Y11 Mock Exam Preparation: *Statistics*

Mock Exam(s):
Exam 1: Calculator - 90 minutes
Exam 2: Calculator - 90 minutes

Revision Topic List	
Content	**Skills**
- **Collection of data**	- **Know the stages of the statistical enquiry cycle** - **Types of data** - **Sources of data** - **Key features to be considered when planning data collection** - **Understand the suitability of different charts/calculations in a statistical plan** - **Understand how to explain choices of techniques with reasons** - **Determine factors that may lead to bias** - **Techniques used to deal with problems with collected data** - **Know what is meant by populationSampling methods** - **Use stratification and know when this is appropriate before sampling** - **Questionnaires** - **Describe and apply Petersen capture recapture formula to estimate the size of a population** - **Write/assess a hypothesis** - **Understand how simulation can be used to model real-life situations using random numbers and assess suitability of a plan** -
- **Processing and representing data**	**Construct, use and interpret:** - **Frequency polygons** - **Composite bar charts** - **Histograms (unequal class width): use frequency density to draw; interpret and compare data sets** - **Box plots** - **Cumulative frequency diagram / curve (+ step polygons for discrete data)** - **Pie charts and comparative pie charts** - **Choropleth maps** - **Population pyramids** -
- **Summarising data**	- **Identify and compare data from a table** - **Compare data sets using mode, median, range,**

	- **Determine and interpret skewness by observation and calculation** - **Calculate and interpret Geometric means** - **Calculate and interpret skew**
- **Scatter diagrams and correlation**	- **Know how to draw a scatter diagram.** - **Explanatory (independent) variables and response (dependent) variables** - **Understand the distinction between correlation and causation/causality** - **Draw/use a line of best fit through the mean, (regression line) and interpret the value of the gradient** - **Compare regression lines (gradient and y-intercept) in context** - **Calculate and interpret Spearman's** - **Understand the difference between Spearman's rank and Pearson's Product Moment Correlation Coefficients** - **Interpret Pearson's Product Moment Correlation in context**
- **Time series**	- **Describe and interpret seasonal variation** - **Use inspection to identify rising, falling and level trends on a time series graph** - **Calculate and plot moving averages** - **Draw a trend line using moving averages by eye** - **Calculate and describe process to calculate the estimated mean seasonal variation** - **Use a trend line to predict and discuss it's reliability**
- **Probability**	- **Construct and interpret tree diagrams** - **Construct and interpret a Venn diagram** - **Recognise and use set notation** - **Formal notation for conditional probability**
- **Index numbers and rates of change**	- **Calculate and interpret Index numbers (inc chain-based** - **Calculate and interpret Geometric mean**
- **Probability distributions**	- **Control charts (quality assurance)** - **Construct and interpret action and warning lines in quality assurance sampling applications** - **Calculate and interpret standardised scores** - **Know the conditions for a binomial distribution to be a suitable model** - **Calculate probabilities using a binomial distribution** - **Characteristics of a normal distribution** - **Know, for a normal distribution, the percentage of values that lie within one, two and three standard deviations of the mean**

Tips on different revision techniques, including subject specific activities can be found in the Student Study Support Guide.