


Algebra Curriculum Bundle # 6

Title	Suggested Dates
Graphing Linear Functions, Final Exams 	December 7 – December 18 (10 days)

Big Idea/Enduring Understanding	Guiding Questions
<p>The rate-of-change and the intercepts can tell you a lot about a set of data and can help to write an equation to model and/or graph the data.</p>	<ol style="list-style-type: none"> 1. What do the slope and y-intercept represent in the context of the problem situation? 2. How are changes in the slope and y-intercept reflected in a table, a graph, an equation, and a verbal description? 3. How can the slope and y-intercept be used to write the equation of line? 4. How can a point and a slope be used to write the equation of a line?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the District Curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)	
<p>A.6 The student understands the meaning of the slope and intercepts of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.</p> <p>A.6D The student graphs and writes equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept.</p>	<ul style="list-style-type: none"> • Use various formulas to find the slope and y-intercept. • Write linear equations in slope-intercept, point-slope, and standard forms. 	<p>Holt: Section 5.6 – 5.7, 5.7 lab</p> <p>Discovering: Section 4.5</p> <p>Mathopenref.com: Blank graph paper</p>	<p>Dana Center Hot Air Balloon Graph-It</p> <p>LTF: Write the Equation of a Line – Review</p> <p>A&M: Section 6.5</p>
<p>A.6 The student understands the meaning of the slope and intercepts of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.</p> <p>A.6F The student interprets and predicts the effects of changing slope and y-intercept in applied situations.</p>	<ul style="list-style-type: none"> • Explain the numerical values of the slope and intercepts in terms of the units from the problem situation. • Show, relate, and understand the changes in the graph to corresponding changes in the problem situation. 	<p>Holt: Section 5.8, 5.8 lab</p> <p>Mathopenref.com: Linear Function Explorer: Interactive changing slope and y-intercept.</p>	<p>Dana Center Analysis of a Function Four Cars Making Pizza, Making Money</p> <p>LTF: Parallel & Perpendicular Lines Pg. 186 – 190</p> <p>A&M: Fall Section 7.3, 7.4</p>

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<p>A.6 The student understands the meaning of the slope and intercepts of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.</p> <p>A.6C The student investigates, describes, and predicts the effects of changes in m and b on the graph of $y = mx + b$.</p>	<ul style="list-style-type: none"> • With and without graphing technology: • Describe and predict the change in the graph: When $m = 0$, $m > 0$ or $m < 0$ When $b > 0$ or $b < 0$ 	<p>Holt: Section 5.9</p>	<p>LTF: Translations of Linear Functions</p> <p>A&M: Fall Section 6.6 – 6.7</p>
<p>A.7 The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.</p> <p>A.7B The student investigates methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, selects a method, and solves the equations and inequalities.</p> <p>Note: focus on graphing</p>	<ul style="list-style-type: none"> • Choose an appropriate method for solving a particular linear equation/inequality. • Be able to use all methods (models, graphs, properties of equality,) to solve equations/inequalities • Relate and connect the methods to each other. 	<p>Incorporate into other resources</p>	
<p>A.6 The student understands the meaning of the slope and intercepts of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.</p> <p>A.6A The student develops the concept of slope as rate of change and determines slopes from graphs, tables, and algebraic representations.</p> <p>Note: focus on graphing</p>	<ul style="list-style-type: none"> • Use the pattern of finite differences in a table of values to develop the numerical concept of determining slope—include undefined and zero slope. • Determine the rate of change in a problem or problem situation by finding the ratio of the difference of y and difference of x. • Relate and make connections between the rate of change in a pattern, table of values, expression, and/or situation to the slope of a graph. 	<p>Incorporate into other resources</p>	
<p>A.6 The student understands the meaning of the slope and intercepts of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.</p> <p>A.6B The student interprets the meaning of slope and intercepts in situations using data, symbolic representations, or graphs.</p> <p>Note: focus on graphing</p>	<ul style="list-style-type: none"> • Connect the slope to rate of change and the intercepts to the context of a problem situation. • State the rate of change/slope in terms of the units used in the problem situation. Ex. 1 mile/4 hours • Relate the rate of change and its explanation in the different forms of a linear function. 	<p>Incorporate into other resources</p>	<p>Dana Center Create a Situation</p> <p>LTF: Shoveling Dirt</p>

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<p>A.2 Foundations for Functions. The student uses the properties and attributes of functions.</p> <p>A.2A The student identifies and sketches the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions.</p> <p>Note: focus on linear here – repeated for quadratics in bundle 8</p>	<ul style="list-style-type: none">• Investigations with and without a graphing calculator• Identify from a table, graph, concrete model, and/or verbal description as match to the parent function $y = x$ and $y = x^2$• Connect from graphical representations of the parent functions to correct symbolic representation.• Sketch the graph corresponding to a given symbolic representation.	<p>Incorporate into other resources</p> <p>TI.com: Age Estimation Activity: good to introduce $y = x$ concept</p>	
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