

Algebra Applications: Quadratic Equations

Dates: January 15- March 12, 2014 (8 weeks)

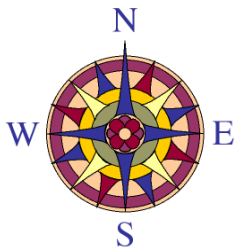
Instructor: Sarah Hogue

Objective: Algebra Applications is series of classes that drills down and explores key concepts in algebra to ensure a thorough understanding of challenging topics. The class will explore real-life uses and applications for complex algebraic functions. A deeper comprehension of these topics is critical to success in advanced algebra, geometry, calculus, AP mathematics, and college entrance exams. The Applications series will cover: Linear Equations (Quarter 1), Absolute Value Functions (Quarter 2), Quadratic Functions (Quarter 3), and All About Exponents (Quarter 4).

This quarter will examine quadratic functions which are used to model relationships that follow a parabolic curve. The lessons in this course cover the graphs of quadratic functions, methods for solving quadratic equations including the quadratic formula, and quadratic applications.

Preliminary Course Outline

<u>Week</u>	<u>Theme/Topic</u>
1.	The Basic Graph of a Quadratic Function <ul style="list-style-type: none">• Vertex Form• Review of Transformations• Intercepts and Vertices
2.	Graphing in Standard Form <ul style="list-style-type: none">• Finding the Vertex• Other Key Points• Applications
3.	Graphing in Intercept Form <ul style="list-style-type: none">• Finding the Vertex• Solutions, Roots, X-Intercepts, Zeros• Applications
4.	Solving Quadratic Equations by Factoring <ul style="list-style-type: none">• Review of Trinomial Factoring (for leading coefficients of 1)
5.	Solving Quadratic Equations by Factoring <ul style="list-style-type: none">• Review of Trinomial Factoring (for leading coefficients other than 1)



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6. Solving Quadratic Equations by Taking Square Roots
 - Review of Radical Simplification
 - Factoring by Difference of Squares

7. Solving Quadratic Equations by Quadratic Formula
 - Finding the Discriminant
 - Using the Formula
 - Applications

8. More Quadratic Applications
 - Using the Graphs
 - Using the Equations

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