The Sutton Academy

Knowledge Rich Curriculum Plan

Year 12/13 stats - Correlation

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this students, need to already know that…*	Assessment
LO: To learn about correlation.	• *Students will know that you can represent bivariate data on a scatter diagram.* • *Students will know how to find correlation given a scatter graph.* • *Students will know that when two variables are correlated you need to consider the context of the question of the question and use common sense to determine if they have a casual relationship.*	Bivariate data – Data which has two pairs of values for two variables Correlation – Describes the nature of the linear relationship between two variables	Students will need to know how to plot a scatter graph.	
LO: To learn how to interpret linear regression.	• *Students need to know a line of best fit used in statistics is the least square regression line (Usually notated as the regression line.) This is the straight line that minimises the sum of the squares of the distances of each data point from the line.* • *Students will know that the linear regression line of y on x is written in the form y= a +bx.* • *Students will know that the coefficient b tells you the change in y for each change in x, if the data is positively correlated, b will be positive. If the data is negatively correlated, b will be negative.* • *Students will know that the closer b is to 1/-1 the stronger the correlation. .* • *Students will know that if you know the independent variable from a bivariate data set, you can use the regression line to estimate the corresponding value of the dependent variable.* • *Students will know that you should only use the regression line to make predictions for values within the range of the given data.*	Independent variable - . It is a variable that stands alone and isn't changed by the other variables you are trying to measure. Dependent variable is the effect. Its value depends on changes in the independent variable Extrapolation – Outside the range of the data set	Students need to know how the equation of a linear graph.	
To learn how to use exponential models	• *Students will know that data can modelled by an exponential relationship, you need to code the data.* • *Students will know that if $y=ax^n$ then log y=loga + nlog x* • *Students will know how that if $y=kb^x$ for constants k and b then log y = log k + log b* •		Students will need to know laws of logarithms. Students will need to know how to plot data Students will need to know how to extrapolate and interpolate;	
To learn how to measure correlation	• *Students will know that the product moment correlation describes the linear correlation between two variables. It can take values between -1 and 1* • *Students will be able to interpret the product moment correlation.* •		Students will need to have knowledge of the large data set. Students will need to know how to use regression lines. *Students will need to know how to code data.*	