Algebra I – Unit 5: Exponential and Polynomial Expressions

Phoenixville Area School District

<table>
<tr><th colspan="3">Stage 1 Desired Results</th></tr>
<tr><td rowspan="4">PA Core Standards:
CC.2.2.8.B.1 Apply concepts of integer exponents to generate equivalent expressions.

CC.2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.

Keystone Assessment Anchors:
A1.1.1.3 Use exponents to solve problems.

A1.1.1.5 Simplify expressions involving polynomials</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
• Mathematical Vocabulary: Interpret mathematical vocabulary and apply proper terminology to engage in meaningful oral and written expression that communicates mathematical thinking, problem-solving methods, and rationale.
• Problem-Solving: Persistently apply various problem-solving strategies and organized approaches to accurately understand and solve problems and provide evidence to support response.</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.
• Mathematicians think about reasonableness throughout the problem-solving process.
• Expressions are simplified using a predetermined order of operations.</td><td>ESSENTIAL QUESTIONS
Students will keep considering...
• How do figures/quantities/numbers/ operations relate to one another?
• What does this quantity/number/ expression/value mean? What are the ways to represent it? Is there a best way?
• What counts as an adequate solution? Does my answer make sense?</td></tr>
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	Knowledge and Skills Acquisition	
	KNOWLEDGE *Students will know…* • How to apply exponent properties to simplify expressions • How to write numbers in scientific notation • How to write a polynomial in standard form, identify its parts, and classify it • How to add, subtract, and multiply polynomials VOCABULARY • Exponent • Scientific Notation • Polynomial • Standard Form • Combine Like Terms • Distribute	SKILLS *Students will be skilled at…* • Simplifying expressions using exponent properties on multiple choice, open response, and constructed response questions. • Writing and using numbers in scientific notation and explaining the meaning of the numbers in terms of the context of the problem and in real-world problems. • Adding, subtracting, and multiplying polynomials on multiple choice, open response, and constructed 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...*	Differentiation Considerations:
Acquisition Meaning Making Transfer	Uses mathematics vocabulary and notation concisely and correctly. 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** • Multiple Choice • True/False (yes/no) • Open Responses • Constructed Responses	Differentiation Considerations: