**Sequencing Rationale**

**Sequencing rationale for the sub-unit of Displaying and Analyzing Data comes mostly from the Algebra 1 book published by Glencoe Mathematics. The units, chapters, and lessons are aligned directly to the Ohio Academic Content Standards are focused on preparation for the Ohio Graduation Test (OGT). The lessons are developed in a logical order since the concepts build as the lessons are taught. Data analysis is a very important section of algebra and is taught in the first month of the semester. “Adults make decisions based on data in their daily lives and in the workplace. Reading charts and graphs, interpreting data, and making decisions based on the information are key skills to being a successful worker and an informed citizen. Being an informed citizen includes understanding statistics and probability as well. Adults cannot make reasonable decisions unless they understand from where the statistics come” (Ohio Literacy Resource Center).**

**The first subunit, “line-plots”, is the first in a series of five different types of graphs students analyze and create. Line plots are a convenient way to organize data for comparison. This subunit introduces the term frequency and equal width of measurement. This is the basis for the rest of the unit.**

**The second subunit, “Stem-and-Leaf Plots”, is another way to organize and display data. The greatest common place value is used as the stems. The numbers next in the next greatest place value are the leaves. This plot is a quick display of data, from least to greatest. Stem-and Leaf Plots are also used to compare two related sets of data, in order to compare you use a Back-to-Back Stem-and Leaf Plot. This subunit also studies the use of mean, median, mode, and measures of central tendency. This unit leads you into the next units when dealing with interquartile range.**

**The next unit, “Box-and-Whisker Plots”, also known as “Box Plots”, is a combination of the line-plot unit and the stem-and leaf unit. The unit revisits equal width of measurement, highest and lowest frequency, and utilizes the skill of locating the median in a set of data. It also explores vocabulary such as range, quartiles, outlier, and extremes. Students recognize the difference between quartile one (lower) and quartile three (upper), then finding the difference or the interquartile range (IQR).**

**The second to last unit, “Histograms/Frequency Tables”, shows the frequency of events. This unit interprets data displayed in the frequency table into a histogram. The histogram is basically the visual summary of a frequency table. Prior knowledge such as frequency, width of measurement, mean, median, mode, and comparing data are once again built upon.**

**The last unit in this unit, “Circle Graphs”, also serves as an introduction to geometry concepts and terms. Students analyze and conduct surveys and find percentages and degree using formulas. They use protractors and compasses to accurately draw circle graphs to scale. The students understand the percentages in a circle equal 100% and degrees equal 360 degrees. Calculating fractions to decimals and decimals to percentages/degrees, leads you into the probability and odds unit.**

**In conclusion, educators must introduce more work-related charts and graph and other statistical information to better prepare adults learners for the word of work. Students need opportunities to collect their own data, create their own charts and graphs. This unit is a perfect unit to implement the contextual design of teaching aligned with the common core, to enhance more real world learning.**