

Algebra I

Instructors:

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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, and modeling with functions.

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 | Introduction Unit |
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| Summary | In this unit, students will use variables to represent data. They will learn to write expressions and equations. They will also evaluate and simplify variable expressions using properties of real numbers. |
| Performance Indicators Assessed in Unit | HS.M.1A Compute with accuracy in the real number system HS.M.2A Use structure and order of operations to manipulate expression S1: F. Compute within the real number system. |
| Unit 2 | 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 3 | Modeling Functions |
| Summary | In this unit students will define a function, and function notation. They will identify |

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| | 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 4 | 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 5 | 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 6 | 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 7 | Systems of Linear Equations and Inequalities |
| Summary | In this unit students will be introduced to systems of linear equations and inequalities. They learn how to solve 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, |

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| | 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. |

Summative Assessments Retake

- 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.

Grading of Formative Assessments

- Formative assessments will count as 20% 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.