

# Using JMP Scripts in Introductory Statistics\*

Amy G. Froelich, Iowa State University  
William M. Duckworth, Creighton University

JMP Scripts can be used to teach many concepts in a typical Introductory Statistics course.

- Relationship Between Mean and Median
- Normal Quantile Plots
- Regression and Residual Plots
- Sampling Distributions
- Central Limit Theorem
- Normal Distribution vs. t distribution in inference for the mean
- Confidence Intervals
  - Variability of the confidence interval
  - Relationship Between sample size and width of confidence interval
  - Connection Between coverage rates and confidence level
- Hypothesis Testing
  - Connection between confidence intervals and two-sided hypothesis tests
  - Connection between rejection rates and  $\alpha$  level for the test
  - Relationships among sample size,  $\alpha$  level and the difference between the true and hypothesized parameter value and the power of a hypothesis test
- 2x2 Contingency Tables
  - Test for equality of two proportions.
  - Fisher's exact test.

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There are several advantages to using JMP Scripts over Java applets available on the web for teaching these concepts in Introductory Statistics.

- Output from the JMP Scripts are in the same format as the output from JMP data analysis.
- Flexibility to create JMP Scripts to match and expand different activities.
- JMP Scripts do not require internet access.

There are also some disadvantages to using JMP scripts over Java applets.

- Designing your own JMP Scripts requires knowledge of the JMP Scripting language.
- JMP Scripts are dependent upon JMP platform.

The JMP website contains a JMP Scripting Library with some sample scripts available for download.

- [http://www.jmp.com/support/downloads/jmp\\_scripting\\_library/](http://www.jmp.com/support/downloads/jmp_scripting_library/)

At least one company produces JMP Scripts for educational and commercial use.

- Predictum Management Sciences ([www.predictum.com](http://www.predictum.com))

Activities described in poster are available at the Statistics Education Materials Repository at Iowa State University

- <http://stated.stat.iastate.edu/>