

Algebra 2 Through Modeling

Building on their work with linear, quadratic, and exponential functions, students extend their repertoire of functions to include polynomial, rational, and trigonometric functions. Students work closely with the expressions that define the functions, and continue to expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms.

Semester 1

I. Extending Our Understanding of Functions

Unit 1 Transformations of Functions	Unit 2 Extending Linear Models	Unit 3 Extending Exponential Models	Unit 4 Extending Quadratic Models
A. Understanding Transformations	A. Understanding the use of linear programming in solving problems B. Understanding linear equations in three dimensions	A. Understanding the application of exponential models to real world situations B. Understanding the application of logarithms to solve exponential equations	A. Understanding the complex number system B. Understanding complex solutions to quadratic equations C. Understanding vertex form of a quadratic function

Semester 2

II. Extending Our Family of Functions		III. Trigonometric Functions	IV. Inferences and Conclusions from Data
Unit 5 Higher Degree Polynomial Functions	Unit 6 Rational Expressions and Functions	Unit 7 Extending Trigonometric Models	Unit 8 Probability and Statistics
A. Understanding the equivalence of polynomial expressions B. Understanding the relationship between zeros and the analytical or graphical representations of polynomial functions	A. Understanding the equivalence of rational expressions B. Understanding characteristics of rational functions	A. Understanding the unit circle B. Understanding the application of trigonometric functions C. Understanding trigonometric functions	A. Understand independence and conditional probability B. Understand and use the rules of probability C. Understand and use probability to evaluate