Pre-Algebra Honors Syllabus

Course Description/Goals:

This course is designed to prepare students for entry into Honors Algebra I. Students must possess an advanced facility with numbers and have a sincere interest in enrolling in AP Pre-Calculus and AP Calculus or another advanced math course as a senior in high school. The primary focal areas in Grade 8 are proportionality; expressions, equations, relationships, and foundations of functions; and measurement and data. Students use concepts, algorithms, and properties of real numbers to explore mathematical relationships and to describe increasingly complex situations; concepts of proportionality to explore, develop, and communicate mathematical relationships; algebraic thinking to describe how a change in one quantity in a relationship results in a change in the other; connect verbal, numeric, graphic, and symbolic representations of relationships, including equations and inequalities; begin to develop an understanding of functional relationships. Students use geometric properties and relationships, as well as spatial reasoning, to model and analyze situations and solve problems; communicate information about geometric figures or situations by quantifying attributes, generalize procedures from measurement experiences, and use the procedures to solve problems. Students use appropriate statistics, representations of data, and reasoning to draw conclusions, evaluate arguments, and make recommendations. While the use of all types of technology is important, the emphasis on algebra readiness skills necessitates the implementation of graphing technology.

Course TEKS/Objectives:

The 8th Grade TEKS (Texas Essential Knowledge and Skills) are organized into reporting categories, each focusing on a specific area of mathematics. These categories include: Probability and Numerical Representations; Computations and Algebraic Relationships; Geometry and Measurement; and Data Analysis and Personal Financial Literacy. Each category contains specific standards (TEKS) that students are expected to master.   https://tea.texas.gov/sites/default/files/ch111c.pdf

Course Outline:

Semester 1	Semester 2
-Real Numbers -The Pythagorean Theorem -Line and Angle Relationships -From Proportional to Linear Relationships -Linear Relationships -Introduction to Functions -Patterns in Bivariate Data	-Solving Linear Equations -Systems of Linear Equations -Surface Area -Volume of Curved Figures -Rigid Motion Transformations -Similarity -Financial Literacy