Appendix 1: Implementing Teaching Standards

The teaching standards that this unit addresses come from the Common Core State Standards (CCSS). The CCSS are broken down into five major topics, which are: *Ratios and Proportions, Number Sense, Geometry, Expressions and Equations,* and *Statistics and Probability.* This unit focuses on teaching from the topic of *Statistics and Probability.* In 6th grade, under the topic of *Statistics and Probability* students are expected to learn about the different measures of center, and how to appropriately display measures of center. The measures of center that 6th grade students are expected to master are *mean, median,* and *mean absolute deviation*. Students are expected to be able to create and interpret a *histogram, dot plot, and box plot* to display a set of numerical data. Students should also be able to distinguish the difference between a statistical (or numerical) question, such as "How many pets do you have?", and a categorical question, like "What is your favorite color?"

Using test data as our set of numerical data, this unit teaches how to calculate and interpret the mean and median of the data. Then, the students will learn how to create and interpret a histogram, dot plot, and histogram. Eventually, the students will create a display of their class' data in the form of a histogram, dot plot, and histogram.

The specific Common Core State Standards that are addressed are as follows[10]:

- *CCSS.Math.Content.6.SP.A.3* - Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
- *CCSS.Math.Content.6.SP.B.4* - Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
- *CCSS.Math.Content.6.SP.B.5* - Summarize numerical data sets in relation to their context, such as by:
    - *CCSS.Math.Content.6.SP.B.5.a* - Reporting the number of observations.
    - *CCSS.Math.Content.6.SP.B.5.b* - Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
    - *CCSS.Math.Content.6.SP.B.5.c* - Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
    - *CCSS.Math.Content.6.SP.B.5.d* - Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.