Quality of Education: *Curriculum is planned and sequenced so that new **knowledge** and **skills** build on what has been taught before and towards its clearly defined end points.*

Ormiston Victory Academy

SUBJECT: Data Handling	**CURRICULUM PROGRESSION PATHWAYS**	**CL: Miss Z. Bradshaw and Miss A. Hazell**					
Year 7	**Year 8**	**Year 9**	**KS4 Foundation pathway**	**KS4 Higher pathway** →	KS5 (Level 3) - **Core Maths Level 3/ Mathematics A Level**	Further Education and training	Careers
Averages and the range • Find the mode of numerical and non numerical data • Find the median of a set of data (odd and even amounts of data) • Find the range of a set of data • Calculate the mean of a set of listed data • Compare two sets of data using an average and the range **Collecting and representing data** • Draw and interpret pictograms, bar charts and bar-line charts • Read and construct tally charts and frequency tables • Find the mode and range from a chart or a table • Read and construct grouped	**Averages and the range** • Choose the most appropriate average • Calculate the mean from a frequency table **Collecting and representing data** • Interpret and draw pie charts • Complete and use two way tables (fill in missing gaps, not construct) • Find the modal class and estimate the range from grouped data • Draw and interpret steam and leaf diagrams with different stem values • Find mode, median and range from stem and leaf diagrams • Compare two sets of data using a pie chart • Draw line graphs to compare two sets of data • Draw scatter graphs, describe correlations and draw line of best fit	**Averages and the range** • Find the median from a frequency tables • Estimate the mean from a grouped frequency table **Collecting and representing data** • Identify sources of primary and secondary data • Choose a suitable sample size and identify factors that may create bias • Design and use questionaries' and data collection sheets/tables • Use a line of best fit to estimate missing values • Identify and suggest reasons for outliers and identify lines of enquiry	**Averages and the range** **Collecting and representing data** • Design two way tables • Interpret dual and composite bar charts • Interpret and compare data in a bar chart, line chart and histogram • Plot and interpret time series graphs and use trends to predict what might happen in the future **Probability** • Calculate probabilities from sample space diagrams • Understand set notation • Solve problems using frequency trees and tree diagrams	**Averages and the range** • Use cumulative frequency graphs to calculate medians, quartiles and interquartile range • Find quartiles and inequalities from stem and leaf diagrams **Collecting and representing data** • Design two way tables • Interpret dual and composite bar charts • Interpret and compare data in a bar chart, line chart and histogram • Plot and interpret time series graphs and use trends to predict what might happen in the future • Explore and use capture recapture and other sampling techniques • Draw and interpret cumulative	**Averages and the range** • Use all types of averages to compare and analyse data looking for trends • Understand advantages and disadvantages between different types of average and how these can be misleading - weighted averages, taken out of context. • Calculate Sample means and standard deviation. • Find all averages from grouped and un-grouped data/frequency tables. • Calculate Quartiles, Percentiles and interquartiles and interpercentile range (A-level) • Identify outliers • Use interpolation to analyse	• Psychology • Media • Social Sciences • Business and finance • Natural Sciences • Product design	• Actuarial Science • Aeronautical Engineering • Chemical Engineering • Civil Engineering • Economics • Electrical/Electronic Engineering • Engineering (General) • Mathematics • Mechanical Engineering • Physics • Statistics

Core knowledge and skills mapped across the curriculum

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tally charts and frequency tables • Read and construct bar charts for grouped data • Find the modal class from a grouped bar chart or frequency tables • Read and draw line graphs, dual bar charts and compound bar charts **Probability** • Use the language of probability • Use a probability scale with words, decimals and fractions • Identify outcomes and equally likely outcomes • Calculate probability based on equally likely outcomes • Calculate more complex probabilities • Calculate the probability of an event not happening • Record data from an experiment, estimate probabilities based on that	• Explain how a graph or chart can be misleading **Probability**	• Draw line graphs to represent grouped data • Draw and interpret back to back stem and lead diagrams **Probability** • Identify mutually exclusive outcomes and events and identify their probabilities • List all the possible outcomes of one or two events in a sample space diagram • Decide if a game is fair or a dice/spinner is unbiased • Calculate probabilities from two way tables • Draw Venn diagrams and use them to calculate probabilities	• Use tree diagrams to calculate the probabilities • Understand when events are independent and dependent • Solve probabilities for dependent events	frequency tables and graphs • Draw and interpret box plots • Understand frequency density and use this to draw histograms and interpret histograms • Compare distributions in context **Probability** • Calculate probabilities from sample space diagrams • Understand set notation • Solve problems using frequency trees and tree diagrams • Use tree diagrams to calculate the probabilities • Understand when events are independent and dependent • Solve probabilities for dependent events • Draw and use tree diagrams to solve conditional problems including the use of algebra	grouped data. (A-level) **Collecting and representing data** • Draw and interpret collected data using appropriate diagrams: Duel and Composite bar charts, box plots, scatter graphs, cumulative frequency tables and histograms and venn diagrams • Explain and use random and non-random sampling methods, giving advantages and disadvantages of each • Compare sample data with population data to understand fair representation. • Develop skills to deal with large sets of data in context like meteorological information or ergonomics • Draw activity networks and Cantt charts to manage multiple tasks or a larger		

data and make conclusion based on results • Use probability to estimate expected number of times an outcome will occur				• Use two way tables and Venn diagrams to calculate conditional probabilities	project (Core Mathematics) **Probability** • Calculate probabilities from tables, venn diagrams, tree diagrams or sample spaces. • Calculate probability when events are independent, "conditional" or mutually exclusive • Calculate probabilities using discrete and continuous distribution models (binomial and normal) • Use probability calculations to test hypothesis (A-level) • Calculate expected probability to help analyse risk (Core Maths)		

Core knowledge and skills mapped across the curriculum