

LEARNING PLAN

<p>Exploratory Activities RUSMP exploration of the graph of a quadratic function</p>	<p>CONCEPT Quadratic Functions</p>
<p>Concept Development Activities Handshakes (TEXTTEAMS 3-122) Ice Cream (TEXTTEAMS 3-123) Exploring triangular numbers Leaky Bottle Shuttle Game Find the Function 3 from <i>Get It Together</i> (p. 141) Parameter Investigation of the Effects of “k” (TEXTTEAMS 3-126, 3-127) Parameter Investigation on the Effects of “a” (TEXTTEAMS 3-92, 3-93, 3-128) Using Tables to Find Roots (TEXTTEAMS 3-98, 3-99, 3-100) Use Graphs to Solve and Factor Quadratic Equations (TEXTTEAMS 3-101, 3-103) Situation 1.1 Breaking Distance (pp. 188-190) in <i>Concepts in Algebra</i></p>	<p>Materials and Resources Function Lab Paper RUSMP handout on exploration of the graph of a quadratic function RUSMP handout on triangular and other figurative numbers Graphing Calculator <i>TEXTTEAMS Algebra I Institute</i> Leaky Bottle handout modified from <i>Advanced Algebra Through Data Exploration</i>, p. 521 (translucent plastic bottle with hole in the bottom, metric ruler, marker, tape, timing device) <i>Concepts in Algebra: A Technological Approach</i> <i>Get It Together</i></p>
<p>Basic Facts and Standard Algorithms Formalized Assign problems from the adopted textbook (McDougal Littell’s <i>Algebra I Explorations and Applications</i>) from Sections 8.2, 8.3, 8.5 and Toolbox p. 616 and p. 619 to provide practice for students in solving quadratic equations using concrete models, tables, graphs, and algebraic models, graphing quadratic equations, exploring parameter changes, relating solutions of a problem situation to the roots of the quadratic function, and determining range and domain values for given situations.</p>	<p>Originality and Creativity <i>Student Products</i></p> <p>Written Write a paragraph that compares and contrasts linear and quadratic functions.</p> <p>Verbal Develop and perform a song or a rap that can be used to help memorize the quadratic formula.</p>
<p>Assessment Given the equation, $y = ax^2 + c$, illustrate and explain the roles of a and c.</p>	<p>Kinesthetic Create and demonstrate a pattern using rainbow cubes that can be modeled by a quadratic function.</p>
<p>TAAS: 2 TEKS/EOC: b.2.A, b.2.B, b.2.C, d.1.A, d.1.B, d.1.C, d.1.D, d.2.A, d.2.B/1, 2, 5, 9 Test Items from Algebra I EOC Spring 1999: 21, 25, 30, 31 Spring 2000: 1,4,5,8,10,13,16,22,25,26,27,30,35</p>	<p>Visual Create a poster that shows the relationship among the tabular, graphical, and algebraic representations for the solution to a quadratic equation used in the real world. Design a flow chart that illustrates how to solve quadratic equations using the Quadratic Formula.</p>