Math I UNIT 6 OVERVIEW: *One Variable Statistics*

Unit Outcomes	Key Vocabulary
At the end of this unit, your student should be able to:	Terms to deepen the student's understanding

• distinguish between two types of data, quantitative and qualitative, and how to describe data graphically and numerically • describe a set of data according to shape, center, spread, and outliers in terms of the context • use a frequency table to create a histogram • create histograms and box plots, by hand and on the calculator, to visually represent a data distribution • calculate standard deviation by hand or on the calculator to describe the spread of a data distribution • explain why data has a specific distribution based on context • compare data sets using visual and numerical representations • apply the 1.5(IQR) rule to determine if there are outliers in a data set • choose the best measure of central tendency to represent data • choose the best measure of spread to represent data • display data for two categorical variables using a two-way table • calculate joint, marginal, and conditional frequencies from two-way tables to interpret data • compare the center and spread of two or more different data sets	• Boxplot • Categorical Data • Clustering • Conditional Frequency • Data • Element • Frequency • Frequency Distribution • Histogram • Interquartile range • Intervals • Joint Frequency • Marginal Frequency • Mean • Mean Absolute Deviation • Median • Measures of Center • Measures of Spread • Modified box plot • Outlier • Population • Quantitative Data • Quartiles • Relative frequency • Row and Column Variables • Sample • Skewed Data • Standard Deviation • Symmetrical • Two-Way Table • Uniform

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Key Standards Addressed Connections to Common Core/NC Essential Standards	Where This Unit Fits Connections to prior and future learning
8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. **NC.M1.S-ID.1** Use technology to represent data with plots on the real number line (histograms and box plots). **NC.M1.S-ID.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. Interpret differences in shape, center, and spread in the context of the data sets. **NC.M1.S-ID.3** Examine the effects of extreme data points (outliers) on shape, center, and/or spread.	**Coming into this unit, students should have a strong foundation in:** • Finding measures of central tendency (mean, median, and mode) • Finding measures of spread (range & Mean Absolute Deviation) • Creating basic graphs including box plots and histograms • Comparing graphical representations and draw informal comparative inferences about two sets of data • Fraction, decimal, and percent conversions • Displaying data in tables • Interpreting representations of data with two variables through regression models • Graphing and interpreting various functions **This unit builds to the following future skills and concepts:** • Graphing and interpreting various functions • Interpreting a two-way table to summarize data on two categorical variables. • Calculating relative frequencies to describe possible association between two variables. • Creating and interpreting representations of data with 2 variables

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Additional Resources	**"Learning Checks"**
Materials to support understanding and enrichment	Questions Parents Can Use to Assess Understanding
- Teaching videos made by Wake County teachers - Basic Measures of Central Tendency - Finding Mean Absolute Deviation Practice - Constructing a Box Plot - Interpreting Box Plots Practice - Histograms - Interpreting Histograms Practice - The Best Measure of Central Tendency - Finding Statistics on your Calculator - Interquartile Range - Professions that Use Statistics	- How can you collect, organize, and display data? - How can the representation and analysis of data inform and influence decisions? - When informed of a statistic, how can you determine if the information is misleading? - How can probability and data analysis be used to make predictions? - How can data be organized and represented to provide insight into the relationship between quantities?

* Please note, the unit guides are a work in progress. If you have feedback or suggestions on improvement, please feel free to contact wakemiddle@wcpss.net.