FRANKLIN-SIMPSON HIGH SCHOOL

Course Name: **Unit Name: Radical Expressions and Equations**

Objectives:

Unit 7 Radical Expressions and Equations		
B.1.	Mathematical Processes	a. Apply problem-solving skills (e.g., identifying irrelevant or missing information, making conjectures, extracting mathematical meaning, recognizing and performing multiple steps when needed, verifying results in the context of the problem) to the solution of real-world problems
		b. Use a variety of strategies (e.g., guess and check, draw a picture) to set up and solve increasingly complex problems
		c. Represent data, real-world situations, and solutions in increasingly complex contexts (e.g., expressions, formulas, tables, charts, graphs, relations, functions) and understand the relationships
		d. Use the language of mathematics to communicate increasingly complex ideas orally and in writing, using symbols and notations correctly
		e. Make appropriate use of estimation and mental mathematics in computations and to determine the reasonableness of solutions to increasingly complex problems
		f. Make mathematical connections among concepts, across disciplines, and in everyday experiences
		g. Demonstrate the appropriate role of technology (e.g., calculators, software programs) in mathematics (e.g., organize data, develop concepts, explore relationships, decrease time spent on computations after a skill has been established)
		h. Apply previously learned mathematical concepts in algebraic contexts
C.1	Foundations	b. Translate real-world problems into expressions using variables to represent values
D.1	Expressions, Equations, and Inequalities	a. Solve single-step and multistep equations and inequalities in one variable
		c. Solve formulas for a specified variable
D.2.	Graphs, Relations, and Functions	b. Give the domain and range of relations and functions
		c. Evaluate functions at given values
		d. Identify graphs of relations and functions and analyze them to determine whether a relation is a function (e.g., vertical line test)

F.1. Rational and Radical Expressions, Equations, and Functions	d. Find rational number square roots (without calculators) and approximate irrational square roots (with and without calculators)
	e. Evaluate and simplify radical expressions
	f. Multiply radical expressions
	g. Simplify an algebraic quotient by rationalizing an irrational monomial denominator

Purpose of the Unit:

To simplify radical expressions with different operations, identify characteristics of square root functions, and solve radical equations.

Prerequisites:

A.1. Skills Acquired by Students …	c. Use rational numbers to demonstrate knowledge of additive and multiplicative inverses
	d. Simplify ratios.

C.1. Foundations	f. Multiply monomials, binomials, trinomials, and polynomials
E.2. Graphs, Relations, and Functions	a. Identify graphs of quadratic functions
	b. Relate factors, solutions (roots), zeros of related functions, and *x*-intercepts in equations that arise from quadratic functions

Daily Lesson Guide

Day	Lesson Content and Daily Focus Questions	Tasks/Procedures		Engagement	Assessment and/or Accommodations
		Knowledge or Comprehension Activities	Critical Thinking (High Yield / Literacy /LTF/etc.)		
1 and 2	Simplifying Radicals (F.1.d, F.1.g) Can I Simplify radicals involving products and quotients?	(Day 1) Algebra I Pearson Book Pg. 623 #10-44 even (Day 2) *Groups based on score from Lesson Quiz *Intervention – reteaching work *On-Level – Algebra I Pearson Workbook pg. 295-296 evens only	(Day 2) *Extension – Enrichment and activities page		(Day 1) *Lesson Quiz (From Algebra I Pearson Teacher addition) Bell Ringers Exit Slip (Algebra I Pearson Workbook – Standardized Test Prep page 297 Homework checks
3 and 4	Operations with Radical Expressions (F.1.e, F.1.f) Can I simplify sums, differences, products, and quotients of radical expressions?	(Day 1) Algebra I Pearson Book Pg. 629 #10-34 even (Day 2) *Groups based on score from Lesson Quiz *Intervention – reteaching work	(Day 2) *Extension – Enrichment and activities pate		(Day 1) *Lesson Quiz (From Algebra I Pearson Teacher addition) Bell Ringers Exit Slip (Algebra I Pearson Workbook – Standardized Test Prep page 301

		***On-Level – Algebra I Pearson Workbook pg. 299 evens only**			**Homework checks**
5 and 6	**Solving Radical Equations (D.1.a, D.1.c)** **Can I solve equations containing radicals and identify extraneous solutions?**	**(Day 1)** **Algebra I Pearson Book Pg. 636-637 #8-36 even** **(Day 2)** ***Groups based on score from Lesson Quiz** ***Intervention – reteaching work** ***On-Level – Algebra I Pearson Workbook pg. 303-304 #2-8 even, and 14-28 even**	**(Day 2)** ***Extension – Enrichment and activities pate**		**(Day 1)** ***Lesson Quiz (From Algebra I Pearson Teacher addition)** **Bell Ringers** **Exit Slip (Algebra I Pearson Workbook – Standardized Test Prep page 305** **Homework checks**
7 and 8	**Graphing Square Root Functions (D.2.b, D.2.c, D.2.d)** **Can I graph square root functions, translate graphs of square root functions, and analyze graphs of square root**	**(Day 1)** **Algebra I Pearson Book Pg. 642 #8-24 even, 25 – 29 all, 30-34 even** **(Day 2)** ***Groups based on score from Lesson Quiz**	**(Day 2)** ***Extension – Enrichment and activities pate**		**(Day 1)** ***Lesson Quiz (From Algebra I Pearson Teacher addition)** **Bell Ringers** **Exit Slip (Algebra I Pearson Workbook – Standardized**

	functions?	***Intervention – reteaching work** ***On-Level – Algebra I Pearson Workbook pg. #2-24 even**			**Test Prep page 309** **Homework checks**
9	**Review Radical Expressions and Equations**	**Review worksheet**	**Review "game" with clickers**		**Formative assessment of student work with the clickers**
10	**Radical Expressions and Equations Test**				**Summative assessment**