New Braunfels ISD Year at a Glance 2021-2022	Algebraic Reasoning Mathematics					
Essential Resources	**District Resources to Teach 100% of the TEKS located in the NBISD ECourse Resources, Math Model Online Textbook Link to TEKS: https://tea.texas.gov/curriculum/teks/**					
Spiraled TEKS	**Process Skills Embedded in All LessonsMathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:(A) apply mathematics to problems arising in everyday life, society, and the workplace; (B) 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;(C) 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; (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate; (E) create and use representations to organize, record, and communicate mathematical ideas; (F) analyze mathematical relationships to connect and communicate mathematical ideas; and(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.**					
Timeline	**1st Quarter Aug 23 - Oct 15, 2021 38 Instructional Days**			**2nd Quarter Oct 19 - Dec 17, 2021 (40 Days)**		
Unit	**Unit 01 Building Blocks of Mathematical Modeling**	**Unit 02 Equations and Inequalities**	**Unit 03 Functions**	**Unit 04 Linear Functions**	**Unit 05 Absolute Value**	**Semester Review and Testing**
Big Idea Current Grade	Simplify and evaluate algebraic expressions. Use commutative and associative property to simplify algebraic expressions. Use the distributive property to simplify algebraic expressions. Simplify expressions containing exponents. Determine whether two expressions are equivalent.	Determine whether a given value is a solution to an equation or inequality. Solve multi-step equations. Solve equations with variables on both sides. Solve Proportions. Solve Literal Equations. Solve multi-step inequalities and graph their solution set on a number line. Solve and graph compound inequalities. Describe a compound inequality using interval notation	Evaluate functions using fucntion notation given a table, graph, or equation. Identify key features of functions including zeros, intercepts, turning points, increasing and decreasing intervals, maximum and minimum values, and domain and range. Students will also be introduced to average rate of change and be asked to find average rate of change given a graph, table, or equation	Understand that a function with a constant rate of change can be modeled with the function f (x) = mx + b Graph linear function written in slope intercept and standard form Write linear function in slope intercept and standard form given a graph, table, or verbal description Convert between Standard Form and Slope Intercept Form Graph and write equations for horizontal and vertical lines	Students will solve absolute value equations and inequalities, graph absolute value functions, explore the effects of transformations on the absolute value parent functions, and solve a system of equations involving a linear function and an absolute value function without technology	Students will review first semester topics
Timeline	**3rd Quarter Jan 4 - March 11, 2022 48 Instructional Days**			**4th Quarter March 21 - May 26, 2022 48 Instructional Days**		
Unit	**Unit 06 Systems of Equation and Inequalities**	**Unit 07 Exponential Functions**	**Unit 08 Polynomials**	**Unit 9 Quadratic Equations and Functions**	**Unit 10 Pythagorean Theorem**	**Unit 11 Geometry**
Big Idea Current Grade	Determine whether or not an ordered pair is a solution to a system of equations. Estimate the solution to a system of equations by graphing. Construct a table of values to solve a system of equations. Solve a system be algebraic methods such as substitution and elimination. Solve a real world problem involving systems of equations. Explain how to determine whether a system will have one solution, no solutions, or an infinite number of solutions	Apply the properties of exponents to simplify expressions containing exponents. Graph exponential functions and identify key attributes such as inital value, growth factor, domain, range, and asymptotes. Explain the difference between linear and exponential functions.	Add, subtract, multiply, and divide polynomial expressions. Factor polynomial expressions.	Students will recognize that the graph of a quadratic function is a visual representation of the solutions to a quadratic equation. Students will explore the relationship between the factors of a quadratic function and the zeros of a quadratic function.	Simplify Square Roots Add, Subtract, Multiply Square Root Graphing and Transforming Square Root Functions Solve Quadratics using Inverse Operations Finding Zeros by Completing the Square Solve a Quadratic Equation by the Quadratic Formula	Students will explore right triangles and use their knowledge of quadrtic equations to solve for missing side lengths. Students will find the distance between two points on a line using the Pythagorean theorem and the distance formula. Students will identify the midpoint of a line segment given the endpoints and find an endpoint when given the midpoint and the other endpoint. Students will find missing angles of a triangle where the given angels are algebraic expressions.