Long Term Plan: (Maths) 2022-23

Year 8 (Maths)	Intent	Students are to be able to "work mathematically" throughout the curriculum by embedding the essential skills of fluency, reasoning and problem solve into each subtopic. Students will now develop the knowledge gained, at Key Stage 2, into more complex and new understanding. Through careful interleaving of topics, students will readily make links between each subtopic, hence strengthening their understanding and mastering the course.
	Assessment strategy	Students will be assessed during the baseline assessment in September, based upon what they have learned to date. They will then be assessed mid-year and finally at the end of the year. These three testing points will be our composite testing. This data will be reported on the system and reported home to parents and carers. Students will then have regular composite testing throughout the year, at the end of each topic. This will be provide teachers with the understanding of strengths, weaknesses and gaps in knowledge in order to support students during their day-to-day learning.

		Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Year 8 (Maths)	Disciplinary knowledge	• Function machines • Bar Models • Representations in base 10	• Place Value Columns • Part – Whole Models • Rods, squares and cubes • Counters	• Number lines • Bar Models • Counters • Part – whole models • Place value counters • Fact families	• Number lines • Thermometers • Directed number counters • Part – whole models	• Angle measures • Pin boards • Real life examples	• Part – whole models • Number lines • Bar models • Fact families
	Substantive knowledge	Algebraic Thinking: • Sequences • Understand and use algebraic notation	Place Value and Proportion: • Place value ordering integers and decimals	Applications: • Solving problems with addition and subtraction	Direct number: • Operations and equations with directed number Fractional Thinking	Lines and Angles: • Constructing, measuring and using geometric notation	Reasoning with Number: • Developing number sense • Sets and probability

Long Term Plan: (Maths) 2022-23

		• Equality and equivalence	• Fraction, decimal and percentage equivalence	• Solving problems with multiplication and division • Fractions and percentages of amounts.	• Addition and subtraction of fractions	• Developing geometric reasoning	• Prime numbers and proof
	Justification	National Curriculum • Generate terms of a sequence from either a term-to-term rule or position-to-term rule • Recognize geometric sequences and appreciate other sequences that arise • Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs • Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms, and factors	National curriculum • Understand and use place value for decimals, measures, and integers of any size • Order positive and negative integers, decimals and fractions; use the number line as a model for ordering the real numbers; use the symbols =, ≠, <, >, ≤, ≥. • Round numbers to an appropriate degree of accuracy (for example, to a number of decimal places or significant figures. • Work interchangeably with terminating	National curriculum • Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative. • Use conventional notation for the priority of operations, including brackets, powers, roots, and use standard units of time • Express one quantity as a fraction of another, where the fraction	National curriculum • Appreciate the infinite nature of the sets of integers, real, and rational numbers • Recognise and use relationships between operations, including inverse operations • Use a calculator and other technologies to calculate results accurately and then interpret them appropriately	National Curriculum • Draw and measure line segments and angles in geometric figures, including interpreting scale drawings • Describe, sketch and draw using conventional terms and notations; points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are rotationally and reflectively similar. • Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures (for example, equal	National curriculum • Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction • Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale • Enumerate sets and unions/intersections of sets systematically, using

Long Term Plan: (Maths) 2022-23

			decimals and their corresponding fractions.	is less than 1 and greater than 1 • Interpret fractions and percentages as operators • Define percentage as number of parts per hundred; express one amount as a percentage of another		lengths and angles) using appropriate language and technologies	tables, grids and Venn diagrams
	Keystone vocabulary	Linear Geometric Substitute Expression Coefficient Equation	Median Interval Integer Recurring Numerator Denominator	Inverse Sum Product Factor Denominator Numerator	Positive Substitute Negative Simplify Equivalent Mixed number	Parallel Perpendicular Isosceles Equilateral	Associative Commutative Union Intersection Integer Factor
	Links to prior learning	Terms, basic sequences.	Basic place value, concepts of fractions, simple equivalences.	Four operations, Y7 Place value and proportion.	Place value, Y7 algebraic thinking. Basic concepts of negatives.	Y7 place value, basic scales.	Y7 algebraic thinking, factors and primes
	Cross-curricular and careers links	Science – Using formulae Geography – Looking for sequences and patterns Music – Looking at sequences in notes	PE – Using decimal timings Technology – Looking at equivalent decimal times in cooking	Science – Forces and Pressure links to mean and unit conversions. MFL – Basic Calculations	Geography – Using directed numbers for temperatures and graphs	Art – Looking at parallel lines in 3D drawings	PE – Probability in Rounders
	Links to future study	Y8 algebraic techniques, Y9 algebra, Y10	Y7 Applications, Y7 Direct number, Y8 Proportional	Y8 proportional reasoning, Y8 developing number,	Y8 developing number, Y9 algebra, Y10 Using number.	Y8 developing geometry, Y9 geometry.	Y8 representations, Y9 probability and statistics, Y10

Long Term Plan: (Maths) 2022-23

		developing algebra, Y11 algebra.	reasoning, Y8 Developing number, Y9 Standard form, Y10 proportion	Y8 developing geometry, Y10 proportional change.			proportions and proportional change, Y11 probability and statistics.
	Assessment	MAPS	MAPS + Mid year assessment	MAPS	MAPS	MAPS + Summer assessment	MAPS
	Homework	SPARX	SPARX	SPARX	SPARX	SPARX	SPARX