

Pre-Algebra Explorations

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This course provides students with the foundation to continue on to additional mathematics courses. This year begins learning basic concepts and skills, giving students the foundation to move toward higher level thinking. Algebra I Part 1 focuses on the first half of the general education Algebra I Curriculum. The class moves at a slower pace to ensure student understanding and giving students the opportunity to get additional help when needed. Success in this course will better prepare students to reach more advanced topics in their high school math careers. Algebra I Part 1 requires continual effort and attention. Expectations are for students to do their best everyday. It is very important that students seek help when they are feeling confused, lost, or overwhelmed. We want students to experience success in mathematics and feel confident in their abilities.

Graduation Standards

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.

Unit 1	Expressions, Equations, and Functions
Summary	Students will review previous courses and refresh and reinforce prerequisite skills. They will learn to represent mathematical ideas and how they can be expressed. Students will use variables to represent data and learn to write expressions and equations. They will evaluate and simplify expressions using properties of real numbers and absolute value. Students will define a function and function notation as well as identify common algebraic functions based on their graphs and general equations. They will determine a function's domain and range, increasing/decreasing intervals, relative maxima and end behavior. Students will understand the basic properties of linear, quadratic, and exponential functions, and be able to identify each type graphically.
Performance Indicators Assessed in Unit	S1: B. Use the properties of rational and irrational numbers. (N.RN.B) S1: H. Understand solving equations as a process of reasoning and explain the reasoning. (A.REI.A) S1: F. Compute within the real number system. S2: A. Interpret the structure of expressions. (A.SSE.A) S2: K. Represent and solve equations and inequalities graphically. (A.REI.D) S3: A. Understand the concept of a function and use function notation. (F.IFA) S3: B. Interpret functions that arise in applications in terms of the context. (F.IF.B) S3: C. Analyze functions using different representations. (F.IF.C.7A-C,E,8-9) S3: D. Build a function that models a relationship between two quantities. (F.BFA.1A-B,2) S3: F. Construct and compare linear, quadratic, and exponential models and solve problems. (F.LE.A)
Unit 2	Linear Equations
Summary	Students will develop the properties of solving equations. They will apply the Addition, Subtraction, Multiplication, and Division properties of equations to solve problems, and can graph their solutions on a number line. 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	S2: A. Interpret the structure of expressions. (A.SSE.A) S2: H. Understand solving equations as a process of reasoning and explain the reasoning. (A.REI.A) S2: I. Solve equations and inequalities in one variable. (A.REI.B)
Unit 3	Linear Functions
Summary	Students will identify and interpret key features of linear function 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	S2: K. Represent and solve equations and inequalities graphically. (A.REI.D) S3: A. Understand the concept of a function and use function notation. (F.IF.A) S3: B. Interpret functions that arise in applications in terms of the context. (F.IF.B) S3: C. Analyze functions using different representations. (F.IF.C.7A-C,E,8-9) S3: D. Build a function that models a relationship between two quantities. (F.BF.A.1A-B,2) S3: F. Construct and compare linear, quadratic, and exponential models and solve problems. (F.LE.A) S3: G. Interpret expressions for functions in terms of the situation they model. (F.LE.B)
Unit 4	Graphing Linear Equations
Summary	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	S2: B. Write expressions in equivalent forms to solve problems. (A.SSE.B) S3: C. Analyze functions using different representations. (F.IF.C.7A-C,E,8-9) S3: E. Build new functions from existing functions. (F.BF.B.3,4A)

Make-up Work/Assessments: When class is missed as a result of a student excused absence.

Formative Work/Assessment - One additional class period for each class missed.

Summative Assessment - Scheduled within 5 school days of the date a student returns to school (or as determined by the teacher.)

Summative Retake Form must be completed and submitted.