

Corsica Stickney Curriculum Map

<p>Subject: Algebra 1 Grade: 9th Unit 10 Module 24 Lesson 24.2, 24.3, 24.4</p>	<p>Teacher: Mr. Jason Broughton Duration: May</p>	
<p>Summary of unit:</p> <p>students will complete a Math in Careers task by examining a model for the length and weight of a freshwater fish. Critical skills include writing an inverse function, describing what the inverse function means for the given situation, and finding a reasonable domain and range for the inverse function model.</p>		
<p>Stage 1 – Desired Results</p>		
<p>Standards:</p> <p>F-IF.C.7c Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.</p> <p>F-BF.B.4a Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse</p> <p>F-IF.C.7b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions</p>	<p>Essential Questions:</p> <p>How does the value of n affect the end behavior of the function $f(x) = x^n$?</p> <p>How can you recognize inverses of functions from their graphs and how can you find inverses of functions?</p> <p>How can you use transformations of the parent square root function to graph functions of the form $f(x) = a\sqrt{x-h} + k$?</p> <p>How can you use transformations of the parent cube root function to graph functions of the form $f(x) = a\sqrt[3]{x-h} + k$?</p>	
<p style="text-align: center;">Language objective</p> <p>Explain to a partner how to recognize the graph of a polynomial function of odd degree.</p> <p>Explain what the inverse of a function is and how its graph compares to the graph of the original function.</p> <p>Describe how the graph of the function $f(x) = \sqrt{-x}$ changes when the function is multiplied by a constant a.</p> <p>Describe what changes to the parent cube root</p>	<p style="text-align: center;">Mathematical practices</p> <p>MP.6 Precision</p> <p>MP.1 Problem Solving</p> <p>MP.8 Patterns</p>	<p style="text-align: center;">Integrate mathematical practice</p> <p>MP.6, which asks students to “attend to precision.” In this lesson, students must use precise language to accurately identify the differences between polynomial functions of even and odd degree, including symmetry, number of turning points, and end behavior at each end of the domain and range.</p> <p>MP.1, which asks students to “make sense of problems and persevere in solving them.” To solve a real-world problem by finding an inverse function, students must realize that they are looking for a function that undoes what the original function does. They write a function to model a given situation, then follow a</p>

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<p>function cause horizontal and vertical translations of its graph.</p>		<p>solution process that involves exchanging the variables x and y and using inverse operations to solve for the desired quantity.</p> <p>MP.8, which calls for students to “look for and express regularity in repeated reasoning.” When transforming square root functions, students make use of patterns they have seen when transforming other functions. Students first explore how subtracting a constant from x or adding a constant to the parent function causes a translation of its graph. Then students explore how multiplying the parent function by a constant causes a vertical stretch or compression of the graph. Finally, students use transformed square root functions to solve real-world problems.</p>
<p>Stage 2 - Assessment Evidence</p>		
<p>Performance Tasks: Homework quizzes, worksheet, Tests.</p>	<p>Unit Pre-Assessment: Assign ready-made or customized practice tests to prepare students for high-stakes tests</p>	
<p>Stage 3 - Learning Plan</p>		
<p>Learning Activities: procedures/topics Reading and discussing lesson with class. Giving students examples to be completed in class. Students taking notes and using notes to complete homework assignments.</p>		

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Lesson Description

MODULE 24 Functions and Inverses

Lesson 24.1 Graphing Polynomial Functions

Lesson 24.2 Understanding Inverse Functions

Lesson 24.3 Graphing Square Root Functions

Lesson 24.4 Graphing Cube Root Functions