Algebra I

Course Description

Algebra is not only a theoretical tool for analyzing and describing mathematical relationships, it is also a powerful tool for the mathematical modeling and solving of real-world problems. These problems can be found all around us: the workplace, the sciences, technology, engineering, and mathematics.

It is expected that students entering Algebra I are able to recognize and solve mathematical and real-world problems involving linear relationships and to make sense of and move fluently among the graphic, numeric, symbolic, and verbal representations of these patterns. Algebra I builds on this increasingly generalized approach to the study of functions and representations by broadening the study of linear relationships to include; systems of equations with three unknowns, formalized function notation, and the development of bivariate data analysis topics such as linear regression and correlation. In addition, their knowledge of exponential and quadratic function families is extended and deepened with the inclusion of topics such as, rules of exponentiation (including rational exponents), and use of standard and vertex forms for quadratic equations. Students will also develop their knowledge of power (including roots, cubics, and quartics) and polynomial patterns of change and the applications they model.

In addition to deepening and extending the student's knowledge of the algebra strand, Algebra I also draws upon and connects to topics related to number and geometry by including the formalized study of the real number system and its properties, and by introducing elementary number theory.

Throughout Algebra I and II, students will experience mathematics generally, and algebra in particular, not only as the theoretical study of mathematical patterns and relationships, but also as a language that allows us to make sense of mathematical symbols. Finally, students will develop an understanding that algebraic thinking is an accessible and powerful tool that can be used to model and solve real-world problems.