

Math 7 Plus Unit 7 Overview: Data Collection and Analysis

Unit Outcomes	Key Vocabulary	
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"> ✓ Determine if a sample is representative or not ✓ Determine variability from box plots ✓ Use different measures of variability to make decisions about a data set ✓ Understand measures of center and shapes of distribution ✓ Develop strategies to analyze a data set ✓ Use visual representations to analyze data sets ✓ Recognize the idea of an outlier 	<ul style="list-style-type: none"> ✓ Bar graph ✓ Boxplot ✓ Categorical Data ✓ Cluster ✓ Data ✓ Distribution ✓ Dot plot/line plot ✓ Five number summary ✓ Frequency table ✓ Gap ✓ Histogram ✓ Interquartile range ✓ Mean 	<ul style="list-style-type: none"> ✓ Mean Absolute Deviation ✓ Measures of Center ✓ Measures of Variability ✓ Median ✓ Mode ✓ Numerical (quantitative) data ✓ Outliers ✓ Peak ✓ Range ✓ Statistics ✓ Variability
Key Standards Addressed	Where This Unit Fits	
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>Coming into this unit, students should have a strong foundation in:</p> <ul style="list-style-type: none"> ✓ Recognizing statistical questions ✓ Understanding of center, spread and overall distribution ✓ Finding mean, median, range, and mode ✓ Displaying data in a box plot, dot plot, and histogram <p>This unit builds to the following future skills and concepts:</p> <ul style="list-style-type: none"> ✓ Analyzing statistical data more deeply in CCMI ✓ Determining correlation between two variables ✓ Determining patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association 	
Additional Resources	"Learning Checks"	
Materials to support understanding and enrichment	Questions Parents Can Use to Assess Understanding	
<ul style="list-style-type: none"> ✓ Teaching videos made by Wake County teachers ✓ WCPSS YouTube Channel – Math Playlist ✓ Statistics ✓ Measures of Variability – <i>students do not need to know standard deviation at this time</i> ✓ Box Plots – <i>This series of videos explains how to read and make a box plot</i> ✓ Finding Interquartile Range (IQR) 	<ul style="list-style-type: none"> ✓ Can you use a small sample to make decisions about a population? If so, how? If you cannot use a small sample, why? ✓ Given a visual representation of a data set, what decisions can you make using the analyzed data without being given the actual data set? ✓ How can variability change a decision about a data set? 	



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