Geometry – Unit 6: Proportions and Similarity

Phoenixville Area School District

Stage 1 Desired Results	
PA Core Standards:	***Transfer***
CC.2.3.8.A.2 Understand and apply congruence, similarity, and geometric transformations using various tools. CC.2.3.HS.A.2 Apply rigid transformations to determine and explain congruence. CC.2.3.HS.A.5 Create justifications based on transformations to establish similarity of plane figures. CC.2.3.HS.A.6 Verify and apply theorems involving similarity as they relate to plane figures.	TRANSFER GOALS *Students will be able to independently use their learning to…* *Problem-Solving:* Persistently apply various problem-solving strategies and organized approaches to accurately understand and solve problems and provide evidence to support response. *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. *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…* - The accurate measurement of space is determined by the ability to visualize the object/problem situation and apply an appropriate algorithm. - Tools and strategies are strategically selected and used to solve particular applications.	ESSENTIAL QUESTIONS *Students will keep considering...* - What is the nature of the relationship? How do I represent it? - How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems? - What tools should I use here to be most efficient and effective?

		Knowledge and Skills Acquisition

KNOWLEDGE	SKILLS
Students will know…	*Students will be skilled at…*
• How to identify and/or use proportional relationships in similar figures • How to write, analyze, complete, or identify formal proofs VOCABULARY • Midsegment • Scale Factor • Similar • Geometric Mean	• Using geometric mean to create proportions to solve for missing parts of a right triangle in both multiple choice and open-ended response prompts. • Applying scale factor to solve for missing information through real world problems. • Analyzing proofs involving similar figures as demonstrated on open-ended response questions.

Stage 2 – Evidence

Code A/M/T	Evaluative Criteria	Assessment Evidence	
Acquisition Meaning Making Transfer	All necessary work is shown with no missing information/skipped steps. Predictions/solutions are reasonable based upon the context of the problem situation. All representations are clear and labeled accurately.	PERFORMANCE TASK(S) *Students will demonstrate understanding (meaning making and transfer) through complex performance by...* **Scale Drawing Project** Students will choose an object and scale factor to replicate a scale drawing of that object. • *Goal:* Your task is to choose an object and a scale factor to make an accurate scale drawing of that object. • *Role/Audience:* You are an architect, graphic designer, or advertising agent who must present to clients/business managers. • *Situation/Product:* You will use graph paper or a ruler and printer paper for your scale drawing. The dimensions of the original object must be provided, and the drawing's measurements must be labeled. • *Success Criteria:* Your scale drawing must include original measurements, the scale factor, and the scale drawing's measurements.	Differentiation Considerations:

Acquisition Meaning Making Transfer	Uses mathematics vocabulary and notation concisely and correctly. Chooses effective strategy/strategies for solving the problem. All representations are clear and labeled accurately. Solution is clearly identified; appropriate units are provided *(if applicable)*.	OTHER EVIDENCE **Unit Test A** - Multiple Choice - Open Response - Constructed Response Prompts **Unit Test B** - Multiple Choice - Open Response - Constructed Response Prompts	Differentiation Considerations: