Algebra I – Unit 7: Radical Expressions

Phoenixville Area School District

<table>
<tr><th colspan="3">Stage 1 Desired Results</th></tr>
<tr><td rowspan="3">PA Core Standards:
CC.2.1.8.E.4 Estimate irrational numbers by comparing them to rational numbers.

CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents.

CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real-world or mathematical problems.

CC.2.2.8.B.1 Apply concepts of radicals and integer exponents to generate equivalent expressions.

Keystone Assessment Anchors:
A1.1.1.1 Represent and/or use numbers in equivalent forms (e.g.,</td><td colspan="2">Transfer</td></tr>
<tr><td colspan="2">TRANSFER GOALS
Students will be able to independently use their learning to…
• Number Sense: Develop a sound foundation to demonstrate the value of numbers by describing their various representations, relationships, and patterns.
• Fluency: Demonstrate automatic recall of addition, subtraction, multiplication, and division of rational numbers.
• Reasoning: Demonstrate mathematical resilience and conceptual understanding through the use of vocabulary, written expression, graphical representation, and alternate strategies.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>UNDERSTANDINGS
Students will understand that…
• Mathematicians flexibly use symbols, numbers, words, and visual representations while maintaining the integrity of the relationship between quantities.
• Algebraic rules and properties determine how expressions are simplified and how equations are solved.
• Mathematicians think about reasonableness throughout the problem-solving process.</td><td>ESSENTIAL QUESTIONS
Students will keep considering...
• What does this quantity/number/ expression/value mean? What are the ways to represent it? Is there a best way?
• How do figures/quantities/numbers/ operations relate to one another?
• Have I represented the relationships between the quantities appropriately?</td></tr>
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integers, fractions, decimals, percents, square roots, and exponents). A1.1.1.3 Use exponents, roots, and/or absolute values to solve problems.	***Knowledge and Skills Acquisition***	
	KNOWLEDGE *Students will know…* • How to compare and/or order any real numbers • How to simplify square roots involving numbers and variables • How to add, subtract, multiply, and divide radical expressions • How to solve an equation by taking a square root VOCABULARY • Square Root/Radical • Perfect Square • Factor	SKILLS *Students will be skilled at…* • Simplifying square roots as demonstrated through classroom discussion, error analysis, multiple choice, open-ended response, and constructed response items. • Adding, subtracting, multiplying, and dividing radical expressions through multiple choice and open-ended response questions. • Solving quadratic equations by taking a square root through multiple choice and open-ended response questions.

Stage 2 – Evidence

Code A/M/T	Evaluative Criteria	Assessment Evidence	
N/A	N/A	PERFORMANCE TASK(S) *Students will demonstrate understanding (meaning making and transfer) through complex performance by...* N/A	Differentiation Considerations:
Acquisition Meaning Making Transfer	Chooses effective strategy/strategies for solving the problem. All necessary work is shown with no missing information/skipped steps. Solution is clearly identified; appropriate units are provided *(if applicable)*.	OTHER EVIDENCE **Unit Test: Radicals** • Multiple Choice • Open Response • Constructed Response Prompts	Differentiation Considerations: