

**Algebra 1**  
**TEKS/TAKS Correlations**

<b>HISD Objective</b> <i>The student will:</i>	<b>TX Essential Knowledge &amp; Skills Student Expectations</b> (2006-2007) <i>The student is expected to:</i> (pre-2006)	<b>Assessment Correlations</b>
<b>Strand 1: Number, Operation, and Quantitative Reasoning</b>		
<b>ALG1.1.01</b> Use symbols to represent unknowns and variables.	<b>(3A)</b> (b3A) Use symbols to represent unknowns and variables.	TAKS Grades 9, 10, Exit – Obj. 2
<b>ALG1.1.02</b> Find specific function values; add, subtract, and multiply to simplify polynomial expressions, transform and solve equations including factoring as necessary in problem situations.	<b>(4A)</b> (b4A) Find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations.	TAKS Grades 9, 10, Exit – Obj. 2
<b>ALG1.1.03</b> Use the commutative, associative, and distributive properties to simplify algebraic expressions.	<b>(4B)</b> (b4B) Use the commutative, associative, and distributive properties to simplify algebraic expressions.	TAKS Grades 9, 10, Exit – Obj. 2
<b>Strand 2: Patterns, Relationships, and Algebraic Thinking</b>		
<b>ALG1.2.01</b> Identify independent and dependent quantities and express them in functional relationships.	<b>(1A)</b> (b1A) Describe independent and dependent quantities in functional relationships.	TAKS Grades 9, 10, Exit – Obj. 1
<b>ALG1.2.02</b> Describe a functional relationship for given problem situations, and write equations or inequalities to answer questions arising from the situations.	<b>(1C)</b> (b1C) Describe functional relationships for given problem situations and write equations or inequalities to answer questions arising from the situation.	TAKS Grades 9, 10, Exit – Obj. 1
<b>ALG1.2.03</b> Represent relationships among quantities by building concrete models, completing tables, constructing graphs or diagrams, writing verbal descriptions, and writing equations or inequalities.	<b>(1D)</b> (b1D) Represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities.	TAKS Grades 9, 10, Exit – Obj. 1
<b>ALG1.2.04</b> Identify mathematical domains and ranges and determine reasonable domain and range values for given situations, described by continuous or discrete data.	<b>(2B)</b> (b2B) Identify mathematical domains and ranges and determine reasonable domain and range values for given situations, both continuous and discrete.	TAKS Grades 9, 10, Exit – Obj. 1
<b>ALG1.2.05</b> Look for patterns in finite differences, determine the value of the zero term, and write the general expression or equation for a specific problem situation.	<b>(3B)</b> (b3B) Look for patterns and represent generalizations algebraically.	TAKS Grades 9, 10 – Obj. 1
<b>ALG1.2.06</b> Connect the function notation of "y = " and "f(x) = ".	<b>(4C)</b> (b4C) Connect the function notation of $y = x + 1$ and $f(x) = x + 1$ .	
<b>ALG1.2.07</b> Determine whether or not given situations can be represented by linear functions by determining finite differences.	<b>(5A)</b> (c1A) Determine whether or not given situations can be represented by linear functions.	TAKS Grades 9, 10, Exit – Obj. 3
<b>ALG1.2.08</b> Determine the domain and range for linear functions in given situations which are represented graphically, tabularly, symbolically, verbally, and in writing.	<b>(5B)</b> (c1B) Determine the domain and range for linear functions in given situations.	



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<b>Strand 2: Patterns, Relationships, and Algebraic Thinking (continued)</b>		
<b>ALG1.2.09</b> Use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions.	<b>(5C)</b> (c1C) Use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions.	TAKS Grades 9, 10, Exit – Obj. 3
<b>ALG1.2.10</b> Develop the concept of slope as rate of change, determine slopes from graphs, tables, and algebraic representations, and express slope as a ratio, decimal, or percent.	<b>(6A)</b> (c2A) Develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations.	TAKS Grades 9, 10, Exit – Obj. 3
<b>ALG1.2.11</b> Interpret the meaning of positive, negative, zero, and undefined slopes and x- and y-intercepts in situations using data, symbolic representations, or graphs.	<b>(6B)</b> (c2B) Interpret the meaning of slope and intercepts in situations using data, symbolic representations, or graphs.	TAKS Grades 9, 10, Exit – Obj. 3
<b>ALG1.2.12</b> Determine the intercepts of the graphs of linear functions and zeros of linear functions from graphs, tables, and algebraic representations.	<b>(6E)</b> (c2E) Determine the intercepts of the graphs of linear functions and zeros of linear functions from graphs, tables, and algebraic representations.	TAKS Grades 9, 10, Exit – Obj. 3
<b>ALG1.2.13</b> Relate direct variation to linear functions and solve problems involving proportional change using concrete, pictorial, symbolic, verbal, and written representations.	<b>(6G)</b> (c2G) Relate direct variation to linear functions and solve problems involving proportional change.	TAKS Grades 9, 10, Exit – Obj. 3
<b>ALG1.2.14</b> Analyze a graph, table, equation, or verbal description in order to write an linear equation or inequality to solve a problem.	<b>(7A)</b> (c3A) Analyze situations involving linear functions and formulate linear equations or inequalities to solve problems.	TAKS Grades 9, 10, Exit – Obj. 4
<b>ALG1.2.15</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.	<b>(7B)</b> (c3B) 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.	TAKS Grades 9, 10, Exit – Obj. 4
<b>ALG1.2.16</b> Interpret and determine the reasonableness of solutions to linear equations and inequalities.	<b>(7C)</b> (c3C) Interpret and determine the reasonableness of solutions to linear equations and inequalities.	TAKS Grades 9, 10, Exit – Obj. 4
<b>ALG1.2.17</b> Analyze a problem situation that can be represented by a linear system in two unknowns, and develop a plan for solving the system using a concrete representation and linear equations.	<b>(8A)</b> (c4A) Analyze situations and formulate systems of linear equations in two unknowns to solve problems.	TAKS Grades 9, 10, Exit – Obj. 4
<b>ALG1.2.18</b> Solve systems of linear equations using concrete models, graphs, tables, and algebraic methods.	<b>(8B)</b> (c4B) Solve systems of linear equations using [concrete] models, graphs, tables, and algebraic methods.	TAKS Grades 10, Exit – Obj. 4 Text in brackets [ ] is not assessed.



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<b>Strand 2: Patterns, Relationships, and Algebraic Thinking (continued)</b>		
<b>ALG1.2.19</b> Interpret and determine the reasonableness of solutions to systems of linear equations.	<b>(8C)</b> (c4C) Interpret and determine the reasonableness of solutions to systems of linear equations.	TAKS Grades 10, Exit – Obj. 4
<b>ALG1.2.20</b> Determine the domain and range for quadratic functions from graphic, tabular, symbolic, verbal, and written representations.	<b>(9A)</b> (d1A) Determine the domain and range for quadratic functions in given situations.	
<b>ALG1.2.21</b> Solve quadratic equations using concrete models, tables, graphs, and algebraic methods including factoring and the quadratic formula.	<b>(10A)</b> (d2A) Solve quadratic equations using [concrete] models, tables, graphs, and algebraic methods.	TAKS Exit – Obj. 5 Text in brackets [ ] is not assessed.
<b>ALG1.2.22</b> Make connections among the solutions (roots) of quadratic equations, the zeros of their related functions, and the horizontal intercepts (x-intercepts) of the graph of the function.	<b>(10B)</b> (d2B) Make connections among the solutions (roots) of quadratic equations, the zeros of their related functions, and the horizontal intercepts (x-intercepts) of the graph of the function.	TAKS Exit – Obj. 5
<b>ALG1.2.23</b> Given like numerical or variable bases and integer exponents including zero, use patterns to generate properties of exponents and apply these properties in problem-solving situations.	<b>(11A)</b> (d3A) Use [patterns to generate] the laws of exponents and apply them in problem-solving situations.	TAKS Grades 9, 10, Exit – Obj. 5 Text in brackets [ ] is not assessed.
<b>ALG1.2.24</b> Analyze data and represent situations involving inverse variation using concrete models, tables, graphs, or algebraic methods.	<b>(11B)</b> (d3B) Analyze data and represent situations involving inverse variation using concrete models, tables, graphs, or algebraic methods.	
<b>ALG1.2.25</b> Analyze data, identify and represent situations involving exponential growth and exponential decay using concrete models, tables, graphs, or algebraic methods.	<b>(11C)</b> (d3C) Analyze data and represent situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods.	
<b>Strand 3: Geometry and Spatial Reasoning</b>		
<b>ALG1.3.01</b> Identify and sketch the graphs of the general forms of linear ( $f(x) = x$ ) and quadratic ( $f(x) = x^2$ ) parent functions, and describe the graphs verbally and in writing.	<b>(2A)</b> (b2A) Identify [and sketch] the general forms of linear ( $y = x$ ) and quadratic ( $y = x^2$ ) parent functions.	TAKS Grades 9, 10, Exit – Obj. 2 Text in brackets [ ] is not assessed.
<b>ALG1.3.02</b> Interpret situations in terms of given graphs or create situations that fit given graphs.	<b>(2C)</b> (b2C) Interpret situations in terms of given graphs or create situations that fit given graphs.	TAKS Grades 9, 10, Exit – Obj. 2
<b>ALG1.3.03</b> Investigate, describe, and predict the effects of changes in $m$ and $b$ on the graph of $y = mx + b$ .	<b>(6C)</b> (c2C) Investigate, describe, and predict the effects of changes in $m$ and $b$ on the graph of $y = mx + b$ .	TAKS Grades 9, 10, Exit – Obj. 3



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<b>Strand 3: Geometry and Spatial Reasoning (continued)</b>		
<b>ALG1.3.04</b> Graph and write equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept which are represented graphically, symbolically or in written form.	<b>(6D)</b> (c2D) Graph and write equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept.	TAKS Grades 9, 10, Exit – Obj. 3
<b>ALG1.3.05</b> Interpret and predict the effects of changing slope and y-intercept in applied situations using tabular, graphical, symbolic, and written representations.	<b>(6F)</b> (c2F) Interpret and predict the effects of changing slope and y-intercept in applied situations.	TAKS Grades 9, 10, Exit – Obj. 3
<b>ALG1.3.06</b> Investigate, describe, and predict the effects of changes in a on the graph of $y = ax^2 + c$ .	<b>(9B)</b> (d1B) Investigate, describe, and predict the effects of changes in a on the graph of $y = ax^2 + c$ .	TAKS Grades 10, Exit – Obj. 5
<b>ALG1.3.07</b> Investigate, describe, and predict the effects of changes in c on the graph of $y = ax^2 + c$ .	<b>(9C)</b> (d1C) Investigate, describe, and predict the effects of changes in c on the graph of $y = ax^2 + c$ .	TAKS Grades 9, 10, Exit – Obj. 5
<b>ALG1.3.08</b> Analyze maximum or minimum points, direction of opening, symmetry, and x- and y-intercepts of graphs of quadratic functions and draw conclusions.	<b>(9D)</b> (d1D) Analyze graphs of quadratic functions and draw conclusions.	TAKS Grades 10, Exit – Obj. 5
<b>Strand 5: Probability and Statistics</b>		
<b>ALG1.5.01</b> Gather and record data and use data sets to determine functional relationships between quantities and write a general equation describing the functional relationship.	<b>(1B)</b> (b1B) Gather and record data and use data sets to determine functional relationships between quantities.	TAKS Grades 9, 10, Exit – Obj. 1
<b>ALG1.5.02</b> Interpret and make decisions, predictions, and critical judgments from functional relationships.	<b>(1E)</b> (b1E) Interpret and make decisions, predictions, and critical judgments from functional relationships.	TAKS Grades 9, 10, Exit – Obj. 1
<b>ALG1.5.03</b> 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.	<b>(2D)</b> (b2D) [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.	TAKS Grades 9, 10, Exit – Obj. 2 Text in brackets [ ] is not assessed.
<b>Strand 6: Underlying Processes and Mathematical Tools</b>		
<b>ALG1.6.01</b> Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics.	<b>(8.14A)</b> Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics.	TAKS Grades 9, 10, Exit – Obj. 10



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<b>Strand 6: Underlying Processes and Mathematical Tools (continued)</b>		
<b>ALG1.6.02</b> Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness.	<b>(8.14B)</b> Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness.	TAKS Grades 9, 10, Exit – Obj. 10
<b>ALG1.6.03</b> Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem or working backwards to solve a problem.	<b>(8.14C)</b> Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem or working backwards to solve a problem.	TAKS Grades 9, 10, Exit – Obj. 10
<b>ALG1.6.04</b> Select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.	<b>(8.14D)</b> Select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.	
<b>ALG1.6.05</b> Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.	<b>(8.15A)</b> Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.	TAKS Grades 9, 10, Exit – Obj. 10
<b>ALG1.6.06</b> Evaluate the effectiveness of different representations to communicate ideas.	<b>(8.15B)</b> Evaluate the effectiveness of different representations to communicate ideas.	
<b>ALG1.6.07</b> Make conjectures from patterns or sets of examples and nonexamples.	<b>(8.16A)</b> Make conjectures from patterns or sets of examples and nonexamples.	TAKS Grades 9, 10, Exit – Obj. 10
<b>ALG1.6.08</b> Validate conclusions using mathematical properties and relationships.	<b>(8.16B)</b> Validate conclusions using mathematical properties and relationships.	TAKS Grades 9, 10, Exit – Obj. 10

