Unit 1: Exploring Data

Content Area: **Mathematics**
Course(s): **AP Statistics**
Time Period: **Semester 1**
Length: **10 weeks**
Status: **Published**

Standards

MA.S-ID.A.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).
MA.S-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.
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-ID.B.6a	Fit a function to the data (including with the use of technology); use functions fitted to data to solve problems in the context of the data.
MA.S-ID.B.6b	Informally assess the fit of a function by plotting and analyzing residuals, including with the use of technology.
MA.S-ID.B.6c	Fit a linear function for a scatter plot that suggests a linear association.
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.

Enduring Understandings

Quantitative data can be graphically described through shape, center, spread, gaps clusters and outliers.

Categorical data can be compared through bar graphs and frequency totals.

Analysis of bivariate data shows strength and direction of an association.

Correlation does not mean causation.

Essential Questions

1. What are the best ways to graphically represent data?

2. How can we best analyze quantitative data?

3. In what ways can we compare categorical data?

4. How can we understand the relationship of bivariate data?

Knowledge and Skills

- Decide which type of graph would best display data.
- Read and interpret histograms, ogives, bar graphs, box plots, and pie charts
- Discuss linear bivariate relations numerically and verbally.
- Linearize data if bivariate data is non-linear.

Transfer Goals

Understanding that the usefulness of data is only as strong as the accuracy in collecting it.

Some techniques of analysis are not appropriate to certain problems.

Resources

The Practice of Statistics, 4th edition by BFW

www.webassign.net

myap.collegeboard.org