



Intent: To build a deep understanding of fundamental concepts within mathematics. Learners will develop fluency with numerical concepts before advancing them to more abstract algebraic ideas.

Mathematics

Year 7

The Number System and Equivalence

Adding and Subtracting

Multiplying

Dividing

Order of Operations and Rounding

Area and Perimeter

Solving Equations and Inequalities

Knowledge
(facts, information, concepts and key terminology)

Primes, factors and multiples, HCF, LCM, equivalent fractions, converting between fractions and decimals.

Commutative and associative law, integers, negatives, algebraic terms, decimals and fractions.

Distributive law, integers, manipulating multiplications, negatives, algebraic terms, decimals and fractions.

Distributive law, integers, manipulating divisions, negatives, algebraic terms, decimals and fractions.

Powers, brackets, indices, products and sums, rounding to place value, rounding to significant figures, bounds, estimation.

Units, quantities, areas and perimeters of compound shapes.

Solve linear, one and two-step equations, equations involving brackets, equations with unknowns on both sides, solve inequalities.

Understanding
(ability to connect and synthesise knowledge within a context)

The multiplicative nature of the number system. The need for both fractional and decimal representations of numbers.

The same methods for adding and subtracting can be applied to most types of numbers when fluent.

The same methods for multiplying can be applied to most types of numbers when fluent.

The same methods for dividing can be applied to most types of numbers when fluent.

The order in which calculations must be performed. The differences between types of rounding. Approximation can simply a problem when checking.

Calculations for area and perimeter are simply an application of adding and multiplication.

The concept of equality and the balancing method for solving equations.

Skills
(successful application of knowledge and understanding to a specific task)

Use prime factors in a variety of contexts to simplify a problem. Smoothly transition between fractions and decimals in order to choose the most efficient method.

Use laws of arithmetic in a variety of contexts to simplify a problem. Apply knowledge and understanding to contextual problems.

Be flexible with multiplicative calculations in order to find the most efficient method. Apply knowledge and understanding to contextual problems.

Be flexible with division calculations in order to find the most efficient method. Apply knowledge and understanding to contextual problems.

Use an in-depth knowledge of the number system to perform calculations in a number of different ways. Use intervals with rounded values.

Apply knowledge to real-life contexts for areas and perimeters.

Successfully interpret contexts to solve problems and transition between solving equations and inequalities.

Formal Assessments
(those done by all/vast majority of the cohort)

Termly cumulative assessments covering content from start of year 7. Topic Assessments after each topic has been delivered.

By the end of the year students on course for at least a grade 5 will... be proficient in standard procedures when in a purely mathematical context.

The timings and order of delivery shown are approximate, these may change on a class-by-class basis

Term 1

Topic	Breakdown	Hegarty Links
The Number System	Factors	26, 27
	Prime numbers	28
	Prime factors	29, 30
	HCF	31, 32
	Multiples and LCM	33, 34, 35, 36
Equivalence	Manipulating fractions	57, 58, 59, 61, 63, 64
	Comparing fractions	60
	Place value	73
	Converting between fractions and decimals	52, 74
Adding and Subtracting	Integers	7, 8, 9
	Negatives	37, 38, 39, 40, 41
	Algebra	156, 157
	Decimals	47
	Fractions	65, 66

Term 2

Topic	Breakdown	Hegarty Links
Multiplying	Integers	21
	Equivalent calculations	
	Negatives	42
	Algebra	158, 160, 161, 162, 163, 164
	Decimals	48
	Fractions	68, 69
Division	Integers	22
	Equivalent calculations	
	Negatives	43
	Algebra	159
	Decimals	49, 50
	Fractions	71, 70

Term 3

Topic	Breakdown	Hegarty Links
Order of Operations	Powers	99, 100, 101
	Order of operations	24, 120
Rounding and Estimation	Rounding to 'place value'	17, 56
	Rounding to significant figures	130
	Bounds	137
	Estimation	131
Perimeter and Area	Converting simple units	15, 16
	Perimeters of compound shapes	548
	Estimating basic quantities	
	Areas of compound shapes	548
Equations and Inequalities	Forming Equations	
	Solving linear equations	177, 178, 180, 182, 183
	Solving linear equations involving expanding brackets	179
	Solving linear equations with unknowns on both sides	184, 185, 186
	Solving linear inequalities	269