations, including growth and decay problems. Students will also extend their understanding of regression models to include exponential regression.

At home connections:

- Research applications of exponential functions.

Concepts within Unit # 7 Link to TEKS	Success Criteria for this concept
Concept #1: Graphing Exponential Functions TEKS: A.9A, A.9D	• Graph an exponential function from a table. • Graph an exponential function using technology. • Graph exponential functions that model growth and decay. • Identify key features of exponential functions from graphs. • Explain the meaning of key features in context of a real-world situation. • Graph an exponential function from an equation using the values of *a* and *b*. • Determine the value of a function from its graph for exponential functions. • Compare graphs by analyzing key features and interpreting the real world meaning of the key features.

	• Create graphs that have domain and range restrictions and interpret the real-world meaning of the domain and range.

Concept #2: Geometric Sequences
TEKS: A.12B, A.12C, A.12D
	• Explain the differences and similarities between arithmetic and geometric sequences.
	• Identify terms of a geometric sequence when given:
	  ○ At least four terms of the sequence
	  ○ One term and the common ratio
	  ○ A recursive equation in function form
	  ○ A visual pattern the represents a geometric sequence.
	  ○ A real-world situation that represents a geometric sequence
	• Find the common ratio of a geometric sequence given:
	  ○ At least four terms of the sequence
	  ○ A visual pattern the represents a geometric sequence.
	  ○ A real-world situation that represents a geometric sequence
	• Write a formula for the nth term of a geometric sequence when given:
	  ○ The common ratio and the first term
	  ○ At least four terms of the sequence
	  ○ A visual pattern that represents a geometric sequence
	  ○ A real-world situation that represents a geometric sequence

Concept #3: Writing Exponential Functions TEKS: A.9B, A.9C	• Determine if an equation represents exponential growth or exponential decay. • Determine the growth or decay rate and the growth or decay factor and explain their meanings in the context of the situation. • Write and exponential equation in the *form* $y = ab^x$ from tables, graphs, and verbal descriptions. • Explain the connection between the value of a and b in the equation in context of the problem. • Explain the connections between the equation, its graph, and its key features. • Determine the value of a function written in function notation for exponential functions. • Explain the connection between finding the value of a function algebraically and graphically. • Create a real-world situation that represents a given exponential function, represent it using an equation, and a verbal description.
Concept #4: Exponential Regression TEKS: A.9A, A.9D, A.9E	• Create a scatter plot with and without technology. • Use technology to determine the exponential regression model for a set of data. • Use an exponential regression model to make predictions about the dependent variables.

	• Interpret the reasonableness of my predictions in the context of the data.

Unit 8: Solving Equations Re-Enforcement

Estimated Date Range: May 4 – May 28 (18 total school days)
Instructional & Re-engagement Days in Unit: 11 days

Assessments

STATE/NATIONAL ASSESSMENT(S)	DISTRICT ASSESSMENT(S)	COMMON FORMATIVE ASSESSMENTS (CFAs)	Semester Exams
N/A	NWEA MAP EOY (5/12 – 5/14) 3 days	*(administered within designated concept)* N/A	(4 days) Testing Window (5/22 – 5/28)

Unit Overview:
In this unit, students will further extend their knowledge on solving linear equations, linear inequalities, and quadratic functions. In the previous unit, students solved linear equations. Additionally, students solved quadratic equations by graphing, factoring, and quadratic formula. In this unit, students will solve quadratic equations by taking square roots and completing the square. Students will also make connections between the solutions of a quadratic equation and the zeros of the graphs of its related function.

At home connections:

- Have students explain real-world situations in which using an equation would be helpful.
- Have students explain their reasoning and method to solve a real-world and mathematical problems.
- Have students use quadratic equations to solve a problem that they design, such as what could be the widths of a frame for different size photographs.
- Have students use quadratics to solve problems such the maximum height of a ball thrown from one person to another.

Concepts within Unit # 8 Link to TEKS	Success Criteria for this concept
Concept #1: Solving Equations and Inequalities TEKS: A.5A, A.5B	• Write linear equations from a table of values, a graph and verbal descriptions. • Write linear equations from both mathematical and real-world situations. • Write linear inequalities from verbal descriptions that describe both mathematical and real-world situations. • Solve linear equations with variables on both sides using graphs, models and algebraically. • Determine the reasonableness of solutions to equations. • Solve linear inequalities with variables on both sides using graphs, models and algebraically. • Solve linear inequalities written in function notation. • Determine the reasonableness of solutions to inequalities. • Justify each step of solving linear equations with properties.
Concept #2: Solve Quadratic Equations by Completing the Square TEKS: A.8A	• Model completing the square using algebra tiles. • Explain the connections between the concrete-pictorial and algebraic representations when completing the square. • Solve quadratic equations algebraically using completing the square. • Explain how when solving by completing the square you finish by using the square root method.

	• Make connections between the solutions of a quadratic equation and the zeros of the graph of its related function. • Solve real world problems, such as problems dealing with area and motion, by solving quadratic equations by completing the square. • Justify each step of solving quadratic equations by completing the square.
Concept #3: Solve Quadratic Equations (All Methods) TEKS: A.8A	• Calculate the discriminant of a quadratic equation. • Describe the types of roots of a quadratic equation, knowing the value of the discriminant. • Explain how the discriminant and the types of roots helps in knowing which method for solving is most efficient. • Explain the efficiency of each method to solve a quadratic equation and when it is best to use each method. • Choose the most appropriate method to solve quadratic equations. • Make connections between the solutions of a quadratic equation and the zeros of the graph of its related function. • Solve real world problems, such as problems dealing with area and motion, by solving quadratic equations by the best method.

Glossary of Curriculum Components

Overview– The content in this document provides an overview of the pacing and concepts covered in a subject for the year.
TEKS – Texas Essential Knowledge and Skills (TEKS) are the state standards for what students should know and be able to do.
Unit Overview – The unit overview provides a brief description of the concepts covered in each unit.
Concept – A subtopic of the main topic of the unit.
Success Criteria—a description of what it looks like to be successful in this concept.

Parent Resources

The following resources provide parents with ideas to support students' understanding. For sites that are password protected, your child will receive log-in information through their campus.

Resource	How it supports parent and students
Pearson-Texas Algebra 1	This is the state adopted textbook for Algebra 1. Click on the link for directions on accessing the textbook.
Didax Virtual Manipulatives Math Learning Center Math Apps Polypad: Mathigon – Virtual Manipulatives	These online resources provide access to virtual manipulatives.

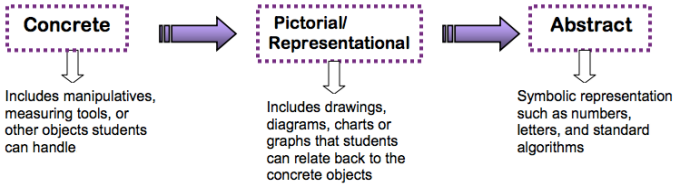
Parent Resources from youcubed.org	This resource from youcubed.org includes articles for parents on ways to support their students in learning and understanding mathematics.
Student Resources from youcubed.org	This resource from youcubed.org includes videos concerning growth mindset in mathematics.
Math: Why Doesn't Yours Look Like Mine?	This resource provides an explanation of why math looks different now as opposed to how parents learned mathematics and how to support students in learning mathematics.

Supplemental Resource and Tool Designation:

- The TI Nspire CX calculator is a standardized technology integration tool used for Mathematics and Science in FBISD.

Instructional Model

The structures, guidelines or model in which students engage in a particular content that ensures understanding of that content.



The instructional model for mathematics is the Concrete-Representational-Abstract Model (CRA).
The CRA model allows students to access mathematics content first through a concrete approach ("doing" stage) then representational ("seeing" stage) and then finally abstract ("symbolic" stage). The CRA model allows students to conceptually develop concepts so they have a deeper understanding of the mathematics and are able to apply and transfer their understanding across concepts and contents. The CRA model is implemented in grades K-12 in FBISD.