

FUTURES HIGH SCHOOL

CURRICULUM MAP FOR ALGEBRA II

If you don't know the destination, then any road will do."

MONTH	CONTENT	POWER STANDARDS	ASSESSMENTS
September	Unit #1 – Algebra I Review Unit #2 – Polynomials	3.0: Students are adept at operations on polynomials, including long division. 7.0: Students add, subtract, multiply, divide, reduce, and evaluate rational expressions with monomial and polynomial denominators and simplify complicated rational expressions, including those with negative exponents in the denominator.	Unit #1 and Unit #2 Tests Formative Assessments
October	Unit #3 – Systems of Equations Unit #4 – Solving Quadratic Equations	2.0: Students solve systems of linear equations and inequalities (in two or three variables) by substitution, with graphs, or with matrices. 4.0: Students factor polynomials representing the difference of squares, perfect square trinomials, and the sum and difference of two cubes. 8.0: Students solve and graph quadratic equations by factoring, completing the square, or using the quadratic formula. Students apply these techniques in solving word problems. They also solve quadratic equations in the complex number system.	Unit #3 and Unit #4 Tests Formative Assessments
November	Unit #5 – Graphing Quadratic Equations	9.0: Students demonstrate and explain the effect that changing a coefficient has on the graph of quadratic functions; that is, students can determine how the graph of a parabola changes as a , b , and c vary in the equation $y = a(x-b)^2 + c$. 10.0: Students graph quadratic functions and determine the maxima, minima, and zeros of the function.	Unit #5 Test Formative Assessments
December	Unit #6 – Absolute Value and Inequalities	1.0: Students solve equations and inequalities involving absolute value. 2.0: Students solve systems of linear equations and inequalities (in two or three variables) by substitution, with graphs, or with matrices.	Unit #6 Test Formative Assessments Semester One Final Exam

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January	Unit #7 – Rational Expressions	7.0: Students add, subtract, multiply, divide, reduce, and evaluate rational expressions with monomial and polynomial denominators and simplify complicated rational expressions, including those with negative exponents in the denominator.	Unit #7 Test Formative Assessments
February	Unit #8 – Complex Numbers Unit #9 – Exponential Growth and Decay	5.0: Students demonstrate knowledge of how real and complex numbers are related both arithmetically and graphically. In particular, they can plot complex numbers as points in the plane. 6.0: Students add, subtract, multiply, and divide complex numbers. 12.0: Students know the laws of fractional exponents, understand exponential functions, and use these functions in problems involving exponential growth and decay.	Unit #8 and Unit #9 Tests Formative Assessments
March	Unit #10 – Logarithms Unit #11 – Conics, Hyperbolas and Polynomial Graphs	11.0: Students prove simple laws of logarithms. 13.0: Students use the definition of logarithms to translate between logarithms in any base. 14.0: Students understand and use the properties of logarithms to simplify logarithmic numeric expressions and to identify their approximate values. 16.0: Students demonstrate and explain how the geometry of the graph of a conic section (e.g., asymptotes, foci, eccentricity) depends on the coefficients of the quadratic equation representing it. 17.0: Given a quadratic equation of the form $ax^2 + by^2 + cx + dy + e = 0$, students can use the method for completing the square to put the equation into standard form and can recognize whether the graph of the equation is a circle, ellipse, parabola, or hyperbola. Students can then graph the equation.	Unit #10 and Unit #11 Tests Formative Assessments

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MONTH	CONTENT	POWER STANDARDS	ASSESSMENTS
April	Unit #12 – Sequences, Series, and Sigma Notation	22.0: Students find the general term and the sums of arithmetic series and of both finite and infinite geometric series. 23.0: Students derive the summation formulas for arithmetic series and for both finite and infinite geometric series.	Unit #12 Test Formative Assessments
May	Unit #13 – Domain, Range, and Combining Functions	15.0: Students determine whether a specific algebraic statement involving rational expressions, radical expressions, or logarithmic or exponential functions is sometimes true, always true, or never true. 24.0: Students solve problems involving functional concepts, such as composition, defining the inverse function and performing arithmetic operations on functions.	Unit #13 Test Formative Assessments Semester Two Final