# Acellus® Algebra 1

**INTERNATIONAL ACADEMY OF SCIENCE**
**Algebra 1 Course Curriculum**

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| **Unit 1 - Algebraic Expressions and Equations** | |
| 1 | Variables and Expressions |
| 2 | Algebraic Language |
| 3 | Classifying Numbers |
| 4 | Evaluating Algebraic Expressions |
| 5 | Introduction to Equations |
| 6 | Input and Output |
| 7 | Analyzing Equations, Patterns, and Graphs |
| 8 | Solving One-Step Equations with Addition and Subtraction |
| 9 | Solving One-Step Equations with Multiplication and Division |
| 10 | Solving Two-Step Equations |
| 11 | Solving Multi-Step Equations |
| 12 | Solving Equations Utilizing the Distributive Property |
| 13 | Solving Equations with Variables on Both Sides |
| 14 | Solving Special Equations |
| 15 | Solving Literal Equations and Formulas |
| **Unit 2 - Proportions, Inequalities, and Absolute Values** | |
| 16 | Ratios, Rates, and Conversions |
| 17 | Solving Proportions |
| 18 | Solving Proportions with Maps |
| 19 | Proportions and Similar Figures |
| 20 | Percent Change |
| 21 | Graphing Inequalities on a Number Line |
| 22 | Solving Positive, Multi-Step Inequalities |
| 23 | Solving Negative, Multi-Step Inequalities |
| 24 | Solving Inequalities with Variables on Both Sides |
| 25 | Solving Special Inequalities |
| 26 | Compound Inequalities |
| 27 | Absolute Value Equations |
| 28 | Absolute Value Inequalities |
| **Unit 3 - Introduction to Functions** | |
| 29 | Mapping Diagrams |
| 30 | Distinguishing Relations from Functions |
| 31 | Investigating Patterns and Linear Functions |
| 32 | Investigating Patterns and Nonlinear Functions |
| 33 | Independent and Dependent Variables |
| 34 | Graphing a Function Rule |
| 35 | Function Notation |
| 36 | Writing a Function Rule |
| 37 | Identifying Arithmetic Sequences as Linear Functions |
| 38 | Rate of Change and Slope |
| 39 | Direct Variation |
| 40 | Slope-Intercept Form |
| 41 | Special Linear Equations |
| **Unit 4 - Linear Functions and Systems** | |
| 42 | Slope-Intercept Transformations |
| 43 | Point-Slope Form |
| 44 | Point-Slope Form Alternative with y = mx + b Inputs |
| 45 | Find X and Y Intercepts with Standard Form |

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| 46 | Converting between Standard Form and Slope-Intercept Form |
| 47 | Converting between Slope Intercept Form and Standard Form |
| 48 | Parallel Lines |
| 49 | Perpendicular Lines |
| 50 | Solving Systems by Graphing |
| 51 | Solving Systems by Substitution |
| 52 | Solving Systems by Elimination |
| 53 | Applying Linear Systems in the Real World |
| 54 | Graphing Linear Inequalities in Two Variables |
| 55 | Graphing Systems of Linear Inequalities |
| 56 | Applying Systems of Linear Inequalities in the Real World |
| 57 | Graphing Positive Absolute Value Functions |
| 58 | Graphing Negative Absolute Value Functions |
| **Unit 5 - Exponential Properties and Functions** | |
| 59 | Zero and Negative Exponents |
| 60 | Multiplication Properties of Exponents |
| 61 | Division Properties of Exponents |
| 62 | Conversion from Exponential to Radical Form |
| 63 | Exponential Functions |
| 64 | Exponential Growth |
| 65 | Exponential Decay |
| 66 | Geometric Sequences |
| 67 | Adding and Subtracting Polynomials |
| 68 | Multiplying Monomials by Polynomials |
| 69 | Multiplying Binomials |
| 70 | Multiplying Binomials Raised to Powers |
| **Unit 6 - Factoring** | |
| 71 | Greatest Common Factor with Coefficients |
| 72 | Greatest Common Factor with Variables |
| 73 | Greatest Common Factor with Variables and Coefficients |
| 74 | Factoring Trinomials with Leading Coefficient of One |
| 75 | Factoring Trinomials with Prime Leading Coefficients |
| 76 | Factoring Trinomials with Composite Leading Coefficients |
| 77 | Factoring Perfect Square Trinomials |
| 78 | Factoring Difference of Squares Binomials |
| 79 | Factoring Four-Term Polynomials |
| **Unit 7 - Quadratic, Inverse, and Square Root Functions** | |
| 80 | Quadratics and Leading Coefficients |
| 81 | Quadratics and Axes of Symmetry |
| 82 | Quadratic Zeroes and Y-intercept |
| 83 | Quadratic Domain and Range |
| 84 | Quadratic Vertices as Minima and Maxima |
| 85 | Quadratic Vertex Form vs. Standard Form |
| 86 | Solving Quadratic Equations by Graphing |
| 87 | Solving Quadratic Equations by Factoring |
| 88 | Solving Quadratic Equations by Square Roots |
| 89 | Solving Quadratic Equations by Completing the Square |
| 90 | Solving Quadratic Equations with the Quadratic Formula |
| 91 | Application of Quadratic Functions |

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| | | | |
|---|---|---|---|
| 92 | Comparing Linear, Quadratic, and Exponential Functions | 99 | Standard Deviation |
| 93 | Systems of Linear and Quadratic Equations | 100 | Box-and-Whisker Plots |
| 94 | Inverse Functions | 101 | Scatter Plots and Correlation |
| 95 | Solving Square Root Equations | 102 | Correlation vs. Causation |
| 96 | Graphing Square Root Functions | 103 | Trend Lines in Scatter Plots |
| Unit 8 - Statistical Analysis | | 104 | Interpolation vs. Extrapolation |
| 97 | Frequency and Histograms | | |
| 98 | Measures of Central Tendency and Dispersion | | |