Unit 4 | Describing Data

Standard Code	Mastery Level	Standard
S.ID.1		Construct dot plots, histograms and box plots for data on a real number line.
S.ID.2		Describe a distribution using center and spread.
		Use the correct measure of center and spread to describe a distribution that is symmetric or skewed.
		Identify outliers (extreme data points) and their effects on data sets.
		Compare two or more different data sets using the center and spread of each.
S.ID.3		Interpret differences in different data sets in context. Interpret differences due to possible effects of outliers.
S.ID.5		Create a two-way table from two categorical variables.
		Read values from two way table.
		Interpret joint, marginal, and relative frequencies in context.
		Recognize associations and trends in data from a two-way table.
S.ID.6		Create a scatter plot from two quantitative variables.
		Describe the form, strength and direction of the relationship.
S.ID.6.a		Categorize data as linear or not. Use algebraic methods and technology to fit a linear function to the data. Use the function to predict values.
		Explain the meaning of the slope and *y*-intercept in context.
		Categorize data as exponential. Use algebraic methods and technology to fit an exponential function to the data. Use the function to predict values.
		Explain the meaning of the growth rate and *y*-intercept in context.
		Explain the meaning of the constant and coefficients in context.
S.ID.6.b		Calculate a residual.
		Create and analyze a residual plot.

S.ID.6.c		Fit a linear function to data for which the scatter plot suggests a linear association.
S.ID.7		Explain the meaning of the slope and *y*-intercept in context.
S.ID.8		Use a calculator or computer to find the correlation coefficient for a linear association. Interpret the meaning of the value in the context of the data.
S.ID.9		Explain the difference between correlation and causation.
MCC6.SP.5		Calculate and interpret the mean absolute deviation of a data set.

Rationale of Unit 4: Students will summarize, represent, and interpret data on a single count or measurement variable. Students will summarize, represent, and interpret data on two categorical and quantitative variables. Students will interpret linear models.

Pre-requisites for Unit 4:

In order for students to be successful, the following skills and concepts need to be attained **BEFORE** beginning this unit.

1. Know how to compute the mean, median, interquartile range, and mean standard deviation by hand in simple cases and using technology with larger data sets.
2. Find the lower extreme (minimum), upper extreme (maximum), and quartiles.
3. Create a graphical representation of a data set.
4. Present data in a frequency table.
5. Plot data on a coordinate grid and graph linear functions.
6. Recognize characteristics of linear and exponential functions.
7. Write an equation of a line given two points.
8. Graph data in a scatter plot and determine a trend.
9. Determine the slope of a line from any representation.
10. Identify the y-intercept from any representation.
11. Be able to use graphing technology.
12. Understand the meaning of correlation.