

**OVERVIEW**

In GCSE Statistics in Year 10 students will learn how to collect, represent, analyse and compare data. This works alongside KS4 maths as students deepen their knowledge of the statistics and probability, and on builds the knowledge that students have gained in Year 7, 8 and 9 in all areas of maths. Students will also get to engage in the Statistical Enquiry Cycle, which is the cycle that is used to carry out investigations. It consists of 5 stages: planning, collecting, processing and presenting, interpreting and communicating and evaluating. In the final half term of Year 10 students will get the opportunity to carry out an investigation from start to finish, including presenting their findings.

**Aut**

**Unit 1: Designing Investigations** – Statistical Enquiry Cycle; Forming a Hypothesis and Designing Investigations and Strategies to Mitigate Issues

**Unit 2: Types of Data** – Primary and Secondary Data; Raw Data, Quantitative and Qualitative Data; Categorical and Ordinal/Rank Data; Discrete and Continuous Data; Bivariate and Multivariate Data and Advantages and Implications of Merging Data

**Unit 3: Population and Sampling** – Population, Sample and Census; Judgement, Opportunity and Quota Sampling and Avoiding Bias

**Unit 4: Estimation** – Estimating Population Characteristics; Sample Size and Predicting Population Proportions and Capture Recapture

**Unit 5: Collecting Data** – Types of Data Collection; Lab, Field and Natural Experiments; Simulation and Observation; Reliability and Validity; Collecting Sensitive Matter and Random Response; Questionnaires and Interviews; Leading Questions and Bias; Missing Data and Cleaning Data; Controlling Extraneous Variables Control Group

**Assessment:**

Students will be informally assessed every lesson using questioning, mini whiteboards and marking of independent work.

There will be an End of Topic Review at the end of each unit.

**Spr**

**Unit 6: Processing and Representing Data** – Two Way Tables, Tabulation and Tally Charts; Pictograms, Pie Charts, Bar Charts and Stem and Leaf; Population Pyramids and Choropleth Maps; Comparing Data Sets Pictorially; Line Graphs and Frequency Polygons; Cumulative Frequency; Box Plots; Histograms and Comparing Data Represented Graphically

**Unit 7: Comparing Data**– Appropriate Forms of Representing Data; Graphical Misrepresentation; Calculating Skewness and Comparing Data Sets in Different Formats

**Unit 8: Measures of Central Tendency** – Averages from Raw or Grouped Data; Weighted Mean; Geometric Mean; Justifying Appropriate Average to Use in Context

**Unit 9: Measures of Dispersion** – Range, Interquartile Range and Percentiles; Interpercentile Range; Standard Deviation; Identifying Outliers and Comparing Data Sets Using Appropriate Measures

**Assessment:**

Mid-Year assessments will take place in January.

Students will be informally assessed every lesson using questioning, mini whiteboards and marking of independent work.

There will be an End of Topic Review at the end of each unit.

**Sum**

**Unit 10: Scatter Diagrams and Correlation** – Independent and Dependent Variables; Correlation; Line of Best Fit Using the Regression Equation; Calculating Spearmans' Rank Correlation Coefficient; Interpreting PMCC in Context and Comparing Spearmans' Rank Correlation Coefficient and PMCC

**Unit 11: Time Series Analysis**– Plotting Points as a Time Series; Identifying Trends and Making Predictions; Interpreting Seasonal and Cyclical Trends in Context; Calculating Moving Averages and Mean Seasonal Variation

**Unit 12: Statistical Enquiry Project** – Defining a Hypothesis and Deciding Data Collection; Planning Strategy to Process and Represent Data; Data Collection; Generating Diagrams to Represent Data; Generating Statistical Measures; Analysing Diagrams and Calculations; Drawing Conclusions and Presentation

**Assessment:**

Students will be informally assessed every lesson using questioning, mini whiteboards and marking of independent work.

There will be an End of Topic Review at the end of each unit.

End of Year assessments will take place in June.

**Useful resources for supporting your child at home:**

MathsGenie: Exam Paper and Topic Questions - <https://www.mathsgenie.co.uk/statistics.html>

Stats Academy Exam Practice - <https://www.statsacademy.co.uk/exam-practice>

Stats Academy Revision Notes – <https://www.statsacademy.co.uk/revision>

**Homework:**

Homework will be set once a week.