

Algebra I

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Description: This college prep course covers both manipulative algebra skills and theory, with the emphasis on manipulative skills. Algebra 1 will cover topics including the real number system, order of operations, solving equations and inequalities, graphing equations and inequalities, solving systems of equations, modeling with functions, working with monomials and polynomials, and an introduction to factoring.

Graduation Standards

(the number of the standard is referenced in the performance indicators listed in each unit):

Standard 1: Reason and model quantitatively, using units and number systems to solve problems.

Standard 2: Interpret, represent, create and solve algebraic expressions.

Standard 3: Interpret, analyze, construct, and solve linear, quadratic, and trigonometric functions.

Standard 5: Interpret, infer, and apply statistics and probability to analyze data and reach and justify conclusions.

Unit 1	Linear Equations
Summary	In this unit students develop the properties of solving equations. They apply the Addition, Subtraction, Multiplication, and Division properties of equations to solve problems. Students will be able to apply equations in one variable to real-world problems. Students will also be able to use units to understand problems, and define appropriate quantities with appropriate accuracy.
Performance Indicators Assessed in Unit	HS.M.2B: Write and solve equations and inequalities in one variable.
Unit 2	Modeling Functions
Summary	In this unit students will define a function, and function notation. They will identify common algebraic functions based on their graphs and general equations. Students will also determine a function's domain and range, increasing/decreasing intervals, relative maxima and minima, and end behavior. They will understand the basic

	properties of linear, quadratic, and exponential functions, and be able to identify each type graphically.
Performance Indicators Assessed in Unit	HS.M.3A - Understands, graphs, and applies parent functions.
Unit 3	Linear Functions
Summary	In this unit students will identify and interpret key features of linear functions in all their forms. They will graph linear functions in their different forms. Students will also create and analyze linear functions that model real-world data.
Performance Indicators Assessed in Unit	HS.M.2D - Solving Linear Equations. HS.M.3B- Analyzing Linear Functions.
Unit 4	Equations of Linear Functions
Summary	In this unit students will be able to identify different forms, and change between all forms of linear equations. They will be able to calculate slope algebraically and relate it to real-world situations. They will be able to create inverse linear functions both algebraically and graphically. They will be able to compare and contrast a linear relationship represented graphically and algebraically.
Performance Indicators Assessed in Unit	HS.M.2E - Write linear equations in various forms and graphs. HS.M.3B - Applying Linear Functions.
Unit 5	Linear Inequalities
Summary	In this unit students will develop the properties of solving inequalities. They apply the Addition, Subtraction, Multiplication and Division properties of inequalities to solve problems and can graph their solutions on a number line. In this unit students will be able to solve compound inequalities and graph their solutions. Students will be able to solve absolute value equations and inequalities in one variable and graph their solution on a number line. Students will be able to graph inequalities into variables on a coordinate plane. This unit will have a strong emphasis on the application of inequalities and absolute value.
Performance Indicators Assessed in Unit	HS.M.2.B - Write and solve equations and inequalities in one variable. HS.M.2C - Represents equations or inequalities graphically.
Unit 6	Systems of Linear Equations and Inequalities
Summary	In this unit students will be introduced to systems of linear equations and inequalities. They will learn how to solve problems by graphing systems of equations and inequalities and classify the systems as consistent or inconsistent, dependent or independent. Students also learn how to apply algebraic methods

	including, substitution, elimination, using addition and subtraction, and elimination using multiplication. Students will create equations and inequalities that model real-world data and determine which method is best to solve the system.
Performance Indicators Assessed in Unit	HS.M.2F - Solves systems of linear equations of inequalities.
Unit 7	Simplifying & Factoring Polynomials
Summary	In this unit students will be algebraically manipulating quadratic expressions to achieve simplified and factored forms. Students will first learn about properties of exponents, like terms, polynomials and operations involving monomials and polynomials.
Performance Indicators Assessed in Unit	HS.M.2G- Factor Quadratic Expressions.

Summative Assessments Retake

- Summative assessments will count as 70% of the grade.
- Students have the opportunity to retake summative assessments.
- The student must submit a retake form to the teacher within five (5) school days of the date that the summative assessment score is reported to the student.
- The highest score a student can receive on a retake or late assessment is a 75.
- The score achieved on a retake will replace the current score (even if the score is lower).
- If a student is making up a test from an absence, that assessment will be graded up to 100.

Finals

- An end of course Final Exam will be conducted, making up 10% of the students overall grade.

Make-up Work

Upon their return to school from an absence, it is the student's responsibility to secure make-up work from their teacher. The due date of the missed work will be one additional class period for each day of absence from that class or at the discretion of the teacher.

Grading of Formative Assessments

- Formative assessments will count as 30% of the grade.
- Formative assessments may be scored on either a 0 - 100 scale or a 0 - 4 scale.
- The 0 - 4 scale will be represented in Power School as 4 = 100, 3 = 87, 2 = 77, and 1 = 67.
- The method of scoring of formative assessments will be determined by assignment.