

**Subject:** Statistics      **Year** 10      **Ability** All

Half Term 3 / weeks	Week 1-3	Week 4-6
<b>Topic</b>	Block 7 – Statistical Diagrams	Block 8 – Further Statistical Calculations
Topic overview	To be able to represent data in more advanced statistical diagrams.	To be able to perform more complex statistical calculations.
<b>Pupils will learn...</b>		
<b>Components</b>	<ul style="list-style-type: none"> <li>To be able to draw and interpret cumulative frequency diagrams and step polygons</li> <li>To be able to draw and interpret box plots</li> <li>To be able to draw and interpret scatter graphs (including positive/negative correlation)</li> <li>To be able to draw and interpret time series graphs</li> <li>To be able to interpret and compare choropleth maps</li> </ul>	<ul style="list-style-type: none"> <li>To be able to identify and then calculate outliers</li> <li>To be able to identify trends and calculate appropriate moving averages and seasonal effects</li> <li>To be able to calculate line of best fit using double mean point</li> <li>To be able to calculate line of best fit using the equation of regression line</li> <li>To be able to calculate Spearman's Rank Correlation Coefficient</li> <li>Comparing range and averages of data sets</li> <li>Interpret data based on skewness</li> <li>Interpret seasonal and cyclic trends in context</li> <li>Know and apply vocabulary of correlation and make comparisons</li> <li>Apply Pearson's and Spearman's data set to the context of the problem</li> <li>Know that size has an impact on the reliability of the estimates</li> </ul>
<b>What pupils should already know (prior learning components)</b>	Students should already have seen cumulative frequency graphs, box plots and scatter graphs at GCSE level.	Students should already be able to calculate averages and the range for grouped and ungrouped data. Students should be able to comment on correlation and draw lines of best fit by inspection
<b>Transferrable knowledge (skills)</b>	These advanced statistical diagrams are seen not just in Maths but also in other subjects at GCSE level and beyond.	These advanced statistical techniques are important in the data handling cycle later in the course and also in other subjects such as the social sciences at GCSE and A Level.
<b>Key vocabulary pupil will know and learn</b>	Cumulative frequency, median, quartile, quintile, decile, inter-quartile range, inter-decile range, outlier, step polygon, scatter graph, correlation, time series, trend, choropleth	Outlier, moving average, trend, line of best fit, Spearman's Rank Correlation, skew, regression, Pearson's moment coefficient.
<b>Assessment activities</b>	Block 7-8 covered in Test 3 Homework available for after each block	Block 7-8 covered in Test 3 Homework available for after each block

<b>Resources available</b>	<p>Template lessons available for each block.          Latest edition of textbook available.          Certain Hegarty quizzes are suitable but not every topic features online</p>	<p>Template lessons available for each block.          Latest edition of textbook available.          Certain Hegarty quizzes are suitable but not every topic features online</p>
Notes	<p>Students have already looked at statistical diagrams in block 5 and this is then built on to establish more advanced types of diagram. These diagrams are generally more powerful in the interpretations that can be drawn from them and making these interpretations is a key feature of this unit.</p>	<p>In order to be able to draw more powerful inferences from the statistical diagrams just covered, this block looks at the statistical calculations that support the diagrams. This ranges from determining numerical values to support, for example, the strength of correlations to creating values such as double mean points to improve the quality of the diagrams being drawn.</p>
<b>Why this topic is important...</b>		