

Richmond Public Schools
Department of Curriculum and Instruction
Curriculum Pacing And Resource Guide – Unit Plan



Course Title/ Course #: Algebra 1

Unit Title/ Marking Period # (MP#3): Quadratic Equations

Start day:

Meetings (Length of Unit): 3

<i>Desired Results ~ What will students be learning?</i>
<u>Standards of Learning/ Standards</u>
A.4c The student will solve multistep linear and quadratic equations in two variables, including c) solving quadratic equations algebraically and graphically
<u>Essential Understandings/ Big Ideas</u>
<ul style="list-style-type: none">• Real-world problems can be interpreted, represented, and solved using linear and quadratic equations.• The process of solving linear and quadratic equations can be modeled in a variety of ways, using concrete, pictorial, and symbolic representations.• The zeros or the x-intercepts of the quadratic function are the real root(s) or solution(s) of the quadratic equation that is formed by setting the given quadratic expression equal to zero.
<u>Key Essential Skills and Knowledge</u>
The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to <ul style="list-style-type: none">• Solve quadratic equations.• Identify the roots or zeros of a quadratic function over the real number system as the solution(s) to the quadratic equation that is formed by setting the given quadratic expression equal to zero.• Confirm algebraic solutions to quadratic equations using a graphing calculator.
<u>Vocabulary</u>
Quadratic Equation

Roots
Zeros
X-Intercepts
Solution
Axis of Symmetry
Characteristics of a Quadratic Equation
Factor
Quadratic Formula
Polynomial

Assessment Evidence ~ What is evidence of mastery? What did the students master & what are they missing?

Assessment/ Evidence

Mulligan Checkpoint A.4

Interactive Achievement

[York County Practice Items](#)

Learning Plan ~ What are the strategies and activities you plan to use?

Learning Experiences/ Best Practice

Create a foldable on:

- How to graph a quadratic equation from a table, using the axis of symmetry, and using the graphing calculator
- How to use the TI-84+ to find the solutions/zeros/roots of a quadratic equation
- How to use Polysmlt2 app on TI-84+ to factor a quadratic and find the roots/zeros/solutions
- How to use the quadratic formula

All Things Algebra → Quadratic Equations → Activities

- Quadratic Equation Bingo
- Quadratic Equation Math Lib Activity
- Quadratic Equations Review Book
- Solving Quadratics by Factoring Equations
- Factoring vs. Quadratic Formula Partner Work
- Graphing Quadratic Equations Stations Activity
- Quadratic Equation Puzzles
- Quadratic Equations Find Someone Who

- Quadratic Equations Battleship
- Quadratic Formula Tic-Tac-Toe
- Quadratic Formula Coloring Activity
- Solving Quadratics Color By Number Activity
- Solving Quadratics Task Cards with QR Codes

Technology Integrations

Gizmo
Khan Academy
Discovery Streaming

Resources

Text

Virginia Glencoe, Algebra I, ©2012, Carter, et al,
McGraw-Hill School Education Group, page(s) 493 - 512

Coach book, Virginia edition, page(s) 134 – 146

Mulligan Math in Minutes A.4

Technology

- Gizmo
 - [Roots of a Quadratic](#)
- [Khan Academy](#)
 - [Quadratics](#)
- [Discovery Streaming](#)
 - [Baseball](#)

Virginia Department of Education

[Factoring for Zeros](#)

Other Sites

[Henrico Algebra 1 Online – A.4](#)

Cross Curricular Connection

Science/Engineering: Projectile Motion

Quadratic Equations represent many real-world situations. Have students research how they are used in theme parks, sports, travel, etc. and display their finding in a creative way.