Hartford Church of England High School – Year 8 – Maths

Year 8	HT1	HT2	HT3	HT4	HT5	HT6
Topic(s)	Indices, Prime Factorisation, Rounding and Estimation, Fractions, Percentages	Algebraic Manipulation, Solving Equations, Graphs	Units of measurement, Angles, Circumference	Ratio and Proportion, Fractions, Decimals and Percentages	Area, Averages, Presenting and interpreting data	Venn Diagrams, 3D Shape, Sequences
Focus	Calculate integer powers and roots. Recognise powers of 2, 3, 4, 5, 10. Basic index laws - multiplication and division of powers. Write powers in index form. Find the Prime Factorisation of a number. Find HCF and LCM using Venn Diagrams and Factor Trees. Round very large and very small numbers to 1, 2 and 3 significant figures. Estimating calculations by rounding to 1 significant figure. Multiply and divide fractions and mixed numbers. Use the equivalence of fractions, decimals and percentages	Use algebraic methods to solve linear equations in one variable. Solve linear inequalities. Rearrange linear equations and formulae. Expand expressions requiring use of index laws. Factorise numbers and letters to a single bracket. Form and solve equations from contextual or geometric problems. Find the midpoint of two co-ordinates, given a midpoint and a co-ordinate to find another. Plot linear graphs of the form y=mx+c. Find y intercept and gradient from linear graphs.	Use standard units of mass, length, time, money and other measures. Understand and use the relationship between parallel lines and alternate and corresponding angles. Calculate interior and exterior angles of (regular) polygons. Calculate and solve problems involving perimeters of 2-D shapes (including circles) and composite shapes.	Compare simple proportions. Apply proportion to scale drawings, recipes and currency. Simplify ratios. Divide a quantity into a given ratio. Solve simple problems involving ratio. Calculate percentages of amounts, with and without the use of a calculator. Increase and decrease amounts by simple percentages. Reverse percentages.	Derive and apply formulae to calculate and solve problems involving area of triangles, parallelograms, trapezia and (part)circles. Find the median, mode, mean and range of discrete, ungrouped data. Draw and interpret bar charts, line graphs, frequency tables and pie charts to represent data.	Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams. Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres. Draw plans and elevations of simple 3-D shapes. Derive and apply formulae to solve problems involving volume of prisms (including cuboids, cubes and triangular prisms). Position to term rule for linear sequences.
Vocabulary	Prime, Factor, Highest Common Factor, Lowest Common Multiple, Significant Figure	Equation, Inequality, Expand, Factorise, Co-ordinate, Midpoint, Plot, Gradient, Y-intercept	Kilo-, Centi-, Corresponding, Co-interior, Alternate, Angle, Regular, Perimeter	Similar, Proportional, Simplify, Ratio, Percent, Increase, Decrease, Interest	Area, Trapezium, Circle, Diameter, Circumference, Radius, Median, Mean, Mode, Range	Intersection, Union, Face, Vertex, Edge, Volume, Sequence

Assessment	Mid Stakes 1: Topic Test Mid Stakes 2: Topic Test	Mid Stakes 3: Topic Test Mid Stakes 4: Topic Test	Mid Stakes 5: Topic Test High Stakes 1: Topic Test	Mid Stakes 6: Topic Test Mid Stakes 7: Topic Test	Mid Stakes 8: Topic Test High Stakes 2: Topic Test	Mid Stakes 9: Topic Test Mid Stakes 10: Topic Test
Curriculum Thread	Number	Algebra	Geometry and Measures	Ratio, Proportion and Rates of Change Number	Geometry and Measures Probability and Statistics	Probability and Statistics Geometry and Measures Algebra
Wider Reading	Sparx Maths – Go to 'Independent Learning' - Index rules with negative indices - Adding and Subtracting Fractions	Sparx Maths – Go to 'Independent Learning' - Expanding single brackets and simplifying expressions - Interpreting equations of straight-line graphs	Sparx Maths – Go to 'Independent Learning' - Problem solving: Converting units of length, area, and volume - Finding the arc length of sectors	Sparx Maths – Go to 'Independent Learning' - Constructing direct proportion questions - Financial terminology and calculations	Sparx Maths – Go to 'Independent Learning' - Finding averages from grouped data - Interpreting scatter graphs	Sparx Maths – Go to 'Independent Learning' - Probabilities from Venn diagrams - Position to term rules for arithmetic sequences