

# Unit #4: 1 Sample Hypothesis Testing

Content Area: **Mathematics**  
Course(s): **Statistics H**  
Time Period: **Semester 1 & 2**  
Length: **4 weeks**  
Status: **Published**

## Standards

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MA.K-12.1	Make sense of problems and persevere in solving them.
MA.S-ID.B.5	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
MA.S-IC.A.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
MA.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.
MA.S-IC.B.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.

## Enduring Understandings

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- 1) Understanding that hypothesis testing is merely a formal way of constructing and having an argument and then deciding with confidence that one argument is correct.
- 2) Recognizing the specific circumstances that determine the type of hypothesis used.

## Essential Questions

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- 1) Will students be able to construct various confidence intervals to estimate means, proportions, standard deviations, and variances?
- 2) Will students be able to calculate the probabilities of Type I and II errors?
- 3) Will students be able to perform 1 and 2-sided hypothesis tests on means, proportions, standard deviations, and variances?

## Knowledge and Skills

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- 1) Construct confidence intervals to estimate means, proportions, standard deviations, and variances
- 2) Calculate the probabilities of Type I and II errors
- 3) Perform 1 and 2-sided hypothesis tests on means, proportions, standard deviations, and variances

### **Transfer Goals**

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- 1) Original claims/arguments are assumed true unless shown to be false, then the original claim is rejected.
- 2) The criteria used to reject the original claim is based upon the alternative claim/argument, and the significance level.

### **Resources**

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#### **Elementary Statistics 10th Edition**

<https://doralacademyprep.enschool.org/ourpages/auto/2015/8/18/48840047/Elementary%20Statistics%2010e.pdf>