Maths **Year 8** **Autumn 1**

Week	Unit Name	Learning Objectives	Resources	Assessment
1	Manipulating Terms	Know the meaning of expression, term, coefficient, unknown	Hegarty Maths	Weekly Progress Checks and Xmas Assessment
		Identify like and unlike terms Collect like terms (no indices) with one letter per term		
2	Manipulating Terms	Collect terms including indices and multiple letters		
		Multiplying numbers and letters. Multiplying letters and letters.		
		Multiplying same letters together e.g. d x d and abc x bc		
3	Manipulating Terms	Dividing letters and numbers. Dividing letters and letters. Dividing same letters together		
		4 operations with letters and numbers		
		Function Machines – going forward		
4	Expressions	Substitute integers into expressions - 4 operations		
		Substitute integers into expressions including indices and brackets		
		Expanding single brackets with numbers or letters on outside		
5	Expressions	Expanding single brackets with multiple letters and numbers on outside including indices		
		Expanding multiple single brackets and simplify		
		Factorising single terms. Factorising into single brackets with a number as a factor		

6	Expressions	Factorising into single brackets with numbers and letters as factors		
		Factorising where factor is a bracket e.g. $4x(x + 1) – 2(x + 1)$		
		Expanding double brackets with positive and negative terms		
7	Expressions	Expanding double brackets with positive and negative terms and indices		
		Factorising quadratics, positive terms		
		Factorising quadratics, positive and negative		
8	Expressions	Factorising quadratics, $a>1$		
		Expanding triple brackets where third bracket is just a number e.g. $3(x + 1)(x – 2)$		
		Expanding triple brackets, all brackets		

Maths **Year 8** **Autumn 2**

Week	Unit Name	Learning Objectives	Resources	Assessment
1	Fractions	Multiplying algebraic fractions 1 term in numerator and denominator. No simplifying answers	Hegarty Maths	Weekly Progress Checks and Xmas Assessment
		Multiplying algebraic fractions 1 term including indices and simplifying answers		
		Fraction raised to powers		
2	Fractions	Multiplying fractions with multiple terms, involving brackets		
		Dividing algebraic fractions 1 term in numerator and denominator. No simplifying answers		
		Dividing algebraic fractions 1 term including indices and simplifying answers		
3	Fractions	Dividing fractions with multiple terms, involving brackets		
		Multiplying and Dividing problems		
4	Fractions	Adding algebraic fractions, numbers as denominators		
5	Fractions	Adding algebraic fractions, letters as denominators		
		Subtracting algebraic fractions 1 algebraic term		
		Adding algebraic fractions, numerator with multiple terms		
6	Fractions	Adding algebraic fractions, denominator with multiple terms		
		Adding algebraic fractions, both numerator and denominator with multiple terms		

		Algebraic Fractions – 4 operations		
7	Fractions	Algebraic Fractions – Order of operations		
		Algebraic Fractions problems e.g. equivalent fractions, area etc		

Maths **Year 8** **Spring 1**

Week	Unit Name	Learning Objectives	Resources	Assessment
1	Forming	Forming expressions from words – adding and subtracting	Hegarty Maths	Weekly Progress Checks and Xmas Assessment
		Forming expressions from words – multiplying and dividing		
		Forming expressions from words – 4 operations (including indices and brackets if able to)		
2	Forming	Forming from geometry – perimeter and area		
		Forming from geometry - angles		
		Writing numbers as expressions e.g odd numbers, even numbers, square numbers etc		
3	Forming	Proving expression is a multiple of a number e.g. 4n + 8 is a multiple of 4. By showing 4(n + 2)		
		Proving expression is a square number or is equal to another expression		
		Understanding equality and balancing sides of an equation. Going backwards on function machines		
4	Solving	Solving 1 step equations – 4 operations		
		Solving 2 step equations – e.g. $3x + 5 = 11$ and $10(x – 2) = 80$		
		Solving 2 step equations – e.g. $x/3 + 5 = 11$ and $(x – 2)/10 = 8$		
5	Solving	Solving multi step equations – brackets		
		Solving multi step equations – fractions		

		Solve with x's on both sides – no brackets or fractions		
6	Solving	Solve with x's on both sides – including brackets		
		Solve with x's on both sides – including fractions		

Maths **Year 8** **Spring 2**

Week	Unit Name	Learning Objectives	Resources	Assessment
1	Solving	Substitute and solve	Hegarty Maths	Weekly Progress Checks and Xmas Assessment
		Forming and Solving - Perimeter		
		Forming and Solving – Angles		
2	Solving	Solving 1 step equations – including indices and roots		
		Solving 2 step equations – involving indices and 1 other operation e.g. $x^2 + 2 = 11, \frac{\sqrt{x}}{5} = 1, 3x^2 = 12$		
		Solving with 2 brackets (last step of solving quadratics) e.g. (x + 2)(x + 5) = 0		
3	Solving	Solving quadratics - positive		
		Solving quadratics – positive and negative		
		Solving quadratics – a>1		
4	Solving	Substitute and use formulae		
5	Solving	Rearranging formulae – 1 and 2 step (4 operations)		
		Rearranging formulae – 1 and 2 step (including indices)		
		Rearranging formulae – multi step		
6	Solving	Formulae to learn by heart – using them		
		Formulae to learn by heart – using them		

Maths **Year 8** **Summer 1**

Week	Unit Name	Learning Objectives	Resources	Assessment
1	Inequalities	Using inequality symbols correctly Identify integers to satisfy inequalities	Hegarty Maths	Weekly Progress Checks and Xmas Assessment
		Writing inequalities on a number line		
		Plot horizontal and vertical inequalities and identify regions		
2	Inequalities	Solve inequalities – one sided		
		Solve inequalities – two sided		
		Solve complex inequalities		
3	Sequences	Continuing linear and geometric sequences and finding missing terms including unique sequences e.g. Fibonacci, triangle numbers,		
		Given linear nth term, generate sequence		
		Find specific term in linear sequence and using it e.g. 10^{th} term of $3n + 1$		
4	Sequences	Find nth term of linear sequence		
		Continuing quadratic sequences and finding missing terms		
		Given quadratic nth term, generate sequence		
5	Sequences	Find nth term of quadratic sequence		
		Find nth term of quadratic sequence		

		Continuing picture patterns		
6	Sequences	Find nth term of picture patterns		

Maths **Year 8** **Summer 2**

Week	Unit Name	Learning Objectives	Resources	Assessment
1	Graphs	Plotting coordinates on a grid Plotting polygons in a grid	Hegarty Maths	Weekly Progress Checks and Xmas Assessment
		Midpoints		
		Plotting graph by continuing a sequence		
2	Graphs	Plotting graph by completing table of values		
3	Graphs	Gradient between two points		
		Find the equation of a linear graph from a diagram		
		Find the equation of a linear graph given gradient and y intercept		
4	Graphs	Find the equation of a linear graph given gradient and another point		
		Find the equation of a linear graph, given two points		
		Identify gradient and y intercept from a given equation		
5	Graphs	Identify the equation of parallel lines		
		Identify the gradient of perpendicular lines		
		Identify the equation of perpendicular lines		
6	Graphs	Graph linear inequalities		
		Graph linear inequalities (regions)		