



Reavis High School

Algebra II Curriculum Snapshot



Unit 1: Equations and Inequalities

14
Days

This unit begins with students using a number line to graph and order real numbers. Students will then identify the properties of real numbers in operations. Next, students will evaluate and simplify algebraic expressions. This leads to students solving linear equations. Students will also rewrite equations (including formulas) with more than one variable. General problem solving strategies are addressed in this unit. These strategies will be applied as students solve simple and compound inequalities as well as absolute value equations and inequalities.



Unit 2: Linear Equations and Functions

17
Days

Students begin Unit 2 by identifying and representing relations and functions. Graphing is a main component of this unit. Students will graph ordered pairs, relations, and functions. Students will then apply slope to graph linear equations, linear inequalities in two variables, piecewise functions, and absolute value functions. Also included in this unit is the writing of linear equations based on various given information. Real-life representations of the problems are studied throughout the chapter.



Unit 3: Systems of Linear Equations and Inequalities

17
Days

The goals of this unit include graphing, solving, and using systems of linear equations and inequalities in two and three variables. Besides graphing, the substitution and linear combination (elimination) methods will be used to solve these systems. Students will also solve linear programming problems. Finally, systems of equations and inequalities are applied in real-life situations throughout the unit.



Unit 4: Matrices and Determinants

10
Days

Students will be able to add, subtract, and multiply a matrix by a scalar and solve matrix equations. Students will evaluate determinants of 2×2 and 3×3 matrices and use Cramer's Rule to solve systems of linear equations. Students will find inverse matrices. Also, students will be able to solve systems of linear equations using inverse matrices and use systems of linear equations to solve real-life problems.



Unit 5: Quadratic Functions

12
Days

Students will be able to graph, factor, solve quadratic functions, equations, and inequalities. Students will be able to solve quadratic equations by factoring, completing the square, and by the Quadratic Formula. Also, students will be able to write a quadratic function given characteristics of their graph.



Unit 6: Polynomials and Polynomial Functions

18
Days

Students will be able to use properties of exponents to evaluate and simplify expressions. Also, students will be able to perform operations on polynomials and solve polynomial equations. Finally, students will be able to evaluate, graph, and find zeros of polynomial functions.



Unit 7: Powers, Roots, and Radicals

19
Days

The three main components of this unit are: powers, roots, and radicals. Students will start this chapter by finding rational exponents and n th roots of real numbers. Next, students will look at power functions and perform algebraic operations on these functions. As a result, students will find composition of two functions which will lead us to finding inverses of functions. Finally, students will be graphing radical functions and solving radical equations.



Unit 8: PSAE Review

10-11
Days

Students will review test-taking strategies for both the ACT and Work Keys mathematics tests. They will apply these strategies during practice ACT and Work Keys tests to improve their scores.



Unit 9: Exponential and Logarithmic Functions

15
Days

This unit focuses on exponential and logarithmic functions. Students will start this chapter by investigating graphs of exponential functions followed by graphs and properties of both natural and common logarithmic functions. Finally, students will use all these properties to solve exponential and logarithmic equations.



Unit 10: Rational Equations and Functions

9
Days

Students will start this unit by discovering the differences and similarities between variations and using variation models in real-life situations. Next, students will move on to simplifying and performing operations on rational expressions, which will finally lead them to graphing and solving rational equations.



Unit 11: Quadratic Relations and Conic Sections

5
Days

Students will graph and write equations of parabolas, circles, ellipses, and hyperbolas. They will use these conic sections in real-life situations.