AP Statistics Unit 10: Inference for Means

Unit #:	APSDO-00019250	Duration:	2.0 Week(s)	Date(s):	

Team:
Andrew Riddle (Author), Jaclyn Lawlor, Matthew Mooney, James Murray, Andrew Riddle
Grades:
11, 12
Subjects:
Mathematics

Unit Focus

In this unit, students will be able to construct and interpret a confidence interval, and carry out and interpret a significance test for means. In addition, students will be required to choose an appropriate test of significance based upon the given information. Summative assessments may include projects, labs, and tests. Primary instructional materials include The Practice of Statistics 1st Edition, by D. Yates, D. Moore, and G. McGabe, 1999., videos from Against All Odds collection hosted by Teresa Amabile, and past AP exam free response questions presented as classwork prompts.

Stage 1: Desired Results - Key Understandings

Established Goals

Common Core
Mathematics: 11

- Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
  CCSS.MATH.CONTENT.HSS.IC.A.1
- 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.
  CCSS.MATH.CONTENT.HSS.IC.B.4
- Use data from a randomized experiment

Transfer

T1 (T50) Based on an understanding of any problem, initiate a plan, execute it and evaluate the reasonableness of the solution.
T2 (T53) Articulate how mathematical concepts relate to one another in the context of a problem or in the theoretical sense.
T3 (T51) Examine alternate methods to accurately and efficiently solve problems.
T4 (T52) Use appropriate tools strategically to deepen understanding of mathematical concepts.
T5 (T31) Represent, summarize, and interpret data to clarify and solve problems or to make informed decisions.

Meaning

Understandings	Essential Questions
U1 (U520) Effective arguments are based on	**Q1** (Q520) Does the argument/thought

to compare two treatments; use simulations to decide if differences between parameters are significant. *CCSS.MATH.CONTENT.HSS.IC.B.5* • Evaluate reports based on data. *CCSS.MATH.CONTENT.HSS.IC.B.6* • Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game). *CCSS.MATH.CONTENT.HSS.MD.B.7* • Attend to precision. *CCSS.MATH.MP.6* • Construct viable arguments and critique the reasoning of others. *CCSS.MATH.MP.3*	logical mathematical thinking. **U2** (U521) Evaluating arguments creates clarity about a problem, its model, and the viability of a solution. **U3** (U550) Attention to detail, such as specifying units of measure and labeling, leads to clarity in expressing mathematical information. **U4** (U311) Predictions of an event may require consideration of multiple data sets on which the target is dependent. **U5** (U312) Measures of the likelihood of future events can be determined through the combination of independent or dependent events.	process/logic make sense? **Q2** (Q522) If an argument/thought process/logic doesn`t make sense, what revisions/changes to the plan or argument are necessary? **Q3** (Q521) What questions can I ask to help clarify the argument/thought process/logic? **Q4** (Q551) How precise do my quantities need to be for my calculations to be accurate? **Q5** (Q550) Did I use clear language (symbols, labels, terms, units of measure and significant digits) to explain my reasoning to others? **Q6** (Q308) Have I accurately applied the appropriate measurement formula?
	Acquisition of Knowledge and Skill	
	Knowledge	**Skills**
		S1 Construct and interpret a confidence interval **S2** Choose an appropriate significance test **S3** Carry out and interpret a significance test

Stage 3: Learning Plan

Coding	Code	Description of Learning Activity