

Year 12 Statistics Key Stage 5 Maths Curriculum

Autumn 1	
Statistics Chapter 2: Measures of location and Spread	Statistics Chapter S3: Representations of data
Assessment: Ch 2 Measures of location and spread	Assessment: Ch 3 & 4 Representation of data and correlations
Builds Upon (GCSE (9-1) in Mathematics at Higher Tier): <ul style="list-style-type: none"> • Interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, vertical line charts for ungrouped discrete numerical data and know their appropriate use • Construct and interpret diagrams for grouped discrete data and continuous data, i.e. histograms with equal and unequal class intervals and cumulative frequency graphs, and know their appropriate use • Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate measures of central tendency (median, mean, mode and modal class) and spread (range, including consideration of outliers), quartiles and inter-quartile range • 	Builds Upon: <ul style="list-style-type: none"> • Interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, vertical line charts for ungrouped discrete numerical data and know their appropriate use • Construct and interpret diagrams for grouped discrete data and continuous data, i.e. histograms with equal and unequal class intervals and cumulative frequency graphs, and know their appropriate use • Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate measures of central tendency (median, mean, mode and modal class) and spread (range, including consideration of outliers), quartiles and inter-quartile range •
Introduces: <ul style="list-style-type: none"> • Calculate measures of central tendency such as the mean, median and mode • Calculate measures of location such as percentiles and deciles • Calculate measures of spread such as range, interquartile range and interpercentile range • Calculate variance and standard deviation • Understand and use coding 	Introduces: <ul style="list-style-type: none"> • Identify outliers in data sets • draw and interpret box plots • Draw and interpret cumulative frequency diagrams • Draw and interpret histograms • Compare two data sets

Statistics Chapter 4: Correlation	Statistics Chapter 5: Probability
Assessment: Ch 3 & 4 Representation of data and correlations	Assessment: Ch 5 Probability
<p>Builds Upon (GCSE (9-1) in Mathematics at Higher Tier):</p> <ul style="list-style-type: none"> • Use and interpret scatter graphs of bivariate data; recognise correlation and know that it does not indicate causation; draw estimated lines of best fit; make predictions; interpolate and extrapolate apparent trends while knowing the dangers of so doing 	<p>Builds Upon:</p> <ul style="list-style-type: none"> • Record, describe and analyse the frequency of outcomes of probability experiments using tables and frequency trees • Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes of multiple future experiments • Relate relative expected frequencies to theoretical probability, using appropriate language and the 0-1 probability scale • Apply the property that the probabilities of an exhaustive set of outcomes sum to one; apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one • Enumerate sets and combinations of sets systematically, using tables, grids • Construct theoretical possibility spaces for single and combined experiments with equally likely outcomes and use these to calculate theoretical probabilities • Tree diagrams and Venn diagrams
<p>Introduces:</p> <ul style="list-style-type: none"> • Draw and interpret scatter diagrams for bivariate data • Interpret correlation and understand that it does not imply causation • Interpret the coefficients of a regression line equation for bivariate data • Understand when you can use a regression line to make predictions 	<p>Introduces:</p> <ul style="list-style-type: none"> • Calculate probabilities for single events • Draw and interpret Venn diagrams • Understand mutually exclusive and independent events, and determine whether two events are independent • understand tree diagrams

Statistics Chapter 5: Probability (Continuing...)	Statistics Chapter 6: Statistical distributions
Assessment: Ch 5 Probability	Assessment: Ch 6 Statistical Distributions
<p>Builds Upon (GCSE (9-1) in Mathematics at Higher Tier):</p> <ul style="list-style-type: none"> • Record, describe and analyse the frequency of outcomes of probability experiments using tables and frequency trees • Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes of multiple future experiments • Relate relative expected frequencies to theoretical probability, using appropriate language and the 0-1 probability scale • Apply the property that the probabilities of an exhaustive set of outcomes sum to one; apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one • Enumerate sets and combinations of sets systematically, using tables, grids • Construct theoretical possibility spaces for single and combined experiments with equally likely outcomes and use these to calculate theoretical probabilities • Tree diagrams and Venn diagrams 	<p>Builds Upon:</p> <ul style="list-style-type: none"> • Order positive and negative integers, decimals and fractions; use the symbols =, ≠, <, >, ≤, and ≥
<p>Introduces:</p> <ul style="list-style-type: none"> • Calculate probabilities for single events • Draw and interpret Venn diagrams • Understand mutually exclusive and independent events, and determine whether two events are independent • understand tree diagrams 	<p>Introduces:</p> <ul style="list-style-type: none"> • Understand and use discrete probability distributions including the discrete uniform distribution • Understand the binomial distribution as a model and comment on appropriateness • Calculate individual probabilities for the binomial distribution • Calculate cumulative probabilities for the binomial distribution

Spring 1

Statistics Chapter 6: Statistical distributions (Continuing...)	Statistics Chapter 7: Hypothesis testing
Assessment: Ch 6 Statistical Distributions	Assessment: Ch 7 Hypothesis testing
Builds Upon: <ul style="list-style-type: none"> Order positive and negative integers, decimals and fractions; use the symbols =, ≠, <, >, ≤, and ≥ 	Builds Upon: (Pure Chapter 8) <ul style="list-style-type: none"> An understanding of how to calculate binomial probabilities and using samples from populations from previous units
Introduces: <ul style="list-style-type: none"> Understand and use discrete probability distributions including the discrete uniform distribution Understand the binominal distribution as a model and comment on appropriateness Calculate individual probabilities for the binomial distribution Calculate cumulative probabilities for the binomial distribution 	Introduces: <ul style="list-style-type: none"> Understand the language and concept of hypothesis testing Understand that a sample is used to make an inference about a population Draw and interpret Venn diagrams Carry out a one-tailed test for the proportion of the binomial distribution and interpret the results Carry out a two-tailed test for the proportion of the binomial distribution and interpret the results
Statistics Chapter 1: Data Collection	
Assessment:	
Builds Upon (GCSE (9-1) in Mathematics at Higher Tier): <ul style="list-style-type: none"> Infer properties of populations or distributions from a sample, while knowing the limitations of sampling Apply statistics to describe a population 	
Introduces: <ul style="list-style-type: none"> Understand 'population', 'sample' and 'census', and comment on the advantages and disadvantages of each. Understand the advantages and disadvantages of simple random sampling, systematic sampling, stratified sampling, quota sampling and opportunity sampling Define qualitative, quantitative, discrete and continuous data, and understand grouped data Understand the large data set and how to collect data form it. Identify types if data and calculate simple statistics 	

Spring 2

Statistics Chapter 1: Data Collection (Continuing...)

Assessment:

Builds Upon (GCSE (9-1) in Mathematics at Higher Tier):

- Infer properties of populations or distributions from a sample, while knowing the limitations of sampling
- Apply statistics to describe a population

Introduces:

- Understand 'population', 'sample' and 'census', and comment on the advantages and disadvantages of each.
- Understand the advantages and disadvantages of simple random sampling, systematic sampling, stratified sampling, quota sampling and opportunity sampling
- Define qualitative, quantitative, discrete and continuous data, and understand grouped data
- Understand the large data set and how to collect data from it.
- Identify types of data and calculate simple statistics

Summer Term

You will begin the Yr13 Pure course during your applied lessons.