Algebra II – Unit 6: Exponential and Logarithmic Functions

Phoenixville Area School District

Stage 1 Desired Results						
PA Core Standards:	Transfer					
CC.2.1.HS.F.1 Apply	TRANSFER GOALS					
and extend the	Students will be able to independently use their learning to					
to solve problems with	 Number Sense: Develop a sound foundation to demonstrate the value of numbers by describing their various representations, relationships, and patterns. 					
CC.2.1.HS.F.2 Apply properties of rational and	 Fluency: Demonstrate automatic recall of addition, subtraction, multiplication, and division of rational numbers. 					
irrational numbers to	 Problem-Solving: Persistently apply various problem-solving strategies and organized approaches to accurately understand and solve problems and provide evidence to support response. 					
solve real world or						
mathematical problems.	Reasoning: Demonstrate mathematical resilience and conceptual understanding through the use					
CC.2.1.HS.F.3 Apply	of vocabulary, written expression, graphical representation, and alternate strategies.					
quantitative reasoning to	Mea					
choose and interpret	UNDERSTANDINGS	ESSENTIAL QUESTIONS				
units and scales in	Students will understand that	Students will keep considering				
formulas, graphs, and	• Mathematical ideas interconnect and build	What is the question asking? How do I get				
data displays.	on one another to produce a conerent					
CC.2.2.HS.D.2 Write		 How do figures/quantities/numbers/ 				
expressions in	 various mathematical representations are useful for problem colving and 	operations relate to one another?				
equivalent forms to solve problems.	communicating a solution	 How do I create an equation/ 				
	Tools and strategies are strategiesly	representation that describes the problem				
	• Tools and stategies are strategically	situation? How do I know if I got it light? Is				
CC.2.2.HS.D.8 Apply	selected and used to solve particular	another?				
solve equations or	applications.	• What tools should Luse here to be most				
formulas for a given	Mathematical ideas must be communicated	efficient and effective?				
variable.	• Mathematical ideas must be communicated	What counts as an adequate solution?				
	clearly in written, visual, or oral form.	Does my answer make sense?				
CC.2.2.HS.D.9 Use	Mathematicians think about researchlances					
reasoning to solve	 Initialicians think about reasonableness throughout the problem colving process 					
	anoughout the problem-solving process.					

equations and justify the solution method. CC.2.2.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. CC.2.2.HS.C.4 Interpret	 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. Patterns and functions can be generalized and represented using; verbal models, tables, equations, and graphs. 	Skills Acquisition
the effects transformations have on functions and find the inverses of functions. CC.2.2.HS.C.5 Construct and compare linear, quadratic, and exponential models to solve problems. CC.2.2.HS.C.6 Interpret functions in terms of the situations they model.	 KNOWLEDGE Students will know How to graph, analyze, and solve exponential and logarithmic functions and equations How to write, solve, and interpret real world exponential growth and decay problems How to simplify, expand, and condense logarithm expressions VOCABULARY Exponential Growth/Decay Interest/Compound Interest/Continuous Horizontal/Vertical Asymptote Logarithm/Natural Logarithm 	 SKILLS Students will be skilled at Writing, graphing, analyzing, and solving exponential growth and decay equations and functions through matching and open response questions Writing and solving exponential growth and decay real-world application open response questions and explaining solutions in terms of the problem's context Simplifying, expanding, and condensing logarithmic expressions through multiple choice, matching, and open response questions Solving exponential and logarithmic equations through open response questions

Stage 2 – Evidence				
Code	Evaluative	Assessment Evidence		
A/M/T	Criteria			
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	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]	Differentiation Considerations:	