Maths Long Term Plan Year 10 Higher

Temperance Term

W/C	1	2	3	4	5	6	7	
Area of Study	Number 1				Algebra 1			**HALF TERM**
Core learning	**Working with integers** To identify the correct operations required and use written calculations to solve worded problems. To calculate with all four operations of arithmetic using positive and negative numbers. To apply the hierarchy of operations to accurately work out calculations involving two or more operations. To identify and write the inverses for operations and apply these to check the results of calculations and develop the skills required to solve the equations.	**Properties of integers** To recall and understand key definitions. To consolidate their understanding of basic place value. To apply their knowledge of factors and primes to express a number as a product of its prime factors. To simplify a collection of numbers that have been multiplied together by writing them in index form. To use the 'listing method' to find the highest common factor and lowest common multiple of a set of numbers. To use a prime factor tree to find the highest common factor and lowest common multiple of a set of numbers.	**Working with fractions** To apply knowledge of factors and multiples to simplify fractions and identify equivalent fractions. To apply and explain an algorithm to find the median fraction. To apply the four operations to fractions. To apply knowledge of the four operations to solving problems involving fractions. To calculate fractions of amounts. To express one number as a fraction of another.	**Working with decimals** To apply knowledge of place value to convert decimals to fractions and order fractions. To be able to add, subtract, multiply and divide decimals. To use a calculator to complete more complicated calculations that involve decimals. To be able to add, subtract, multiply and divide decimals without using a calculator. To convert recurring decimals to fractions.	**Basic Algebra** To interpret and work with algebraic notation including an understanding of correct, formal language and notation. To form algebraic expressions from worded instructions and geometric problems. To simplify products and quotients and apply the index laws to simplify. To simplify algebraic expressions by collecting like terms. To simplify products and quotients. To expand the product of a single term and binomial. To factorise out common factors and recognise that the HCF must be factored out for an expression to be fully factorised. To form expressions from word problems and use algebra to solve problems in different contexts including number problems.		**Further Algebra** To know what a quadratic expression is. To be able to expand the product of two binomials. To be able to factorise expressions of the form ax^2 + bx + c. To complete the square on a quadratic expression. To simplify and manipulate algebraic fractions.	
	Opportunities for Challenge: Open middle, goal free, exam questions, "by example", SSDD are good resources but always choose problems based on the current topic.							
Assessment			Progress Check			Progress Check		

W/C	8	9	10	11	12	13	
Area of study	Assessment	Algebra 1		Geometry 1			
Core learning	**Revision**	**Equations** To solve linear equations. To understand that identities are equations for which there are an infinite number of solutions as they are true for all values x can take. To form and solve quadratic equations. To understand that different types of equations have a different possible number of solutions. To solve linear simultaneous equations. To solve linear and quadratic simultaneous equations. To know how to read and interpret graphs in various contexts. To be able to use graphs to find approximate solutions to equations. To use iterative methods to find approximate solutions to equations. To use equations and graphs to solve problems.		**Properties of polygons and 3D objects** To know the names and features of common polygons and polyhedrons. To know how to describe and label common features of plane figures. To identify and describe line and rotational symmetry. To know and use properties of triangles and quadrilaterals, including their interior angle sum. To know and use the properties of 3D solids.	**Angles** To recall knowledge of basic angle facts including: vertically opposite angles, angles on a line and angles around a point. To apply basic and parallel angle facts to find the size of angles in various scenarios. To recall knowledge of parallel line angle facts including: corresponding angles, alternate angles and co-interior angles. To understand a proof for the sum of interior angles of a triangle being 180. To calculate the size of an interior or exterior angle of a regular polygon.	**Perimeter** To calculate the perimeter of a simple shape. To understand that the perimeter of a shape is its boundary. To calculate the perimeter of composite shapes. To form expressions and equations for the perimeter of a given shape. To know and use a formula for the circumference of a circle. To be able to find arc length of a given sector and hence the perimeter of the sector. **Area** To know and use the formulae for calculating the area of rectangles, triangles, parallelograms, and trapeziums. To use formulae to calculate the area of composite shapes. To form algebraic expressions for the area of a shape. To know and use the formula for calculating the area of a circle. To calculate the area of a sector.	**CHRISTMAS**
	Opportunity for Challenge: Open middle, goal free, exam questions, "by example", SSDD are good resources but always choose problems based on the current topic.						
Assessment	Formal, summative			Progress Check			

Maths Long Term Plan Year 10 Higher

Justice Term

W/C	14	15	16	17	18	19	
Area of study							HALF TERM
Core learning							
	Opportunity for Challenge: Open middle, goal free, exam questions, "by example", SSDD are good resources but always choose problems based on the current topic.						
Assessment							

W/C	21	22	23	24	25	26	
Area of study							EASTER
Core learning							
	Opportunity for Challenge: Open middle, goal free, exam questions, "by example", SSDD are good resources but always choose problems based on the current topic.						
Assessment							

Maths Long Term Plan Year 10 Higher

Courage Term

W/C	27	28	29	30	31	31	
Area of study							HALF TERM
Core learning							
Opportunity for Challenge: Open middle, goal free, exam questions, "by example", SSDD are good resources but always choose problems based on the current topic.							
Assessment							
W/C	32	33	34	35	36	37	
Area of study							SUMMER
Core learning							
Opportunity for Challenge: Open middle, goal free, exam questions, "by example", SSDD are good resources but always choose problems based on the current topic.							
Assessment							