



## Algebra I Correlation to Mathematics Framework

	Mathematics Curriculum Framework	I CAN Learn <sup>®</sup> Lesson #	I CAN Learn <sup>®</sup> Lesson Title
<b>STANDARD 1</b>	<b>MATHEMATICAL PROCESSES</b>		
	<b>Course Level Expectations:</b>		
CLE 3102.1.1	Use mathematical language, symbols, definitions, proofs and counterexamples correctly and precisely in mathematical reasoning.	Throughout	This standard is demonstrated throughout. For examples please see:
		HA1-020	Classifying Numbers into Subsets of Real Numbers
		HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-130	Identifying Postulates, Theorems, and Properties
		HA1-449	Applying Inductive and Deductive Reasoning
CLE 3102.1.2	Apply and adapt a variety of appropriate strategies to problem solving, including testing cases, estimation, and then checking induced errors and the reasonableness of the solution.	Throughout	This standard is demonstrated throughout. For examples please see:
		HA1-150	Writing an Equation to Solve Word Problems
		HA1-362	Solving Work Problems
CLE 3102.1.3	Develop inductive and deductive reasoning to independently make and evaluate mathematical arguments and construct appropriate proofs; include various types of reasoning, logic, and intuition.	Throughout	This standard is demonstrated throughout. For examples please see:
		HA1-449	Applying Inductive and Deductive Reasoning
		HA1-805	Applying Algebra Concepts
		HA1-881	Completing and Validating Algebraic Proofs
CLE 3102.1.4	Move flexibly between multiple representations (contextual, physical, written, verbal, iconic/pictorial, graphical, tabular, and symbolic), to solve problems, to model mathematical ideas, and to communicate solution strategies.	Throughout	This standard is demonstrated throughout. For examples please see:
		HA1-960	Real-World Applications of Linear Functions
		HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
		HA1-402	Translating Among Multiple Representations of Functions
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		HA1-565	Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events
		HA1-271	Factoring Trinomials and the Differences of Squares Using Algebra Tiles
CLE 3102.1.5	Recognize and use mathematical ideas and processes that arise in different settings, with an emphasis on formulating a problem in mathematical terms, interpreting the solutions, mathematical ideas, and communication of solution strategies.	Throughout	This standard is demonstrated throughout. For examples please see:
		HA1-155	Writing an Equation to Solve Consecutive Integer Problems
		HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems

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CLE 3102.1.6	Employ reading and writing to recognize the major themes of mathematical processes, the historical development of mathematics, and the connections between mathematics and the real world.	Throughout	This standard is demonstrated throughout including the Journal and Problem Sets of the Day sections. For examples please see:
		HA1-095	Translating Word Phrases into Algebraic Expressions
		HA1-104	Translating Word Statements into Equations
		HA1-105	Translating Word Statements into Inequalities
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-960	Real-World Applications of Linear Functions
		HA1-887	Applications of Absolute Value, Step, and Constant Functions
		HA1-940	Applications of Quadratic Equations
		HA1-945	Real-World Applications of Quadratic Functions
CLE 3102.1.7	Use technologies appropriately to develop understanding of abstract mathematical ideas, to facilitate problem solving, and to produce accurate and reliable models.	HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-416	Graphing Linear Inequalities with Two Variables Using the Graphing Calculator
		HA1-291	Factoring Quadratic Equations Using the Graphing Calculator
		HA1-892	Data Analysis Using the Graphing Calculator
	<b>Checks for Understanding (Formative/Summative Assessment):</b>		
3102.1.1	Develop meaning for mathematical vocabulary.	Throughout	This standard is demonstrated throughout including the Journal and Problem Sets of the Day sections.
3102.1.2	Use the terminology of mathematics correctly.	Throughout	This standard is demonstrated throughout.
3102.1.3	Understand and use mathematical symbols, notation, and common mathematical abbreviations correctly.	Throughout	This standard is demonstrated throughout.
3102.1.4	Write a rule with variables that expresses a pattern.	HA1-447	Identifying Number Patterns
		HA1-448	Finding the nth Term of a Pattern
3102.1.5	Use formulas, equations, and inequalities to solve real-world problems including time/rate/distance, percent increase/decrease, ratio/proportion, and mixture problems.	HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems
		HA1-150	Writing an Equation to Solve Word Problems
		HA1-170	Solving Percent of Change Problems
		HA1-135	Evaluating Formulas
		HA1-362	Solving Work Problems
		HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
		HA1-805	Applying Algebra Concepts
3102.1.6	Use a variety of strategies to estimate and compute solutions, including real-world problems.	Throughout	This standard is demonstrated throughout.
3102.1.7	Identify missing or irrelevant information in problems.	Throughout	This standard is demonstrated throughout.
3102.1.8	Recognize and perform multiple steps in problem solving when necessary.	Throughout	This standard is demonstrated throughout.
3102.1.9	Identify and use properties of the real numbers (including commutative, associative, distributive, inverse, identity element, closure, reflexive, symmetric, transitive, operation properties of equality).	HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-130	Identifying Postulates, Theorems, and Properties
3102.1.10	Use algebraic properties to develop a valid mathematical argument.	HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-130	Identifying Postulates, Theorems, and Properties
3102.1.11	Use manipulatives to model algebraic concepts.	HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
		HA1-124	Using a Concrete Model to Solve One- and Two-Step Equations
		HA1-144	Using a Concrete Model to Solve Equations with Variables on Both Sides
		HA1-271	Factoring Trinomials and the Differences of Squares Using Algebra Tiles
3102.1.12	Create and work flexibly among representations of relations (including verbal, equations, tables, mappings, graphs).	HA1-436	Identifying Relations

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3102.1.13	Change from one representation of a relation to another representation, for example, change from a verbal description to a graph.	HA1-437 HA1-436	Identifying Relations as Functions Identifying Relations
3102.1.14	Apply graphical transformations that occur when changes are made to coefficients and constants in functions.	HA1-437 HA1-955	Identifying Relations as Functions Analyzing Linear Functions
		HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		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
3102.1.15	Apply arithmetic concepts in algebraic contexts.	Throughout	This standard is demonstrated throughout.
3102.1.16	Understand and express the meaning of the slope and y-intercept of linear functions in real-world contexts.	HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-450	Solving Problems Involving Direct Variation
3102.1.17	Connect the study of algebra to the historical development of algebra.	Throughout	This standard is demonstrated throughout.
3102.1.18	Translate syntax of technology to appropriate mathematical notation.	HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-416	Graphing Linear Inequalities with Two Variables Using the Graphing Calculator
		HA1-291	Factoring Quadratic Equations Using the Graphing Calculator
		HA1-892	Data Analysis Using the Graphing Calculator
3102.1.19	Recognize and practice appropriate use of technology in representations and in problem solving.	HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-416	Graphing Linear Inequalities with Two Variables Using the Graphing Calculator
		HA1-291	Factoring Quadratic Equations Using the Graphing Calculator
		HA1-892	Data Analysis Using the Graphing Calculator
	<b>State Performance Indicators:</b>		
SPI 3102.1.1	Interpret patterns found in sequences, tables, and other forms of quantitative information using variables or function notation.	HA1-447	Identifying Number Patterns
		HA1-448	Finding the $n$ th Term of a Pattern
SPI 3102.1.2	Write an equation symbolically to express a contextual problem.	HA1-104	Translating Word Statements into Equations
		HA1-150	Writing an Equation to Solve Word Problems
SPI 3102.1.3	Apply properties to evaluate expressions, simplify expressions, and justify solutions to problems.	HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
		HA1-090	Simplifying Expressions Using the Property of -1
		HA1-080	Simplifying and Evaluating Algebraic Expressions Containing Grouping Symbols
SPI 3102.1.4	Translate between representations of functions that depict real-world situations.	HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-960	Real-World Applications of Linear Functions
		HA1-887	Applications of Absolute Value, Step, and Constant Functions
		HA1-940	Applications of Quadratic Equations
		HA1-945	Real-World Applications of Quadratic Functions
SPI 3102.1.5	Recognize and express the effect of changing constants and/or coefficients in problem solving.	Throughout	This standard is demonstrated throughout.
SPI 3102.1.6	Determine and interpret slope in multiple contexts including rate of change in real-world problems.	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
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations

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		HA1-450	Solving Problems Involving Direct Variation
<b>STANDARD 2</b>	<b>NUMBER AND OPERATIONS</b>		
	<b>Course Level Expectations:</b>		
CLE 3102.2.1	Understand computational results and operations involving real numbers in multiple representations.	HA1-003	Order of Operations
		HA1-015	Graphing Real Numbers Using a Number Line
		HA1-030	Using Opposites and Absolute Values
		HA1-035	Adding Real Numbers Using a Number Line
		HA1-040	The Addition Rule for Real Numbers
		HA1-045	Subtracting Real Numbers
		HA1-050	Multiplying Real Numbers
		HA1-055	Dividing Real Numbers
		HA1-062	Adding, Subtracting, Multiplying, and Dividing Integers
		HA1-060	Evaluating Numerical Expressions Using the Order of Operations
		HA1-480	Finding the Square Roots of Rational Numbers
CLE 3102.2.2	Understand properties of and relationships between subsets and elements of the real number system.	HA1-020	Classifying Numbers into Subsets of Real Numbers
	<b>Checks for Understanding (Formative/Summative Assessment):</b>		
3102.2.1	Recognize and use like terms to simplify expressions.	HA1-075	Simplifying Algebraic Expressions by Combining Like Terms
		HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
3102.2.2	Apply the order of operations to simplify and evaluate algebraic expressions.	HA1-003	Order of Operations
		HA1-005	Evaluating Algebraic Expressions
		HA1-065	Evaluating Expressions Containing Exponents
3102.2.3	Operate with and simplify radicals (index 2, 3, n) and radical expressions including rational numbers and variables in the radicand.	HA1-480	Finding the Square Roots of Rational Numbers
		HA1-490	Simplifying Square Roots
		HA1-492	Simplifying Square and Cube Roots
3102.2.4	Operate efficiently with both rational and irrational numbers.	HA1-495	Simplifying Sums and Differences of Radicals
		HA1-500	Simplifying Products of Radicals
		HA1-505	Simplifying Quotients of Radicals
3102.2.5	Perform operations with numbers in scientific notation (multiply, divide, powers).	HA1-235	Applying Scientific Notation
3102.2.6	Use appropriate technologies to apply scientific notation to real-world problems.	HA1-235	Applying Scientific Notation
3102.2.7	Identify the subsets in the real number system and understand their relationships.	HA1-020	Classifying Numbers into Subsets of Real Numbers
3102.2.8	Use multiple strategies to approximate the value of an irrational number including irrational square roots and including location on the real number line.	HA1-015	Graphing Real Numbers Using a Number Line
	<b>State Performance Indicators:</b>		
SPI 3102.2.1	Operate (add, subtract, multiply, divide, simplify, powers) with radicals and radical expressions including radicands involving rational numbers and algebraic expressions.	HA1-495	Simplifying Sums and Differences of Radicals
		HA1-500	Simplifying Products of Radicals
		HA1-505	Simplifying Quotients of Radicals
SPI 3102.2.2	Multiply, divide, and square numbers expressed in scientific notation.	HA1-235	Applying Scientific Notation
SPI 3102.2.3	Describe and/or order a given set of real numbers including both rational and irrational numbers.	HA1-025	Comparing and Ordering Real Numbers
<b>STANDARD 3</b>	<b>ALGEBRA</b>		

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	<b>Course Level Expectations:</b>		
CLE 3102.3.1	Use algebraic thinking to analyze and generalize patterns.	HA1-447	Identifying Number Patterns
		HA1-448	Finding the nth Term of a Pattern
CLE 3102.3.2	Understand and apply properties in order to perform operations with, evaluate, simplify, and factor expressions and polynomials.	HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
		HA1-090	Simplifying Expressions Using the Property of -1
		HA1-005	Evaluating Algebraic Expressions
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-220	Identifying and Multiplying Monomials
		HA1-225	Dividing Monomials and Simplifying Expressions Having an Exponent of Zero
		HA1-230	Raising a Monomial or Quotient of Monomials to a Power
		HA1-240	Identifying the Degree of Polynomials and Simplifying by Combining Like Terms
		HA1-245	Adding and Subtracting Polynomials
		HA1-920	Simplifying Algebraic Expressions Using the Distributive Property
		HA1-255	Multiplying Two Binomials Using the FOIL Method
		HA1-260	Squaring a Binomial and Finding the Product of a Sum and Difference
		HA1-270	Factoring the Greatest Common Monomial Factor from a Polynomial
		HA1-271	Factoring Trinomials and the Differences of Squares Using Algebra Tiles
		HA1-275	Factoring the Difference Between Two Squares and Perfect Trinomial Squares
		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
CLE 3102.3.3	Understand and apply operations with rational expressions and equations.	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
		HA1-345	Adding and Subtracting Polynomials and Rational Expressions
CLE 3102.3.4	Solve problems involving linear equations and linear 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
		HA1-170	Solving Percent of Change Problems
		HA1-105	Translating Word Statements into Inequalities
CLE 3102.3.5	Manipulate formulas and solve literal equations.	HA1-135	Evaluating Formulas
		HA1-175	Solving Literal Equations
CLE 3102.3.6	Understand and use relations and functions in various representations to solve contextual problems.	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
CLE 3102.3.7	Construct and solve systems of linear equations and inequalities in two variables by various methods.	HA1-455	Solving Systems of Linear Equations by Graphing
		HA1-460	Solving Systems of Linear Equations by the Substitution Method

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		HA1-465	Solving Systems of Linear Equations by the Addition/Subtraction Method
		HA1-470	Solving Systems of Linear Equations by the Multiply/Add/Subtract Method
		HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
		HA1-475	Graphing the Solution Set of a System of Linear Inequalities
		HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
CLE 3102.3.8	Solve and understand solutions of quadratic equations with real roots.	HA1-305	Solving Polynomial Equations by Factoring
		HA1-310	The Practical Use of Polynomial Equations
		HA1-940	Applications of Quadratic Equations
		HA1-945	Real-World Applications of Quadratic Functions
		HA1-525	Solving Quadratic Equations Involving Perfect Square Expressions
		HA1-530	Solving Quadratic Equations by Completing the Square
		HA1-535	Developing the Quadratic Formula and Using it to Solve Equations
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
CLE 3102.3.9	Understand and use exponential functions to solve contextual problems.	HA1-820	Graphing Exponential Functions
		HA1-825	Solving Exponential Growth and Decay Problems (Future release)
	<b>Checks for Understanding (Formative/Summative Assessment):</b>		
3102.3.1	Recognize and extend arithmetic and geometric sequences.	HA1-447	Identifying Number Patterns
		HA1-448	Finding the nth Term of a Pattern
3102.3.2	Explore patterns including Pascal's Triangle and the Fibonacci sequence.	HA1-447	Identifying Number Patterns
		HA1-448	Finding the nth Term of a Pattern
3102.3.3	Justify correct results of algebraic procedures using extension of properties of real numbers to algebraic expressions.	HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
		HA1-090	Simplifying Expressions Using the Property of -1
□ 3102.3.4	Simplify expressions using exponent rules including negative exponents and zero exponents.	HA1-810	Simplifying Expressions Using the Multiplication Properties of Exponents
		HA1-815	Simplifying Expressions with Negative and Zero Exponents
		HA1-818	Simplifying Expressions Using the Division Properties of Exponents
3102.3.5	Add, subtract, and multiply polynomials including squaring a binomial.	HA1-240	Identifying the Degree of Polynomials and Simplifying by Combining Like Terms
		HA1-245	Adding and Subtracting Polynomials
		HA1-920	Simplifying Algebraic Expressions Using the Distributive Property
		HA1-255	Multiplying Two Binomials Using the FOIL Method
		HA1-260	Squaring a Binomial and Finding the Product of a Sum and Difference
3102.3.6	Find the quotient of a polynomial and a monomial.	HA1-355	Dividing Polynomials
3102.3.7	Use various models (including area models) to represent products of polynomials.	HA1-220	Identifying and Multiplying Monomials
		HA1-255	Multiplying Two Binomials Using the FOIL Method
3102.3.8	Find the GCF of the terms in a polynomial.	HA1-270	Factoring the Greatest Common Monomial Factor from a Polynomial
3102.3.9	Find two binomial factors of a quadratic expression.	HA1-291	Factoring Quadratic Equations Using the Graphing Calculator
		HA1-271	Factoring Trinomials and the Differences of Squares Using Algebra Tiles
		HA1-275	Factoring the Difference Between Two Squares and Perfect Trinomial Squares
		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 $ax^2 + bx + c$
		HA1-295	Factoring by Removing a Common Factor and Grouping
		HA1-300	Factoring a Polynomial Completely
3102.3.10	Add, subtract, multiply, and divide rational expressions and simplify results.	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

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3102.3.11	Solve multi-step linear equations with one variable.	HA1-345	Adding and Subtracting Polynomials and Rational Expressions
		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
3102.3.12	Recognize and articulate when an equation has no solution, a single solution, or all real numbers as solutions.	HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
		HA1-382	Solving Linear Equations Using the Graphing Calculator
3102.3.13	Solve multi-step linear inequalities with one variable and graph the solution on a number line.	HA1-925	Using the Discriminant to Analyze the Solution of a Quadratic Equation
		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
		HA1-200	Combined Inequalities
3102.3.14	Solve absolute value equations and inequalities (including compound inequalities) with one variable and graph their solutions on a number line.	HA1-205	Solving Combined Inequalities
		HA1-210	Solving Equations Involving Absolute Value
3102.3.15	Determine domain and range of a relation and articulate restrictions imposed either by the operations or by the real life situation that the function represents.	HA1-215	Solving Absolute Value Inequalities
		HA1-438	Finding the Domain and Range of Functions
		HA1-439	Using Function Notation
3102.3.16	Determine if a relation is a function from its graph or from a set of ordered pairs.	HA1-402	Translating Among Multiple Representations of Functions
		HA1-437	Identifying Relations as Functions
3102.3.17	Recognize "families" of functions.	HA1-955	Analyzing Linear Functions
		HA1-960	Real-World Applications of Linear Functions
		HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		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
3102.3.18	Analyze the characteristics of graphs of basic linear relations and linear functions including constant function, direct variation, identity function, vertical lines, absolute value of linear functions. Use technology where appropriate.	HA1-935	Analyzing Graphs of Quadratic Functions
		HA1-955	Analyzing Linear Functions
		HA1-887	Applications of Absolute Value, Step, and Constant Functions
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-450	Solving Problems Involving Direct Variation
		HA1-950	Graphing Absolute Value Functions
		HA1-398	Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point
3102.3.19	Explore the characteristics of graphs of various nonlinear relations and functions including inverse variation, quadratic, and square root function. Use technology where appropriate.	HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-453	Solving Problems Involving Inverse Variation
		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
		HA1-940	Applications of Quadratic Equations

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3102.3.20	Understand that a linear equation has a constant rate of change called slope and represent slope in various forms.	HA1-945	Real-World Applications of Quadratic Functions
		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
3102.3.21	Determine the equation of a line using given information including a point and slope, two points, a point and a line parallel or perpendicular, graph, intercepts.	HA1-450	Solving Problems Involving Direct Variation
		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
3102.3.22	Express the equation of a line in standard form, slope-intercept, and point-slope form.	HA1-395	Finding the Equation of a Line Parallel or Perpendicular to a Given Line
		HA1-394	Interchanging Linear Equations Between Standard Form and Slope-Intercept Form
		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
3102.3.23	Determine the graph of a linear equation including those that depict contextual situations.	HA1-395	Finding the Equation of a Line Parallel or Perpendicular to a Given Line
		HA1-955	Analyzing Linear Functions
		HA1-380	Graphing Linear Equations
		HA1-955	Analyzing Linear Functions
		HA1-402	Translating Among Multiple Representations of Functions
3102.3.24	Interpret the changes in the slope-intercept form and graph of a linear equation by looking at different values of the parameters, m and b.	HA1-892	Data Analysis Using the Graphing Calculator
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-439	Using Function Notation
3102.3.25	Find function values using $f(x)$ notation or graphs.	HA1-439	Using Function Notation
3102.3.26	Graph linear inequalities on the coordinate plane and identify regions of the graph containing ordered pairs in the solution.	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
3102.3.27	Determine the number of solutions for a system of linear equations (0, 1, or infinitely many solutions).	HA1-460	Solving Systems of Linear Equations by the Substitution Method
		HA1-465	Solving Systems of Linear Equations by the Addition/Subtraction Method
		HA1-470	Solving Systems of Linear Equations by the Multiply/Add/Subtract Method
		HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
		HA1-455	Solving Systems of Linear Equations by Graphing
3102.3.28	Solve systems of linear equations graphically, algebraically, and with technology.	HA1-460	Solving Systems of Linear Equations by the Substitution Method
		HA1-465	Solving Systems of Linear Equations by the Addition/Subtraction Method
		HA1-470	Solving Systems of Linear Equations by the Multiply/Add/Subtract Method
		HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
		HA1-455	Solving Systems of Linear Equations by Graphing
3102.3.29	Solve contextual problems involving systems of linear equations or inequalities and interpret solutions in context.	HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
3102.3.30	Solve quadratic equations using multiple methods: factoring, graphing, quadratic formula, or square root principle.	HA1-305	Solving Polynomial Equations by Factoring
		HA1-525	Solving Quadratic Equations Involving Perfect Square Expressions
		HA1-530	Solving Quadratic Equations by Completing the Square
		HA1-535	Developing the Quadratic Formula and Using it to Solve Equations
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
3102.3.31	Determine the number of real solutions for a quadratic equation including using the discriminant and its graph.	HA1-905	Quadratic Equations with Irrational Roots

	Mathematics Curriculum Framework	I CAN Learn® Lesson #	I CAN Learn® Lesson Title
3102.3.32	Recognize the connection among factors, solutions (roots), zeros of related functions, and x-intercepts in equations that arise from quadratic functions.	HA1-925	Using the Discriminant to Analyze the Solution of a Quadratic Equation
		HA1-935	Analyzing Graphs of Quadratic Functions
3102.3.33	Recognize data that can be modeled by an exponential function.	HA1-892	Data Analysis Using the Graphing Calculator
3102.3.34	Graph exponential functions in the form $y = a(b^x)$ where $b \neq 0$ .	HA1-820	Graphing Exponential Functions
3102.3.35	Apply growth/decay and simple/compound interest formulas to solve contextual problems.	HA1-825	Solving Exponential Growth and Decay Problems (Future release)
	<b>State Performance Indicators:</b>		
SPI 3102.3.1	Express a generalization of a pattern in various representations including algebraic and function notation.	HA1-447	Identifying Number Patterns
		HA1-448	Finding the $n$ th Term of a Pattern
SPI 3102.3.2	Operate with polynomials and simplify results.	HA1-220	Identifying and Multiplying Monomials
		HA1-225	Dividing Monomials and Simplifying Expressions Having an Exponent of Zero
		HA1-230	Raising a Monomial or Quotient of Monomials to a Power
		HA1-240	Identifying the Degree of Polynomials and Simplifying by Combining Like Terms
		HA1-245	Adding and Subtracting Polynomials
		HA1-920	Simplifying Algebraic Expressions Using the Distributive Property
		HA1-255	Multiplying Two Binomials Using the FOIL Method
		HA1-260	Squaring a Binomial and Finding the Product of a Sum and Difference
		HA1-355	Dividing Polynomials
		SPI 3102.3.3	Factor polynomials.
HA1-271	Factoring Trinomials and the Differences of Squares Using Algebra Tiles		
HA1-275	Factoring the Difference Between Two Squares and Perfect Trinomial Squares		
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		
SPI 3102.3.4	Operate with, evaluate, and simplify rational expressions including determining restrictions on the domain of the variables.		
		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
		HA1-345	Adding and Subtracting Polynomials and Rational Expressions
SPI 3102.3.5	Write and/or solve linear equations, inequalities, and compound inequalities including those containing absolute value.	HA1-104	Translating Word Statements into 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
		HA1-150	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

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		HA1-105	Translating Word Statements into Inequalities
		HA1-180	Graphing Equations and Inequalities on the Number Line
		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
		HA1-200	Combined Inequalities
		HA1-205	Solving Combined Inequalities
		HA1-210	Solving Equations Involving Absolute Value
		HA1-215	Solving Absolute Value Inequalities
SPI 3102.3.6	Interpret various relations in multiple representations.	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
SPI 3102.3.7	Determine domain and range of a relation, determine whether a relation is a function and/or evaluate a function at a specified rational value.	HA1-438	Finding the Domain and Range of Functions
		HA1-437	Identifying Relations as Functions
		HA1-439	Using Function Notation
SPI 3102.3.8	Determine the equation of a line and/or graph a linear equation.	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
		HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-394	Interchanging Linear Equations Between Standard Form and Slope-Intercept Form
		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
		HA1-395	Finding the Equation of a Line Parallel or Perpendicular to a Given Line
SPI 3102.3.9	Solve systems of linear equation/inequalities in two variables.	HA1-455	Solving Systems of Linear Equations by Graphing
		HA1-460	Solving Systems of Linear Equations by the Substitution Method
		HA1-465	Solving Systems of Linear Equations by the Addition/Subtraction Method
		HA1-470	Solving Systems of Linear Equations by the Multiply/Add/Subtract Method
		HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
		HA1-475	Graphing the Solution Set of a System of Linear Inequalities
		HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
SPI 3102.3.10	Find the solution of a quadratic equation and/or zeros of a quadratic function.	HA1-305	Solving Polynomial Equations by Factoring
		HA1-525	Solving Quadratic Equations Involving Perfect Square Expressions
		HA1-530	Solving Quadratic Equations by Completing the Square
		HA1-535	Developing the Quadratic Formula and Using it to Solve Equations
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
		HA1-935	Analyzing Graphs of Quadratic Functions
SPI 3102.3.11	Analyze nonlinear graphs including quadratic and exponential functions that model a contextual situation.	HA1-940	Applications of Quadratic Equations
		HA1-945	Real-World Applications of Quadratic Functions
		HA1-820	Graphing Exponential Functions
<b>STANDARD 4</b>	<b>GEOMETRY AND MEASUREMENT</b>		
	<b>Course Level Expectations:</b>		
CLE 3102.4.1	Use algebraic reasoning in applications involving geometric formulas and contextual problems.	HA1-889	Complementary and Supplementary Angles
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
CLE 3102.4.2	Apply appropriate units of measure and convert measures in problem solving situations.	HA1-889	Complementary and Supplementary Angles
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures

	Mathematics Curriculum Framework	I CAN Learn® Lesson #	I CAN Learn® Lesson Title
	<b>Checks for Understanding (Formative/Summative Assessment)</b>	HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
3102.4.1	Using algebraic expressions solve for measures in geometric figures as well as for perimeter, area, and volume.	HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
3102.4.2	Use the Pythagorean Theorem to find the missing measure in a right triangle including those from contextual situations.	HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
3102.4.3	Understand horizontal/vertical distance in a coordinate system as absolute value of the difference between coordinates; develop the distance formula for a coordinate plane using the Pythagorean Theorem.	HA1-520	Finding the Distance Between Two Points on a Coordinate Plane
3102.4.4	Develop the midpoint formula for segments on a number line or in the coordinate plane.	HA1-876	Applying Length, Midpoint and Slope of a Segment on a Cartesian Plane
3102.4.5	Use dimensional analysis to convert rates and measurements both within a system and between systems and check the appropriateness of the solution.	MPA-155	Comparing and Converting Rates
	<b>State Performance Indicators:</b>		
SPI 3102.4.1	Develop and apply strategies to estimate the area of any shape on a plane grid.	MPA-160	Plotting Polygons and Finding the Area
SPI 3102.4.2	Solve contextual problems using the Pythagorean Theorem.	HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
SPI 3102.4.3	Solve problems involving the distance between points or midpoint of a segment.	HA1-520	Finding the Distance Between Two Points on a Coordinate Plane
		HA1-876	Applying Length, Midpoint and Slope of a Segment on a Cartesian Plane
SPI 3102.4.4	Convert rates and measurements.	MPA-155	Comparing and Converting Rates
<b>STANDARD 5</b>	<b>DATA, PROBABILITY, AND STATISTICS</b>		
	<b>Course Level Expectations:</b>		
CLE 3102.5.1	Describe and interpret quantitative information.	HA1-545	Making a Frequency Distribution Table
		HA1-540	Finding the Mean, Median, and Mode from Data and Frequency Distribution Tables
		HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
CLE 3102.5.2	Use statistical thinking to draw conclusions and make predictions.	HA1-877	Drawing Inferences and Making Predictions from Tables and Graphs
CLE 3102.5.3	Understand basic counting procedures and concepts of probability.	HA1-879	Applying Counting Techniques to Permutations and Combinations
	<b>Checks for Understanding (Formative/Summative Assessment):</b>		
3102.5.1	Identify patterns or trends in data.	HA1-965	Determining the Best-Fitting Line
3102.5.2	Develop a meaning for and identify outliers in a data set and verify.	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
3102.5.3	When a set of data is changed, identify effects on measures of central tendency, range, and inter-quartile range.	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
3102.5.4	Explore quartiles, deciles, and percentiles of a distribution.	MPA-097	Constructing Box-and-Whisker Plots
3102.5.5	Construct and interpret various forms of data representations, (including line graphs, bar graphs, circle graphs, histograms, scatter-plots, box-and-whiskers, stem-and-leaf, and frequency tables).	HA1-545	Making a Frequency Distribution Table
		MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots
		MPA-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatterplots
3102.5.6	Draw qualitative graphs of functions and describe a general trend or shape.	HA1-965	Determining the Best-Fitting Line
		HA1-885	Histograms and the Normal Distribution
		HA1-892	Data Analysis Using the Graphing Calculator
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations

	Mathematics Curriculum Framework	I CAN Learn® Lesson #	I CAN Learn® Lesson Title
3102.5.7	Compare two data sets using graphs and descriptive statistics.	HA1-885	Histograms and the Normal Distribution
3102.5.8	Examine real-world graphical relationship (including scatter-plots) to determine type of relationship (linear or nonlinear) and any association (positive, negative or none) between the variables of the data set.	HA1-965	Determining the Best-Fitting Line
		HA1-892	Data Analysis Using the Graphing Calculator
3102.5.9	Determine an equation for a line that fits real-world linear data; interpret the meaning of the slope and y-intercept in context of the data.	HA1-965	Determining the Best-Fitting Line
		HA1-892	Data Analysis Using the Graphing Calculator
3102.5.10	Using technology with a set of contextual linear data to examine the line of best fit; determine and interpret the correlation coefficient.	HA1-965	Determining the Best-Fitting Line
		HA1-892	Data Analysis Using the Graphing Calculator
3102.5.11	Use an equation that fits data to make a prediction.	HA1-877	Drawing Inferences and Making Predictions from Tables and Graphs
3102.5.12	Use techniques (Venn Diagrams, tree diagrams, or counting procedures) to identify the possible outcomes of an experiment or sample space and compute the probability of an event.	HA1-886	Unions and Intersections of Sets Using Venn Diagrams
		HA1-879	Applying Counting Techniques to Permutations and Combinations
		HA1-560	Determining Probability of an Event and Complementary Event from a Random Experiment
		HA1-565	Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events
3102.5.13	Determine the complement of an event and the probability of that complement.	HA1-560	Determining Probability of an Event and Complementary Event from a Random Experiment
3102.5.14	Determine if two events are independent or dependent.	HA1-565	Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events
3102.5.15	Explore joint and conditional probability.	HA1-565	Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events
3102.5.16	Identify situations for which the Law of Large Numbers applies.	Content under review	
3102.5.17	Perform simulations to estimate probabilities.	HA1-565	Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events
3102.5.18	Make informed decisions about practical situations using probability concepts.	HA1-565	Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events
	<b>State Performance Indicators:</b>		
SPI 3102.5.1	Interpret displays of data to answer questions about the data set(s) (e.g., identify pattern, trends, and/or outliers in a data set).	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
		MPA-097	Constructing Box-and-Whisker Plots
		MPA-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatterplots
SPI 3102.5.2	Identify the effect on mean, median, mode, and range when values in the data set are changed.	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
SPI 3102.5.3	Using a scatter-plot, determine if a linear relationship exists and describe the association between variables.	MPA-132	Interpreting and Creating Scatterplots
SPI 3102.5.4	Generate the equation of a line that fits linear data and use it to make a prediction.	HA1-965	Determining the Best-Fitting Line
SPI 3102.5.5	Determine theoretical and/or experimental probability of an event and/or its complement including using relative frequency.	HA1-560	Determining Probability of an Event and Complementary Event from a Random Experiment

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the Algebra I Gateway Tennessee Curriculum Standards which was adopted by the Tennessee State Board of Education in 2001 and updated for 2006-2007.