MATH NEWS

Algebra I, Module 2, Topic D

LAFAYETTE PARISH SCHOOL SYSTEM

Algebra I

Module 2: Descriptive Statistics

Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 2 of Eureka Math (Engage New York) students develop a set of tools for understanding and interpreting variability in data, and begin to make more informed decisions from the data. Students will also display and interpret graphical representations of data, and when appropriate, choose regression techniques that approximate a linear relationship between quantities. Through the use of linear models, students will determine the goodness of fit.

Focus Area Topic D:

Numerical Data on Two Variables

In Topic D, students analyze relationships between two quantitative variables using scatterplots and by summarizing linear relationships using the least squares regression line. Models are proposed based on an understanding of the equations representing the models and the observed pattern in the scatter plot. Students calculate and analyze residuals based on an interpretation of residuals as prediction errors.

Words to Know

Residual: the residual of the data point (x_i, y_i) is the (actual y_i value) – (predicted y value) for the given x_i.

Residual plot: Given a bivariate data set and linear equation used to model the data set, a residual plot is the graph of all ordered pairs determined as follows: for each data point (xi, yi) in the data set, the first entry of the ordered pair is the x-value of the data point and the second entry is the residual of the data point.

Correlation coefficient: The correlation coefficient, often denoted by r, is a number between -1 and +1 inclusively that measures the strength and direction of a linear relationship between the two types of quantities. If r = 1, the the graph of data points of the bivariate data set lie on a line of positive slope. If r = -1, then the graph of data points of the bivariate data set lie on a line of negative slope.

Focus Area Topic D:

Numerical Data on Two Variables

Lesson 12: Relationships Between Two Numerical Variables
http://youtu.be/SJZdbSIbHe0
Lesson 13: Relationships Between Two Numerical Variables
http://youtu.be/pMETPz63Ncs
Lesson 14: Modeling Relationships with a Line
TINspire: http://youtu.be/BjgHEhEwBIo
TI84: http://youtu.be/ydzntKekNGY
Lesson 15: Interpreting Residuals from a Line
http://youtu.be/D5vX0wRhIls
Lesson 16: More on Modeling Relationships with a Line
http://youtu.be/VaXiehqEdoc
Lesson 17: Analyzing Residuals
TINspire: http://youtu.be/nMrRKB4cvVU
TI84: http://youtu.be/BnlD6iFZIXM
Lesson 18: Analyzing Residuals
http://youtu.be/8g_w3O7_uo0
Lesson 19: Interpreting Correlation
TINspire: http://youtu.be/kFMGEYY_kyM
TI84: http://youtu.be/VMMAEFyIcpo