

## Mathematical Models with Applications Curriculum Bundle #8

Title	Suggested Dates
Graphing Quadratics (approx 1.5 weeks)/Start Solving Quadratics (approx 1.5 weeks)	February 1 – February 19 (13 days)

Big Idea/Enduring Understanding	Guiding Questions
Quadratic functions can be used to model real world situations that do not have a constant rate of change, but do have a constant second difference.	<ol style="list-style-type: none"> <li>1. What are characteristics of a graph that will lead you to identify it as quadratic?</li> <li>2. How many different methods can you use to find the solution(s) of a quadratic equation? How do you choose which method to use in a particular situation?</li> <li>3. How are factoring a quadratic equation and using the quadratic formula to solve a quadratic equation alike and different?</li> </ol>

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)
<b>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 10<sup>th</sup> and 11<sup>th</sup> grade only.</b>		
<p><b>M.1 The student uses a variety of strategies and approaches to solve both routine and nonroutine problems.</b></p> <p>M.1A compare and analyze various methods for solving a real-life problem</p>	<ul style="list-style-type: none"> <li>• Ongoing Skill</li> </ul>	
<p><b>M.1 The student uses a variety of strategies and approaches to solve both routine and nonroutine problems.</b></p> <p>M.1B use multiple approaches (algebraic, graphical, and geometric methods) to solve problems from a variety of disciplines;</p>	<ul style="list-style-type: none"> <li>• Use calculators to graph and examine/compare parameter changes</li> <li>• Graph quadratics – focus on transformations</li> <li>• Examine properties of symmetry in quadratic functions – example: given the vertex and a point – find another point on the parabola</li> <li>• Focus on solving by graphing and factoring</li> <li>• Solve application problems</li> <li>• Use all terms: roots, solutions, zeros, x-intercepts</li> </ul>	<p><b><u>A&amp;M Curriculum</u></b> Fall Section 7.6, 7.7, 8.2 – 8.5</p> <p>Region IV/Comap <b><u>Modeling with Mathematics – A Bridge to Algebra II</u></b> Unit 5 all p. 257- 343 (<b>Quadratic and Linear</b>) Unit 6 all p. 344 – 413A (<b>Exponential and Linear</b>)</p> <p>Pearson <b><u>Mathematical Models with Applications</u></b> Unit 3 all p. 239-398</p> <p><b><u>A&amp;M Curriculum</u></b> Fall Section 7.1, 8.1</p>

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		<p>Spring Section 9.1 – 9.5</p> <p>Region IV/Comap  <u>Modeling with Mathematics – A Bridge to Algebra II</u>            Sections 5.5 – 5.9</p> <p>Pearson  <u>Mathematical Models with Applications</u>            p. 407 – 410 (skip #22 – 27)</p>
<p><b>M.1 The student uses a variety of strategies and approaches to solve both routine and nonroutine problems.</b></p> <p>M.1C select a method to solve a problem, defend the method, and justify the reasonableness of the results.</p>	<ul style="list-style-type: none"> <li>• Ongoing Skill</li> </ul>	
<p><b>M.3 The student develops and implements a plan for collecting and analyzing data in order to make decisions.</b></p> <p>M.3B communicate methods used, analyses conducted, and conclusions drawn for a data-analysis project by written report, visual display, oral report, or multi-media presentation;</p>	<ul style="list-style-type: none"> <li>• Ongoing skill</li> </ul>	