

UbD: Algebra 1 - Two Variable Statistics

Time Frame: 10 lessons	Unit 3: Two-Variable Statistics	Course Name: Algebra 1
Stage 1: Desired Results		
Established Goal(s)	Transferable Skills	
<p>Competensies: Two Variable Statistics</p> <p>Standards Addressed: HSS-ID.B.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. HSS-ID.B.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. HSS-ID.C.7 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. HSS-ID.C.8 Compute (using technology) and interpret the correlation coefficient of a linear fit.</p>	<p><i>Students will be able to independently use their learning to...</i></p> <ul style="list-style-type: none"> ● apply knowledge of linear relationships to analyze real-world situations and use mathematical reasoning to solve real-world problems. ● develop clear and effective communication. ● increase self-direction. ● develop creative and practical problem-solving. ● become responsible and involved citizens. ● develop informed and integrative thinking. 	
	Meaning	
	<p><u>Understandings</u> <i>Students will understand that...</i></p> <ul style="list-style-type: none"> ● patterns between two quantities can be found by creating and interpreting a scatter plot. ● scatter plots can be used to identify clustering and outliers. ● lines of best fit can be identified as positive, negative, linear, or nonlinear association. ● frequency and relative frequency tables can show relationships between two categorical data sets ● the correlation coefficient is a convenient number that shows the strength and direction of the relationship between two numerical data sets 	<p><u>Essential Questions</u></p> <ul style="list-style-type: none"> ● How can collecting and analyzing data help you make decisions or predictions? ● How can you make and interpret different representations of data?
Acquisition		

UbD: Algebra 1 - Two Variable Statistics

HSS-ID.C.9 Distinguish between correlation and causation.

HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Students will know...

- patterns in two-way tables and relative frequency tables can provide evidence of possible association between two variables.
- the correlation coefficient can be a convenient way to measure the strength and direction of a relationship between two variables.
- linear models can be used to make decisions and predictions.
- residuals for a data set can be used to decide whether a linear model is a good fit.
- how to use technology to find the correlation coefficient and explain what the value tells me about a linear model in everyday language.
- how to use technology to find a line of best fit.
- how to calculate values in a relative frequency table and describe what the values mean in everyday language

Students will be able to...

- calculate missing values in a two-way table.
- create a two-way table for categorical data given information in everyday language.
- describe the rate of change and -intercept for a linear model in everyday language.
- match the correlation coefficient with a scatter plot and linear model.
- describe the strength of a relationship between two variables.

Mathematical Practices:

- make sense of problems and persevere in solving them.
- reason abstractly and quantitatively.
- construct viable arguments and critique the reasoning of others.
- model with mathematics.
- use appropriate tools strategically.
- attend to precision.
- look for and make use of structure.
- look for and express regularity in repeated reasoning.