



# Alg.2 Essentials Math Curriculum

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Marking Period	Reading/Writing Assignment	Chapter/Section
1	Read an article on braking distance and write a response about which representation, linear or quadratic, is best used for modeling the situation.	Chapter 2: Quadratic Functions
2	Read a Khan Academy article about determining solutions to a quadratic equations and complete a written note-taking graphic organizer that connects previous understandings to new learnings.	Chapter 3: Quadratic Equations and Complex Numbers
3	Read about exponential growth and how compound interest is such an effective means for growing wealth. Write about how this information can be applied to students' own personal finances in a scenario driven problem.	Ch.6 Exponential and Logarithmic Functions
4	Students will make predictions about probability outcomes and write concerning misconceptions surrounding probabilities.	Ch.8 Probability

## Scoring Rubric for Written Work

1 - Emerging	2 - Intermediate	3 - Proficient	4 - Exemplary
<p><b>Conceptual Understanding</b> Demonstrates almost no understanding of learning targets, and includes significant errors or deficiencies in thought.</p> <p><b>Mathematical Skills</b> Gives incorrect answers and explanations and does not follow or implement correct processes or methods for the solution.</p> <p><b>Work Habits</b> Does not complete the majority of tasks and/or work is unintelligible.</p>	<p><b>Conceptual Understanding</b> Demonstrates some understanding of learning targets, potentially including several errors or deficiencies in thought.</p> <p><b>Mathematical Skills</b> Gives partially correct answers and explanations, does not use ideal processes or methods, and work is not clear.</p> <p><b>Work Habits</b> Completes almost all tasks but work is not organized or easily understood.</p>	<p><b>Conceptual Understanding</b> Demonstrates nearly all understanding of learning targets, potentially including a minor error or deficiency in thought.</p> <p><b>Mathematical Skills</b> Gives correct or nearly correct answers and explanations through solving equations, drawing graphs, identifying figures, etc., and may also lack some clarity.</p> <p><b>Work Habits</b> Completes tasks thoroughly, and work is mostly organized and legible.</p>	<p><b>Conceptual Understanding</b> Demonstrates complete understanding of learning targets.</p> <p><b>Mathematical Skills</b> Gives clear and correct answers and explanations through solving equations, drawing graphs, identifying figures, etc..</p> <p><b>Work Habits</b> Completes tasks thoroughly, and work is organized, legible, and easily understood.</p>



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## Content Topics and Pacing

Topic	Duration	Learning Target(s)
<b>Ch. 1 Linear Functions</b>	<b>6 weeks</b>	Understand Linear Functions. Graph and describe transformations of functions. Write functions that represent transformations of functions. Use linear functions to model and analyze real-life situations.
<b>Ch.2 Quadratic Functions</b>	<b>8 weeks</b>	Describe and graph transformations of quadratic functions. Graph and describe quadratic functions. Graph and write equations of parabolas. Write equations of quadratic functions using given characteristics.
<b>Ch. 3 Quadratic Equations and Complex Numbers</b>	<b>8 weeks</b>	Understand quadratic equations and complex numbers. Solve quadratic equations graphically and algebraically. Understand the imaginary unit $i$ and perform operations with complex numbers. Solve and analyze quadratic equations using the Quadratic formula and discriminants. Solve nonlinear systems graphically and algebraically. Graph quadratic inequalities in 2 variables.
<b>Ch.4 Polynomial Functions</b>	<b>3 weeks</b>	Understand Polynomial Functions. Graph and describe polynomial functions. Add, Subtract, and multiply polynomials. Solve Polynomial equations and find zeros of polynomial functions.



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<b>Ch.6 Exponential and Logarithmic Functions</b>	<b>3 weeks</b>	Understand exponential and logarithmic functions. Write and graph exponential growth and decay functions. The natural base $e$ . Understand logarithms and graph logarithmic functions.
<b>Ch.8 Probability</b>	<b>3 weeks</b>	Understand probability. Find sample spaces and probabilities of events. Use two-way tables to represent data and find probabilities. Find and use conditional probabilities. Understand and find probabilities of independent and dependent events.
<b>Ch.9 Data Analysis and Statistics</b>	<b>2 weeks</b>	Understand data analysis and statistics. Understand normal distributions. Use random samples and simulations to make conclusions.