



Alg.2 Mathematics Curriculum

Marking Period	Reading/Writing Assignment	Chapter/Section
1	Read the situation. Then come up with a written solution for the company. Explain the assumptions or approximations you made to justify your solution.	ch.1/page 1 Launch the chapter with the Robotic Arm problem.
2	Read the information given. Write up a problem that can be solved using the given information, then exchange problems with your elbow partner and come up with a detailed solution for the problem they came up with.	ch.3/page 87 Launch the chapter with Nuclear Electricity generated for consumer use in the US over time.
3	Students will be looking to see if calculations are repeated, and look both for general methods and for shortcuts as they come up with solutions to the problem(s) presented.	Ch.6/291 Launch the chapter with “looking for and express regularity in repeated reasoning” using exponential functions.
4	Students will be using the outcomes of flipping coins or rolling dice to help them come up with solutions to the problem(s) presented.	ch.8/pg.403 Launch the chapter with Finding sample spaces and describing events using a coin or dice.

Scoring Rubric for Written Work

1 - Emerging	2 - Intermediate	3 - Proficient	4 - Exemplary
<p>Conceptual Understanding Demonstrates almost no understanding of learning targets, and includes significant errors or deficiencies in thought.</p> <p>Mathematical Skills Gives incorrect answers and explanations and does not follow or implement correct processes or methods for the solution.</p> <p>Work Habits Does not complete the majority of tasks and/or work is unintelligible.</p>	<p>Conceptual Understanding Demonstrates some understanding of learning targets, potentially including several errors or deficiencies in thought.</p> <p>Mathematical Skills Gives partially correct answers and explanations, does not use ideal processes or methods, and work is not clear.</p> <p>Work Habits Completes almost all tasks but work is not organized or easily understood.</p>	<p>Conceptual Understanding Demonstrates nearly all understanding of learning targets, potentially including a minor error or deficiency in thought.</p> <p>Mathematical Skills Gives correct or nearly correct answers and explanations through solving equations, drawing graphs, identifying figures, etc., and may also lack some clarity.</p> <p>Work Habits Completes tasks thoroughly, and work is mostly organized and legible.</p>	<p>Conceptual Understanding Demonstrates complete understanding of learning targets.</p> <p>Mathematical Skills Gives clear and correct answers and explanations through solving equations, drawing graphs, identifying figures, etc..</p> <p>Work Habits 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)
Ch. 1 Linear Functions	4 weeks	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. Solve linear systems in three variables.
Ch.2 Quadratic Functions	4 weeks	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.
Ch. 3 Quadratic Equations and Complex Numbers	4 weeks	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.
Ch.4 Polynomial Functions	4 weeks	Understand Polynomial Functions. Graph and describe polynomial functions. Add, Subtract, and multiply polynomials. Dividing Polynomials. Factoring Polynomials.



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		Solve Polynomial equations and find zeros of polynomial functions.
Ch.5 Rational Exponents and Radical Functions	4 weeks	Understand rational exponents and radical functions. Evaluate expressions and solve equations containing nth roots and rational exponents. Simplify radical expressions. Solve equations containing radicals and rational exponents. Perform arithmetic operations on two functions. Evaluate and find compositions of functions. Understand the relationship between inverse functions.
Ch.6 Exponential and Logarithmic Functions	3 weeks	Understand exponential and logarithmic functions. Write and graph exponential growth and decay functions. The natural base e. Understand logarithms and graph logarithmic functions.
Ch.7 Rational Functions	4 weeks	Understand rational functions. Understand inverse variation. Describe and graph rational functions. Multiply and divide rational expressions. Add and Subtract rational expressions. Solving Rational expressions.
Ch.8 Probability	3 weeks	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. Count permutations and combinations.



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Ch.9 Data Analysis and Statistics	2 weeks (If Time)	Understand data analysis and statistics. Understand normal distributions. Use random samples and simulations to make conclusions.
Ch. 10 Trigonometric Ratios and Functions	2 weeks (If Time)	Understand Trig. ratios and functions. Draw angles in standard position and understand radian measure. Evaluate Trig. functions of any angle.