Algebra I – Unit 2: Solving Linear Equations and Inequalities

Phoenixville Area School District

<table>
<tr><th colspan="3">Stage 1 Desired Results</th></tr>
<tr><td rowspan="3">PA Core Standards:
CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method

CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities

CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable

CC.2.2.HS.D.7 Create and graph inequalities to describe numbers or relationships.

Keystone Assessment Anchors:
A1.1.2.1 Write, solve, and/or graph linear equations using various methods.</td><td colspan="2">Transfer</td></tr>
<tr><td colspan="2">TRANSFER GOALS
Students will be able to independently use their learning to…
Fluency: Demonstrate automatic recall of addition, subtraction, multiplication, and division of rational numbers.
Problem-Solving: Persistently apply various problem-solving strategies and organized approaches to accurately understand and solve problems and provide evidence to support response.
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…
Variables represent the unknown so that mathematicians can generalize a pattern rather than being limited to looking at specific values.
Algebraic rules and properties determine how expressions are simplified and how equations are solved.
Algebraic expressions, equations, inequalities, and functions (linear, absolute value, quadratic, polynomial, exponential, and logarithmic) are used to model relationships between quantities in real-world situations.</td><td>ESSENTIAL QUESTIONS
Students will keep considering...
What is the nature of the relationship? How do I represent it?
What does this quantity/number/ expression/value mean? What are the ways to represent it? Is there a best way?
How do I create an equation/ representation that describes the problem situation? How do I know if I got it right? Is one representation more appropriate than another?</td></tr>
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A1.1.3.1 Write, solve, and/or graph linear inequalities using various methods.	***Knowledge and Skills Acquisition***	
	KNOWLEDGE *Students will know…* • How to solve multi-step one variable equations, absolute value equations, and proportions • How to solve and graph multi-step one variable, compound, and absolute value inequalities • When an equation or inequality has no solutions or infinite solutions VOCABULARY • Equation • Variable • Inequality • Solution/Solution Set • Inverse Operation	SKILLS *Students will be skilled at…* • Solving multi-step one variable equations demonstrated through open response and constructed response questions. • Writing and solving one variable equations from real world application problems and interpreting the solutions in their context. • Writing, solving, and graphing multi-step one variable inequalities demonstrated through a matching activity, multiple choice questions, and open response and constructed response questions.

Stage 2 – Evidence			
Code A/M/T	**Evaluative Criteria**	**Assessment Evidence**	
Acquisition Meaning Making Transfer	Valid conclusions are made based on given/ implied/ found information. All necessary work is shown with no missing information/skipped steps. Solution is clearly identified; appropriate units are provided.	PERFORMANCE TASK(S) *Students will demonstrate understanding (meaning making and transfer) through complex performance by...* **Writing, Comparing, and Solving Expressions and Equations** http://www.insidemathematics.org/assets/common-core-math-tasks/how%20old%20are%20they.pdf	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. Explains one's reasoning efficiently using mathematics, words, or both. Solution is clearly identified; appropriate units are provided *(if applicable)*.	OTHER EVIDENCE **Unit Test A: Chapter 2 Solving Equations** • Multiple Choice • Open Response • Constructed Response Prompt(s) **Unit Test B: Chapter 5 Solving Inequalities** • Multiple Choice • Open Response • Constructed Response Prompt(s)	Differentiation Considerations: