Planned Course: Statistics	Course Number: M313	Department: Mathematics	
Unit: Regression Estimated Time: 15 days	Grade Level: 10-12 Level/Track:	Date Approved: 7/15/08	
PA Academic Standards	**Core Concepts (in question format)** • **Skills/Knowledge**	**Activities/Strategies/Study Skills (identify some activities as remedial or enrichment activities)**	**Assessments (include types and topics)**
2.6.11 Statistics and Data Analysis C. Determine the regression equation of best fit (e.g., linear, quadratic, exponential). D. Make predictions using interpolation, extrapolation, regression and estimation using technology to verify them. C. Determine the regression equation of best fit (e.g., linear, quadratic, exponential).	What is a bivariate relationship? • The student will be able to determine if there is an explanatory/response relationship between two variables. • The student will be able to draw a scatterplot to describe the form, direction, and strength of a relationship between two quantitative variables. • The student will be able to compute the correlation coefficient r. What is a regression line? • The student will be able to draw, both manually and with appropriate technology, the least squares regression line to fit the data and use it to predict y for any given x. • The student will be able to recognize the danger of predictions outside the range of the	– Textbook exercises – Supplemental worksheets – Simulations – Experiments – Calculator Usage – Videos (“Against All Odds: Inside Statistics”, The Annenberg/CPB Collection) – Computer websites (applets, data sources, teacher resources) – Computer statistical packages: Data Desk and Jump-Intro	• Quizzes • Tests • Homework • Classwork and participation • Group and/or individual projects

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	available data. • The student will be able to use the coefficient of determination, r-squared, to describe how much of the variation in one variable can be accounted for by a straight line relationship with another variable.		
E. Determine the validity of the sampling method described in a given study.	What are plausible explanations for the observed association between two variables? • The student will be able to determine extreme observations on both r and the least squares regression line. • The student will be able to recognize lurking variables that may explain the observed association between two variables. • The student will be able to identify direct cause-and-effect relationships between two variables.		

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