Year 10 Maths Parallel Curriculum Overview

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Unit of Work	• Adding and Subtracting • Multiply and Divide • Place Value • Rounding • Calculating with Time • Factors and Multiples • BIDMAS	• Prime Numbers and Prime Factorisation • Negative Number • Negative Numbers • Powers and Roots • Pictograms • Bar Charts	• Introduction to Fraction • Metric Conversions • Function Machines	• Fraction of an Amount • Averages • Probability	• Writing an Expression • Angles • FDP	Coordinates Writing, Simplifying and Comparing Fraction
Ethos Links	STEM – accurate calculation, place value and estimation are essential across scientific and technical careers. Milton Keynes – timetables and time calculations can be applied to local transport.	STEM – number properties and powers underpin scientific and computational work. Sustainability and Milton Keynes – charts can communicate local and environmental data.	STEM – metric conversion and functions are used across science and engineering. Financial literacy – fractions support proportional and money calculations.	Financial literacy – fractions of amounts are used in everyday financial contexts. STEM – averages and probability support data-informed decisions.	STEM – algebra and angle reasoning are used in modelling, design and engineering. Financial literacy – fractions, decimals and percentages support money contexts.	STEM – coordinates support graphical and computational work. Learning habits – fraction reasoning develops accurate multiplicative thinking.

KS4 Curriculum Overview: Maths

Knowledge	By the end of this unit students will know and understand: Adding and Subtracting • Add and subtract integers and decimals using formal column methods. Multiply and Divide • Multiply and divide whole numbers and decimals. Place Value • Recognise place value in whole numbers and decimals; multiply/divide by 10, 100 and 1000; order and compare numbers. Rounding • Round to decimal places and significant figures; estimate by rounding to 1 significant figure. Calculating with Time • Read analogue/digital times, convert 12/24-hour time and interpret timetables. Factors and Multiples	By the end of this unit students will know and understand: Prime Numbers and Prime Factorisation • Understand primes and write integers as products of prime factors. Negative Numbers • Order, compare, add and subtract negative numbers; multiply and divide negative numbers and solve reasoning problems. Powers and Roots • Recognise square/cube numbers and roots; use a calculator for powers and square roots. Pictograms and Bar Charts • Write surveys/tallies; construct and interpret pictograms, dual and composite bar charts; recognise sampling issues.	By the end of this unit students will know and understand: Introduction to Fraction • Represent fractions as parts of a whole, bar models and number lines; find fractions of amounts and recognise equivalence. Metric Conversions • Read scales; convert metric length, mass and volume; convert metric/imperial and related length/area units. Function Machines • Find outputs from inputs and inputs from outputs; solve unfamiliar problems using function machines.	By the end of this unit students will know and understand: Fraction of an Amount • Use fraction representations and equivalence to find fractions of amounts. Averages • Calculate mode, range, median and mean and understand the relationship between total and mean. Probability • Use the 0–1 probability scale; express probabilities as fractions, decimals or percentages; use experiments, sample spaces and complements.	By the end of this unit students will know and understand: Writing an Expression • Use algebraic notation; substitute positive values; collect and simplify like terms. Angles • Identify, measure and draw acute, obtuse, right and reflex angles; calculate missing angles on lines, around points, vertically opposite, in triangles and quadrilaterals. FDP • Understand percent as parts per hundred; represent and convert fractions, decimals and percentages; calculate simple percentages of amounts.	By the end of this unit students will know and understand: Coordinates • Identify and plot coordinates in four quadrants; plot 2D shapes; draw horizontal/vertical lines; use y=x; reflect coordinates; link graphs and sequences. Writing, Simplifying and Comparing Fraction • Simplify fractions; add/subtract fractions with the same denominator; convert mixed/improper fractions; order fractions using equivalence.

	• Understand factors and multiples and apply divisibility tests. BIDMAS • Apply the agreed order of operations accurately to numerical calculations.					

KS4 Curriculum Overview: Maths

Skills By the end of this unit students will be able to:	• Use formal arithmetic methods accurately. • Apply place value and rounding. • Calculate with time and interpret timetables. • Learning habits • Planning and organisation • Perseverance • Concentrating • Making links and applying knowledge • Reasoning • Communicating • Identify factors and multiples and apply divisibility. • Use BIDMAS accurately.	• Use prime factorisation. • Calculate with directed numbers. • Evaluate powers and roots. • Construct and interpret charts. Learning habits • Making links • Problem solving • Noticing • Self-regulation • Collecting and using data • Analysis and evaluation	• Represent and calculate with fractions. • Convert measures accurately. • Use function machines and inverse operations. Learning habits • Noticing • Making links and applying knowledge • Communicating • Problem solving • Resilience	• Find fractions of quantities. • Calculate and interpret averages and range. • Construct sample spaces and calculate probability. Learning habits • Communicating • Collecting and using data • Questioning • Thinking • Analysis and evaluation • Noticing	• Write and simplify expressions. • Measure, draw and calculate angles. • Convert between fractions, decimals and percentages and calculate percentages. Learning habits • Noticing • Making links and applying knowledge • Communicating • Explain and reason • Resilience • Listening	• Plot and interpret coordinates. • Simplify, convert, order and calculate with fractions. Learning habits • Making links • Problem solving • Noticing • Concentrating • Self-regulation • Creating • Thinking

KS4 Curriculum Overview: Maths

Key Vocabulary	Integer Decimal Place value Round Significant figure Estimate Analogue Digital Timetable Factor Multiple Divisibility BIDMAS Operation	Prime Prime factor Positive Negative Square Cube Root Survey Tally Pictogram Bar chart Sample Bias	Fraction Numerator Denominator Equivalent Metric Imperial Scale Function Input Output Inverse	Fraction Equivalent Mean Median Mode Range Probability Outcome Sample space Certain Impossible	Variable Expression Term Coefficient Acute Obtuse Reflex Fraction Decimal Percentage	Coordinate Horizontal Vertical Fraction Simplify Improper fraction Mixed number Equivalent
Assessment	Homework Questioning Topic assessment / blue sheet where indicated PR1 / formal assessment point	Homework Questioning Topic assessment / blue sheet where indicated	Homework Questioning Topic assessment / blue sheet where indicated PR2 / formal assessment point	Homework Questioning Topic assessment / blue sheet where indicated PR3 / formal assessment point	Homework Questioning Topic assessment / blue sheet where indicated	Homework Questioning Topic assessment / blue sheet where indicated End-of-year assessment
Assessment	Formal assessments take place on 3 occasions throughout the year. These assess topics up to that point.					