


Algebra II Curriculum Bundle #2

Title		Suggested Dates
Matrices and Factoring		September 14 – October 2 (14 Days)

Big Idea/Enduring Understanding	Guiding Questions
No matter how you choose to solve a quadratic function for real solutions, you are always looking for where the function crosses the x-axis.	<ol style="list-style-type: none"> 1. What does it mean if the parabola does not cross the x-axis? 2. How many ways can you solve a quadratic? 3. How many different terms are used to identify the solutions to a quadratic? 4. What portion of the parabola represents the maximum or minimum and why?
Matrices are another tool to solve systems of equations and can be used to solve real world problems.	<ol style="list-style-type: none"> 1. How can matrices be used to solve systems of equations?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the District Curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)	
PSAT sample problems intended for use as warm-ups starting on Sept 17th can be found in the campus shared folder called "PSAT Math Preparation 2009-10"			
<p>2A.3 Foundations for Functions. The student formulates systems of equations and inequalities from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situations.</p> <p>2A.3B The student uses algebraic methods, graphs, tables, or matrices, to solve systems of equations or inequalities</p>	<ul style="list-style-type: none"> • Choose the methods to solve the system based on the numerical values • The elimination method to solve a system in which there is no solution, one solution, and infinitely many solutions • The substitution method to solve a system in which there is no solution, one solution, and infinitely many solutions • Analyze the graphs of a system of equations/inequalities and identify the solution(s) with and without a graphing calculator • Translate, dilate, rotate geometric figures (optional) • Find area of a triangle using determinants (optional) • Perform matrix operations: add, subtract, perform scalar multiplication with and without the calculator • Find the determinant and the inverse of a 2x2 	<p>Texas Algebra II Holt, Rinehart, & Winston</p> <p>Section 4-1 Matrices and Data pg. 246 – 252</p> <p>Section 4-2 Multiplying Matrices pg. 253 – 260</p> <p>Section 4-4 Determinants and Cramer's Rule pg. 270 – 277</p> <p>Section 4-5 Matrix Inverses and Solving Systems pg. 278 – 285</p> <p>Discovering Advanced Algebra, An Investigative</p>	<p>NCTM: Navigating Through Geometry</p> <p>"Into the Light With Transformations" pg. 21-26, 87-96</p>

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	<p style="color: red;">matrix without a calculator</p> <ul style="list-style-type: none"> • Use the inverse matrices method on the calculator to solve the systems 	<p>Approach Key Curriculum Press</p> <p>Section 6.1 Matrix Representations pg. 300 – 306</p> <p>Section 6.2 Matrix Operations pg. 307 – 317</p> <p>Section 6.4 Solving Systems With Inverse Matrices pg. 327 – 335</p>	
<p>2A.2 Foundations for Functions. The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations.</p> <p>2A.2A The student uses tools including factoring, and properties of exponents to simplify expressions and to transform and solve equations.</p> <p style="color: blue;">NOTE: Given monomial and polynomial dimensions NOTE: Not a lesson, teach vocabulary terms as you go. NOTE: Teach both long division and synthetic division.</p>	<ul style="list-style-type: none"> • Use polynomial dimensions to find the area of rectangles • Factoring binomials and trinomials and other polynomials • Common monomial factor (GCF) • Factorable trinomials • Difference of two squares • Sum and difference of two cubes • Factor by grouping • Apply the commutative, associative, and distributive properties to solve equations • Substitute a value for a variable 	<p>Texas Algebra II Holt, Rinehart, & Winston</p> <p>Factoring Quadratic Expressions pg. S67 pg. 331</p> <p>Section 6-4 Factoring Polynomials pg. 430 – 435</p> <p>Section 6-3 Dividing Polynomials Pg. 422-428</p> <p>Discovering Advanced Algebra, An Investigative Approach Key Curriculum Press</p> <p>Section 7.6 Factoring Polynomials pg. 398 – 404</p> <p>Section 7-8 More about finding solutions Pg. 712-718</p>	