



YEAR 12 Core Maths

'An ambitious curriculum that meets the needs of all'

Medium Term Planning – Critical Analysis Unit

Curriculum Intent

Skills/Assessment Objective Links

	Content	Additional information
C1.1	criticising the arguments of others	
C2.1	summarising and report writing	
C3.1	comparing results from a model with real data	
C3.2	critical analysis of data quoted in media, political campaigns, marketing etc	

Skills/Assessment Objective Links

Prior Knowledge

1. Basic Statistical Concepts
Understanding of averages (mean, median, mode) and measures of spread (range, interquartile range).
Ability to interpret different types of data displays: tables, bar charts, pie charts, histograms, and scatter graphs.

2. Probability Fundamentals
Basic knowledge of probability (values between 0 and 1).
Understanding of simple events and combined events (union and intersection).
Awareness of the difference between correlation and causation.

3. Numeracy Skills
Competence in arithmetic operations: addition, subtraction, multiplication, division.
Ability to work with fractions, decimals, and percentages.
Skills in rounding, estimating, and approximating numerical answers.

4. Algebraic Manipulation
Rearranging simple formulas.
Substituting values into formulae.
Understanding linear relationships and basic functions.

5. Interpreting and Constructing Mathematical Arguments
Experience in explaining reasoning clearly.
Ability to identify assumptions, conclusions, and supporting evidence in written or spoken arguments.

6. Data Handling and Analysis
Familiarity with sampling methods and concepts of bias and representativeness.
Understanding variability and uncertainty in data.

Prior Knowledge

	<p>7. Critical Thinking and Problem Solving</p> <p>Ability to analyse problems logically.</p> <p>Experience in identifying limitations or flaws in data or arguments.</p>
Spiritual, moral, social, and cultural development	<p>Spiritual - Reflection on knowledge limits and uncertainty</p> <p>Moral - Ethical data use, honesty, impact of misinformation</p> <p>Social - Collaboration, social impact of data, responsibility</p> <p>Cultural - Global data issues, cultural perspectives, bias</p>
Numeracy	<p>Data interpretation - Reading graphs, tables, and statistical summaries</p> <p>Arithmetic & algebra - Calculating averages, percentages, and probabilities</p> <p>Statistical evaluation - Assessing sampling methods and data reliability</p> <p>Quantitative reasoning - Drawing conclusions supported by numerical data</p> <p>Technology use - Analysing data with digital tools</p>
Literacy	<p>Vocabulary - Using precise terms related to data and analysis</p> <p>Reading comprehension - Understanding complex data and arguments</p> <p>Written explanation - Justifying conclusions and explaining methods</p> <p>Critical evaluation - Assessing bias, assumptions, and reasoning</p> <p>Communication - Presenting findings clearly in writing and speech</p>
Becoming future ready	<p>Critical thinking - Problem-solving in education and work</p> <p>Data literacy - Analysing data in careers and daily life</p> <p>Communication - Explaining ideas clearly in writing and speech</p> <p>Ethical awareness - Responsible data use and decision-making</p> <p>Real-world application - Informed decisions in finance, health, and media</p> <p>Cross-subject relevance - Supports other A-levels, apprenticeships, and university</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. Interpret and Analyse Mathematical Information Extract and interpret information from: Graphs, charts, and tables Written reports and media articles Understand the purpose and limitations of different types of data presentation.</p> <p>2. Identify and Evaluate Assumptions Recognise assumptions underlying arguments and models. Judge the reasonableness of those assumptions and how they affect conclusions.</p> <p>3. Assess Validity and Reliability Distinguish between reliable and unreliable sources of data. Identify potential bias, misleading use of statistics, and limitations in data or methodology. Evaluate the strength of arguments based on evidence.</p> <p>4. Understand Correlation and Causation Identify when correlation does not imply causation. Evaluate real-life claims that incorrectly assume causation from correlation.</p> <p>5. Communicate Mathematical Reasoning Clearly Explain reasoning, critique arguments, and justify conclusions using both: Mathematical vocabulary Everyday language appropriate for non-specialist audiences</p> <p>6. Apply Critical Analysis in Context Apply critical analysis skills to real-world issues such as: Media claims Survey results Economic or health data Advertising and statistical reports</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>