(Maths) Year 8 Long Term Plan

Rationale (with end points):

In Year 8, pupils build directly on the foundations established in Year 7, deepening their understanding across the five key mathematical disciplines: number, algebra, ratio and proportion, geometry and measures, and probability and statistics

The curriculum increases in abstraction and complexity, moving pupils from procedural fluency towards greater mathematical reasoning, multi-step problem solving, and formal algebraic manipulation. Emphasis is placed on proportional reasoning, algebraic generalisation, graphical representation, and geometric justification. By the end of Year 8, pupils will be mathematically secure, analytical, and ready to transition confidently into the more formal demands of Year 9.

Term	Topic	Knowledge	Skills	*Reading /wider reading*
Autumn term 1	• Proportional reasoning • Algebra	• Ratio and scale • Multiplicative change • Multiplying and dividing fractions • Algebraic manipulation	• Identifying the links between ratio and fractions • Using scale factors, scale diagrams and maps • Solving problems using direct and indirect proportion • Algebra expressions with the use of brackets (single & double) and collecting like terms	Multiplying Menace: The Revenge of Rumplestiltskin by Pam Calvert
Autumn 2	• Algebra • Number • Geometry	• Gradients and straight-line & quadratic graphs • Multiplication and division of fractions	• Developing algebraic and graphical fluency • Develop the knowledge of parts of a straight-line and its general equation and quadratic graphs • Develop the skills of multiplication and division of fractions numerically and algebraically	Sir Cumference and the Dragon of Pi by Cindy Neuschwander
Spring 1	• Geometry • Algebra • Number	• Calculating area, volume and density of shapes/objects	• Developing understanding of simple angle facts involving shapes and/or parallel lines	Think of a number by Johnny Ball

		• Forming and solving equation/ inequalities	• Using algebraic knowledge and/or basic angle/shapes facts to form and solve equations/inequalities • Developing understanding of FDP and percentage change with/without multipliers	
Spring 2	• Algebra • Number • Statistics	• Indices • Standard form • Data	• Developing use of formal mathematical knowledge to interpret and solve problems with indices • Interpreting and comparing numbers in standard form $A\times10n$, $1\le A<10$ • Interpreting and representing discreet and continuous data	Euclid's Window: The story of Geometry from parallel lines to hyperspace by Leonard Mlodinow
Summer 1	• Geometry • Probability	• Angles in parallel lines and regular/irregular polygons • Probability	• Developing angle links between parallel lines and/or regular/irregular polygons • Developing basic probability with single events up, two-way tables and frequency trees	
Summer 2	• Geometry & Measures • Statistics	• Area, Circumference involving circles • Measures of location	• Calculate the circumference, area of circles. Perimeter of shapes using part of a circle (compound shapes) • Revisiting representation/comparison of data using pie charts, bar, line graphs and/or pictograms	