Algebra 1A
Mathematics

Grade(s) 9th - 12th, Duration 1 Year, 1 Credit
Required Course

Course Overview
GENERAL DESCRIPTION: This course is designed to cover the first half of Algebra I outcomes in one year. Students will develop skills in using variables, evaluating algebraic expressions using order of operations, solving equations and inequalities, graphing linear equations, functions and linear inequalities, writing linear equations, and using functions. Problem solving skills will be emphasized and developed.

Scope And Sequence

Timeframe	Unit	Instructional Topics
56 Day(s)	Relationships between Quantities	1. Expressions, Equations, and Functions 2. Linear Equations
104 Day(s)	Linear Relationships	1. Linear Functions 2. Equations of Linear Functions 3. Linear Inequalities 4. Systems of Linear Equations and Inequalities

Materials and Resources
Glencoe
Algebra 1
2012
Kuta Software
Study Island
SUPPLIES: Each student will be charged a $5 calculator rental feel, unless the student chooses to purchase the calculator required for the class.

Prerequisites
Teacher Referral

Course Details

Unit: Relationships between Quantities

Duration: 56 Day(s)

Unit Overview
Write and solve one-step equations, multi-step equations, and equations involving absolute value using order of operations, the distributive property, and number properties.

Materials and Resources
connectED.mcgraw-hill.com (requires student password)

Academic Vocabulary
Algebraic Expressions
Variable
Term
Exponent
Evaluate
Additive identity
Multiplicative identity
Multiplicative Inverse
Reciprocal
Like Terms
Coefficient
Replacement Set
Solution Set
Equation
Function
x-intercept
y-intercept
Percent of change
Literal equation
Symmetry
Independent Variable
Dependent Variable

Summative Assessment
Chapter Test

Topic: Expressions, Equations, and Functions

Duration: 28 Day(s)

Topic Overview
Students will learn the similarities and differences between expressions, equations, and functions. Students will also practice using order of operations and the distributive property to simplify expressions and equations.

Learning Targets

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Section 1-1a
Write verbal expressions for algebraic expressions

Section 1-1b
Write algebraic expressions for verbal expressions.

Section 1-2
Evaluate numerical expressions by using the order of operations.

Section 1-2b
Evaluate algebraic expressions by using the order of operations.

Section 1-3
Recognize the number properties.
  Reflexive Property, Symmetric Property, Transitive Property, Substitution Property, Additive Identity, Additive Inverse, Multiplicative Identity, Multiplicative Property of Zero, Multiplicative Inverse, Commutative Property, Associative Property

Section 1-4
Distributive Property
  evaluate and simplify expressions

Section 1-5 a
One-Step Equations

Section 1-5 b
Two-Step Equation

Section 1-6 a
Represent Relations
  Graph, Table, and Mapping

Section 1-6 b
Interpret graphs of relations
  Story Graphs

Section 1-7
Determine whether a relation is a function.

Section 1-8 a
Interpret Graphs
  Intercepts, Symmetry of graphs of functions

Section 1-8 b
Interpret Graphs
  Positive, Negative, Increasing and Decreasing behavior, Extrema, and End behavior

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Topic: Linear Equations

Duration: 28 Day(s)

Topic Overview
  Solve one-step, multi-step, and equations involving absolute value. Compare ratios and solve proportions involving equations and solve equations for given variables.

Learning Targets
Section 2-1
Translate sentences into equations and equations into sentences.

Section 2-2 a
Solve one-step equations using addition and subtraction.

Section 2-2 b
Solve equations by using multiplication and division.

Section 2-3 a
Solve equations involving more than one operation.

Section 2-3 b
Solve equations involving consecutive integers.

Section 2-4 a
Solve equations with the variable on each side.

Section 2-4 b
Solve equations involving grouping symbols.

Section 2-5
Solve absolute value equations.

Section 2-6
Solve proportions involving expressions.

Section 2-7 a
Find the percent of change.

Section 2-7 b
Solve problems involving percent of change.

Section 2-8
Literal Equations

Section 2-9
Solve problems involving weighted averages.

Unit: Linear Relationships

Duration: 104 Day(s)

Unit Overview
Graphing linear functions and inequalities. Students will learn standard. slope intercept, and point-slope forms of lines. Graph and solve systems of equations using substitution and elimination.

Materials and Resources
connectED.mcgraw-hill.com
Khan Academy
Study Island

Academic Vocabulary
Rate of Change
Slope
Standard Form
Arithmetic Sequence
Slope-Intercept Form
Point-Slope Form
Bivariate Data
Scatter Plot
Inequality,
System of Equations
Substitution
Elimination

Summative Assessment
Chapter Tests

Topic: Linear Functions

Duration: 22 Day(s)

Topic Overview
Students will graph functions using the x and y intercepts. Students will solve linear equations algebraically and by graphing. Students will discover slope and rate of change.

Learning Targets
Section 3-1
Identify linear equations, intercepts, and zeros.
  Put equations into standard form

Section 3-1 b
Graph linear equations.
  Use x and y intercepts to graph linear equations.

Section 3-2
Solve linear equation by graphing.
  Use zeros and function tables to graph linear equations.

Section 3-3 a
Use rate of change to solve problems.

Section 3-3 b
Find the slope of a line.

Section 3-4 a
Write and graph direct variation equations.

Section 3-4 b
Solve problems involving direct variation.

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Section 3-5
Recognize and relate arithmetic sequences to linear functions.

Section 3-6 a
Write an equation for a proportional relationship.

Section 3-6 b
Write an equation for a non-proportional relationship.

Topic: Equations of Linear Functions   **Duration:** 30 Day(s)

Topic Overview
Students will write equations in slope-intercept form and point-slope form. Students will also determine lines of best fit on scatter plots and determine regression and median-fit lines.

Learning Targets
Section 4-1 a
Write and graph linear equations in slope-intercept form.

Section 4-1 b
Model real-world data with equations in slope-intercept form.

Section 4-2 a
Write an equation of a line in slope-intercept form given the slope and one point.

Section 4-2 b
Write an equation of a line in slope-intercept form given two points.

Section 4-3 a
Write equations of lines in point-slope form.

Section 4-3 b
Write linear equations in different forms.
   Standard Form, Slope-intercept Form, Point-slope Form

Section 4-4
Write an equation of the line that passes through a given point, parallel or perpendicular to a given line.

Section 4-5 a
Investigate relationships between quantities by using points on scatter plots.

Section 4-5 b
Use lines of fit to make and evaluate predictions.

Section 4-6
Write equations of best-fit lines using linear regression.

Section 4-7
Find the inverse of a relation and a linear function.

Topic: Linear Inequalities   **Duration:** 22 Day(s)

Topic Overview
Students will solve multi-step & compound inequalities and inequalities involving absolute value. They will also graph inequalities in two variables.

Learning Targets
Section 5-1
Solve linear inequalities by using addition or subtraction.

Section 5-2
Solve linear inequalities by using multiplication or division.

Section 5-3 a
Solve linear inequalities involving more than one operation.

Section 5-3 b
Solve linear inequalities involving the Distributive Property.

Section 5-4 a
Solve compound inequalities containing the word and, and graph their solution set.

Section 5-4 b
Solve compound inequalities containing the word or, and graph their solution set.

Section 5-5 a
Solve and graph absolute value inequalities (<).

Section 5-5 b
Solve and graph absolute value inequalities (>).

Section 5-6 a
Graph linear inequalities on the coordinate plane.

Section 5-6 b
Solve inequalities by graphing.

Topic: Systems of Linear Equations and Inequalities   **Duration:** 30 Day(s)

Topic Overview
Students will solve systems of linear equations using elimination and substitution.

Learning Targets
Section 6-1 a
Determine the number of solutions a system of linear equations has.

Section 6-1 b
Solve systems of linear equations by graphing.

Section 6-2
Solve systems of equations by using substitution.

Section 6-3 a
Solve systems of equations by using elimination with addition.

Section 6-3 b
Solve systems of equations by using elimination with subtraction.

Section 6-4
Solve systems of equations by using elimination with multiplication.

Section 6-5
Determine and apply the best method for solving systems of equations.

Section 6-6
Solve systems of linear inequalities by graphing.