

ALGEBRA 2 THROUGH MODELING

UNIT 1: TRANSFORMATION OF FUNCTIONS (2 weeks)

Students will identify and apply transformations both algebraically and graphically to the family of functions previously explored in Algebra 1. Students will continue to studying transformations throughout this course as they extend their understanding of functions.

Unit 2: Extending Linear Models (4 weeks)

Students will extend their understanding of linear functions from Algebra 1 to include linear programming and linear equations in three dimensions.

Unit 3: Extending Exponential Models (4 weeks)

Students will extend their understanding of exponential functions from Algebra 1 to include the use of logarithms.

Unit 4: Extending Quadratic Models (5 weeks)

Students will complete their study of the complex number system by extending their understanding of quadratic functions from Algebra 1 to include non-real solutions. The vertex form of a quadratic function is used to help students analyze quadratic functions and their graphs.

Unit 5: Higher Degree Polynomial Functions (4 weeks)

Students will extend their understanding of functions and their zeros to include higher degree polynomial functions. Equivalence of polynomial expressions will be explored by using factor and remainder theorems.

Unit 6: Rational Expressions and Functions (4 weeks)

A central theme of this unit is that the arithmetic operations on rational expressions are governed by the same rules as the arithmetic operations on rational numbers. Students will apply the concept of equivalence to simplify rational expressions and solve rational equations. The exploration of the zeros of rational functions provides an introduction to the asymptotic behavior of functions.

Unit 7: Extending Trigonometric Models (4 weeks)

Students will extend their understanding of trigonometry as ratios from Geometry to include trigonometric functions. In addition to becoming fluent with the unit circle and the Pythagorean identity, students will graph and transform trigonometric functions to model and solve problems.

Unit 8: Probability and Statistics (3 weeks)