HPISD Curriculum: Algebra II

Title	Estimated Duration	6 Weeks					
Unit 6: Radical Functions	2 weeks	1	2	**3**	4	5	6

Unit Overview

Solving and graphing radical equations and inequalities, finding inverses of relations, solve application radical problems.

Enduring Understandings

The student will understand that:	
	• Square root functions are inverses of quadratic functions, so every quadratic problem can be rewritten as a square root problem. • Domain and range restrictions limit the possible solutions of square root equations and application problems.

Concepts	Guiding/Essential Questions
• Relationships • Problem Solving	• What process can be used to solve a radical equation? • What are the similarities and differences in the processes for solving radical inequalities and radical equations? • What are the characteristics of the graph of the square root parent function? • What process can be used to find the inverse of a square root equation?

Learning Targets

- Students will connect algebraic and geometric representations of functions.
- Students will formulate equations and inequalities based on square root functions, use a variety of methods to solve them, and analyze the solutions in terms of the situation.

Formative Assessments	Summative Assessments
homework, quizzes	test

TEKS: Readiness Standards	TEKS: Related Supporting Standards
A2.9F Analyze situations modeled by square root functions, formulate equations or inequalities, select a method, and solve problems.	**A2.4A** Identify and sketch graphs of parent functions including square root of x. **A2.4C** Describe and analyze the relationship between a function and its inverse. **A2.9A** Use the parent function to investigate, describe, and predict the effects of parameter changes on the graphs of square root functions and describe limitations on the domains and ranges. **A2. 9B** Relate representations of square root functions, such as algebraic, tabular, graphical, and verbal descriptions. **A2. 9C** Determine the reasonable domain and range values of square root functions, as well as interpret and determine the reasonableness of solutions to square root equations and inequalities. **A2. 9D** Determine solutions of square root equations using graphs, tables, and algebraic methods. **A2. 9E** Determine solutions of square root inequalities using graphs and tables. **A2.9G** Connect inverses of square root functions with quadratic functions.
Processes and Skills: **What students should be able to DO**	**Facts:** **What students should KNOW**
• Solve and graph radical equations and inequalities • Apply the radical knowledge to real world problems • Find the inverse equation for quadratic equations • Recognize the graph of inverse relations • Determine if two functions are inverses of each other	• Square root functions are inverses of quadratic functions, so every quadratic problem can be rewritten as a square root problem. • Domain and range restrictions limit the possible solutions of square root equations and application problems.

Topics		
radical equations and inequalities domain and range	application of radical equations relations vs. functions	inverse equations of quadratic functions

Language of Instruction		
Inverse functions	relation	extraneous root
radicand	function	

State Assessment Connections	National Assessment Connections

Resources
McDougal Littell – Algebra 2 Supplemental material