Unit #6: Non-Parametric Hypothesis Testing

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

Standards

MA.S-ID.B.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
MA.S-ID.C.7	Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
MA.S-ID.C.8	Compute (using technology) and interpret the correlation coefficient of a linear fit.
MA.S-ID.C.9	Distinguish between correlation and causation.
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

1) Understand when a paremetric test is appropriate and when it's non-parametric counterpart should be used.

2) Recognize that the correlation between two variables must first be determined before predictions can be made.

Essential Questions

1) Will students be able to use the concepts of correlation and regression to make predictions about two-variable data?

2) Will students be able to differentiate and perform various non-parametric hypothesis tests that are the counterparts to other parametric tests?

3) Will students be able to utilize DESMOS to determine the correlation between two variables, and resulting regression predictions?

Knowledge and Skills

1) Students will calulate correlation coefficients, and use linear regression to make predictions and construct confidence intervals.

2) Students will be able to perform non-parametric tests on various hypotheses.

3) Students will be able to create a scatterplot, correlation coefficient, and regression equation on DESMOS, and utilize the information to make predictions.

Transfer Goals

1) Regression analysis is covered in much greater depth in intermediate and advanced statistical courses.

2) Non-paremetric tests should be used when the restrictive requirements of their parametric counterparts cannot be met.

Resources

Elementary Statistics 10th Edition

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