

Topics: Statistics

Stage 1 Desired Results		
ESTABLISHED GOALS: <u>Competencies:</u> - Students will demonstrate the ability to apply statistical methods by summarizing, representing and interpreting data on categorical and quantitative data. - Students will demonstrate ability to analyze and summarize text and integrate knowledge to make meaning of discipline-specific materials. - Students will demonstrate the ability to produce coherent and supported writing in order to communicate effectively for a range of discipline-specific tasks, purposes, and audiences. - Students will demonstrate the ability to speak purposefully and effectively by strategically making decisions about content, language use, and discourse style. <u>Content Standards:</u> - S.ID.A.4 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. - S.IC.A.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population. - S.IC.A.2 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. - S.IC.B.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. - S.IC.B.4 Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling. - S.IC.B.6 Evaluate reports based on data. - MP2 Reason abstractly and quantitatively. - MP3 Construct viable arguments and critique the reasoning of others. - MP7 Look for and make use of structure. - MP8 Look for and express regularity in repeated reasoning.	Transfer	
	Students will be able to independently use their learning to construct and defend a well thought out conclusion.	
	Meaning	
	ENDURING UNDERSTANDINGS Students will understand that... statistical representations are beneficial for either studying certain characteristics or influencing certain interpretations of the data.	ESSENTIAL QUESTIONS Can you ever be sure that a conclusion is correct?
	Acquisition	
	Students will know... - that the sum of the angles in a circle is 360. - that graphs transform a collection of measurement numbers into a visual form that is useful and simplified. - that line graphs display the change in quantity, usually as it changes over time. - that a measure of central tendency is a single number that summarizes an entire set of data. <u>vocabulary:</u> statistics, data, multiple bar graph, broken line graph, mean, median, mode, frequency distribution, standard deviation	Students will be skilled at... - interpreting bar graphs, line graphs, and circle graphs. - selecting and creating an appropriate graph to represent data. - calculating measures of central tendency. - making inferences about from a data set. - creating and analyzing stemplots. - finding the measures of central tendency (mean, median, mode). - identifying an outlier in a data set. - calculating percentiles. - finding the variance and standard deviation (with and without a calculator). - using standard deviation to describe data. - analyzing sample methods. - analyzing study methods. - designing a survey.
Content Area Literacy Standards		21st Century Skills
- RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. - RST.11-12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 11-12 texts and topics</i>.		- reason effectively - make judgments and decisions - access and evaluate information

• RST.11-12.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. • RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. • RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. • RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	• <i>use and manage information</i>
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Stage 2 - Evidence	
<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	PERFORMANCE TASK(S):
	OTHER EVIDENCE:

Stage 3 – Learning Plan	
Summary of Key Learning Events and Instruction	
<i>Language Arts Integration</i>	<i>Mathematics Integration</i>
• 1.OA.1 Use	• 1.OA.1 Use
<i>Technology Integration</i>	<i>District Materials</i>

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| <ul style="list-style-type: none">• 1.OA.1 Use | |
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