

HPISD Curriculum: Algebra II								
Title		Estimated Duration	6 Weeks					
Unit 1: Linear Functions		2 weeks	1	2	3	4	5	6
Unit Overview								
Solving linear equations and linear systems of equations including matrices.								
Enduring Understandings								
The student will understand that:		<ul style="list-style-type: none"> Differences and similarities exist between relations and functions. It is necessary to use correct order of operations when simplifying expressions. A variety of methods can be used to solve systems of equations from problem situations. Functions and equations may be used to model real world applications and their solutions provide answers to many real world situations. 						
Concepts	Guiding/Essential Questions							
<ul style="list-style-type: none"> relationships 	<ul style="list-style-type: none"> What are the differences and similarities between relations and functions? How is the equation $y = mx+b$ related to the equation $f(x) = mx+b$? How does the context of a problem restrict the domain and/or range of a function? What is the order of operations and why does there need to be a set order of operations? What algebraic methods are commonly used to solve systems of linear equations? When solving real-world application problems, how is a reasonable solution determined? 							
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 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>A2.1A Identify the mathematical domains and ranges of functions and determine reasonable domain and range values for continuous and discrete situations.</p> <p>A2.3A Analyze situations and formulate systems of equations in two or more unknowns to solve problems.</p> <p>A2.3B Use algebraic methods, graphs, tables, or matrices, to solve systems of equations.</p> <p>A2.3C Interpret and determine the reasonableness of solutions to systems of equations 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 ($f(x) = \log x$) 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"> • Write the domain and range from a mapping, table, ordered pair, graph, and an equation. • Develop a system of equations from application problems. • Solve a linear system by graphing. • Solve a linear system by elimination. • Solve a linear system by substitution. • Solve a linear system by using a matrix with and without a calculator. • Solve problems involving applications of linear functions and determine reasonableness of solutions. • Simplify expressions and solve equations. • Determine whether a relation is a function given coordinates, mapping, graphs, and equations. • Find function values by substitution. • Use rules for order of operations to simplify algebraic expressions. 	<ul style="list-style-type: none"> • Domain is the set of x values • Range is the set of y values • A solution to the system of equations is the intersection of the graphs. • Answers to a linear system of equations could be no solution, a point, or infinitely many. • The order of operations is parenthesis, exponents, multiplication and division, addition and subtraction. 	
Topics		
systems of equations	functions	order of operations

Language of Instruction		
Function	Order of operations	Independent
Domain	Linear	Dependent
Range	Matrix	
State Assessment Connections		National Assessment Connections
Resources		
McDougal Littell – Algebra 2 Supplemental material		