Applied Statistics

Domain	Exploring Data	
Cluster	Select appropriate graphical and numerical methods to explore data.	
Standard(s)	M.ASHS.5	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities. Instructional Note: Focus on form, strength, direction, and departures from a model based on data and context.

Content Examples

» Linear Regression Equations with the TI-84Plus:
https://youtu.be/kxklQNQ9Vc8

Relevant Content

Vocabulary

» Association: An association is a relationship between two variables in which knowing the value of one variable helps predict the value of the other. If knowing the value of one variable does not help predict the value of the other, there is no association between the variables.

» Correlation: Correlation measures the direction and strength of a linear relationship between two quantitative variables. Correlation is usually written as r. We can calculate r using the formula:

$$r = \frac{1}{n-1}\sum\left(\frac{x_i - \bar{x}}{s_x}\right)\left(\frac{y_i - \bar{y}}{s_y}\right)$$

» Scatterplot: A scatterplot is a plot that shows the relationship between two quantitative variables measured on the same individuals. The values of one variable appear on the horizontal axis, and the values of the other variable appear on the vertical axis.

Heart Rate and Exercise: Is there a correlation?
https://www.cpalms.org/Public/PreviewResourceLesson/Preview/130980

Assessment Links or Tasks

» Regression Activity (TI-Nspire Activity):
https://education.ti.com/en/activity/detail?id=E04653589D754CAF85B04C347A5110E9&ref=%2Fen%2Factivity%2Fsearch%2Fadvanced

» Regression Activity (any graphing calculator):
https://www.tarleton.edu/team/documents/9to12/algebra1/algebra1_4.pdf

» Correlation Guessing Game Applet:
http://www.rossmanchance.com/applets/GuessCorrelation.html

» Linear Regression Problem:
https://illuminations.nctm.org/uploadedfiles/content/lessons/resources/6-8/barbie-as-project.pdf