SREB Math Essentials

The SREB Math Ready Course consists 8 units: algebraic expressions, equations, measurements and proportional reasoning, linear functions, linear systems of equations, quadratic functions, exponential functions and summarizing and interpreting statistical data. This course is designed to be taught a new, engaging way based heavily on conceptual teaching and learning.

1st 9 Weeks	
Unit 1	Algebraic Expressions
	The algebraic expressions unit was designed to solidify student understanding of expressions while providing the students with an opportunity to have success early in the course. The recurring theme integrated in this unity focuses on engaging students using and expanding the concepts found within purposefully chosen activities. Through guided lessons, students will manipulate, create and analyze algebraic expressions, and look at the idea of whether different sets of numbers are closed under certain operations.
Unit 2	Equations
	The equations unit calls for students to construct and evaluate problems that involve one or two steps while seeking understanding of how and why equations and inequalities are used in their daily lives. Students use the structure of word problems and equations to rewrite and solve equations in different forms revealing different relationships.
2nd 9 Weeks	
Unit 3	Measurements and Proportional Reasoning
	This units deals with unit conversions, using proportions for scaling, and area and volume. The unit requires higher-order thinking and number sense in order to get to the true intent of the standards covered. It is useful in helping students make connections with math and science or other subjects.
Unit 4	Linear Functions
	This unit takes students back to the foundation of all high school mathematics – an in-depth study of linear functions. Along with allowing students to differentiate between relations that are functions and those that are not, the unit helps students specifically examine characteristics of linear functions. By looking closely at linear functions in multiple forms, students are expected to graph and write equations, as well as interpret their meaning in context of the slope and y-intercept. Students conclude with a project allowing them to collect their own data and write a line of best fit from that data.

3rd 9 Weeks	
Unit 5	Linear Systems of Equations
	The systems unit deals with solving systems of linear equations. This involves helping students classify solutions (one, none or infinitely many), as well as set up and solve problems using systems of equations. Students also choose the best way to solve a system of equations and explain their solutions.
Unit 6	Quadratic Functions
	This unit is an expansive look at quadratic functions: their graphs, tables and algebraic functions. It stresses multiple approaches to graphing, solving and understanding quadratics, as students explore, make conjectures and draw conclusions in group-work settings. In this unit, students explore and learn from multiple applications of quadratics. This unit assumes students have seen quadratics before but may not have a concrete transferrable understanding of quadratic functions.
4th 9 Weeks	
Unit 7	Exponential Functions
	This unit develops students' fluency in exponential functions through varying real-life financial applications/inquires.
Unit 8	Summarizing and Interpreting Statistical Data
	In this unit, students further develop skills to read, analyze, and communicate (using words, tables, and graphs) relationships and patterns found in data sets of one or more variables. Students learn how to choose the appropriate statistical tools and measurements to assist in analysis, communicate results, and read and inter interpret graphs, measurements, and formulas which are crucial skills in a world overflowing with data. Students explore these concepts while modeling real contexts based on data they collect.