

Adopted Algebra 1 Curriculum January 2016

Introduction to Algebra 1

- Integer Operations
- Absolute Value
- Properties of Real Numbers
- Order of Operations
- Variables
- Distributing, Combining Like Terms, Simplifying Expressions

Equations & Inequalities

- Solve 1 & 2 step Equations and Inequalities in 1 variable
- Solve Multistep Equations and Inequalities in 1 variable (variables on both sides)
- Graph solutions to 1 variable Inequalities and Compound Inequalities
- Create Equations and Inequalities in 1 variable and use them to solve word problems
- Transform Literal Equations
- Solve Simple Absolute Value Equations and Inequalities
- Scatterplots

Polynomials

- Add & Subtract Polynomials
- Multiply Polynomials by Distributing
- Multiply Binomials
- Divide Monomials
- Factor Trinomials
- Factor Difference of Two Squares
- Factor GCF
- Factor by Grouping both when $a = 0$ and $a > 0$
- Solve word problems by using Factoring
- Solve Equations by using Factoring
- Identify Zeros of Polynomials by Factoring

Exponents

- Product Rule
- Quotient Rule
- Power Rule
- Negative Exponent Rule
- Scientific Notation
- Simplifying Exponents

Functions

- Coordinate Plane – Plotting Points
- Function Notation
- Evaluate Functions (linear, quadratic)
- Functions Defined by Tables, Graphs, or Equations
- Domain and Range
- Vertical Line Test

Linear Equations

- Slope (given 2 points, given a graph)
- Graph Equations in 2 variables (using chart, x and y intercepts, slope-intercept form, standard form)
- Slope-Intercept Form of a Linear Equation
- Determine the Equation of a Line (given graph, slope and one point, or 2 points)
- Write Equation of a Line in slope-intercept or standard form (given graph, slope and one point, or two points)
- Horizontal and Vertical Lines (graph and write equations)
- Direct Variation

Systems of Linear Equations

- Solve by Graphing
- Solve by Substitution
- Solve by Elimination
- Create Equations in 2 variables to Represent Relationships between Quantities
- Use Systems to Solve Word Problems
- Solve a Simple System of a Linear Equations in 2 variables
- Solve a Simple System of Quadratic Equations in 2 variables
- Solve & Graph Systems of Linear Inequalities
-

Rational and Irrational Numbers

- Properties of Rational & Irrational Numbers
- Rational Square Roots
- Simplify Irrational Square Roots (Use Pythagorean Theorem as an application of this topic)
- Add & Subtract Radicals
- Multiply & Divide Radicals
- Solve Simple Radical Equations

Quadratic Equations

- Solve Quadratic Equations by Factoring
- Solve Quadratic Equations with Perfect Squares
- Solve Quadratic Equations using the Quadratic Formula
- Graph Quadratic Functions

THE FOLLOWING TOPICS SHOULD BE INCORPORATED THROUGHOUT THE CURRICULUM AS APPLICATIONS OF THE PRECEDING STANDARDS.

Proportional Reasoning

- Ratios
- Proportions
- Unit Rate (Converting Units)
- Solve word problems using Proportional Reasoning
- Percents and Percent Word Problems

Statistics/Probability

- Mean, Median, Mode, Min, Max
- Scatterplot, Dot plot, Histogram, Box Plots
- Fit a function to the data (linear, quadratic, exponential)
- Interpret slope and intercept in context of the data
- Independence and Conditional Single Event Probability