HPISD Curriculum: Algebra II

Title	Estimated Duration	6 Weeks					
Unit 7: Functions	1 week	1	2	**3**	4	5	6

Unit Overview

Graphing and writing equations of various functions with an emphasis on absolute value, solving systems of equations. computing regressions using a calculator.

Enduring Understandings

The student will understand that:	
	• Parent functions provide a framework for describing and predicting the effects of parameter changes on equations of families of functions and their graphs. • Functions can be represented by graphs, tables, and symbols

Concepts	Guiding/Essential Questions
• Relationships • Equation Writing • Predictions	• What is a parameter and what are parameter changes? • Using each model, what do you predict will happen in the future, and which model is best for the particular situation? Why? • What are some applications of quadratic functions and how can you tell if a quadratic can be used to model a situation? • What are the various methods for solving a system of equations?

Learning Targets

- The student uses properties and attributes of functions and applies functions to problem situations.
- The student formulates systems of equations and inequalities from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situations.

Formative Assessments	Summative Assessments
homework, quizzes	test

TEKS: Readiness Standards	TEKS: Related Supporting Standards
A2.1A Identify the mathematical domains and ranges of functions and determine reasonable domain and range values for continuous and discrete situations. **A2.1B** Collect and organize data, make and interpret scatterplots, fit the graph of a function to the data, interpret the results, and proceed to model, predict, and make decisions and critical judgments **A2.4B** Extend parent functions with parameters and describe the effects of the parameter changes on the graph of parent functions	**A2.4.A** identify and sketch graphs of parent functions, including linear (f (x) = x),_quadratic (f (x) = x2), exponential _(f (x) = ax), and logarithmic _(f (x) = logax) functions, absolute value of x (f (x) = |x|), square root _of x (f (x) = ax), and reciprocal _of x (f (x) = 1/x)

Processes and Skills: What students should be able to DO	Facts: What students should KNOW
• Graph linear, quadratic, radical, and absolute value functions • Write equations for linear, quadratic, radical, and absolute value functions • Write linear, quadratic, and power equations using regressions	• The process of completing the square converts a quadratic equation from standard to vertex form, • Regression is a technique used to discover a mathematical relationship between two variables using a set of individual data points.

Topics

linear functions	absolute value functions	linear regression
quadratic functions	graphing transformations	quadratic regression
square root functions	equation of best fit	power regression

Language of Instruction

absolute value	regression

State Assessment Connections	National Assessment Connections

Resources

McDougal Littell – Algebra 2
Supplemental material