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**Knowledge Rich Curriculum Plan**

Year 11 Higher+ Data and Statistics



| **Lesson/Learning Sequence** | **Intended Knowledge:**  *Students will know that…* | **Tiered Vocabulary** | **Prior Knowledge:**  *In order to know this…* | **Assessment** |
| --- | --- | --- | --- | --- |
| **To learn how to solve problems involving cumulative frequency and box plots** | * Students will know how to draw a cumulative frequency table given the cumulative frequency * Students will know how to calculate cumulative frequency and draw the resulting curve * Students will know how to estimate values from a cumulative frequency curve * Students will know how to estimate the median, quartiles and interquartile range from a cumulative frequency curve * Students will know how to construct a box plot from their cumulative frequency curve * Students will know how to solve problems involving cumulative frequency curves and box plots | **Cumulative** - increasing or increased in quantity, degree, or force by successive additions  **Box Plot –** a statistical diagram used for graphically demonstrating the locality, spread and skewness groups of numerical data  **Median –** the middle piece of data when the data is ordered from smallest to largest  **Lower Quartile –** the median of the lower half of a data set. This is located by dividing the data set with the median and then dividing the lower half that remains with the median again  **Upper Quartile –** the median of the upper half of a data set. This is located by dividing the data set with the median and then dividing the upper half that remains with the median again  **Range –** the difference between the largest value in the data set and the smallest value in the data set  **Interquartile Range** – the difference between the upper quartile and the lower quartile | * Students should already know how to draw a box plot * Students should already know how to calculate cumulative frequency and draw a cumulative frequency curve |  |
| **To learn how to solve problems involving cumulative frequency and box plots** | * Students will know how to draw a cumulative frequency table given the cumulative frequency * Students will know how to calculate cumulative frequency and draw the resulting curve * Students will know how to estimate values from a cumulative frequency curve * Students will know how to estimate the median, quartiles and interquartile range from a cumulative frequency curve * Students will know how to construct a box plot from their cumulative frequency curve * Students will know how to solve problems involving cumulative frequency curves and box plots | **Cumulative** - increasing or increased in quantity, degree, or force by successive additions  **Box Plot –** a statistical diagram used for graphically demonstrating the locality, spread and skewness groups of numerical data  **Median –** the middle piece of data when the data is ordered from smallest to largest  **Lower Quartile –** the median of the lower half of a data set. This is located by dividing the data set with the median and then dividing the lower half that remains with the median again  **Upper Quartile –** the median of the upper half of a data set. This is located by dividing the data set with the median and then dividing the upper half that remains with the median again  **Range –** the difference between the largest value in the data set and the smallest value in the data set  **Interquartile Range** – the difference between the upper quartile and the lower quartile | * Students should already know how to draw a box plot * Students should already know how to calculate cumulative frequency and draw a cumulative frequency curve |  |
| **To learn how to draw histograms** | * Students will know that histograms show frequency density * Students will know that * Students will know how to draw a histogram for grouped data | **Histogram** – a graphical representation of discrete or continuous data where the area of a bar in a histogram is equal to the frequency  **Frequency Density –** the frequency per unit for the data in each class | * Students will need to know how to draw a bar chart |  |
| **To learn how to interpret histograms** | * Students will know how to calculate frequency from a histogram and complete a grouped frequency table from a histogram. * Students will know how to complete a partial histogram given a partially completed frequency table and vice versa * Students will know how to estimate how many students are above/below/between values within a group/groups * Students will know how to solve exam style problems involving histograms * Students will know how to estimate the mean from a histogram with unequal class width. * Students will know how to determine the median from a histogram |  | * Students will need to know how to calculate the median from a table * Students will need to know how to draw a histogram |  |