Blackhawk School District

CURRICULUM

Course Title: Algebra III (0341)
Grade Level(s): 11th-12th
Length of Course:Daily-1 Semester-.5 credits
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COURSE DESCRIPTION:

This is a course designed to extend Algebra II with selected mathematical topics such as base numbers, matrices, determinants, series and sequences, mathematical induction, the binomial theorem, etc. Students selecting this course should have a passed Algebra II and Geometry.

Unit	Concepts	Standard	Resources
Fundamental Concepts	Sets Natural Numbers and Integers Rational Numbers Real Numbers Order of Operations, Absolute Value, and Algebraic Expressions Linear Equations and Inequalities		Weltman Perez *Intermediate Algebra* Chapter 1, TCM, various supplements
Matrices	Adding Subtracting Multiplying Inverse		Supplement from *Finite Mathematics* Chapter 1
Quadratic and Higher-Degree Equations and Inequalities	Graphing Quadratic Functions Completing the Square to Find the Vertex Solving Quadratic Equations by Completing the Square The Quadratic Formula Quadratic Equations Summary Applications Equations in Quadratic Form and Higher-Degree Equations	M11.A.1.3.1 Locate irrational numbers at the approximate location on a number line. M11.A.1.3.2 Compare any real numbers (rational and irrational may be mixed). M11.A.2.1.1 Solve problems using operations with rational numbers including	Weltman Perez *Intermediate Algebra* Chapter 7; TCM; various supplements

	Polynomial and Rational Inequalities	rates (single and multi-step and multiple procedure operations) (e.g., distance, work and mixture problems, etc.). M11.A.3.2.1 Use estimation to solve problems. M11.D.1.1.2 Determine if a relation is a function given a set of points or a graph. M11.D.2.1.1 Solve compound inequalities (may include absolute value inequalities). M11.D.2.1.5 Solve quadratic equations by completing the square or the Quadratic Formula. M11.D.4.1.1 Match the graph of a given function to its table or equation.	
Conic Sections	Horizontal Parabolas Circles Ellipses Hyperbolas Graphing and Second-Degree Inequalities	M11.D.2.1.2 Identify or graph functions, linear equations or linear inequalities on a coordinate plane.	Weltman Perez *Intermediate Algebra* Chapter 8; TCM; various supplements
Systems of Equations	Linear Systems in Two Variables Linear Systems in Three Variables Applications Nonlinear Systems of Equations	M11.A.2.1.1 Solve problems using operations with rational numbers including rates (single and multi-step and multiple procedure operations) (e.g., distance, work and mixture problems, etc.). M11.A.3.2.1 Use estimation to solve problems. M11.D.2.1.4 Write and/or solve systems of equations using graphing substitution and/or elimination (limit systems to 3 equations).	Weltman Perez *Intermediate Algebra* Chapter 9; TCM; various supplements