

Alg1 Syllabus (First Semester)

Unit 1: Basic operations

Lesson 01: Order of operations (PEMDAS)

Lesson 02: Negative numbers, opposites, absolute values
Inequalities

Lesson 03: Review of sign rules for arithmetic operations
Unit multipliers

Lesson 04: Evaluating algebraic expressions
Combining like terms

Lesson 05: Evaluating expressions that distribute negative numbers
Nested groups

Lesson 06: *Putting it all together with fractions

Unit 1 review

Unit 1 test

Unit 2: Solving linear equations

Lesson 01: Solving one-step linear equations

Lesson 02: Solving two-step linear equations

Lesson 03: Solving linear equations by combining like terms
Solving multiple-step linear equations

Lesson 04: Solving linear equations with variables on both sides

Unit 2 review

Unit 2 test

Unit 3: Inequality basics

Solving linear, single-variable inequalities

Lesson 01: Inequality statements

Lesson 02: Solving linear inequalities

Cumulative review, unit 3

Unit 3 test

Unit 4: Word problems (area, perimeter, percent)

Solving abstract equations

Lesson 01: Converting word expressions into algebraic expressions
Solving simple word problems

Lesson 02: Solving perimeter and area word problems

Lesson 03: Percent problems

Lesson 04: More area, perimeter, and percent problems

Lesson 05: Solving abstract equations

Cumulative review

Unit 4 review

Unit 4 test

Unit 5: Relations and functions

Lesson 01: The coordinate axes, reflections, and translations

Lesson 02: Relations: domain and range

Lesson 03: Functions: function notation

Lesson 04: More practice with functions

Lesson 05: Function word problems
Constant rates of change

Lesson 06: Graphical representations of functions
Independent and dependent variables

Cumulative review

Unit 5 review

Unit 5 test

Unit 6: Graphing linear functions

Lesson 1: Linear function definition
Plotting points and verifying with a graphing calculator

Lesson 2: Slope

- Lesson 3: Graphing a line given a point and a slope
Slope-intercept form of a linear function
- Lesson 4: Converting linear functions to $y = mx + b$ form
Verifying solutions to linear equations
- Lesson 5: Finding function rules given points in a chart
Special cases of linear functions (vert., horiz., $b = 0$)
- Lesson 6: Putting it all together: interpreting linear graphs
- Lesson 7: Comparing linear graphs using a graphing calculator
Evaluating linear functions with a calculator
- Cumulative review
Unit 6 review
Unit 6 test

Unit 7: More on writing linear functions

- Lesson 1: Writing the equation of a line given the slope and one other piece of information
- Lesson 2: Writing the equation of a line given two points
Writing the equations of horizontal & vertical lines
- Lesson 3: Perpendicular and parallel lines
- Lesson 4: Linear function word problems
Calculator tables
- Cumulative review
Unit 7 review
Unit 7 test

Unit 8: Lines of best-fit, correlation

Interpreting data

- Lesson 1: Manual scatter plots, correlation
- Lesson 2: Scatter plots and linear regression on a graphing calculator
- Lesson 3: Interpretation of linear data using a graphing calculator

Cumulative review

Unit 8 review

Unit 8 test

Unit 9: Systems of linear equations

Lesson 1: The meaning of the solution to a system of linear equations

Lesson 2. Solving two linear equations by graphing

Lesson 3: Solving two linear equations by substitution

Lesson 4: Solving two linear equations by elimination

Lesson 5: Graphing calculator solutions of linear systems

Lesson 6: Solving for two variables in word problems

Cumulative review

Unit 9 review

Unit 9 test

Unit 10: Direct and indirect variation

Lesson 1: Direct variation

Lesson 2. Indirect variation

Unit 10 test

Semester summary

Semester review

Semester test

Enrichment Topics

Topic A: Commutative, distributive, and associative properties

Topic B: Inequality conjunctions and disjunctions

Topic C: Two dimensional inequalities

Topic D: Combining direct and indirect variations

Topic E: Scientific notation

Topic F: Greatest common factor (GCF) and least common multiple (LCM)

Topic G: Derivation of the Quadratic Formula

Topic H: Completing the square

Topic I: Statistics

Topic J: Real-world applications of parabolas and the other three conic sections