Statistics: Y10 Exam Topic Checklist

Topic	Class Notes	RAG	Revised
Topic 1 Collection of data			
• Describing data			
• Understand population, census, National Census, electoral register, sample and sample frame, and identify these for given data.			
• Assess the appropriateness of the statistical methodologies and the conclusions drawn through the application of the statistical enquiry cycle, including possible constraints with collected data and how to deal with them			
• Write a hypothesis			
• Sampling methods			
• Questionnaires and interviews (inc random response method)			
• Know how and why to clean data including outliers, or anomalous data values			
• Controlling extraneous variables (inc control groups and matched pairs)			
• Peterson capture-recapture formula			
Topic 2 Processing and representing data			
• Tables (inc 2-way tables)			
• Stem and leaf diagrams			
• Pie charts, (inc comparative pie charts)			
• Choropleth maps			
• Frequency polygons			
• Histograms			
• Cumulative frequency charts			
• Box plots			
• The shape of a distribution (normal/skewed)			
Topic 3 Summarising data			
• Averages (inc from frequency tables and grouped data and linear interpolation)			

• **Weighted mean**			
• **Measures of dispersion for discrete and grouped data (inc range, IQR, percentiles and deciles)**			
• **Calculate standard deviation from summary statistics**			
• **Calculate and interpret skew**			
• **Understand the advantages and disadvantages of each of the three measures 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**			
• **Choosing the best average**			
• **Comparing data sets**			
Topic 4 Scatter diagrams and correlation			
• **Draw a scatter diagram**			
• **Know the difference between an explanatory (independent) and response (dependent) variable**			
• **Recognise positive, negative and zero correlation as well as strong, moderate or weak correlation by inspection**			
• **Compare regression equations - interpret the value of the gradient and y-intercept**			
• **Calculate and interpret Spearman's rank correlation coefficient**			
Topic 5 Time series			
• **Interpret time series graphs**			
• **Calculate moving averages and provide reasoning as to appropriateness**			
• **Draw a trend line through moving averages by eye**			
• **Know that a trend line shows the general trend of data**			
• **Interpret rising, falling and level trends on a time series graph**			
• **Identify seasonal variation on a time series graph**			
• **Calculate and describe the process to calculate the estimated mean seasonal variation**			

• **Know that the predicted value = trend line + mean seasonal variation**			
Topic 6 Probability distributions			
• **Know the shape of a normal distribution and how this occurs (including 1σ 68%, 2σ 95% and 3σ 99.8%)**			