Algebra 1 AAC
Overview
2022-2023

This document is designed 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.
- Grading Period 1
- Grading Period 2
- Grading Period 3
- Grading Period 4

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: Exploring Functions Estimated Date Range: Aug. 10 – Spt. 2 Estimated Time Frame: 18 days

Unit Overview:

In this unit, students will begin their study of the functions that are the focus of Algebra 1: Linear, Quadratic, and Exponential Functions. The major focus of this unit is that students build an understanding of the key features and the connection between multiple representations. Students will build an understanding that certain key features transcend across all the functions and some key features are specific to certain functions.

At home connections:
- Research and discuss real world applications for linear, quadratic and exponential functions.
- Discuss how attributes of real world objects help us identify and understand objects. Ask students to relate this discussion to how the attributes of function assist us in understanding functions.

Concepts within Unit #1 **Link to TEKS**	Success Criteria for this concept
Establishing a Positive Mathematics Community 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 and by peers using guidelines and a protocol.
Concept #1: Determining and Evaluating Functions TEKS: A.12A, A.12B	• 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, quadratic and exponential functions. • Determine the value of a function written in function notation for linear, quadratic and exponential functions. • 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
Concept #2: Domain and Range TEKS: A.2A, A.6A, A.9A, A.12A, A.12B	• Distinguish between continuous and discrete data. • Identify domain and range given a function (linear, quadratic, exponential) from multiple representations including a real world situation, a graph, a table or an equation • Write the domain and range of a function of continuous data using inequalities • Make connections between domain and range of functions given multiple representations of the function. • Find the range of the function when given the function and its domain.
Concept #3: Key Attributes of Functions	• Distinguish between the key features that apply to all functions versus key features that apply to specific functions.

TEKS: A.2A, A.3C, A.6A, A.7A, A.9A, A.9D, A.12A, A.12B	• Identify key features of a linear, quadratic or exponential function from a given graph • Graph, with technology, and identify key features of a linear, quadratic or exponential function from the graph. • Evaluate reasonableness of key features in mathematical and real world situations. • Explain the meaning of key features in context of the situation for real world problems.

Unit 2: Solving Linear Functions, Equations, and Inequalities
Estimated Date Range: Sept.6 – Sept. 22
Estimated Time Frame: 13 days

Unit Overview:

In this unit, students will be introduced to arithmetic sequences. Students will write arithmetic sequences from multiple representations. 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:
- Discuss sequences that occur in nature.
- Have students explain real like situations in which using an equation would be helpful.
- Have students explain their reasoning and method to solve a non-mathematical problem.

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

Concept #1: Concept #1: Functions as Arithmetic Sequences
TEKS: A.12B, A.12C, A.12D
	• 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: Solving Equations and Inequalities
TEKS: A.2C, A.2H, A.5A, A.5B, A.12E
	• Write linear equations from
	    ○ Table of values
	    ○ Graph
	    ○ 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.
	• Solve linear equations written in function notation.

- 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.
- Solve compound inequalities.
- Determine the reasonableness of solutions to inequalities.
- Solve literal equations including mathematical, geometrical and scientific formulas

Unit 3: Graphing and Writing Linear Functions, Equations and Inequalities
Estimated Date Range: Sept. 26 – Oct. 7 and Oct. 11 – Nov. 4
Estimated Time Frame: 28 days (continued in Grading Period 2)

Unit Overview:

In this unit, students will expand their knowledge of linear functions from prior grade levels. Students will begin with determining 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, including transformations. Students will analyze key features of linear functions from multiple representations in real word and mathematical situations. Students have prior experience with slope-intercept form. 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:

- Have students explain their reasoning and method to solve a non-mathematical problem.
- Discuss rate and slope and have students describe real world examples. (speed, pitch of a roof, etc.)
- 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: 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.
Concept #2: TEKS: A.2A, A.2B, A.2C, A.2D, A.2E, A.2F, A.2G, A.3A, A.3B, A.3C	• Write direct variation problems from multiple representations. • Solve and determine the reasonableness of direct variation problems. • 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. • 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. • Graph and write equations in both mathematical and real-world situations

	• 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 • Analyze the reasonableness of solution to problems that involve writing and graphing equations of lines.
Concept #3: Linear Transformations TEKS: A.2A, A.3C, A.3E	• Graph the parent linear function. • Graph a function in which the parent function has been reflected vertically or compressed or stretched vertically. i.e. *graph g(x) = af(x) where f(x) = x.* • Graph a function in which the parent function has been translated vertically. i.e *graph g(x) = f(x) + d where f(x) = x.* • Graph a function in which the parent function has been reflected horizontally or compressed or stretched horizontally. i.e. g*raph g(x) = f(bx) where f(x) = x.* • Graph a function in which the parent function has been translated horizontally. i.e. g*raph g(x) = f(x- c) where f(x) = x.* • Graph a function in which any linear function has been reflected vertically or compressed or stretched vertically. i.e. g*raph g(x) = af(x) where f(x) is any linear function.* • Graph a function in which any linear function has been translated vertically. i.e. g*raph g(x) = f(x) + d where f(x) is any linear function.* • Graph a function in which any linear function has been reflected horizontally or compressed or stretched horizontally. i.e g*raph g(x) = f(bx) where f(x) is any linear function.* • Graph a function in which any linear function has been translated horizontally. i.e. g*raph g(x) = f(x- c) where f(x) is any linear function.* • Identify and analyze the changes in the key features of the graphs of functions after the transformations for mathematical and real world contexts.
Concept #4: Linear Regression TEKS: A.4A, A.4B, A.4C	• Create a scatter plot with and without technology. • 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. • 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.
Concept #5: Linear Inequalities in 2 Variables TEKS: A.2A, A.2H, A.3D	• 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.

Grading Period 2	
Unit 3: Graphing and Writing Linear Functions, Equations and Inequalities Estimated Date Range: Sept. 26– Oct.7 and Oct. 11– Nov. 4 Estimated Time Frame: 28 days (continued from Grading Period 1) Note: See Grading Period 1 for details for this unit.	
Unit 4: Systems of Linear Equations and Inequalities Estimated Date Range: Nov. 7 – Nov. 18 and Nov. 28 – Dec. 16 Estimated Time Frame: 25 days Note: Includes 7 days for Semester Exams and review	

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 attributes, such as speed, number of minutes, amount of data, etc.
- Have students explain their reasoning and method to solve a non-mathematical problem

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 graphed systems of 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.
Concept #2: Solving Systems of Equations TEKS: A.2I, A.3F, A.3G, 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.
Concept #3: Systems of Linear Inequalities TEKS: A.3H	• Verify a solution to a system of linear inequalities. • Graph a system of two linear inequalities in mathematical situations. • Graph a system of two linear inequalities in real-world situations.

Grading Period 3
Unit 5: Operations of Polynomial Functions
Estimated Date Range: Jan. 5 – Feb. 21
Estimated Time Frame: 19 days

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 trinomials. The focus will be on operations of polynomials of degree one and two. 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 # 5 **Link to TEKS**	Success Criteria for this concept
Concept #1: Adding and Subtracting Polynomials TEKS: A.10A	• Classify polynomials by degree and type (monomial, binomial, etc.) • Write a polynomial in standard form. • Add and subtract polynomials concretely (using algebra tiles) • Add and subtract polynomials using a graphic organizer or pictorial representations • Add and subtract polynomials abstractly (algebraically - horizontally and/or vertically) • Solve adding and subtracting polynomials problems that include a geometric context.
Concept #2: Multiplying Monomials and Polynomials TEKS: A.10B, 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. • 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:

	o Monomial times a polynomial o Binomial times a binomial o Binomial squared o Binomial times a polynomial

Concept #3: Dividing Monomials and Polynomials
TEKS: A.10C, A.11B
	• Explain the division property of exponents through expanded notation.
	• Apply the division property of exponents to monomials.
	• 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:
	    o Polynomial divided by a monomial
	    o 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 • Divide polynomials by factoring. • 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.

Unit 6: Graphs of Quadratic Functions
Estimated Date Range: Feb.2 - March 3
Estimated Time Frame: 20 days

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 identify and analyze the key features of the graphs they create. Context will be mathematical and real world. Students will also utilize the graph of a quadratic function to write its related equation. Students will solve quadratic equations by factoring and by graphing. The focus on solving in this unit is to make a connection between the solutions of the equation and the zeros of the graph of its related function.

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 and Writing Quadratic Functions TEKS: A.6A, A.6B, 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 or any 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. • 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. • Make connections between the equation of a quadratic and the key features of its related graph. • Rewrite an equation that is in vertex form into standard form.
Concept #2: Solving Quadratic Equations by Graphing and Factoring TEKS: A.7A, A.7B	• 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.
Concept #3: Connections and Applications of Quadratic Graphs TEKS: A.6C, A.7A, A.7B, A.8A	• Write quadratic equations given a graph of its related function and the solutions to the equation. • Make connections between a quadratic graph and its related equation. • Making connections between the solutions to a quadratic equation and the zeros of its related graph. • Solve quadratic applications using graphs and equations. • Interpret the meaning of quadratic applications including the meaning of the key features and the solutions.

Unit 7: Solving Quadratic Equations
Estimated Date Range: Mar. 6 - Mar. 10 and Mar. 20 – April 18 Estimated Time Frame: 25 days (continued in Grading Period 4) Note: For details see Grading Period 4

Grading Period 4

Unit 7: Solving Quadratic Equations (continued)
Estimated Date Range: Mar. 6 - Mar. 10 and Mar. 20 – April 18
Estimated Time Frame: 25 days (continued from Grading Period 3)

Unit Overview:

In this unit, students will further extend on their knowledge on quadratic functions. In the previous unit, students solved quadratic equations by graphing and by factoring. In this unit, students will solve quadratic equations by taking square roots, completing the square 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 # 7 **Link to TEKS**	Success Criteria for this concept
Concept #1: Simplifying Radical Expressions TEKS: A.11A, A.11B	• 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 #2: Solve Quadratic Equations by Square Root Method TEKS: A.7A, A.8A, A.11A	• Explain how the symmetry of a parabola helps describe why there are two solutions to quadratic equation when taking square roots. • Solve simple quadratics (i.e. $x^2=25$), by taking square roots. • Solve quadratic equation in vertex form by taking square roots. • 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 equations using square roots.
Concept #3: Solve Quadratic Equations by Completing the Square TEKS: A.7A, A.8A, A.11A	• 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.
Concept #4: Solve Quadratic Equations by Quadratic Formula TEKS: A.7A, A.8A, A.11A	• Explain how the quadratic formula is developed from completing the square of the general quadratic equation $ax^2 + bx + c = 0$. • 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.
Concept #5: Quadratic Regression TEKS: A.8B	• 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 in order to solve problems. • Use a quadratic regression model to make predictions about both the independent and dependent variables. • Interpret the reasonableness of my predictions in the context of the data.
Concept #6: Solving Quadratic Equations by Best Method TEKS: A.7A, A.8A, A.8B, A.11A	• 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.

Unit 8: Exponential Functions
Estimated Date Range: April 19 – May 25
Estimated Time Frame: 27 days
Note: Includes 7 days for Semester Exams and review

Unit Overview:

In this unit, students will extend their knowledge of functions and key features of functions to exponential functions. In Unit 2, students were introduced to Arithmetic sequences. In this unit, students will be introduced to Geometric sequences. This will lead to writing and graphing 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: Geometric Sequences
TEKS: A.12B, A.12C, A.12D
	• Explain the differences and similarities between arithmetic and geometric sequences
	• Identify teams of an 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 an geometric sequence
	   ○ A real world situation that represents an 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 #2: Graphing and Writing Exponential Functions TEKS: A.9A, A.9B, A.9C, A.9D	• Graph an exponential function from a table. • Graph an exponential function using technology. • 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 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
Concept #3: 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 both the independent and dependent variables. • Interpret the reasonableness of my predictions in the context of the data.

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.
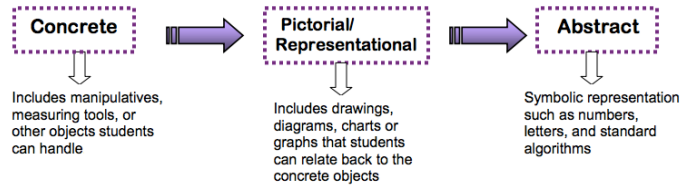
The instructional model for mathematics is the Concrete-Representational-Abstract Model (CRA).

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.