Algebra II Curriculum Bundle #8

Title	Suggested Dates
Quadratic and Square Root Functions	February 1 – February 19 (13 days)

Big Idea/Enduring Understanding	Guiding Questions
Square root functions inverses of quadratic functions, so every quadratic problem can be rewritten as a square root problem.	1. How are quadratic functions and square root functions related? 2. How are they different? 3. How are they the same? (Include discussion of graphs, domain and range and related ordered pairs for each function.) 4. How would you describe the graph of a square root function using the vocabulary of quadratic functions?
Domain and range restrictions limit the possible solutions of square root equations and application problems.	1. What makes the solution to a square root equation "reasonable"? 2. How do parameter changes affect the graph and zeros of the square root function?

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 online score report - one day has been planned in this bundle to go to computer lab to see report and SAT study plans with students in 10th and 11th grade only.			
2A.9 Quadratic and Square Root Functions. The student formulates equations and inequalities based on square root functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. 2A.9B The student relates representations of square root functions, such as algebraic, tabular, graphical, and verbal descriptions.	• Relate representations of square root functions, such as algebraic, tabular, graphical, and verbal descriptions.	**Discovery Advanced Algebra** Key Curriculum Press Supplemental Lesson 4 p. 31-34	
2A.9 Quadratic and Square Root Functions. The student formulates equations and inequalities based on square root functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. 2A.9C The student determines the reasonable domain and range values of square root functions, as well as interprets and determines the reasonableness of solutions to square root equations and inequalities.	• Determine the domain and range based on the given equation and real world application problems • Relate "error" values in the calculator table to the domain.	**Discovery Advanced Algebra** Key Curriculum Press Supplemental Lesson 5 p. 35-38 **Texas Algebra II** Holt, Reinhart, Winston 8-7 Radical Functions p. 619 – 627 (Domain and Range)	

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2A.9 Quadratic and Square Root Functions. The student formulates equations and inequalities based on square root functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. 2A.9D The student determines solutions of square root equations using graphs, tables, and algebraic methods.	• Find the solutions using graphical, algebraic, tabular and verbal representations. • Analyze the graph to determine the domain, range and the solutions • Include graphical representations on the calculator	**Texas Algebra II** Holt, Reinhart, Winston 8-8 Solving Radical Equations and Inequalities p. 628 - 635	
2A.9 Quadratic and Square Root Functions. The student formulates equations and inequalities based on square root functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. 2A.9E The student determines solutions of square root inequalities using graphs and tables.	• Find x-intercepts/zeros and analyze solutions from a graph or table of values • Solve square root equations and inequalities with and with out a calculator.		
2A.9 Quadratic and Square Root Functions. The student formulates equations and inequalities based on square root functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. 2A.9F The student analyzes situations modeled by square root functions, formulates equations or inequalities, selects a method, and solves problems.	• Use graphs, tables, and algebraic methods of solving square root inequalities • Choose the most appropriate method for solving based on the numbers in the problem. • Include investigations of extraneous roots. • Formulate equations based on the verbal description of transformations. • Reflection over y-axis. (optional)		
2A.9 Quadratic and Square Root Functions. The student formulates equations and inequalities based on square root functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. 2A.9G The student connects inverses of square root functions with quadratic functions.	• Derive square root functions by finding the inverse of the quadratic function and vice versa • Compare graphs of quadratic functions and related square root functions. • Compare table values of quadratic and square root functions to show reversal of x and y ordered pair values and domain and range.		