

### *Math 7 Plus Unit 7 Overview: Data Collection and Analysis*

<b>Unit Outcomes</b>	<b>Key Vocabulary</b>	
At the end of this unit, your student should be able to:	Terms to deepen the student's understanding	
<ul style="list-style-type: none"> <li>✓ Determine if a sample is representative or not</li> <li>✓ Determine variability from box plots</li> <li>✓ Use different measures of variability to make decisions about a data set</li> <li>✓ Understand measures of center and shapes of distribution</li> <li>✓ Develop strategies to analyze a data set</li> <li>✓ Use visual representations to analyze data sets</li> <li>✓ Recognize the idea of an outlier</li> </ul>	<ul style="list-style-type: none"> <li>✓ Bar graph</li> <li>✓ Boxplot</li> <li>✓ Categorical Data</li> <li>✓ Cluster</li> <li>✓ Data</li> <li>✓ Distribution</li> <li>✓ Dot plot/line plot</li> <li>✓ Five number summary</li> <li>✓ Frequency table</li> <li>✓ Gap</li> <li>✓ Histogram</li> <li>✓ Interquartile range</li> <li>✓ Mean</li> </ul>	<ul style="list-style-type: none"> <li>✓ Mean Absolute Deviation</li> <li>✓ Measures of Center</li> <li>✓ Measures of Variability</li> <li>✓ Median</li> <li>✓ Mode</li> <li>✓ Numerical (quantitative) data</li> <li>✓ Outliers</li> <li>✓ Peak</li> <li>✓ Range</li> <li>✓ Statistics</li> <li>✓ Variability</li> </ul>
<b>Key Standards Addressed</b>	<b>Where This Unit Fits</b>	
Connections to Common Core/NC Essential Standards	Connections to prior and future learning	
<p>7.SP.1 - Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.</p> <p>7.SP.2 - Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.</p> <p>7.SP.3 - Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.</p> <p>7.SP.4 - Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.</p>	<p><b>Coming into this unit, students should have a strong foundation in:</b></p> <ul style="list-style-type: none"> <li>✓ Recognizing statistical questions</li> <li>✓ Understanding of center, spread and overall distribution</li> <li>✓ Finding mean, median, range, and mode</li> <li>✓ Displaying data in a box plot, dot plot, and histogram</li> </ul> <p><b>This unit builds to the following future skills and concepts:</b></p> <ul style="list-style-type: none"> <li>✓ Analyzing statistical data more deeply in CCMI</li> <li>✓ Determining correlation between two variables</li> <li>✓ Determining patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association</li> </ul>	
<b>Additional Resources</b>	<b>"Learning Checks"</b>	
Materials to support understanding and enrichment	Questions Parents Can Use to Assess Understanding	
<ul style="list-style-type: none"> <li>✓ <a href="#">Teaching videos made by Wake County teachers</a></li> <li>✓ <a href="#">WCPSS YouTube Channel – Math Playlist</a></li> <li>✓ <a href="#">Statistics</a></li> <li>✓ <a href="#">Measures of Variability</a> – <i>students do not need to know standard deviation at this time</i></li> <li>✓ <a href="#">Box Plots</a> – <i>This series of videos explains how to read and make a box plot</i></li> <li>✓ <a href="#">Finding Interquartile Range (IQR)</a></li> </ul>	<ul style="list-style-type: none"> <li>✓ Can you use a small sample to make decisions about a population? If so, how? If you cannot use a small sample, why?</li> <li>✓ Given a visual representation of a data set, what decisions can you make using the analyzed data without being given the actual data set?</li> <li>✓ How can variability change a decision about a data set?</li> </ul>	



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<ul style="list-style-type: none"><li>✓ <u>Mean Absolute Deviation (MAD)</u></li><li>✓ <u>Measures of Center</u></li><li>✓ <u>Mean, Median, and Mode</u> – <i>This series of videos explains how to find all three and provides different examples.</i></li><li>✓ <u>Reasonable Samples</u></li><li>✓ <u>Shapes of Distribution</u></li></ul>	<ul style="list-style-type: none"><li>✓ How do new data values or outliers affect variability and center?</li></ul>
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\* **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.