

Campbell County Schools
Algebra IIA
2nd Nine Weeks

<p>Mathematical Practices:</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. 	<p>Common Core Coding Explanation:</p> <div style="text-align: center; margin: 10px 0;"> <p>Conceptual Category Cluster Standard #</p> </div> <p>Domains Examples: SSE- Seeing Structure in Expressions REI- Reasoning with Equations & Inequalities CED- Creating Equations that Describe</p>
--	--

Domain	Common Core State Standard	Tasks / Suggested Pacing	Textbook Lessons Aligned to Common Core
	Finish 1st 9wks Map	15 days	
	Functions	30 days	
Description:	<p>Students synthesize and generalize what they have learned about a variety of function families. They extend their work with exponential functions to include solving exponential equations with logarithms. They identify appropriate types of functions to model a situation, they adjust parameters to improve the model, and they compare models by analyzing appropriateness of fit and making judgments about the domain over which a model is a good fit. <i>The description of modeling as “the process of choosing and using mathematics and statistics to analyze empirical situations, to understand them better, and to make decisions” is at the heart of this unit.</i> Students will engage in high level math tasks that provide opportunities to express depths of knowledge using the Mathematical Practices.</p>		

<p>Algebra: Reasoning with Equations & Inequalities</p>	<p>Represent and solve equations and inequalities graphically.</p> <ul style="list-style-type: none"> • A.REI.D.11. Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. ★ 		
	<p>Supported by:</p> <ul style="list-style-type: none"> • A.CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. • A.REI.C.6 Solve systems of linear equations exactly and approximately (e.g. with graphs), focusing on pairs of linear equations in two variables. 		
<p>Functions: Interpreting Functions</p>	<p>Interpret functions that arise in applications in terms of a context.</p> <ul style="list-style-type: none"> • F.IF.B.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. <i>For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.</i> ★ 		

<p>Functions: Interpreting Functions</p>	<p>Analyze functions using different representations.</p> <ul style="list-style-type: none"> • F.IF.C.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. ★ <ul style="list-style-type: none"> b) F.IF.C.7.b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. c) F.IF.C.7.c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. e) F.IF.C.7.e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. 		
<p>Functions: Interpreting Functions</p>	<p>Interpret functions that arise in applications in terms of a context.</p> <ul style="list-style-type: none"> • F.IF.B.4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</i> ★ 		

Functions: Building Functions	Build new functions from existing functions. <ul style="list-style-type: none"><li data-bbox="381 233 1040 569">• F.BF.B.3. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.		
--	--	--	--