



Algebra 1 Correlation to Mathematics Frameworks

| | Mathematics Curriculum Framework | I CAN Learn® Lesson # | I CAN Learn® Lesson Title |
|-------------------|---|-----------------------|--|
| Standard 1 | OPERATIONS WITH REAL NUMBERS | | |
| A1.1.1 | Compare real number expressions. | HA1-025 | Comparing and Ordering Real Numbers |
| | | HA1-480 | Finding the Square Roots of Rational Numbers |
| | | HA1-485 | Writing Rational Numbers as Decimals or Fractions |
| | | HA1-810 | Simplifying Expressions Using the Multiplication Properties of Exponents |
| A1.1.2 | Simplify square roots using factors. | HA1-480 | Finding the Square Roots of Rational Numbers |
| A1.1.3 | Understand and use the distributive, associative, and commutative properties. | HA1-075 | Simplifying Algebraic Expressions by Combining Like Terms |
| | | HA1-076 | Basic Distributive Property |
| | | HA1-080 | Simplifying and Evaluating Algebraic Expressions Containing Grouping Symbols |
| | | HA1-085 | Simplifying Expressions Using the Properties of Real Numbers |
| | | HA1-130 | Identifying Postulates, Theorems, and Properties |
| | | HA1-245 | Adding and Subtracting Polynomials |
| | | HA1-920 | Simplifying Algebraic Expressions Using the Distributive Property |
| | | HA1-255 | Multiplying Two Binomials Using the FOIL Method |
| A1.1.4 | Use the laws of exponents for rational exponents. | HA1-492 | Simplifying Square and Cube Roots |
| | | HA1-815 | Simplifying Expressions with Negative and Zero Exponents |
| A1.1.5 | Use dimensional (unit) analysis to organize conversions and computations. | MPA-155 | Comparing and Converting Rates |
| | | HA1-160 | Writing an Equation to Solve Distance, Rate, and Time Problems |
| Standard 2 | LINEAR EQUATIONS AND INEQUALITIES | | |
| A1.2.1 | Solve linear equations. | HA1-115 | Using the Addition and Subtraction Properties for Equations |
| | | HA1-120 | Using the Multiplication and Division Properties for Equations |
| | | HA1-124 | Using a Concrete Model to Solve One- and Two-Step Equations |
| | | HA1-125 | Solving Equations Using More Than One Property |
| | | HA1-140 | Solving Equations by Combining Like Terms |
| | | HA1-144 | Using a Concrete Model to Solve Equations with Variables on Both Sides |
| | | HA1-145 | Solving Equations with Variables on Both Sides |
| | | HA1-382 | Solving Linear Equations Using the Graphing Calculator |
| | | HA1-360 | Expressing Ratios in Simplest Form and Solving Equations Involving Proportions |
| | | HA1-150 | Writing an Equation to Solve Word Problems |
| | | HA1-155 | Writing an Equation to Solve Consecutive Integer Problems |
| | | HA1-160 | Writing an Equation to Solve Distance, Rate, and Time Problems |
| | | HA1-362 | Solving Work Problems |
| | | HA1-165 | Using Equations to Solve Percent Problems |
| | | HA1-170 | Solving Percent of Change Problems |
| A1.2.2 | Solve equations and formulas for a specified variable. | HA1-175 | Solving Literal Equations |
| | | HA1-394 | Interchanging Linear Equations Between Standard Form and Slope-Intercept Form |

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| A1.2.3 | Find solution sets of linear inequalities when possible numbers are given for the variable. | HA1-100 | Finding Solution Sets of Open Sentences from Given Replacement Sets |
| A1.2.4 | Solve linear inequalities using properties of order. | HA1-185 | Solving Inequalities Using the Addition and Subtraction Properties |
| | | HA1-190 | Solving Inequalities Using the Multiplication and Division Properties |
| | | HA1-195 | Solving Inequalities Using More Than One Property |
| A1.2.5 | Solve combined linear inequalities. | HA1-200 | Combined Inequalities |
| | | HA1-205 | Solving Combined Inequalities |
| A1.2.6 | Solve word problems that involve linear equations, formulas, and inequalities. | HA1-104 | Translating Word Statements into Equations |
| | | HA1-105 | Translating Word Statements into Inequalities |
| | | HA1-150 | Writing an Equation to Solve Word Problems |
| | | HA1-155 | Writing an Equation to Solve Consecutive Integer Problems |
| | | HA1-160 | Writing an Equation to Solve Distance, Rate, and Time Problems |
| | | HA1-362 | Solving Work Problems |
| | | HA1-165 | Using Equations to Solve Percent Problems |
| | | HA1-135 | Evaluating Formulas |
| | | HA1-170 | Solving Percent of Change Problems |
| Standard 3 | RELATIONS AND FUNCTIONS | | |
| A1.3.1 | Sketch a reasonable graph for a given relationship. | HA1-380 | Graphing Linear Equations |
| | | HA1-180 | Graphing Equations and Inequalities on the Number Line |
| | | HA1-395 | Drawing a Line Using Slope-Intercept and Determining if Two Lines are Parallel |
| | | HA1-398 | Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point |
| | | HA1-415 | Graphing Linear Inequalities with Two Variables |
| | | HA1-416 | Graphing Linear Inequalities with Two Variables Using the Graphing Calculator |
| | | HA1-455 | Solving Systems of Linear Equations by Graphing |
| | | HA1-887 | Applications of Absolute Value, Step, and Constant Functions |
| | | HA1-955 | Analyzing Linear Functions |
| | | HA1-960 | Real-World Applications of Linear Functions |
| | | HA1-441 | Applications of Functions and Relations Involving Distance, Rate, and Time |
| | | HA1-442 | Interpreting Graphs of Functions in Real-Life Situations |
| | | HA1-935 | Analyzing Graphs of Quadratic Functions |
| | | HA1-945 | Real-World Applications of Quadratic Functions |
| | | HA1-820 | Graphing Exponential Functions |
| A1.3.2 | Interpret a graph representing a given situation. | HA1-441 | Applications of Functions and Relations Involving Distance, Rate, and Time |
| | | HA1-402 | Translating Among Multiple Representations of Functions |
| | | HA1-442 | Interpreting Graphs of Functions in Real-Life Situations |
| | | HA1-455 | Solving Systems of Linear Equations by Graphing |
| | | HA1-892 | Data Analysis Using the Graphing Calculator |
| | | HA1-955 | Analyzing Linear Functions |
| | | HA1-960 | Real-World Applications of Linear Functions |
| A1.3.3 | Understand the concept of a function, decide if a given relation is a function, and link equations to functions. | HA1-436 | Identifying Relations |
| | | HA1-437 | Identifying Relations as Functions |
| | | HA1-438 | Finding the Domain and Range of Functions |
| | | HA1-439 | Using Function Notation |
| | | HA1-892 | Data Analysis Using the Graphing Calculator |
| A1.3.4 | Find the domain and range of a relation. | HA1-438 | Finding the Domain and Range of Functions |
| | | HA1-439 | Using Function Notation |
| | | HA1-437 | Identifying Relations as Functions |
| | | HA1-402 | Translating Among Multiple Representations of Functions |

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| Standard 4 | GRAPHING LINEAR EQUATIONS AND INEQUALITIES | | |
| A1.4.1 | Graph a linear equation. | HA1-380 | Graphing Linear Equations |
| | | HA1-382 | Solving Linear Equations Using the Graphing Calculator |
| | | HA1-385 | Finding the Slope of a Line from its Graph or from the Coordinates of Two Points |
| | | HA1-395 | Drawing a Line Using Slope-Intercept and Determining if Two Lines are Parallel |
| | | HA1-398 | Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point |
| | | HA1-401 | How Variations of "m" and "b" Affect the Graph of $y = mx + b$ |
| | | HA1-402 | Translating Among Multiple Representations of Functions |
| A1.4.2 | Find the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line. | HA1-380 | Graphing Linear Equations |
| | | HA1-385 | Finding the Slope of a Line from its Graph or from the Coordinates of Two Points |
| | | HA1-398 | Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point |
| A1.4.3 | Write the equation of a line in slope-intercept form. Understand how the slope and y-intercept of the graph are related to the equation. | HA1-385 | Finding the Slope of a Line from its Graph or from the Coordinates of Two Points |
| | | HA1-394 | Interchanging Linear Equations Between Standard Form and Slope-Intercept Form |
| | | HA1-395 | Finding the Equation of a Line Parallel or Perpendicular to a Given Line |
| | | HA1-405 | Determining an Equation of a Line Given the Slope and Coordinates of One Point |
| | | HA1-410 | Determining an Equation of a Line Given the Coordinates of Two Points |
| A1.4.4 | Write the equation of a line given appropriate information. | HA1-405 | Determining an Equation of a Line Given the Slope and Coordinates of One Point |
| | | HA1-410 | Determining an Equation of a Line Given the Coordinates of Two Points |
| A1.4.5 | Write the equation of a line that models a data set and use the equation (or the graph of the equation) to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change. | HA1-955 | Analyzing Linear Functions |
| | | HA1-960 | Real-World Applications of Linear Functions |
| | | HA1-965 | Determining the Best-Fitting Line |
| A1.4.6 | Graph a linear inequality in two variables. | HA1-415 | Graphing Linear Inequalities with Two Variables |
| | | HA1-416 | Graphing Linear Inequalities with Two Variables Using the Graphing Calculator |
| Standard 5 | PAIRS OF LINEAR EQUATIONS AND INEQUALITIES | | |
| A1.5.1 | Use a graph to estimate the solution of a pair of linear equations in two variables. | HA1-455 | Solving Systems of Linear Equations by Graphing |
| | | HA1-806 | Solving Systems of Linear Equations Using the Graphing Calculator |
| A1.5.2 | Use a graph to find the solution set of a pair of linear inequalities in two variables. | HA1-475 | Graphing the Solution Set of a System of Linear Inequalities |
| A1.5.3 | Understand and use the substitution method to solve a pair of linear equations in two variables. | HA1-460 | Solving Systems of Linear Equations by the Substitution Method |
| A1.5.4 | Understand and use the addition or subtraction method to solve a pair of linear equations in two variables. | HA1-465 | Solving Systems of Linear Equations by the Addition/Subtraction Method |
| A1.5.5 | Understand and use multiplication with the addition or subtraction method to solve a pair of linear equations in two variables. | HA1-470 | Solving Systems of Linear Equations by the Multiply/Add/Subtract Method |
| A1.5.6 | Use pairs of linear equations to solve word problems. | HA1-805 | Applying Algebra Concepts |
| | | HA1-870 | Solving Problems with Systems of Linear Equations and Inequalities |
| Standard 6 | POLYNOMIALS | | |
| A1.6.1 | Add and subtract polynomials. | HA1-245 | Adding and Subtracting Polynomials |
| A1.6.2 | Multiply and divide monomials. | HA1-220 | Identifying and Multiplying Monomials |
| | | HA1-225 | Dividing Monomials and Simplifying Expressions Having an Exponent of Zero |
| A1.6.3 | Find powers and roots of monomials (only when the answer has an integer exponent). | HA1-230 | Raising a Monomial or Quotient of Monomials to a Power |
| | | HA1-490 | Simplifying Square Roots |
| A1.6.4 | Multiply polynomials. | HA1-920 | Simplifying Algebraic Expressions Using the Distributive Property |
| | | HA1-255 | Multiplying Two Binomials Using the FOIL Method |

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| A1.6.5 | Divide polynomials by monomials. | HA1-260 | Squaring a Binomial and Finding the Product of a Sum and Difference |
| | | HA1-355 | Dividing Polynomials |
| | | HA1-863 | Dividing Polynomials Using Long Division |
| A1.6.6 | Find a common monomial factor in a polynomial. | HA1-270 | Factoring the Greatest Common Monomial Factor from a Polynomial |
| | | HA1-295 | Factoring by Removing a Common Factor and Grouping |
| A1.6.7 | Factor the difference of two squares and other quadratics. | HA1-275 | Factoring the Difference Between Two Squares and Perfect Trinomial Squares |
| | | HA1-276 | Factoring Sums and Differences of Cubes |
| A1.6.8 | Understand and describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression. | HA1-280 | Factoring $x^2 + bx + c$ When c is Greater Than Zero |
| | | HA1-285 | Factoring $x^2 + bx + c$ When c is Less Than Zero |
| | | HA1-290 | Factoring $ax^2 + bx + c$ |
| | | HA1-291 | Factoring Quadratic Equations Using the Graphing Calculator |
| | | HA1-295 | Factoring by Removing a Common Factor and Grouping |
| | | HA1-300 | Factoring a Polynomial Completely |
| | | HA1-305 | Solving Polynomial Equations by Factoring |
| | | HA1-310 | The Practical Use of Polynomial Equations |
| | | HA1-536 | Solving Quadratic Equations Using the Graphing Calculator |
| Standard 7 | ALGEBRAIC FUNCTIONS | | |
| A1.7.1 | Simplify algebraic ratios. | HA1-315 | Defining Rational Expressions and Determining the Restricted Values |
| | | HA1-320 | Simplifying Rational Expressions |
| | | HA1-325 | Multiplying Rational Expressions |
| | | HA1-330 | Dividing Rational Expressions |
| | | HA1-335 | Finding the LCD of Rational Expressions and Changing Fractions to Equivalent Fractions |
| | | HA1-340 | Adding and Subtracting Rational Expressions |
| | | HA1-350 | Simplifying Complex Fractions |
| A1.7.2 | Solve algebraic proportions. | HA1-365 | Solving Rational Equations |
| | | HA1-360 | Expressing Ratios in Simplest Form and Solving Equations Involving Proportions |
| Standard 8 | QUADRATIC, CUBIC, AND RADICAL EQUATIONS | | |
| A1.8.1 | Graph quadratic, cubic, and radical equations. | HA1-536 | Solving Quadratic Equations Using the Graphing Calculator |
| | | HA1-927 | Graphing $f(x) = ax^2$ Using Dilations |
| | | HA1-928 | Graphing $f(x) = ax^2$ Using Dilations and Reflections |
| | | HA1-929 | Graphing $f(x) = ax^2 + c$ Using Dilations, Reflections, and Vertical Translations |
| | | HA1-935 | Analyzing Graphs of Quadratic Functions |
| | | HA1-945 | Real-World Applications of Quadratic Functions |
| A1.8.2 | Solve quadratic equations by factoring. | HA1-291 | Factoring Quadratic Equations Using the Graphing Calculator |
| | | HA1-295 | Factoring by Removing a Common Factor and Grouping |
| | | HA1-300 | Factoring a Polynomial Completely |
| | | HA1-305 | Solving Polynomial Equations by Factoring |
| | | HA1-310 | The Practical Use of Polynomial Equations |
| A1.8.3 | Solve quadratic equations in which a perfect square equals a constant. | HA1-525 | Solving Quadratic Equations Involving Perfect Square Expressions |
| A1.8.4 | Complete the square to solve quadratic equations. | HA1-530 | Solving Quadratic Equations by Completing the Square |
| A1.8.5 | Derive the quadratic formula by completing the square. | HA1-535 | Developing the Quadratic Formula and Using it to Solve Equations |
| A1.8.6 | Solve quadratic equations using the quadratic formula. | HA1-535 | Developing the Quadratic Formula and Using it to Solve Equations |
| A1.8.7 | Use quadratic equations to solve word problems. | HA1-805 | Applying Algebra Concepts |
| | | HA1-935 | Analyzing Graphs of Quadratic Functions |
| | | HA1-940 | Applications of Quadratic Equations |
| | | HA1-945 | Real-World Applications of Quadratic Functions |
| A1.8.8 | Solve equations that contain radical expressions. | HA1-510 | Solving Radical Equations |

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| | | HA1-515 | Using the Pythagorean Theorem |
| | | HA1-516 | Applications of the Pythagorean Theorem |
| | | HA1-520 | Finding the Distance Between Two Points on a Coordinate Plane |
| A1.8.9 | Use graphing technology to find approximate solutions of quadratic and cubic equations. | HA1-291 | Factoring Quadratic Equations Using the Graphing Calculator |
| | | HA1-536 | Solving Quadratic Equations Using the Graphing Calculator |
| Standard 9 | MATHEMATICAL REASONING AND PROBLEM SOLVING | | |
| A1.9.1 | Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards. | HA1-150 | Writing an Equation to Solve Word Problems |
| | | HA1-155 | Writing an Equation to Solve Consecutive Integer Problems |
| | | HA1-160 | Writing an Equation to Solve Distance, Rate, and Time Problems |
| | | HA1-362 | Solving Work Problems |
| | | HA1-165 | Using Equations to Solve Percent Problems |
| | | HA1-170 | Solving Percent of Change Problems |
| | | HA1-805 | Applying Algebra Concepts |
| | | HA1-870 | Solving Problems with Systems of Linear Equations and Inequalities |
| | | HA1-442 | Interpreting Graphs of Functions in Real-Life Situations |
| | | HA1-825 | Exponential Growth and Decay |
| | | HA1-442 | Interpreting Graphs of Functions in Real-Life Situations |
| A1.9.2 | Decide whether a solution is reasonable in the context of the original situation. | Throughout | This standard is demonstrated throughout. For examples, please see the following: |
| | | HA1-155 | Writing an Equation to Solve Consecutive Integer Problems |
| | | HA1-310 | The Practical Use of Polynomial Equations |
| | | HA1-510 | Solving Radical Equations |
| | | HA1-365 | Solving Rational Equations |
| | | HA1-362 | Solving Work Problems |
| A1.9.3 | Use the properties of the real number system and the order of operations to justify the steps of simplifying functions and solving equations. | Throughout | This standard is demonstrated throughout. For examples, please see the following: |
| | | HA1-439 | Using Function Notation |
| | | HA1-195 | Solving Inequalities Using More Than One Property |
| | | HA1-935 | Analyzing Graphs of Quadratic Functions |
| | | HA1-145 | Solving Equations with Variables on Both Sides |
| | | HA1-929 | Graphing $f(x) = ax^2 + c$ Using Dilations, Reflections, and Vertical Translations |
| A1.9.4 | Understand that the logic of equation solving begins with the assumption that the variable is a number that satisfies the equation and that the steps taken when solving equations create new equations that have, in most cases, the same solution set as the original. Understand that similar logic applies to solving systems of equations simultaneously. | HGM-035 | Using Deductive Reasoning: Algebraic Proof |
| | | HA1-455 | Solving Systems of Linear Equations by Graphing |
| | | HA1-806 | Solving Systems of Linear Equations Using the Graphing Calculator |
| A1.9.5 | Decide whether a given algebraic statement is true always, sometimes, or never (statements involving linear or quadratic expressions, equations, or inequalities). | HA1-881 | Completing and Validating Algebraic Proofs |
| A1.9.6 | Distinguish between inductive and deductive reasoning, identifying and providing examples of each. | HA1-449 | Applying Inductive and Deductive Reasoning |
| | | HGM-020 | Using Inductive Reasoning: Linear and Non-Linear Relationships |
| | | HGM-027 | Identifying Counterexamples and Using Proof by Contradiction |
| A1.9.7 | Identify the hypothesis and conclusion in a logical deduction. | HGM-030 | Deductive Reasoning: Writing Conditional Statements |
| | | HGM-035 | Using Deductive Reasoning: Algebraic Proof |

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| A1.9.8 | Use counterexamples to show that statements are false, recognizing that a single counterexample is sufficient to prove a general statement false. | HA1-449 HA1-449 | Applying Inductive and Deductive Reasoning Applying Inductive and Deductive Reasoning |
| | | HGM-027 | Identifying Counterexamples and Using Proof by Contradiction |

MM1-Fundamentals of Mathematics

MPA-Pre-Algebra

HA1-Algebra 1

HGM - Geometry

Note: Standards were taken from the Indiana Mathematics Curriculum Framework document adopted by the Indiana State Board of Education in September 2000 and updated in 2006.