Unit 9 Projects Utilizing Our Statistics Skills

Content Area: **Mathematics**
Course(s): **AP Statistics**
Time Period: **May**
Length: **6 weeks**
Status: **Published**

Enduring Understandings

Almost all data can be tested for significance

Data must be collected properly for test results to be valid

The internet is a valuable resource but not the only source of data

Learning can be more useful when applied to ones personal interests

Essential Questions

How do you go about proving or disproving a claim?

What are the most effective and accurate techniques for collecting data that meet my goal?

What is the best statistical test to analyze and interpret my collected data?

What conclusions can be drawn from my data and hypothesis tests?

Content

Red Hot Topics:

Skill application

Data collection, organization and graphic displays

Analysis and interpretation of collected data

Use variety of test on several projects

Vocabulary:

Utilized previous terms

in actual real world

applications including formal write-up

Skills

Brainstorm project topics.

Collect data conforming to rules of randomization.

Organize data using appropriate method.

Create a data display that best represents the data.

Perform appropriate hypothesis test for data.

Analyze and interpret results to draw conclusions about original hypothesis.

Write up results for formal presentation or create power point.

Resources

Standards

CCSS.Math.Content.HSS-ID	Interpreting Categorical and Quantitative Data
CCSS.Math.Content.HSS-ID.A	Summarize, represent, and interpret data on a single count or measurement variable
CCSS.Math.Content.HSS-ID.A.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).
CCSS.Math.Content.HSS-ID.A.2	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
CCSS.Math.Content.HSS-ID.A.3	Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
CCSS.Math.Content.HSS-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.
CCSS.Math.Content.HSS-ID.B	Summarize, represent, and interpret data on two categorical and quantitative variables
CCSS.Math.Content.HSS-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.
CCSS.Math.Content.HSS-ID.B.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
CCSS.Math.Content.HSS-ID.B.6.a	Fit a function to the data; use functions fitted to data to solve problems in the context of the data.
CCSS.Math.Content.HSS-ID.B.6.b	Informally assess the fit of a function by plotting and analyzing residuals.
CCSS.Math.Content.HSS-ID.B.6.c	Fit a linear function for a scatter plot that suggests a linear association.
CCSS.Math.Content.HSS-ID.C	Interpret linear models
CCSS.Math.Content.HSS-ID.C.7	Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
CCSS.Math.Content.HSS-ID.C.8	Compute (using technology) and interpret the correlation coefficient of a linear fit.
CCSS.Math.Content.HSS-ID.C.9	Distinguish between correlation and causation.