



YEAR 12 Core Maths

‘An ambitious curriculum that meets the needs of all’

Medium Term Planning – Data Unit

Curriculum Intent

Skills/Assessment Objective Links

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	Content	Additional information
D1.1	appreciating the difference between qualitative and quantitative data	including the difference between discrete and continuous quantitative data
D1.2	appreciating the difference between primary and secondary data	including the use of secondary data that have been processed eg grouped
D1.3	collecting quantitative and qualitative primary and secondary data	
D2.1	inferring properties of populations or distributions from a sample, whilst knowing the limitations of sampling	
D2.2	appreciating the strengths and limitations of random, cluster, stratified and quota sampling methods and applying this understanding when designing sampling strategies	appreciating that improving accuracy by removing bias and increasing sample size may cost/save both time and money
D3.1	calculating/identifying mean, median, mode, quartiles, percentiles, range, interquartile range, standard deviation	either from raw data or from cumulative frequency diagrams, stem-and-leaf diagrams or box plots
D3.2	interpreting these numerical measures and reaching conclusions based on these measures	
D4.1	constructing and interpreting diagrams for grouped discrete data and continuous data, knowing their appropriate use and reaching conclusions based on these diagrams	including histograms with equal and unequal class intervals and cumulative frequency graphs, box and whisker plots, stem-and-leaf diagrams (including back-to-back)

Prior Knowledge

Prior Knowledge

- Types of Data
Qualitative vs Quantitative data
Discrete vs Continuous data
Understanding primary vs secondary sources of data
- Data Representation
Interpreting and constructing:
Bar charts
Pie charts
Line graphs
Histograms (with equal class intervals at GCSE)
Scatter diagrams
- Averages and Measures of Spread
Calculating and interpreting:

	<p>Mean Median Mode Range</p> <p>4. Basic Probability (Introductory Level) Understanding likelihood on a scale of 0 to 1 Simple frequency-based probability (e.g., probability = frequency ÷ total) Basic knowledge of independent vs dependent events While probability is not a main focus in the Data unit, it may appear in risk contexts (e.g. interpreting data or making decisions).</p> <p>5. Interpreting Graphs and Tables Reading data from: Two-way tables Frequency tables Graphs and charts Comparing data sets visually and numerically</p> <p>6. Calculator Use and Accuracy Using calculators efficiently for: Statistical calculations (mean, standard deviation) Interpreting calculator output (e.g., statistical modes)</p>
<p>Spiritual, moral, social, and cultural development</p>	<p>Spiritual Development</p> <p>Encourages students to reflect on the impact of data in the world around them, such as:</p> <ul style="list-style-type: none"> - Global issues (e.g. climate data, poverty statistics) - Health and wellbeing (e.g. pandemic data, mental health trends) - Develops a sense of curiosity and wonder about how data reveals patterns in human behaviour, nature, and society - Promotes self-reflection when considering personal data (e.g. screen time, spending habits) <p>Moral Development</p> <p>Raises awareness of how data can be used or misused:</p> <ul style="list-style-type: none"> - Misleading graphs or selective statistics in the media - Ethical concerns around data collection and privacy - Encourages students to evaluate fairness and bias in how data is presented or gathered <p>Develops moral responsibility in interpreting data honestly and avoiding manipulation</p> <p>Social Development</p>

	<p>Supports teamwork through collaborative analysis and discussion of data sets.</p> <p>Encourages active citizenship by interpreting social data (e.g. crime rates, unemployment, education statistics).</p> <p>Builds skills in communicating ideas clearly, especially when data is used to support a viewpoint or campaign.</p> <p>Cultural Development</p> <p>Increases understanding of different cultures and communities through analysis of global or demographic data.</p> <p>Encourages respect for cultural diversity, especially when comparing international statistics (e.g. healthcare access, income levels)</p> <p>Promotes awareness of how cultural differences influence data interpretation and decision-making</p>
Numeracy	<p>Averages and spread - Analysing exam results, salary data, population data</p> <p>Percentages and proportions - Polling, sales data, inflation figures</p> <p>Graph interpretation - Reading news articles, reports, charts in business or science</p> <p>Statistical reasoning - Making informed decisions (e.g. healthcare, finance, public policy)</p> <p>Calculator/statistical tools - Using tech to handle large data sets and validate results</p>
Literacy	<p>Analyse a misleading graph from a news article</p> <p>Critical reading, evaluation, vocabulary</p> <p>Write a conclusion to a data comparison</p> <p>Structured writing, summarising</p> <p>Discuss reliability of two data sources</p> <p>Verbal reasoning, persuasive language</p> <p>Interpret and annotate box plots</p> <p>Vocabulary, written interpretation</p>
Becoming future ready	<p>Critical thinking - Evaluating data validity and spotting bias</p> <p>Numeracy & statistics - Calculating and interpreting averages, trends</p> <p>Communication - Writing reports, explaining findings clearly</p> <p>Ethical awareness - Understanding responsible data use</p> <p>Digital literacy - Using spreadsheets and tech tools for data</p> <p>Career readiness - Skills relevant to many industries and studies</p>
Adaptation QFT/SEND Provision	<ul style="list-style-type: none"> • By progressive questioning: exploring pupils' understanding through interactive dialogue. • By outcome: different learners will produce different outcomes. • By resource: worksheets are clearly presented and accessible. • By intervention: by providing different levels of supervision and support. • By grouping/setting: according to prior attainment, gender, social preference, preferred learning style. • By offering optional activities: In class or as homework, to extend learning.

<p>Implementation Curriculum Delivery Learning Outcomes (Knowledge)</p>	<p>1. Identify and Classify Types of Data Distinguish between qualitative and quantitative, discrete and continuous, and primary vs secondary data.</p> <p>2. Represent Data Accurately and Clearly Construct and interpret a range of data displays: Bar charts Pie charts Histograms (with unequal class intervals) Box plots Scatter diagrams Two-way tables and frequency tables</p> <p>3. Calculate and Interpret Summary Statistics Accurately calculate: Mean, median, mode Range, interquartile range (IQR) Standard deviation Use these to describe and compare data sets.</p> <p>4. Understand and Interpret Correlation Interpret scatter diagrams and describe: Direction (positive/negative) Strength (strong/weak) Recognise that correlation does not imply causation. Draw and interpret lines of best fit (by eye or using software).</p> <p>5. Analyse the Validity of Data and Conclusions Evaluate: Reliability and bias in data collection Sampling methods and their appropriateness The implications of outliers Identify when data or graphs may be misleading.</p> <p>6. Make and Justify Decisions Based on Data Interpret real-world contexts (e.g. surveys, news articles, business data) and form conclusions based on statistical evidence. Communicate findings clearly and effectively, both verbally and in writing.</p> <p>7. Use Technology Appropriately Use calculators or spreadsheets to: Perform statistical calculations Display and explore data</p>
<p>Assessment</p>	<p>Refer to Assessment Map – Final examination May/June End of Year 12</p>
<p>Impact</p>	<p>Attainment and Progress – Refer to assessment results / data review documentation.</p>