



## Algebra 1 TEKS Correlation

9 <sup>th</sup> Gr TAKS Obj	10 <sup>th</sup> Gr TAKS Obj	Alg 1 TEKS Obj	Texas Essential Knowledge and Skills	Lesson Number	Lesson Title
<b>FOUNDATIONS FOR FUNCTIONS</b>					
1	1	A.1 (A)	Describe independent and dependent quantities in functional relationships.	HA1-438	Finding the Domain and Range of Functions
				HA1-867	Identifying Domain and Range of Relations Given Graphs, Tables, or Sets of Ordered Pairs
1	1	A.1 (B)	Gather and record data, and use data sets to determine functional relationships between quantities.	HA1-375	Identifying Solutions of Equations in Two Variables
				HA1-436	Identifying Relations
				HA1-437	Identifying Relations as Functions
				HA1-448	Finding the <i>n</i> th Term of a Pattern
1	1	A.1 (C)	Describe functional relationships for given problem situations and write equations or inequalities to answer questions arising from situations.	HA1-104	Translating Word Statements into Equations
				HA1-105	Translating Word Statements into Inequalities
				HA1-150	Writing an Equation to Solve Word Problems
				HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems
				HA1-165	Using Equations to Solve Percent Problems
				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
				HA1-436	Identifying Relations
				HA1-437	Identifying Relations as Functions
				HA1-438	Finding the Domain and Range of Functions
				HA1-439	Using Function Notation
				HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
				HA1-448	Finding the <i>n</i> th Term of a Pattern
				HA1-867	Identifying Domain and Range of Relations Given Graphs, Tables, or Sets of Ordered Pairs
				HA1-955	Analyzing Linear Functions
				HA1-960	Real-World Applications of Linear Functions
1	1	A.1 (D)	Represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities.	HA1-436	Identifying Relations
				HA1-437	Identifying Relations as Functions
				HA1-448	Finding the <i>n</i> th Term of a Pattern
				HA1-380	Graphing Linear Equations
				HA1-395	Drawing a Line Using Slope-Intercept and Determining if Two Lines are Parallel

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				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
				HA1-866	Drawing a Line Using Slope-Intercept Form and Determining if Two Lines are Parallel or Perpendicular
				HA1-955	Analyzing Linear Functions
1	1	A.1 (E)	Interpret and make decisions, predictions, and critical judgments from functional relationships.	HA1-877	Drawing Inferences and Making Predictions from Tables and Graphs
				HA1-955	Analyzing Linear Functions
				MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
2	2	A.2 (A)	Identify and sketch the general forms of linear ( $y = x$ ) and quadratic ( $y = x^2$ ) parent functions.	HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
				HA1-929	Graphing $f(x) = ax^2 + c$ Using Dilations, Reflections, and Vertical Translations
				HA1-931	Graphing Quadratic Functions with Dilations, Reflections, and Transformations
2	2	A.2 (B)	Identify mathematical domains and ranges and determine reasonable domain and range values for given situations, both continuous and discrete.	HA1-438	Finding the Domain and Range of Functions
				HA1-867	Identifying Domain and Range of Relations Given Graphs, Tables, or Sets of Ordered Pairs
				HA1-945	Real-World Applications of Quadratic Functions
2	2	A.2 (C)	Interpret situations in terms of given graphs or creates situations that fit given graphs.	HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
				HA1-877	Drawing Inferences and Making Predictions from Tables and Graphs
				HA1-955	Analyzing Linear Functions
				HA1-960	Real-World Applications of Linear Functions
				HA1-965	Determining the Best-Fitting Line
				MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
				MPA-094	Interpreting and Constructing Line Plots
				MPA-096	Constructing Stem-and-Leaf Plots
				MPA-097	Constructing Box-and-Whisker Plots
				MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
				MPA-131	Interpreting and Creating Histograms
				MPA-132	Interpreting and Creating Scatterplots
2	2	A.2 (D)	Collect and organize data, make and interpret scatterplots (including recognizing positive, negative, or no correlation for data approximating linear situations) and model, predict, and make decisions and critical judgments in problem situations.	HA1-892	Data Analysis Using the Graphing Calculator
				HA1-965	Determining the Best-Fitting Line
2	2	A.3 (A)	Use symbols to represent unknowns and variables.	HA1-005	Evaluating Algebraic Expressions
				HA1-060	Evaluating Expressions Using the Order of Operations
				HA1-065	Evaluating Expressions Containing Exponents
				HA1-070	Evaluating Formulas for Given Values of the Variables
				HA1-075	Simplifying Algebraic Expressions by Combining Like Terms
				HA1-080	Simplifying and Evaluating Algebraic Expressions Containing Grouping Symbols
				HA1-085	Simplifying Expressions Using the Properties of Real Numbers
				HA1-090	Simplifying Expressions Using the Property of -1
				HA1-095	Translating Word Phrases into Algebraic Expressions

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				<i>Throughout</i>	
2	2	A.3 (B)	Look for patterns and represent generalizations algebraically.	HA1-447	Identifying Number Patterns
				HA1-448	Finding the nth Term of a Pattern
2	2	A.4 (A)	Find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations.	HA1-115	Using the Addition and Subtraction Properties for Equations
				HA1-120	Using the Multiplication and Division Properties for Equations
				HA1-125	Solving Equations Using More Than One Property
				HA1-140	Solving Equations by Combining Like Terms
				HA1-145	Solving Equations with Variables on Both Sides
				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
				HA1-165	Using Equations to Solve Percent Problems
				HA1-170	Solving Percent of Change Problems
				HA1-175	Solving Literal Equations
				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
				HA1-220	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
				HA1-255	Multiplying Two Binomials Using the FOIL Method
				HA1-260	Squaring a Binomial and Finding the Product of a Sum and Difference
				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 $ax^2 + bx + c$
				HA1-305	Solving Polynomial Equations by Factoring
				HA1-310	The Practical Use of Polynomial Equations
				HA1-382	Solving Linear Equations Using the Graphing Calculator
				HA1-438	Finding the Domain and Range of Functions
				HA1-439	Using Function Notation
				HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
				HA1-800	Solving Equations
				HA1-801	Solving Inequalities
				HA1-802	Factoring
				HA1-867	Identifying Domain and Range of Relations Given Graphs, Tables, or Sets of Ordered Pairs
				HA1-920	Simplifying Algebraic Expressions Using the Distributive Property
2	2	A.4 (B)	Use the commutative, associative, and distributive properties to simplify algebraic expressions.	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
				HA1-090	Simplifying Expressions Using the Property of -1
				HA1-245	Adding and Subtracting Polynomials

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				HA1-255	Multiplying Two Binomials Using the FOIL Method
				HA1-920	Simplifying Algebraic Expressions Using the Distributive Property
		A.4 (C)	Connect equation notation with function notation, such as $y = x + 1$ and $f(x) = x + 1$ .	HA1-439	Using Function Notation
<b>LINEAR FUNCTIONS</b>					
3	3	A.5 (A)	Determine whether or not given situations can be represented by linear functions.	HA1-960	Real-World Applications of Linear Functions
		A.5 (B)	Determine the domain and range for linear functions in given situations.	HA1-438	Finding the Domain and Range of Functions
				HA1-867	Identifying Domain and Range of Relations Given Graphs, Tables, or Sets of Ordered Pairs
				HA1-945	Real-World Applications of Quadratic Functions
3	3	A.5 (C)	Use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions.	HA1-375	Identifying Solutions of Equations in Two Variables
				HA1-398	Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point
				HA1-438	Finding the Domain and Range of Functions
				<i>Throughout</i>	
3	3	A.6 (A)	Develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations.	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 $y = mx + b$
				HA1-405	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
				HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
				HA1-866	Drawing a Line Using Slope-Intercept Form and Determining if Two Lines are Parallel or Perpendicular
3	3	A.6 (B)	Interpret the meaning of slope and intercepts in situations using data, symbolic representations, or graphs.	HA1-380	Graphing Linear Equations
				HA1-385	Finding the Slope of a Line from its Graph or from the Coordinates of Two Points
3	3	A.6 (C)	Investigate, describe, and predict the effects of changes in m and b on the graph of $y = mx + b$ .	HA1-398	Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point
3	3	A.6 (D)	Graph and write equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept.	HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
				HA1-380	Graphing Linear Equations
				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
				HA1-405	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
				HA1-866	Drawing a Line Using Slope-Intercept Form and Determining if Two Lines are Parallel or Perpendicular
3	3	A.6 (E)	Determine the intercepts of the graphs of linear functions and zeroes of linear functions from graphs, tables, and algebraic representations.	HA1-380	Graphing Linear Equations
3	3	A.6 (F)	Interpret and predict the effects of changing slope and y-intercept in	HA1-395	Drawing a Line Using Slope-Intercept and Determining if Two Lines are

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			applied situations.		Parallel
				HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
				HA1-866	Drawing a Line Using Slope-Intercept Form and Determining if Two Lines are Parallel or Perpendicular
3	3	A.6 (G)	Relate direct variation to linear functions and solve problems involving proportional change.	HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
				HA1-450	Solving Problems Involving Direct Variation
4	4	A.7 (A)	Analyze situations involving linear functions and formulate linear equations or inequalities to solve problems.	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
				HA1-165	Using Equations to Solve Percent Problems
				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
				HA1-448	Finding the $n$ th Term of a Pattern
4	4	A.7 (B)	Investigate methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, select a method, and solve the equations and inequalities.	HA1-100	Finding Solution Sets of Open Sentences from Given Replacement Sets
				HA1-115	Using the Addition and Subtraction Properties for Equations
				HA1-120	Using the Multiplication and Division Properties for Equations
				HA1-125	Solving Equations Using More Than One Property
				HA1-140	Solving Equations by Combining Like Terms
				HA1-145	Solving Equations with Variables on Both Sides
				HA1-150	Writing an Equation to Solve Word Problems
				HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems
				HA1-165	Using Equations to Solve Percent Problems
				HA1-170	Solving Percent of Change Problems
				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
				HA1-375	Identifying Solutions of Equations in Two Variables
				HA1-382	Solving Linear Equations Using the Graphing Calculator
				HA1-455	Solving Systems of Linear Equations by Graphing
				HA1-800	Solving Equations
				HA1-801	Solving Inequalities
				HA1-804	Solving Systems of Equations by Graphing
4	4	A.7 (C)	Interpret and determine the reasonableness of solutions to linear equations and inequalities.	HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
				HA1-100	Finding Solution Sets of Open Sentences from Given Replacement Sets
				HA1-375	Identifying Solutions of Equations in Two Variables
				HA1-439	Using Function Notation
				MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
				MPA-116	Solving Real-Life Problems by Using Guess-and-Check and Working Backwards
4	4	A.8 (A)	Analyze situations and formulate systems of linear equations in two unknowns to solve problems.	HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
	4	A.8 (B)	Solve systems of linear equations using concrete models, graphs, tables,	HA1-455	Solving Systems of Linear Equations by Graphing

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			and algebraic methods.		
				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
				HA1-803	Solving Systems of Equations
				HA1-804	Solving Systems of Equations by Graphing
				HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
	4	A.8 (C)	Interpret and determine the reasonableness of solutions to systems of linear equations.	HA1-455	Solving Systems of Linear Equations by Graphing
				HA1-460	Solving Systems of Linear Equations by the Substitution Method
				HA1-803	Solving Systems of Equations
				HA1-804	Solving Systems of Equations by Graphing
				HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
<b>QUADRATIC AND OTHER NONLINEAR FUNCTIONS</b>					
		A.9 (A)	Determine the domain and range for quadratic functions in given situations.	HA1-935	Analyzing Graphs of Quadratic Functions
				HA1-940	Applications of Quadratic Equations
	5	A.9 (B)	Investigate, describe, and predict the effects of changes in $a$ on the graph of $y = ax^2 + c$ .	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
				HA1-930	Graphing Quadratic Functions with Horizontal and Vertical Shifting
				HA1-931	Graphing Quadratic Functions with Dilations, Reflections, and Transformations
5	5	A.9 (C)	Investigate, describe, and predict the effects of changes in $c$ on the graph of $y = x^2 + c$ .	HA1-929	Graphing $f(x) = ax^2 + c$ Using Dilations, Reflections, and Vertical Translations
				HA1-930	Graphing Quadratic Functions with Horizontal and Vertical Shifting
				HA1-935	Analyzing Graphs of Quadratic Functions
	5	A.9 (D)	Analyze graphs of quadratic functions and draw conclusions.	HA1-935	Analyzing Graphs of Quadratic Functions
	5	A.10 (A)	Solve quadratic equations using concrete models, tables, graphs, and algebraic methods.	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
	5	A.10 (B)	Make connections among the solutions (roots) of quadratic equations, the zeroes of their related functions, and the horizontal intercepts ( $x$ -intercepts) of the graph of the function.	HA1-935	Analyzing Graphs of Quadratic Functions
5	5	A.11 (A)	Use patterns to generate the laws of exponents and apply them in problem-solving situations.	HA1-220	Identifying and Multiplying Monomials
				HA1-225	Dividing Monomials and Simplifying Expressions Having an Exponent of Zero
				HA1-860	Using the Laws of Exponents
				HA1-861	Simplifying Expressions with Negative and Zero Exponents
				<i>Throughout</i>	
		A.11 (B)	Analyze data and represent situations involving inverse variation using concrete models, tables, graphs, or algebraic methods.	HA1-453	Solving Problems Involving Inverse Variation
		A.11 (C)	Analyze data and represent situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods.	HA1-892	Data Analysis Using the Graphing Calculator
		A.9 (A)	Determine the domain and range for quadratic functions in given situations.	HA1-935	Analyzing Graphs of Quadratic Functions
				HA1-940	Applications of Quadratic Equations
	5	A.9 (B)	Investigate, describe, and predict the effects of changes in $a$ on the	HA1-927	Graphing $f(x) = ax^2$ Using Dilations

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			graph of $y = ax^2 + c$ .		
				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
				HA1-930	Graphing Quadratic Functions with Horizontal and Vertical Shifting
				HA1-931	Graphing Quadratic Functions with Dilations, Reflections, and Transformations
5	5	A.9 (C)	Investigate, describe, and predict the effects of changes in con the graph of $y = x^2 + c$ .	HA1-929	Graphing $f(x) = ax^2 + c$ Using Dilations, Reflections, and Vertical Translations
				HA1-930	Graphing Quadratic Functions with Horizontal and Vertical Shifting
				HA1-935	Analyzing Graphs of Quadratic Functions
	5	A.9 (D)	Analyze graphs of quadratic functions and draw conclusions.	HA1-935	Analyzing Graphs of Quadratic Functions
	5	A.10 (A)	Solve quadratic equations using concrete models, tables, graphs, and algebraic methods.	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
	5	A.10 (B)	Make connections among the solutions (roots) of quadratic equations, the zeroes of their related functions, and the horizontal intercepts (x-intercepts) of the graph of the function.	HA1-935	Analyzing Graphs of Quadratic Functions
5	5	A.11 (A)	Use patterns to generate the laws of exponents and apply them in problem-solving situations.	HA1-220	Identifying and Multiplying Monomials
				HA1-225	Dividing Monomials and Simplifying Expressions Having an Exponent of Zero
				HA1-860	Using the Laws of Exponents
				HA1-861	Simplifying Expressions with Negative and Zero Exponents
				<i>Throughout</i>	
		A.11 (B)	Analyze data and represent situations involving inverse variation using concrete models, tables, graphs, or algebraic methods.	HA1-453	Solving Problems Involving Inverse Variation
		A.11 (C)	Analyze data and represent situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods.	HA1-892	Data Analysis Using the Graphing Calculator

MM1-Fundamentals of Mathematics  
MPA-Pre-Algebra  
HA1-Algebra 1

Note: The standards and expectations in this document were obtained from the Texas Education Agency Chapter 111. Texas Essential Knowledge and Skills for Mathematics with a revised date of March 2005 and an effective date for the 2005-2006 school year.