(Maths) Year 9 Long Term Plan

Rationale (with end points):
In Year 9, pupils consolidate and extend the knowledge developed in Years 7 and 8, studying concepts that increase in abstraction, depth and complexity across the five core disciplines: number, algebra, ratio and proportion, geometry and measures, and probability and statistics
The curriculum is designed to bridge Key Stage 3 and Key Stage 4, ensuring pupils develop procedural fluency alongside deeper conceptual understanding and formal mathematical reasoning. There is greater emphasis on algebraic manipulation, graphical representation, proportional reasoning, and geometric proof. By the end of Year 9, pupils will be equipped with the mathematical maturity, resilience and independence required to begin GCSE study confidently in Year 10.

Term	Topic	Knowledge	Skills	*Reading /wider reading*
Autumn term 1	• Number • Geometry & measures • Algebra	• Properties of number • Percentages • Area and volume • Equations, inequalities & formulae	• Use of factors, prime factors and being able to calculate the HCF and/or LCM including the use of Venn diagrams • Knowledge of calculating the surface area of basic 3D shapes inc prisms, area circumference of circles, leading up to spheres, cones & pyramids. • Developing algebraic fluency in solving problems with equations and inequalities, changing the subject of the formula and substitution	Equal, Schmequal by V Kroll
Autumn 2	• Algebra • Number • Ratio, proportion & rates of change	• Equations, inequalities & formulae • Fractions • Speed, distance, time	• Developing algebraic fluency in solving problems with equations and inequalities, changing the subject of the formula and substitution • Revisiting addition, subtraction, multiplication and division of fractions (including using algebra)	Equal, Schmequal by V Kroll

			• Speed, distance and time calculations, graphs and being able to convert between units	
Spring 1	• Number • Algebra • Ratio, proportion & rates of change	• Numbers • Using percentages • Straight line graphs • Maths and money	• Using the four operations applied to integers, decimals, proper & improper fractions, & mixed numbers, all both positive and negative • Revisiting gradients, y-intercepts, equations of straight line graphs including plotting them • solving problems involving percentage change & simple interest in financial maths	Algebra: Everything You Need to Know to Master Algebra! by Math Wizo
Spring 2	• Geometry and measures • Algebra	• Constructions and congruence • Similarity • Algebraic manipulation	• Understanding what makes shapes congruent, being able to use a compass to draw lines • Understand what makes shapes similar and how to calculate lengths using scale factors	Algebra: Everything You Need to Know to Master Algebra! by Math Wizo
Summer 1	• Geometry and measures • Algebra • Probability	• Pythagoras' Theorem • Non-linear graphs • Sets and probability	• Know, understand and apply Pythagoras' theorem to solve problems involving right angled triangles (2D and 3D) • Know the shapes and be able to plot and/or identify roots for quadratic, cubic, reciprocal, exponential graphs. • Know, understand and draw what a Venn diagram, set notation and combination of the two. Use set theory to calculate probabilities	Probably Pistachio by Stuart Murphy

Summer 2	• Geometry and measures • Algebra	• Transformations • Simultaneous equations • Trigonometry	• Describe and/or know how to translate, reflect, rotate and enlarge shapes • Solve 2 linear simultaneous equations using the elimination and substitution methods. • Know and calculate using SOHCAHTOA (Trigonometry) to find lengths/angles of right angled triangles in 2Dand/or 3D	Probably Pistachio by Stuart Murphy