Mathematics Year 8 Curriculum Map

Term	I am learning	By the end of this topic I will be able
Autumn	**Topic: Ratio, scale and multiplicative change** • to understand the meaning and purpose of ratio, and how ratios link to multiplicative reasoning • to deepen understanding of the key concept of direct proportion • to develop proportional reasoning skills **Topic: Multiplying and dividing fractions** • to deepen understanding by looking at multiple representations of multiplying and dividing fractions • to understand what reciprocal means and its uses	**Topic: Ratio, scale and multiplicative change** • to understand and use ratio notation • to divide into a given ratio • to compare ratios and fractions • to solve problems involving direct proportion • to understand scale factors and interpret scale diagrams **Topic: Multiplying and dividing fractions** • to multiply and divide fractions • to multiply and divide mixed numbers and improper fractions
	Topic: Working in the cartesian plane • to develop understanding of coordinates from KS2 • to understand key algebraic notation of equations of lines on the cartesian plane • to deepen understanding of gradient, direct proportion, link equations and sequences **Topic: Representing data and sequences** • to extend understanding of representations of discrete and continuous data • to accurately and fluently generate sequences from a given rule and to find n^{th} term rules for a linear sequence	**Topic: Working in the cartesian plane** • to understand and draw a straight-line graph (vertical, horizontal and diagonal) • to understand and plot graphs in the form y=mx+c **Topic: Representing data and sequences** • to draw and interpret scatter graphs • to read and interpret frequency tables • to construct and interpret two-way tables

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Spring	**Topic: Brackets, equations and inequalities** • to fluently use and form expressions, equations and inequalities and be able to solve them • to deepen understanding of equivalence (visited in Year 7)	**Topic: Brackets, equations and inequalities** • to expand brackets • to factorise expressions • to solve equations and inequalities • to form and simplify algebraic expressions
	Topic: Fractions and percentages • to develop key fluency and recap steps promote this fluent calculation with fractions and percentages • to deepen understand of the relationship between fractions and percentages **Topic: Number sense** • to efficiently and accurately round numbers in order to estimate calculations. • to use metric conversions fluently to solve problems	**Topic: Fractions and percentages** • to calculate fractions and percentages of an amount with or without a calculator • to calculate using a percentage multiplier • to work with percentage change • to express one number as a fraction or percentage of another **Topic: Number sense** • to round to a given number of decimal places or significant figures • to estimate the answer to a calculation • to convert between metric units of length, weight and capacity

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Summer	**Topic: Angles in lines and polygons** • to fluently calculate missing angles in parallel lines • to understand the properties of special quadrilaterals • to understand the angles in a polygon **Topic: Area of trapezia and circles & Reflection** • to efficiently use of area formulae in a variety of contexts including with compound shapes • to embed and deepen knowledge of line symmetry and reflection in horizontal, vertical and diagonal reflection lines	**Topic: Angles in lines and polygons** • to identify and calculate corresponding, alternate and co-interior angles • to identify and calculate angles in special quadrilaterals • to construct a triangle using protractor and compass • to understand and use the sum of angles in a polygon **Topic: Area of trapezia and circles & Reflection** • to calculate the area of a rectangle, parallelogram, triangle, trapezium and circle • to calculate the perimeter/circumference of 2D shapes • to reflect shapes in horizontal, vertical and diagonal lines
	Topic: Data handling and measures of location • to fluently use several different types of charts to compare different distributions • to explore outliers and when graphs may be misleading, an important real-life consideration • to use and fully understand different averages **Topic: Reasoning with data** • to deepen understanding of when to use the average and range and which is best used for a given set of data • to explore how to calculate averages from frequency tables	**Topic: Data handling and measures of location** • to draw and interpret bar charts, pie charts, line graphs and pictograms • to choose the most appropriate diagram for a given set of data • to compare distributions using charts • to find and interpret the range • to understand and use the mean, median and mode **Topic: Reasoning with data** • to choose the most appropriate average for a given set of data • to calculate the mean from an ungrouped frequency table