

Essential Standards for Algebra 1

Unit 1 Solving Linear Equations

Students will be able to:

- Solve multistep linear equations and use them to solve real-life problems. (REI.B.3, CED.A.1, Q.A.1)
- Solve linear equations with a variable on one side or both sides, and identify equations with no solution or infinitely many solutions (REI.B.3, CED.A.1)
- Solve absolute value equations involving one or two absolute values, and identify equations with extraneous solutions (CED.A.1, REI.B.3)
- Rewrite and use literal equations and common formulas (CED.A.4)

Unit 2 Solving Linear Inequalities

Students will be able to:

- Write and graph linear inequalities. (CED.A.1,)
- Write linear inequalities from graphs (CED.A.1, REI.B.3)
- Solve inequalities using basic operations, including multiplying or dividing by negative numbers (CED.A.1, REI.B.3)
- Solve multistep compound inequalities (CED.A.1, REI.B.3)
- Use inequalities to solve real-life problems (MP.1, MP.4)

Unit 3 Graphing Linear Functions

Students will be able to:

- Identify linear functions, using graphs, tables, and equations (CED.A.2, REI.D.10, IF.B.5, IF.C.7a, LE.A.1b)
- Use function notation to evaluate, interpret, and graph functions (CED.A.2, IF.A.1, IF.A.2, IF.C.7a, IF.C.9)
- Find the slope of a line and use it to write a linear equation in slope-intercept form (CED.A.2, IF.B.4, IF.C.7a, LE.B.5)
- Solve real-life problems using function notation, linear equations, slopes, and y-intercepts (MP.1, MP.4)

Unit 4 Writing Linear Functions

Students will be able to:

- Identify, write, and use linear equations in slope-intercept form and point-slope form (CED.A.2, BF.A.1a, LE.A.1, LE.A.2)
- Identify, write and use equations for parallel and perpendicular lines (CED.A.2, LE.A.2)
- Interpret scatter plots and determine how well lines of fit model data (LE.B.5, ID.B.6a, ID.B.6c, ID.C.7)

Unit 5 Solving Systems of Linear Equations

Students will be able to:

- Solve systems of linear equations by graphing, by substitution, and by elimination (REI.C.5, REI.C.6, REI.C.7, CED.A.3)
- Solve absolute value equations by graphing (CED.A.2, REI.D.10, IF.C.7b, BF.B.3)
- Graph and write systems of linear inequalities (CED.A.3, REI.D.12)

- Use systems of linear equations and linear inequalities to solve real-life problems (MP.1, MP.4)

Unit 6 Basic Exponential Functions

Students will be able to:

- Evaluate and simplify expressions with exponents (RN.A.2)
- Identify, evaluate, and graph exponential functions, use, identify, interpret, and write exponential growth and decay functions; solve real-life problems (tables) (SSE.B.3c, CED.A.2, C.7e, IF.C.8b, BF.A.1a, LE.A.1c, LE.A.2)
- Solve basic exponential equations (guess & check, same base) CED.A.1, REI.A.1, REI.D.11)

Unit 7 Polynomial Equations and Factoring

Students will be able to:

- Classify, add, and subtract polynomials (APR.A.1)
- Use the FOIL Method, the square of a binomial, multiply binomials and trinomials (SSE.A.2, SSE.B.3a,)
- Solve polynomial equations by using the Zero-Product Property and by factoring out the GFC (APR.B.3, REI.B.4b)
- Factor $x^2 + bx + c$, $ax^2 + bx + c$, the difference of two squares, and perfect square trinomials (SSE.A.2, SSE.B.3a,)
- Use sums, differences, products, and complete factoring of polynomials to solve real-life problems (SSE.A.2, SSE.B.3a, MP.1, MP.4)

Unit 8 Basic Graphing of Quadratic Functions

Students will be able to:

- Graph and use quadratic functions in different forms from a table (CED.A.2, IF.C.7a, BF.B.3, IF.C.9)
- Find maximum and minimum values of quadratic functions (CED.A.2, IF.C.7a, BF.B.3, IF.C.9)
- Choose functions to model data and solve real-life problems using different function types (MP.1, MP.4)

Unit 9 Basic Solving of Quadratic Equations

Students will be able to:

- Solve quadratic equations by graphing, using square roots, and using the Quadratic Formula (REI.4.B, CED.A.1, CED.A.4, REI.D.11, IF.C.7a)
- Solve real-life problems using graphs of quadratic functions (REI.D.11, IF.C.7a, MP.1, MP.4)