

HPISD Curriculum: Algebra I								
Title		Estimated Duration	6 Weeks					
Unit 14: Radicals		2 weeks	1	2	3	4	5	6
Unit Overview								
Unit 14 focuses on working with radicals and connections to geometry. Students will learn to simplify square root expressions using properties of radicals and to solve square root equations by squaring both sides.								
Enduring Understandings								
The student will understand that:		<ul style="list-style-type: none"> • A radical can be simplified only if its radicand has one or more perfect square factors. • The properties of real numbers apply to radicals. • Radicals can be multiplied and divided using the properties of radicals. • Radicals can be simplified using order of operations techniques. • The identity property of multiplication can be used to rationalize radicals. 						
Concepts	Guiding/Essential Questions							
<ul style="list-style-type: none"> • number • relationships 	<ul style="list-style-type: none"> • How is a radical expressed in simplest form? • How is prime factorization related to simplifying square roots? • How is the identity property of multiplication used to rationalize radicals? • What are the properties of radicals? 							
Learning Targets								
Students will select and apply appropriate properties to simplify radical expressions and solve radical equations.								
Formative Assessments				Summative Assessments				
homework, quizzes				test				

TEKS: Readiness Standards	TEKS: Related Supporting Standards
<p>A.4A Find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations.</p>	<p>A.4B Use the commutative, associative, and distributive properties to simplify algebraic expressions.</p>
Processes and Skills: What students should be able to DO	Facts: What students should KNOW
<ul style="list-style-type: none"> • Simplify radical expressions • Perform operations on radicals • Rationalize radical denominators • Solve radical equations and check answers to omit extraneous solutions. 	<ul style="list-style-type: none"> • The radicand is the expression under the radical • A radical expression is in simplest form if the following conditions are true: <ul style="list-style-type: none"> ◦ No perfect square factors other 1 are in the radicand ◦ No fractions are in the radicand ◦ No radicals appear in the denominator of a fraction • The square root of a product equals the product of the square roots of the factors. • The square root of a quotient equals the quotient of the numerator and denominator. • The process of eliminating a radical from an expression’s denominator is called “rationalizing the denominator.” • The distributive property can be used to simplify sums and differences of radical expressions when the expressions have the same radicand. • Squaring both sides of an equation can result in an extraneous solution that is not a solution to the original equation.
Topics	
simplify radical expressions by: addition/subtraction multiplication division and rationalizing	solving radical equations

Language of Instruction		
extraneous solutions	radicand	quotient property of radicals
factors	radical	square of a binomial
factor tree	rationalize the denominator	FOIL
inverse operations	simplify	distributive property
like terms	square root	
prime factors	product property of radicals	
State Assessment Connections	National Assessment Connections	
Resources		
McDougall Littell – Algebra I Section 11.2 and 11.3 Teacher-made supplementary materials		