Queen Elizabeth High School

			SUBJECT: STATISTICS HIGHER TIER		YEAR: 10	
	Autumn term 1: Data collection	Autumn term 2: Representing discrete data	Spring term1: Averages	Spring term 2: Representing continuous data 1 ~ Cumulative frequency	Summer term 1: Representing continuous data 2 ~ Histograms	Summer term 2: Revision for mocks
Key concepts	• Introduction to the statistical enquiry cycle • Hypotheses • Types of data • Methods of data collect • Methods of sampling • Cleaning data • Types of variables	• Tally and tabulate data • Pictograms * • Bar charts, composite* and comparative* • Stem and leaf diagrams • Standard* and comparative pie charts • Choropleth graphs • Population pyramids • Scatter diagrams	• Mode*, mean* and estimated mean* • Geometric and weighted means • Comparing data sets using the mean* • Median from raw data* and ungrouped frequency tables* • Estimating median from a grouped frequency table* • Range and interquartile	• Frequency polygons* • Cumulative frequency diagrams* • Estimating statistical parameters (median, quartiles and IQR) from a cumulative frequency diagram* • Construct box and whisker diagrams*	• Construct and interpret Histograms* • Make links between types of data and the best form of representation for that data set. • Standard deviation • Outlier using mean and standard deviation (Formula)	• Catch up on anything not covered • Revision of topics covered for the year 10 mocks

			range of a raw set of data*	• Skewedness of distribution (using formula) • Calculate and identify outliers on box plots • Deciles, percentiles, inter-decile range and inter-percentile range • Cumulative frequency step polygons		
Themes	Types of data and methods for data collection	Methods of representing discrete data	Calculating averages	Understanding the concept of cumulative frequency and how it can be represented graphically	Spread of data sets	Revision for mocks
Challenge	Compare and criticise methods of data collection. Identify bias and suggest methods to overcome it.	Interpreting comparative pie charts. Back to back stem and leaf diagrams.	Understand and use the generic formulas and notations for the mean. Understand the formula for geometric mean. Understand when geometric mean is	Using frequency polygons to compare two data sets. Compare data sets by constructing cumulative frequency diagrams and estimates of	Compare data sets by commenting on the skewness of histograms. Estimate quartiles from histograms by using linear interpolation. Can give reasoned justification for	

			used instead of arithmetic mean. Estimating interquartile range from grouped frequency table.	population parameters. Compare the skewness of two distributions by inspection and by calculation. Understand the significance and impact outliers have on estimated parameter. Calculate inter-decile range and inter-percentile range. Compare data sets using both these measures. Calculate quartiles, deciles and percentiles from a step polygon.	choice of diagram they have chosen. Compare distributions using the mean and standard deviation Identify any outlier using the mean and standard. Describe the significance of these outlier when comparing distributions	
Support	Bullet point methods to help learn key points for sampling methods. Make flash cards for methods for types of data and variables.	Be able to identify the difference between comparative and composite bar charts. Consolidate constructing	Consolidate methods for calculating mean from a frequency table. Understand how to calculate the geometric mean	Calculating cumulative frequencies for discrete and continuous data. Confidently estimate quartiles from cumulative	Consolidate calculating frequency density. Know that we plot against frequency density.	

		standard pie charts.		frequency diagrams. Identify positive and negative skewed distributions. Apply formula for identifying outliers. Understand differences between quartiles, deciles and percentiles and can calculate each from raw data and cumulative frequency diagram	Calculate frequency from a histogram. Know which diagrams are for discrete data and which are for continuous data. Recognise and apply formulas for standard deviation. Calculate outlier using the formula for mean and standard deviation.	
Literacy focus	Learn meaning and spelling of key words	Learn meaning and spelling of key words	Learn meaning and spelling of key words	Learn meaning and spelling of key words	Learn meaning and spelling of key words	Learn meaning and spelling of key words
Cross-curricular links	Geography ~ collecting data such as weather Science ~ Carrying out experiments	* Also included in maths GCSE Geography, science, business studies, methods for representing information collected. Geography ~ Choropleth graphs	* Also included in maths GCSE Business studies	* Also included in maths GCSE	* Also included in maths GCSE	
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ASSESSMENTS	Assessment 1 ~ December	Assessment 1 ~ December	Assessment 2 ~ Easter	Assessment 2 ~ Easter	Year 10 Mocks ~ June	Year 10 Mocks ~ June
Out of school learning						