

Algebra II – Unit 8: Probability and Statistics

Phoenixville Area School District

Stage 1 Desired Results		
PA Core Standards: CC.2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable. CC.2.4.HS.B.4 Recognize and evaluate random processes underlying statistical experiments. CC.2.4.HS.B.6 Use the concepts of independence and conditional probability to interpret data. CC.2.4.HS.B.7 Apply the rules of probability to compute probabilities of compound events in a uniform probability model	Transfer	
	TRANSFER GOALS <i>Students will be able to independently use their learning to...</i> <ul style="list-style-type: none"> • <i>Number Sense:</i> Develop a sound foundation to demonstrate the value of numbers by describing their various representations, relationships, and patterns. • <i>Problem-Solving:</i> Persistently apply various problem-solving strategies and organized approaches to accurately understand and solve problems and provide evidence to support response. • <i>Reasoning:</i> Demonstrate mathematical resilience and conceptual understanding through the use of vocabulary, written expression, graphical representation, and alternate strategies. 	
	Meaning	
	UNDERSTANDINGS <i>Students will understand that...</i> <ul style="list-style-type: none"> • A study of probability helps illuminate the randomness of our everyday world. • The likelihood of an occurrence is governed by specific rules that can be used as a basis for prediction/determining possible outcomes with varying degrees of confidence. • Mathematicians think about reasonableness throughout the problem-solving process. • Tools and strategies are strategically selected and used to solve particular applications. 	ESSENTIAL QUESTIONS <i>Students will keep considering...</i> <ul style="list-style-type: none"> • How is mathematics used to quantify and compare situations, events and phenomena? • What counts as an adequate solution? Does my answer make sense? • Does my abstract representation of these quantities make sense in context? • What tools should I use here to be most efficient and effective? • How do mathematicians predict the future? What makes the prediction reasonable?

Knowledge and Skills Acquisition		
	<p>KNOWLEDGE <i>Students will know...</i></p> <ul style="list-style-type: none"> • How to find the number of outcomes for an event using either the fundamental counting principle, permutation, or combination • How to find the probability of simple, compound, mutually exclusive, independent, and dependent events. • How to apply Binomial Theorem to expand polynomials and find a specific coefficient <p>VOCABULARY</p> <ul style="list-style-type: none"> • Fundamental Counting Principle • Factorial • Permutation/Combination • Probability • Compound/Independent/Dependent Events • Compliment/Mutually Exclusive Events • Binomial Theorem 	<p>SKILLS <i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> • Using the Fundamental Counting Principle, Permutations, and Combinations to find the number of possible outcomes for a given event through multiple choice and open response problems and a quiz • Finding the probability of simple, compound, independent, and dependent events through multiple choice, open response, and constructed response questions • Expanding polynomials using the Binomial Theorem through open response questions

Stage 2 – Evidence

Code A/M/T	Evaluative Criteria	Assessment Evidence	
<p>A/M/T</p> <p>Acquisition</p> <p>Meaning Making</p> <p>Transfer</p>	<p><i>What criteria will be used in each assessment to evaluate attainment of the desired results?</i></p>	<p>PERFORMANCE TASK(S)</p> <p><i>Students will demonstrate understanding (meaning making and transfer) through complex performance by...</i></p> <p>[Performance Assessment Title] [Performance Assessment Description]</p> <ul style="list-style-type: none"> • <i>Goal:</i> Your task is to... • <i>Role/Audience:</i> You are a... • <i>Situation/Product:</i> You will... • <i>Success Criteria:</i> Your [product] must include... 	<p>Differentiation Considerations:</p>
<p>A/M/T</p> <p>Acquisition</p> <p>Meaning Making</p> <p>Transfer</p>	<p><i>What criteria will be used in each assessment to evaluate attainment of the desired results?</i></p>	<p>OTHER EVIDENCE</p> <p>[Unit Test]</p> <ul style="list-style-type: none"> • [Multiple Choice] • [True/False] • [Matching] • [Constructed Response Prompts:] 	<p>Differentiation Considerations:</p>