Algebra II – Unit 1: Foundations of Algebra

Phoenixville Area School District

Stage 1 Desired Results	

PA Core Standards:	*Transfer*	
CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems. CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities algebraically and graphically. CC.2.2.HS.C.1 Use the concept and notation of functions to interpret and apply them in terms of their context. CC.2.2.HS.C.2 Graph and analyze functions	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. *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.	
	Meaning	
	UNDERSTANDINGS *Students will understand that…* - Mathematical ideas interconnect and build on one another to produce a coherent whole. - Tools and strategies are strategically selected and used to solve applications. - Mathematical ideas must be communicated clearly in written, visual, or oral form. - The most appropriate way to solve a problem or represent a quantity depends on the situation, calculations may be done using; mental math or paper and pencil calculations using a variety of mathematically sound algorithms. - 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.	ESSENTIAL QUESTIONS *Students will keep considering...* - What counts as an adequate solution? Does my answer make sense? - Have I represented the relationships between the quantities appropriately? - What tools should I use here to be most efficient and effective? - 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?

and use their properties to make connections between the different representations. CC.2.2.HS.C.4 Interpret the effects transformations have on functions.	*Knowledge and Skills Acquisition*	
	KNOWLEDGE *Students will know…* - How to simplify expressions - How to write, solve, and graph one and two variable linear equations and linear inequalities - How to find rate of change or slope - How to solve and graph absolute value equations, inequalities, and functions - How to write and graph piecewise functions VOCABULARY - Expression - Equation - Inequality - Function - Absolute Value - Piecewise Function	SKILLS *Students will be skilled at…* - Writing, simplifying, and solving expressions and equations through open response questions and real-world problems - Writing, solving, and graphing one and two variable linear inequalities through open response questions and real-world problems - Identifying and evaluating functions using tables, graphs, and ordered pairs and finding their domains and ranges - Writing, graphing, and analyzing linear functions to represent and solve real world open response problems - Writing, solving, and graphing absolute value equations, inequalities, and functions through matching and open response questions - Writing and graphing piecewise functions through matching and open response questions

Stage 2 – Evidence			
Code A/M/T	**Evaluative Criteria**	**Assessment Evidence**	
A/M/T Acquisition Meaning Making Transfer	*What criteria will be used in each assessment to evaluate attainment of the desired results?*	PERFORMANCE TASK(S) *Students will demonstrate understanding (meaning making and transfer) through complex performance by...* **[Performance Assessment Title]** [Performance Assessment Description] • *Goal:* Your task is to... • *Role/Audience:* You are a... • *Situation/Product:* You will... • *Success Criteria:* Your [product] must include...	Differentiation Considerations:
A/M/T Acquisition Meaning Making Transfer	*What criteria will be used in each assessment to evaluate attainment of the desired results?*	OTHER EVIDENCE **[Unit Test]** • [Multiple Choice] • [True/False] • [Matching] • [Constructed Response Prompts:]	Differentiation Considerations: