

Teaching Textbooks Algebra

Class Description:

In this Algebra course, the student will utilize Teaching Textbooks Algebra to cover the standard topics, including: fractions, decimals, geometric concepts, algebraic equations, dealing with x , slope-intercept, order of operations, powers, scientific notation, graphing, inequalities, and more.

Learning Materials: Main Curriculum:

Teaching Textbook - Algebra Textbook

Teaching Textbook - Algebra Answer Key

Teaching Textbook - Algebra CD-ROM Set

Learning Goals/Performance Objectives: M1.1.C Solve problems that can be represented by a system of two linear equations or inequalities.

M1.2.C Evaluate $f(x)$ at a (i.e., $f(a)$) and solve for x in the equation $f(x) = b$.

M1.3.A Write and solve linear equations and inequalities in one variable.

M1.3.C Identify and interpret the slope and intercepts of a linear function, including equations for parallel and perpendicular lines.

M1.3.H Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line.

Learning Activities: The student will complete lessons as per the timeline below, using the workbook and CD's. Each lesson consists of video instruction and new material practice. Quizzes are after every 7th lesson. Grades will be automatically calculated via the digital gradebook.

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Chapter 1: Algebra Basics

Lesson 1—Advanced Arithmetic

Lesson 2—The Purpose of Algebra

Lesson 3—Undoing and the Golden Rule of Algebra

Lesson 4—Undoing Multiplication and Division

Lesson 5—Commutative Properties

Lesson 6—Algebra Notation

Lesson 7—Percent Problems

Lesson 8—Banking and Business

Lesson 9—Moon Vacation

Lesson 10—Extending the Concept of Speed

Chapter 2: Working with Integers

Lesson 11—Less than Zero

Lesson 12—Negatives in Action

Lesson 13—Adding with Negatives
Lesson 14—Subtracting with Negatives
Lesson 15—Multiplying Negatives
Lesson 16—Dividing Negatives ...
Lesson 17—Undoing Equations with Negatives
Lesson 18—Negatives and Fractions
Lesson 19—Changing $-x$ to x
Chapter 3: Order of Operations
Lesson 20—Order of Operations
Lesson 21—Equations Too
Lesson 22—Help from the Fraction Bar
Lesson 23—Undoing In Reverse Order
Lesson 24—Undoing with Division
Lesson 25—More than Two Operations
Lesson 26—Using the Associative Property
Lesson 27—More on the Associative Property
Chapter 4: Combining Like Terms
Lesson 28—Combining x 's
Lesson 29—More on Rates
Lesson 30—Invisible Coefficients
Lesson 31—Getting Bigger/Getting Smaller
Lesson 32—Two Unknowns
Chapter 5: Equation-Solving Techniques
Lesson 33—Freeing x from Parentheses
Lesson 34—More Distributing
Lesson 35—Minus Sign Outside
Lesson 36—Clashing Knights
Lesson 37—Parentheses within Parentheses
Lesson 38—Freeing x from a Fraction (Part 1)
Lesson 39—Freeing x from a Fraction (Part 2)
Chapter 6: x 's on Both Sides
Lesson 40—From one Side to the Other
Lesson 41—Moving Shortcuts
Lesson 42—Chase Scene
Lesson 43—Mixing it All Up
Lesson 44—Mixture Problems Again
Lesson 45—Solving Freestyle
Lesson 46—False Equations and Identities
Chapter 7: Rational Expressions
Lesson 47—Reducing Fractions

Lesson 48—Factoring into Prime Numbers
Lesson 49—Reducing Rational Expressions
Lesson 50—Rational Expressions and Parentheses
Lesson 51—Distributing in Reverse (Part 1)
Lesson 52—Distributing in Reverse (Part 2)
Lesson 53—Multiplying Rational Expressions
Lesson 54—Dividing Rational Expressions
Lesson 55—Adding Rational Expressions
Lesson 56—Subtracting Rational Expressions
Chapter 8: Solving Rational Equations
Lesson 57—Rational Equations
Lesson 58—More than x in the Bottom
Lesson 59—Ratios and Proportions
Lesson 60—Clearing More than One Fraction
Lesson 61—When the Denominators are Different
Lesson 62—Finding the Lowest Common Denominator
Lesson 63—Rational Equations with Complicated Denominators
Chapter 9: Powers and Exponents
Lesson 64—Raising a Number to a Power
Lesson 65—Scientific Notation
Lesson 66—Order of Operations and Powers
Lesson 67—Combining Powers
Lesson 68—Multiplying Powers
Lesson 69—Advanced Distributing
Lesson 70—Dividing Powers
Lesson 71—More Scientific Notation
Lesson 72—Harder Rational Expressions
Lesson 73—Combining Harder Rational Expressions
Chapter 10: Radical Expressions
Lesson 74—Root: The Inverse of a Power
Lesson 75—Undoing Powers and Roots
Lesson 76—Irrational Roots
Lesson 77—Estimating Irrationals
Lesson 78—The Pythagorean Theorem
Chapter 11: Quadratic Equations
Lesson 79—Two Solutions
Lesson 80—Undoing Several Operations
Lesson 81—The Uncombinables
Lesson 82—More Solving by Factoring
Lesson 83—Advanced Reverse Distributing

Lesson 84—Equations that Won't Factor Easily
Lesson 85—Completing the Square
Lesson 86—Building a Pool Deck
Chapter 12: Powers, Polynomials, and Radicals
Lesson 87—Relations, Functions, and Equations
Lesson 88—Solving for the Other Variable
Lesson 89—Calculating Profits
Lesson 90—Galileo Analyzes Motion
Lesson 91—Kepler Tracks the Planets
Lesson 92—Equations with Several Variables
Lesson 93—Newton's Equation of the Universe
Chapter 13: More on Polynomials and Rational Expressions
Lesson 94—Adding and Subtracting with Several Variables
Lesson 95—Multiplying with Several Variables
Lesson 96—Distributing with Several Variables
Lesson 97—Reducing Rational Expressions with Several Variables
Lesson 98—More Reducing with Several Variables
Lesson 99—Finding the Right Pair with Several Variables
Lesson 100—Difference of Two Squares
Lesson 101—Multiplying and Dividing Rational Expressions with Several Variables
Lesson 102—Adding and Subtracting Rational Expressions with Several Variables
Lesson 103—Equation-Solving Strategies
Lesson 104—Curved Mirrors and Headlights
Chapter 14: Graphing Functions and Slope
Lesson 105—Drawing a Picture
Lesson 106—Graphing Linear Equations
Lesson 107—Graphing Higher-Degree Equations
Lesson 108—Graphing Shortcuts
Chapter 15: Rate of Change and Slope
Lesson 109—Change in y over Change in x
Lesson 110—Different Kinds of Slopes
Lesson 111—Horizontal and Vertical Lines
Lesson 112—Slope Intercept Form
Lesson 113—Point-Slope Form
Chapter 16: Systems of Equations
Lesson 114—Solving Systems
Lesson 115—Solving Systems by Subtraction
Lesson 116—More on the Addition and Subtraction Methods
Lesson 117—Solving Systems by Substitution
Lesson 118—Graphing Systems

Lesson 119—Inconsistent and Dependent Systems
Chapter 17: Inequalities and Radicals
Lesson 120—Inequalities
Lesson 121—Undoing Inequalities
Lesson 122—Undoing Inequalities in Reverse Order
Lesson 123—Multiplying Irrationals
Lesson 124—Dividing Irrationals
Lesson 125—Adding and Subtracting Irrationals
Lesson 126—Simplifying Irrationals
Lesson 127—Compound Inequalities
Lesson 128—Two-Variable Inequalities
Lesson 129—Graphing Two-Variable Inequalities
Lesson 130—Systems of Two-Variable Inequalities
Chapter 18: Absolute Value and the Function Concept
Lesson 131—Absolute Value
Lesson 132—Absolute Value Equations
Lesson 133—Solving Absolute Value Equations with Algebra
Lesson 134—Function Basics
Lesson 135—Working with Functions
Chapter 19: Statistics and Probability
Lesson 136—Statistics
Lesson 137—Measures of Dispersion
Lesson 138—More Measures of Dispersion
Lesson 139—Probability
Lesson 140—Probability Shortcuts
Chapter 20: Additional Topics
Lesson 141—The Quadratic Formula

Progress Criteria/Methods of Evaluation: For successful completion of this course, the student will complete at least 70% of the lessons/goals, at a minimum of 70% accuracy.

September Complete Lessons 1 – 14
September Complete Lessons 57 – 70
October Complete Lessons 15 – 28
November Complete Lessons 29 – 42
December Complete Lessons 43 – 56
January Complete Lessons 57 – 70
February Complete Lessons 71 – 84
March Complete Lessons 85 – 98
April Complete Lessons 99 – 112

May Complete Lessons 113 – 126

June Complete Lessons 127 – 141