

HPISD Curriculum: Algebra II								
Title		Estimated Duration	6 Weeks					
Unit 2: Linear Inequalities		2 weeks	1	2	3	4	5	6
Unit Overview								
Graphing and solving linear inequalities, solving absolute value equations and inequalities.								
Enduring Understandings								
The student will understand that:		<ul style="list-style-type: none"> Absolute value and linear equations and inequalities may be used to model real world situations. Solutions to systems of several equations and inequalities can be used to solve real world problems. Multiple constraints can be modeled graphically using a system of inequalities. 						
Concepts	Guiding/Essential Questions							
<ul style="list-style-type: none"> relationships 	<ul style="list-style-type: none"> What does absolute value mean? Will all absolute value problems have a solution? What does a solution of an inequality of the form $ax + b < c$ typically look like? What does a solution of an inequality of the form $ax + b > c$ typically look like? What process can be used to determine which side of the line to shade? What kind of real world problems can be solved by using linear programming? 							
Learning Targets								
<ul style="list-style-type: none"> Students will use properties and attributes of functions and apply functions to problem situations. Students will formulate systems of equations and inequalities from problem situations, use a variety of methods to solve them, and analyze the solutions in terms of the situations. 								
Formative Assessments			Summative Assessments					
homework, quizzes			test					

TEKS: Readiness Standards	TEKS: Related Supporting Standards	
<p>A2.1.B 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</p> <p>A2.3A Analyze situations and formulate systems of equations in two or more unknowns or inequalities in two or more unknowns or inequalities in two unknowns to solve problems.</p> <p>A2.3.B use algebraic methods, graphs, tables, or matrices, to solve systems of equations or inequalities</p> <p>A2.3C Interpret and determine the reasonableness of solutions to systems of equations or inequalities for given contexts.</p>	<p>A2.4.A identify and sketch graphs of parent functions, including linear ($f(x) = x$), quadratic ($f(x) = x^2$), exponential ($f(x) = ax$), and logarithmic ($f(x) = \log ax$) functions, absolute value of x ($f(x) = x$), square root of x ($f(x) = \sqrt{x}$), and reciprocal of x ($f(x) = 1/x$)</p>	
Processes and Skills: What students should be able to DO	Facts: What students should KNOW	
<ul style="list-style-type: none"> • Solve absolute value equations and inequalities. • Solve a linear programming problem. • Graph systems of linear inequalities. • Solve compound inequalities involving absolute value. • Use graphing techniques, graphing technology and algebraic methods to solve systems of linear inequalities. • Solve linear programming problems by finding maximum and minimum values of a function over a region. 	<ul style="list-style-type: none"> • The absolute value of a number is the number's distance from 0 on the number line. • When multiplying or dividing by a negative, the direction of the inequality symbol must be reversed. • When graphing single variable inequalities on the number line, determine if the point is open or closed. • The inequality of less than or greater than is a dashed line. The inequality of less than or equal to and greater than or equal to is a solid line. • The graphs of inequalities require shading to show the set of solutions. 	
Topics		
Inequalities	Absolute Value	Linear Programming
Language of Instruction		
Inequalities	Absolute Value	Constraints
Linear programming	Feasible Region	

State Assessment Connections	National Assessment Connections
Resources	
McDougal Littell – Algebra 2 Supplemental material	