Geometry – Unit 2: Reasoning and Proof

Phoenixville Area School District

<table>
<tr><th colspan="3">Stage 1 Desired Results</th></tr>
<tr><td rowspan="3">PA Core Standards:
CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.

CC.2.3.HS.A.14 Apply geometric concepts to model and solve real-world problems.</td><td colspan="2">Transfer</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>UNDERSTANDINGS
Students will understand that…
Postulates, theorems, definitions, and properties are used to justify reasoning in a direct proof and establish relationships involving two and three-dimensional figures.
Critique strengthens one’s argument and understanding of mathematical principles.
Mathematical ideas must be communicated clearly in written, visual, or oral form.</td><td>ESSENTIAL QUESTIONS
Students will keep considering...
How do the tools of geometry such as definitions, theorems, and properties foster an increasing ability to spatially visualize and logically deduce conclusions?
Have I sufficiently supported my answer and shown my work?
Does this argument make sense? What might be counterevidence and counter arguments to what I have concluded?</td></tr>
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	Knowledge and Skills Acquisition	
	KNOWLEDGE *Students will know…* • How to make conjectures and find counterexamples for statements. • Use deductive reasoning to reach valid conclusions. • Write proofs involving segment and angle theorems. VOCABULARY • Proof • Inductive Reasoning • Deductive Reasoning • Theorem • Postulate	SKILLS *Students will be skilled at…* • Drawing conclusions and finding counterexamples of conditional statements using real world scenarios through open-ended response questions. • Writing formal proofs and using logic statements to construct or validate arguments through two-column proof with justification.

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...* A	Differentiation Considerations:
Acquisition Meaning Making Transfer	Valid conclusions are made based on given/ implied/ found information Proves the approach was valid and solution correct through examples/counterexamples. All representations are clear and labeled accurately. Solution is clearly identified; appropriate units are provided.	OTHER EVIDENCE **Unit 2 Test** • Open-Ended Response • Two-Column Proof	Differentiation Considerations: