W E S T S H O R E S C H O O L D I S T R I C T

AP Stats Learning Module #2

Title of Module	Exploring Relationships between Variables	**Grade Level**	9-12
Curriculum Area	AP Statistics	**Time Frame**	23 days

Desired Results

Best Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure (Deductive Reasoning)
8. Look for and express regularity in repeated reasoning.

Transfer Goals

Students will be able to independently use their learning to...

- Connect old problem solving techniques to new curriculum.
- Connect new material to real world applications.
- Create viable mathematical arguments and use them to critique the arguments of fellow classmates.

Key Learnings/Big Ideas

- Scatterplots, Association, and Correlation
- Response and Explanatory Variables
- Linear Regression
- Extrapolation
- Lurking Variables and Causation
- Techniques for Re-expressing Data

Content and Reading and Writing Standards

Content standards

CC.2.4.HS.B.2

Summarize, represent, and interpret data on two categorical and quantitative variables.

CC.2.4.HS.B.3

Analyze linear models to make interpretations based on the data.

Essential Questions	Vocabulary (Best Practices) Utilize concepts & competencies to add to vocabulary
Unit EQ: What are the techniques for comparing the relationship of two variables? **LEQ:** 1. What are the characteristics that describe a scatterplot? 2. What does the slope mean with respect to a regression equation? 3. What is the danger of predicting values from a regression equation? 4. What are the techniques for re-expressing data into a linear format?	Scatterplot Response/Exploratory Variable Correlation Coefficient Correlation and Causation Residuals Least Squares Line of Best Fit Extrapolation Lurking Variables
Concepts Students will know…	**Skills/Competencies (I Can…) Based on LEQs** Students will be able to…
1. Differentiate data as either categorical or quantitative. 2. Explore relationships in quantitative data through scatterplots, correlation, regression equations, and variance.	1. I can interpret and describe a scatterplot. 2. I can identify the response and explanatory variables in a relationship. 3. I can interpret the strength of a two-variable relationship by using the correlation coefficient. 4. I can be skeptical of correlation claims because of my understanding of lurking variables.

Assessment Evidence

Formative Assessment
Questioning, Think Pair Share, Graphic Organizers, Visual Representations.
Summative Assessment
Common Assessments
Best Instructional Practices
Activating Strategies Extended Thinking Summarizing Vocabulary in Context Advance Organizers Non-verbal Representation Integration of Webb's Depth Integration of 21st Century Skills Reading and writing across disciplines Rigor and Relevance

Resources

Student	Teacher

Adapted from Wiggins, Grant and J. Mc Tighe. (1998). Understanding by Design, Association for Supervision and Curriculum Development, ISBN # 0-87120-313-8 (ppk)