

Window Rock Unified School District #8
CURRICULUM GUIDE
SY 2021-2022

SUBJECT: Algebra 1

GRADE: 9

TIMELINE: Semester 2 - 4th Quarter

STANDARD	CONTENT	OBJECTIVES <i>At the end of the lesson, I will be able to:</i>	ASSESSMENTS	RESOURCES	VOCABULARY
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BIG IDEAS

- DATA COLLECTION AND ANALYSIS
- DATA REPRESENTATION
- PROBABILITY

ESSENTIAL QUESTIONS:

01. How can collecting and analyzing data help you make decisions or predictions?
02. How can you make and interpret different representations of data?
03. How is probability related to real-world events?
04. When collecting data, is it important for the results to accurately represent the situation?

ESSENTIAL UNDERSTANDING

01. Different measures can be used to interpret and compare sets of data.
02. Separating data into subsets is a useful way to summarize and compare data sets
03. When collecting data, it is important for the results to accurately represent the situation.
04. Counting methods can be used to find the number of possible ways to choose objects with and without regard to order.
05. The probability of an event will, or $P(\text{event})$, tells how likely it is that the event will occur.
06. Probabilities can be found by reasoning mathematically or by using data collected from an experiment.
07. You can write the probability of a compound event as an expression involving probabilities of simpler events. This may make the compound probability easier to find.

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<p>A1.S-ID.A. Summarize, represent, and interpret data on a single count for measurement variable.</p> <ul style="list-style-type: none"> A1.S-ID.A.2 <p>ALSO</p> <ul style="list-style-type: none"> A1.S-ID.A.3 AI.N-Q.A.2 	<p>Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (inter-quartile range, standard deviation) of two or more different data sets.</p> <p style="text-align: center;">-----</p> <p>KEY CONCEPTS:</p> <ul style="list-style-type: none"> Measure of Central Tendency <ul style="list-style-type: none"> Mean Median Mode Measure of Dispersion <ul style="list-style-type: none"> Range Standard Deviation 	<p>Calculate the mean and median of sample data.</p> <p>Understand how unusual and extreme data points can influence measures of center.</p> <p>Calculate the range and standard deviation of sample data.</p> <p>Understand how unusual and extreme data points can influence measures of spread.</p> <p>Determine which measures of center and spread are most appropriate for a data set.</p>	<p>NWEA Spring Test</p> <p>Practice and Problem Solving Exercises</p> <ul style="list-style-type: none"> Reasoning Standard Test Prep Mixed Review <p>Selected Response Assessment</p> <ul style="list-style-type: none"> Multiple Choice True or False <p>Personal Communication Assessment</p> <ul style="list-style-type: none"> Oral Presentation Think Aloud Discussions <p>Lesson Quiz</p> <ul style="list-style-type: none"> Error Analysis Reasoning Problem Solving 	<p>Prentice Hall Algebra 1</p> <p>www.pearsonrealize.com</p> <p>www.apexvs.com</p> <p>www.khanacademy.org</p> <p>www.mathworksheetsgo.com</p> <p>VIRTUAL NERD</p> <ul style="list-style-type: none"> https://www.youtube.com/channel/UCe73Uxnad_VYqYhQzLLD2IA <p>IXL.com</p> <p>Enrichment or Extension Activity Sheets</p> <p>Puzzles</p> <p>Algebra 1 Consumables</p> <p>AZM2 Practice Test</p> <p>Kutasoftware.com</p>	<p>Measure of Central Tendency</p> <p>Mean</p> <p>Median</p> <p>Mode</p> <p>Outlier</p> <p>Range</p> <p>Measure of Dispersion</p> <p>Standard Deviation</p>

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<p>A1.S-ID.A. Summarize, represent, and interpret data on a single count for measurement variable.</p> <ul style="list-style-type: none"> A1.S-ID.A.1 <p>ALSO:</p> <ul style="list-style-type: none"> A1.N-Q.A.1 A1.S-ID.A.2 	<p>Represent real-value data with plots for the purpose of comparing two or more data sets.</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">KEY CONCEPTS:</p> <ul style="list-style-type: none"> Frequency Tables and Histograms Dot Plots Box-and-Whisker Plots 	<p>Learn how to display data sets using frequency tables, histograms, dot plots, and box-and-whisker plots.</p> <p>Find the five-number summary for given data sets.</p> <p>Find the inter-quartile range for given data sets.</p> <p>Learn how to display and interpret numerical data collected from two different populations using comparative dot plots, box plots, and histograms.</p>	<p>Practice and Problem Solving Exercises</p> <ul style="list-style-type: none"> Reasoning Standard Test Prep Mixed Review <p>Constructed Response</p> <ul style="list-style-type: none"> Extended Brief <p>Personal Communication Assessment</p> <ul style="list-style-type: none"> Oral Presentation Think Aloud Discussions <p>Lesson Quiz</p> <ul style="list-style-type: none"> Error Analysis Reasoning Problem Solving <p>Mid-Chapter Test</p>	<p>Prentice Hall Algebra 1</p> <p>www.pearsonrealize.com</p> <p>www.apexvs.com</p> <p>www.khanacademy.org</p> <p>www.mathworksheetsgo.com</p> <p>VIRTUAL NERD</p> <ul style="list-style-type: none"> https://www.youtube.com/channel/UCe73Uxnad_VYqYhQzLLD2IA <p>IXL.com</p> <p>Enrichment or Extension Activity Sheets</p> <p>Puzzles</p> <p>Algebra 1 Consumables</p> <p>AZM2 Practice Test</p> <p>Kutasoftware.com</p>	<p>Numerical Data</p> <p>Categorical Data</p> <p>Histograms</p> <p>Distribution</p> <p>Frequency Table</p> <p>Dot Plot</p> <p>Bar Graph</p> <p>Quartile</p> <p>Upper Quartile</p> <p>Lower Quartile</p> <p>Interquartile Range</p> <p>Standard Deviation</p> <p>Box-and-Whisker Plot</p> <p>Comparative Box Plot</p>

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<p>A1.S-ID.A. Summarize, represent, and interpret data on a single count for measurement variable.</p> <ul style="list-style-type: none"> A1.S-ID.A.3 	<p>Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of outliers if present.</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">KEY CONCEPTS</p> <ul style="list-style-type: none"> Symmetric Distributions Skewed Distribution Comparing Distributions 	<p>Identify distribution shapes, including data that have skewed or symmetrical distributions.</p> <p>Understand how the shape of a distribution is related to the mean and the median.</p> <p>Determine how outliers affect the shape of a distribution.</p> <p>For a particular data set, determine whether the median and inter-quartile range are better measures of center and spread, respectively, than the mean and standard deviation.</p> <p>Given the shapes of two distributions, choose the appropriate statistics to compare the centers and spreads of the two data sets.</p>	<p>Group Anchor Charts</p> <p>Practice and Problem Solving Exercises</p> <ul style="list-style-type: none"> Reasoning Standard Test Prep Mixed Review <p>Constructed Response</p> <ul style="list-style-type: none"> Extended Brief <p>Personal Communication Assessment</p> <ul style="list-style-type: none"> Oral Presentation Think Aloud Discussions <p>Lesson Quiz</p> <ul style="list-style-type: none"> Error Analysis Reasoning Problem Solving <p>AZM2 Practice Test Questions</p>	<p>Prentice Hall Algebra 1</p> <p>www.pearsonrealize.com</p> <p>www.apexvs.com</p> <p>www.khanacademy.org</p> <p>www.mathworksheetsgo.com</p> <p>VIRTUAL NERD</p> <ul style="list-style-type: none"> https://www.youtube.com/channel/UCe73Uxnad_VYqYhQzLLD2IA <p>IXL.com</p> <p>Enrichment or Extension Activity Sheets</p> <p>Algebra 1 Consumables</p> <p>AZM2 Practice Test</p> <p>Kutasoftware.com</p> <p>Lesson Tutorials</p>	<p>Histogram</p> <p>Distribution</p> <p>Symmetric Distribution</p> <p>Skewed Distribution</p> <p>Positive Skewed Distribution</p> <p>Negative Skewed Distribution</p> <p>Outlier</p> <p>Symmetric Distribution</p>

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		Interpret the differences in data distributions using measures of center, shape, and spread.			
A1.S-ID.B. Summarize, represent, and interpret data on two categorical and quantitative variables. <ul style="list-style-type: none"> A1.S-ID.B.6 ALSO <ul style="list-style-type: none"> A1.S-ID.C.7 A1.S-ID.C.8 A1.S-ID.C.9 	Represent data on two quantitative variables on a scatter-plot, and describe how the quantities are related. <ol style="list-style-type: none"> Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Focus on linear models. Informally assesses the fit of a function by plotting and analyzing residuals. <p style="text-align: center;">-----</p> <p>KEY CONCEPTS:</p> <ul style="list-style-type: none"> Scatter Plots Trend Lines Correlation Causation 	Create a scatter plot for a given set of data. <p>Describe data based on the outcome on the scatter plot.</p> <p>Distinguish between positive, negative, and no correlation.</p> <p>Calculate the correlation coefficient using appropriate technology.</p> <p>Interpret a correlation coefficient (r-value) in context.</p> <p>Distinguish between correlation and causation.</p>	<p>Group Anchor Charts</p> <p>Practice and Problem Solving Exercises</p> <ul style="list-style-type: none"> Reasoning Standard Test Prep Mixed Review <p>Constructed Response</p> <ul style="list-style-type: none"> Extended Brief <p>Personal Communication Assessment</p> <ul style="list-style-type: none"> Oral Presentation Think Aloud Discussions <p>Lesson Quiz</p> <ul style="list-style-type: none"> Error Analysis Reasoning Problem Solving 	Prentice Hall Algebra 1 www.pearsonrealize.com www.apexvs.com www.khanacademy.org www.mathworksheetsgo.com <p>VIRTUAL NERD</p> <ul style="list-style-type: none"> https://www.youtube.com/channel/UCe73Uxnad_VYqYhQzLLD2IA IXL.com Algebra 1 Consumables AZM2 Practice Test Kutasoftware.com Lesson Tutorials	Two-Variable Data Scatter Plot Independent Variable Dependent Variable Correlation Positive Correlation Negative Correlation Trend Line Correlation Coefficient Outliers Causation Line of Best Fit Interpolation Extrapolation

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<p>A1.S-CP.A. Understand independence and conditional probability and use them to interpret data.</p> <ul style="list-style-type: none"> A1.S-CP.A.1 <p>ALSO</p> <ul style="list-style-type: none"> A1.S-CP.A.2 	<p>Describe events as subsets of a sample space using characteristics of the outcome, or as unions, intersections, or compliments of other events.</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">KEY CONCEPTS</p> <ul style="list-style-type: none"> Theoretical Probability <ul style="list-style-type: none"> Finding Theoretical Probability Finding Probability of the Complement of an Event Finding Odds Experimental Probability <ul style="list-style-type: none"> Finding Experimental Probability Using Experimental Probability 	<p>Describe sample space.</p> <p>Determine the theoretical probability of an event.</p> <p>Determine the experimental probability of an event.</p> <p>Use experimental probability to make predictions.</p> <p>Find the probability of an independent event.</p> <p>Find the probability of dependent events.</p>	<p>Practice and Problem Solving Exercises</p> <ul style="list-style-type: none"> Reasoning Standard Test Prep Mixed Review Real-World Problem Solving <p>Personal Communication Assessment</p> <ul style="list-style-type: none"> Oral Presentation Think Aloud Discussions <p>Lesson Quiz</p> <ul style="list-style-type: none"> Error Analysis Reasoning Problem Solving <p>Constructed Response</p> <ul style="list-style-type: none"> Extended Brief <p>Summative Test</p>	<p>Prentice Hall Algebra 1</p> <p>www.pearsonrealize.com</p> <p>www.apexvs.com</p> <p>www.khanacademy.org</p> <p>www.mathworksheetsgo.com</p> <p>VIRTUAL NERD</p> <ul style="list-style-type: none"> https://www.youtube.com/channel/UCe73Uxnad_VYqYhQzLLD2IA <p>Algebra 1 Consumables</p> <p>AZM2 Practice Test</p> <p>Kutasoftware.com</p> <p>Lesson Tutorials</p>	<p>Sample Space</p> <p>Outcome</p> <p>Event</p> <p>Probability</p> <p>Theoretical Probability</p> <p>Experimental Probability</p> <p>Complement of an Event</p> <p>Odds</p>