Statistics & Further Maths GCSE Curriculum Palette

Alcester Academy
TO BE THE BEST THAT WE CAN BE

Year 9

Autumn

1. The Collection Of Data

1 A Planning
- Hypotheses
- Designing Investigations
- Strategies To Deal With Potential Problems

1 B Types Of Data
- Describing Data
- Raw Data
- Quantitative
- Qualitative
- Categorical
- Ordinal
- Discrete
- Continuous
- Ungrouped
- Grouped

1 C Population & Sampling
- Population
- Advantages & Disadvantages
- Advantages & Implications Of Primary/ Secondary Data
- Advantages & Implications Of Merging/ Grouping Data
- Multivariate
- Bivariate

2 H Estimation
- Techniques To Avoid Bias
- Advantages Of Each Method
- Random, Systematic & Quota Sampling
- Opportunity (Convenience) & Quota Sampling
- Sample Frame & Sample Judgment
- Apply Petersen Capture Recapture Formula To Calculate An Estimate Of The Size Of A Population
- Know That Sample Size Has An Impact On Reliability & Replication
- Use Sample Data To Predict Population Proportions
- Use Summary Statists To Make Estimates Of Population Characteristics

1 D Collecting Data
- Collection Of Data
- Experimental (Laboratory, Field & Natural)
- Simulation
- Questionnaires
- Observation
- Reference
- Census
- Population & Sampling
- Reliability & Validity
- Collecting Sensitive Content Matter
- Random Response
- Questionnaires & Interviews
- Leading Questions
- Time Factors
- Open/ Closed Questions
- Different Types Of Interview Technique
- Problems With Collected Data
- Missing Data

2. Processing, Representing & Analysing Data

Spring

2 A Tabulation
- Population Pyramid
- Stem & Leaf Diagram
- Pie Chart
- Bar Charts
- Pictogram
- Frequency Tables
- Two-Way Tables
- Tabulation
- Tally

2 A Representing Data
- Choropleth Map
- Comparative Pie Chart
- Comparative 2D
- Representations
- Comparative 3D Representations
- Interpret & Compare Data Sets Represented Pictorially
- Line Graphs
- Bar Line (Vertical Line) Charts
- Frequency Polygons
- Cumulative Frequency (Discrete & Grouped) Charts
- Histograms (Equal Class Width)
- Box Plots
- Interpret & Compare Data Sets Represented Graphically
- Histograms Unequal Class Widths
- Frequency Density
- Interpret & Compare Data Sets Displayed In Histograms
- Justify Appropriate Form To Represent Data
- Graphical Misrepresentation

2 B Measures Of Central Tendency
- Identifying Outliers By Inspection
- Standard Deviation
- Interdecile Range
- Interpercentile Range
- Percentiles
- Interquartile Range (IQR)
- Quartiles
- Range
- Geometric Mean
- Weighted Mean
- Mean, Median, Mode
- Averages From Raw Or Grouped Data
- Comparing Data Sets Represented In Different Formats
- Calculating Skewness
- Interpreting A Distribution Of Data With Reference To Skewness
- Determine Skewness By Inspection

2 C Measures Of Dispersion
- Identifying Outliers By Calculation
- Comment On Outliers In Context
- Compare Data Sets Using Appropriate Measure Of Central Tendency & Measure Of Dispersion
- Interpercentile Range
- Explanatory (Independent) Variables
- Response (Dependent) Variables
- Correlation
- Positive, Negative, Zero, Weak, Strong
- Distinction Between Correlation & Causation
- Line Of Best Fit
- Using The Regression Equation y= a+bx
- Calculate Spearman's Rank Correlation Coefficient
- Interpret Spearman's Rank In Context
- Interpret Pearson's Product Moment Correlation Coefficient (PMCC) In Context
- Spearman's Rank Correlation Coefficient & Pearson's Product Moment Correlation Coefficient (PMCC)

2 E Scatter Diagrams & Correlation

2 F Time Series

3. Probability

Summer

- Difference In Terms Of Bias
- Conditional Probability
- Independent Events
- Use Two-Way Tables, Sample Space Diagrams, Tree Diagrams & Venn Diagrams To Represent All The Different Outcomes Possible For At Most Three Events
- Understand That Increasing Sample Size Generally Leads To Better Estimates Of Probability & Population Parameters
- Compare Experimental Data With Theoretical Predictions
- Use Collected Data & Calculated Probabilities To Determine & Interpret Risk
- Expected Frequency Of A Specified Characteristic Within A Sample Or Population
- Experimental & Theoretical Probability