Grade 6 Mathematics – Unit 5: Statistics

Phoenixville Area School District

Stage 1 Desired Results	
PA Core Standards:	*Transfer*
M06.D-S.1.1 Display, analyze, and summarize numerical data sets in relation to their context. **PSSA Assessment Anchors:** **M06.D-S.1** Demonstrate understanding of statistical variability by summarizing and describing distributions.	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 formulation of the question affects the design and execution of the experiment. • Selection of the appropriate statistical method to analyze data will progress towards solutions and subsequent inferences. • The way that data is collected, organized and displayed influences interpretation and decision-making. — ESSENTIAL QUESTIONS *Students will keep considering...* • What question is worth asking? How do I design an experiment that will provide an answer? What do my results mean? • What story does this data set/display tell? • How can mathematics be used to provide models that help us interpret data and make predictions?
	Knowledge and Skills Acquisition
	KNOWLEDGE *Students will know…* • Numerical information featured in data displays • Measures of center (e.g., median, mean, mode) and variability (e.g., range, interquartile range, mean absolute deviation) • Overall patterns and any deviations from the overall pattern with reference to the context in which the data were gathered • Measures of center and variability related to the shape of the data distribution and the context in which the data were gathered — SKILLS *Students will be skilled at…* • Interpreting data demonstrated on a number line and in line plots, histograms, stem and leaf plot, and box-and-whisker plots. • Calculating the measures of center and variability when conducting a hands-on math activity. • Determining the overall pattern in a set of data when analyzing a data display. • Choosing the appropriate measure of center and/or variability to display the data when solving a real-world problem.

		VOCABULARY • Interquartile Range • Mean • Mean Absolute Deviation • Median • Mode • Quartile • Range	

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...* **Baseball Players** The task challenges students to apply the concepts of measures of center (mean, median, and mode) and variability (range). Making sense of how additional data affects the mean weight is essential. • ***Goal:*** Your task is to determine the total weight of players given the mean weight. • ***Role/Audience:*** You are a baseball manager and need to calculate the total weight of the players for travel purposes. • ***Situation/Product:*** You will use the data to find the mean and range of different groups of baseball players. • ***Success Criteria:*** Your solutions must include the work and an explanation of reasoning.	**Differentiation Considerations:** Partial credit is provided to students that demonstrate steps even if their answer is not correct. The assessment can be read to students. Encouragement is given to highlight certain instructions.
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] • [Matching] • Which data display would be best used to show the results of the experiment? • How is range different from mean?	**Differentiation Considerations:** Questions testing similar skills are modified. Work needs to be shown. Advanced students can write high level sentences utilizing math vocabulary and include examples when responding to the written responses. Partial credit is provided to students that demonstrate steps even if their answer is not correct. The assessment can be read to students. Encouragement is given to highlight certain instructions.