Year 7 Curriculum Intent   **Subject: Mathematics**

Year 7 Overview:
Throughout year 7 students will develop their mathematical fluency, mathematical reason and problem solving skills through Number, Algebra, Ratio & Proportion, Geometry & Measures, Probability and Statistics.

Autumn Term

Outline of Key Learning	Hegarty Support	Lesson Link
Four Operations a. Understand commutative and associative laws b. Use formal methods to multiply, divide, add and subtract integers c. Multiply and divide numbers by powers of 10 d. Order of operations e. Use =, < and > symbols in calculations	7, 8, 40 18- 23, 143- 148 15, 16 24	Multiplication Methods Multiplying by 10, 100 Inequalities
Decimal & Place Value a. Order positive integers and decimals b. Add & Subtract using decimals c. Calculate with money including use of receipts & bank statements d. Multiply & Divide using decimals e. Rounding to given decimal places f. Estimate calculations g. Use a calculator correctly	46 47- 51 743- 751 48- 51 56, 134 131 129	Place Value / Rounding Decimals Estimation
2D & 3D Shapes a. Identify properties of 2D shapes including symmetry, regular, parallel, perpendicular lines, sum of interior angles b. Identify 3D shapes and know their properties c. Drawing 3D shapes on isometric paper d. Identify a variety of nets of simple 3D shapes	823- 828 829- 831 832 833- 836	2D Shapes 3D Shapes Nets

Teach for Understanding

Outline of Key Learning	Hegarty Support	Lesson Link
Negative Numbers a. Order negative numbers b. Add, subtract, multiply and divide negative numbers c. Apply order of operations with negative numbers d. Use a calculator with negative numbers	37 39 – 43, 142 44	[Negative numbers in context](#) [Subtract negatives](#) [Negatives](#)
Representing Data a. Draw and interpret bar charts for discrete data b. Draw and interpret composite and dual bar graphs c. Draw and interpret scatter graphs. Draw line of best fit and comment on correlation d. Draw and interpret time series	425 453 454 450- 452	[Bar Charts](#) [Interpret Data](#) [Time Series](#)
Writing Expressions a. Form algebraic expressions b. Substituting into expressions c. Using single and double functions machines with links to x	151 – 153 189	[Algebra](#) [Function Machines](#)

Spring Term

Outline of Key Learning	Hegarty Support	Lesson Link
Fraction, Decimal & Percentage Equivalence a. Find equivalent fractions, decimals and percentages, with and without a calculator b. Order fractions, decimals and percentages c. Express one number as a fraction of another d. Find fractions of amounts e. Find 50%, 10%, 5%, 1%, 75%, 20% without a calculator	59, 61, 73- 76 60 62 77 84	[Percentages](#) [Fractions](#) [FDP](#)

Teach for Understanding

Area & Perimeter a. Find perimeter of shapes and solve problems b. Find area of rectangles, parallelograms and triangles c. Surface area of cuboids, cubes d. Find volume of cubes & cuboids e. Convert between metric units of measure	548- 552 554- 558 584, 585 568, 569 691- 694	[Area](#) [Volume and Surface Area](#)
Simplifying Algebra a. Collect like terms including negatives b. Forming expressions from diagrams and worded contexts c. Simplifying expressions involving multiplication d. Simplifying expressions involving division	156,157 552 158 159	[Algebra](#)
Calculating with Fractions a. Compare fractions, using inequality signs b. Convert between mixed and improper fractions c. Add, subtract fractions with common denominator including answers above 1 d. Add, subtract fractions with different denominators e. Use equivalent fractions to divide a decimal by a decimal	63, 64 65 66	[Comparing / Equivalent Fractions](#) [Calculations with Fractions](#)
Angles a. Draw and measure lines and angles using ruler and protractor. b. Understand and use notation e.g. line AB, angle ABC c. Be able to identify acute, obtuse & reflex angles d. Estimate angles to within 50 e. Identify congruence in shapes Find equivalent fractions, decimals and percentages, with and without a calculator	455- 461 821 680, 681	[Angles on a line / around a point](#) [Acute / Obtuse Angles](#) [Measure / Draw Angles](#)

Teach for Understanding

Summer Term		
Outline of Key Learning	**Hegarty Support**	**Lesson Link**
Solving Equations a. Solving one-step equations b. Solving two-step equations including negatives c. Solving multi-step equations d. Set up and solve equations from worded examples	177, 178 179- 182 183 188	Forming and Solving Equations
Probability a. Find probability of single events using fractions and decimals b. Find the probability of an event not occurring c. Identify if two outcomes are mutually exclusive d. Calculate expected probability e. Calculate experimental probability	351, 352 353 354 355 356	Probability
Averages a. Calculate the mode & median from a set of data b. Calculate the mean from a set of data to draw conclusions c. Problem solving with averages	404, 409 405 -408 419, 420	Mean Median, Mode, Range
Calculating Angles a. Calculate angles around a point b. Calculate angles on a straight line and vertically opposite c. Calculate missing angles in triangle and quadrilaterals d. Calculate interior and exterior angles of polygons e. Construct and solve equations using angle	812- 815 477- 480 484- 487 561, 563 565	Angles in Triangles Missing Angles in Polygons Interior and Exterior Angles

Teach for Understanding

Multiplicative change
 	
   a. Use ratio to draw scale drawings and maps
   b. Use scale factors to find missing lengths in similar shapes including fractional scale factors
 	
   c. Solve problems involving direct proportion and inverse proportions
   d. Convert currencies
	
	 864- 868
	 608- 611
	
	 339- 342
	 707, 708
		[Ratio in Geometry](#)
		
		 [Direct and Inverse Proportion](#)
		
		 [Ratio Problems](#)

Teach for Understanding