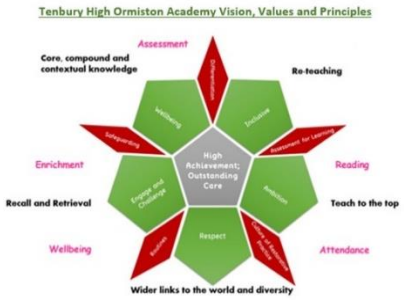
TENBURY HIGH
ORMISTON ACADEMY



Curriculum Overview for Statistics
Year 10

Spring Term: Scatter diagrams and correlation

Summary of declarative knowledge:

- Know the term explanatory (independent) variables
- Know the term response (dependent) variables
- Know the definitions of positive, negative, zero correlations
- Know the definitions of causation, association, interpolation and extrapolation
- Know that correlation does not necessarily imply causation
- Know that multiple factors may interact
- Understand the distinction between Spearman's rank correlation coefficient and Pearson's product moment correlation coefficient

Summary of procedural knowledge:

- Describe correlation by inspection (strong or weak)
- Determine line of best fit by eye
- Determine line of best fit by drawing through a calculated double mean point
- Determine line of best fit by using the equation of the regression line
- Interpret calculated or given Spearman's rank correlation coefficient in the context of a problem
- Interpret given Pearson's product moment correlation coefficient (PMCC) in context

Summary of contextual knowledge:

- Apply the definitions of correlation (positive, negative and zero)
- Apply the definitions of explanatory and response variables
- Apply the definitions of causation, association, interpolation, extrapolation
- Compare data in scatter diagrams
- Apply formula to determine Spearman's rank correlation coefficient

Modelling reading of questions by the class teacher – teaching like a Mathematician / Statistician.

Two key words each lesson defined with syllabification.

Expectation of Mathematical vocabulary used in lessons.

Axes, Axis, Bivariate, Independent variable, Dependent variable, Explanatory variable, Response variable, Interpolate, Extrapolate, Reliable, Unreliable, Prediction, Correlation

A formal knowledge recall test will be completed during the unit to ensure knowledge is retained.

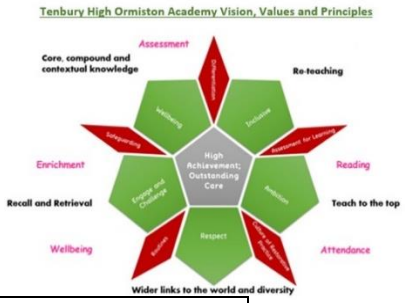
A formal end of unit exam will take place at the end of the unit. The questions will be taken from the exam board bank of questions.

Reteaching / relearning will be class dependent subject to the performance of the class.

Practise Exam Questions based on the current unit or previous units to build recall.

Dr Frost Maths – practising skills using DrFrost.org (a unique username and password will be provided by the school)

We expect Year 10 pupils to spend 40 minutes on Statistics homework per week (on average over the half-term – this may be higher nearer exams or lower at other times).



Spring Term: Measures of central tendencies

Summary of declarative knowledge:

- Know the meaning of:
- The mean, mode, median (including by interpolation) and range for a list of numbers and discrete and/or continuous data listed in a table
- The minimum, lower quartile, median, upper quartile and maximum value for a list of numbers
- The interquartile range and the percentiles for a set of data.
- Identify simple properties of the shape of distributions

Summary of procedural knowledge:

- Calculate:
- The mean, mode, median (including by interpolation) and range for a
- list of numbers and discrete and/or continuous data listed in a table
- The minimum, lower quartile, median, upper quartile and maximum
- value for a list of numbers
- The interquartile range and the percentiles for a set of data. of central tendency, and which is appropriate to use in different situations.
- Construct, use and interpret box plots from summary statistics and cumulative
- frequency graphs.
- Identify and interpret outliers by inspection and show them on box plots.
- Use box plots as a method to compare sets of data for dispersion, measures of central tendency and skewness.
- Identify simple properties of the shape of distributions of data including
- symmetry, positive and negative skew.

Summary of contextual knowledge:

- Understand the advantages and disadvantages of each of the three measures mean, mode and median
- Understand the effect of transformations on the mean, mode and median.
- Given the median and interquartile range, make comparisons between different data samples to compare the sample and population data.

Modelling reading of questions by the class teacher – teaching like a Mathematician / Statistician.

Two key words each lesson defined with syllabification.

Expectation of Mathematical vocabulary used in lessons.

Mean, mode, median (including by interpolation), range, minimum, lower quartile, median, upper quartile and maximum value, discrete and/or continuous data, central tendency, transformations, box plots, cumulative frequency graphs, outliers, inspection, measures of central tendency, skewness, geometric mean, weighted mean, dispersion, decile, percentile, standard deviation, positive skew, negative skew

A formal knowledge recall test will be completed during the unit to ensure knowledge is retained.

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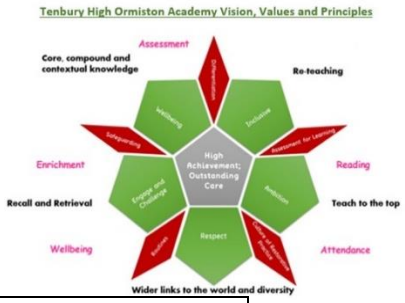

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