Curriculum Map Year 8 MATHEMATICS

Topic Name	Term	**Skills** developed with link to NC Subject content	Reflection on previous link in the curriculum	Progress to future link in the curriculum
Sequences	*Autumn HT1*	• Generating terms of a linear sequences. • Generating terms of a non-linear sequences. • Identifying different types of linear and non-linear sequences. • Finding a given term in a linear sequence. • Developing a rule for finding a term in a linear sequence. • Generalising the position to term rule for a linear sequence (nth term)	*Year 7: Expressions, equations and sequences* *(This is explicitly reviewed at the start of the half term)*	*GCSE: nth term of non-linear sequences*
Forming and Solving Equations	*Autumn HT1*	• Classifying expressions, equations, inequalities and identities. • Deriving equations from different contexts. • Solving linear equations with an unknown on one side. • Solving linear equations with an unknown on both sides. • Solving equations involving fractional terms and brackets • Interpreting the solution to an equation based on the context from which it is derived	*Year 7: Expressions, equations and sequences* *(This is explicitly reviewed at the start of the half term)*	*GCSE: Solving simultaneous equations.*
Forming and Solving Inequalities	*Autumn HT1*	• Interpreting relationships expressed as inequalities (revise from year 7) • Deriving inequalities from contexts • Forming and solving inequalities with unknown on one side • Forming and solving inequalities with an unknown on both sides • Representing a solution on a number line	*Year 8: Forming and Solving Equations*	*GCSE: Graphing inequalities.*
Linear Graphs	*Autumn HT2*	• Identify the equations of horizontal and vertical lines (from year 7) • Plot coordinates from a rule to generate a straight line • Develop a rule into an algebraic representation • Develop concept of gradient using graphs of the form y = ax progressing to equations of the form y = ax + b • Identify key features of a linear graph including the y-intercept and the gradient • Make links between the graphical and the algebraic representation of a linear graph • Recognise different algebraic representations of a linear graph • Identify parallel lines from algebraic representations	*Year 7: Co-ordinates* *(This work is explicitly reviewed at the start of the topic)*	*GCSE Non-Linear Graphs.*
Transforming 2D Figures	*Autumn HT2*	• Translation, rotation and reflection of an objects on a cartesian plane • Enlargement by a positive scale factor	*Year 4: Symmetrical figures*	*GCSE: Transformations: Combined transformations, invariance and negative scale factor.*
Ratio, real life graphs and rates of change	*Spring HT3*	• Use ratio notation to describe a multiplicative relationship between two quantities (revise from year 7) • Solve problems involving ratios (revise from year 7) • Explore ratios in different contexts including speed and other rates of change • Contrast ratio relationships involving discrete and continuous measures • Use speed and other rates of change to draw and interpret graphical representations • Explore density and concentration as other contexts for proportional relationships	*Year 7: Equivalent Ratios and Dividing Using Ratio*	*GCSE: Ratio and Proportion*
Percentage Review	*Spring HT3*	• Equivalence to fractions and decimal fractions • Percentage of an amount • Percentage increase and decrease • Finding the original amount • Using percentages, fractions and decimals in different contexts including probability	*Year 7: Percentages*	*GCSE Compound interest and Reverse percentages.*
Accuracy and estimation	*Spring HT3*	• Round numbers to a required number of decimal places • Round numbers to a required number of significant figures • Identify rounding errors • Estimate quantities in a variety of contexts including area and perimeter • Identify and reason if an estimate is an over or under-estimate	*Year 6: Rounding*	*GCSE: Limits of accuracy and upper and lower bounds.*

Univariate Data	*Spring HT4*	• Find the mean, median mode and range from raw datasets • Use the mean, median and mode to compare data sets • Use an average plus the range to compare datasets • Find the mode, median and mean from tables and graphical representations (not grouped) • Explore methods of data collection including surveys, questionnaires and the use of secondary data • Appreciate the difference between discrete and continuous data • Classify and tabulate data • Conduct statistical investigations using collected data	*Year 6: Calculating the mean*	*GCSE Averages from frequency tables, Cumulative frequency and box plot. Histograms*
Bivariate Data	*Spring HT4*	• Construct scatter graphs • Examine clusters and outliers • Analyse the shape, strength and direction to make conjectures for possible bivariate relationships • Using range, mean, median and mode to investigate the characteristics of data and to compare to sets of data • Use a scatter graph to plot a line of best fit • Use a line of best fit to interpolate and extrapolate inferences	*Year 8: Univariate data*	*GCSE: Comparing data- median, quartiles and interquartile range*
Angles in Polygons	*Summer HT5*	• Know the sum of interior angles of a triangle and use to solve angle problems (revise from Year 7) • Explore methods for finding the sum of the interior angles of polygons • Generalise different methods for finding the sum of interior and define the sum of the exterior angles of a polygon • Use the sum of the interior and exterior angles of a polygon to solve problems	*Year 7: Angles (This work is explicitly reviewed at the start of this unit)*	*GCSE: Circle Theorems*
Circles and Composite Shapes	*Summer HT5*	• Explore relationship between circumference and diameter/radius • Formula for circumference • Explore relationship between area and radius • Formula for area of a circle • Area and circumference of a semi-circle and other sectors • Area and perimeter of composite shapes involving sectors of circles	*Year 7: Area and Perimeter*	*GCSE: Area sector, arc length* *GCSE: Volume of a cylinder*
Volume and Surface Area of Prisms	*Summer HT6*	• Naming prisms, nets of prisms and using language associated with 3-D shapes • Finding the volume and surface area of cuboids • Finding the volume and surface area of other prisms including cylinders Finding the volume and surface area of composite solids • Solving equations and rearranging formulae • Convert between different units of area and volume	*Year 7: Area and Perimeter*	*GCSE: Volume and Surface Area of spheres, cones and pyramids.*