

Algebra I Course Overview

Unit	Major Concepts	Skills	Summative Assessments
Functions and Mathematical Properties	Input/output relationships Domain and range Multiple representations for functions Distributive, associative, and commutative properties	Identify if a relation is a function Create a rule for a linear relationship from a table of values Evaluate a function using algebraic, numeric and graphical representations Use function notation to evaluate functions Graph a piecewise function Apply mathematical properties to solve equations	Pool border project Module 2 assessment
Linear Functions & Inequalities	Constant rate of change Meaning of intercepts Undoing operations to solve Interpret inequalities from context	Compute slope Write the equation of a line Graph a line Solve linear equations Model real world situations with linear functions Solve and graph linear inequalities Model real world situations with inequalities	Graphing project Module 1 assessment
Systems of Equations	Solutions to systems make each equation true How to solve systems in multiple ways	Solve systems algebraically and graphically Model real world situations with systems of equations Solve systems of inequalities	Real world application problem project Module 1 assessment
Exponential Functions/Transformations	How to identify transformations from a graph How to identify transformations in function notation Represent functions in multiple ways Changing rate of change Properties of exponents Meaning of growth and decay	Transform a function given the function notation Write a function given the transformations Graph exponential functions Simplify expressions with exponents Evaluate exponential functions Model real world situations with exponential functions	Growth and decay of bacteria project Module 3 assessment
Polynomials	Combining like terms Distributive property Factoring is rewriting as multiplication	Add, subtract, multiply, divide and factor polynomials	Module 1 assessment
Radicals	Radicals are exponents of $\frac{1}{2}$ power	Add, subtract, multiply, divide radicals Simplify radicals	Module 3 assessment

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Quadratic Functions	Zero property of multiplication Graphs of parabolas and their meaning in context	Solve quadratics by factoring, completing the square and the quadratic formula Graph a parabola Find the vertex of a parabola algebraically Model real world situations with quadratic functions	Catapult and trebuchet project
Statistics	Symmetric vs. skewed data Categorical vs. numerical data One variable vs. two variable data Measures of center and spread	Construct a boxplot, histogram and dot plot Analyze data by shape, center and spread Categorize data as categorical or numerical Create a bivariate frequency table Construct a line of best fit Analyze a best fit function using residuals and correlation	Student lead lecture project
Dimensional Analysis	US vs Metric systems	Converting metric to metric Converting US to US Converting metric to US Converting US to metric	Slime making project
Review/Test Taking	All topics from the year with emphasis on test taking strategies	All skills from past units with emphasis on exam questions and types	Algebra Regents - June