

















Year 9	Term 1				
Unit Title	Straight line graphs	Forming and solving equations	Testing conjectures	Three dimensional shapes	Constructions and congruency
Approximate Number of Lessons	6	6	6	9	9
Curriculum Content	<ul style="list-style-type: none"> Use lines parallel to the axes, $y = x$ and $y = -x$ Using tables of values Compare gradients and intercepts Understand and use $y = mx + c$ Find the equation of a line from a graph Interpret gradients and intercepts of real-life graphs Write an equation in the form $y = mx + c$ Model real-life graphs involving inverse proportion Explore perpendicular lines 	<ul style="list-style-type: none"> Solve one and two step equations and inequalities with or without brackets Solve inequalities with negative numbers Solve equations and inequalities with unknowns on both sides Solve equations and inequalities in context Substitute into formulae and equations Rearrange formulae involving one or two steps Rearrange complex formulae including brackets and squares Rearrange formulae where variable is the denominator of a fraction. 	<ul style="list-style-type: none"> Recap factors, multiples and primes Use knowledge of types of number and fractions, decimals and percentages to determine whether a statement is true, sometimes true or never true Prove a statement is true by showing supporting method Conjecture with calculating with evens and odds Expand a pair of binomials Explore the 100 grid Conjecture with algebra Understand why it is harder to show a conjecture a true than it is to show a conjecture is false 	<ul style="list-style-type: none"> Recall 2D and 3D shape names and language Recognise prisms Sketch and recognise accurate nets of cuboids and other 3D shapes Sketch plans and elevations Identify a shape from its plans and elevations Find the area of 2D shapes Calculate the surface area of cubes, cuboids, triangular prisms and cylinders Calculate the volume of cubes, cuboids, prisms and cylinders Explore volumes of cones, pyramids and spheres Find missing lengths given the volume of a 3D shape 	<ul style="list-style-type: none"> Draw and measure angles Construct and interpret scale drawings Sketch the range of points equidistant from a point, straight line, shape, or two points (loci) Construct angle and perpendicular bisectors Construct a perpendicular line; from a point on a line and to a point from a line Sketch the range of points equidistant from two lines Construct triangles from given information Identify congruent figures and triangles Know the least information needed to construct a triangle, using a protractor and a pair of compasses Explore the intersection of multiple angle bisectors in polygons
Links to prior learning	<ul style="list-style-type: none"> Understand how to substitute numerical values into formulae and expressions 	<ul style="list-style-type: none"> Use algebraic methods to solve linear equations Use inverse operations to solve equations 	<ul style="list-style-type: none"> Expanding two expressions Factors, multiples and primes 	<ul style="list-style-type: none"> Names of 2D and 3D shapes Area of 2D shapes 	<ul style="list-style-type: none"> Understand how to use a protractor and pair of compasses
Cultural Capital Opportunities	The Gradient of a Ski Slope	Research the Goldbach Conjecture	Investigating Pascal's Triangle	What is missing?	Where would you put the CCTV cameras?
Assessment Focus	Formative assessment on the half term's content covering a full variety of fluency, application and problem-solving questions, lasting approximately 45 minutes.			Whiterose end of term assessment on the full term's content, lasting approximately 45 minutes-90 minutes depending on Maths set.	
Knowledge Organiser	 Unit-01---Straight-line-graphs-KO.pdf	 Unit-02---Forming-and-solving-equations-	 Unit-03---Testing-conjectures-KO.pdf	 Unit-04---3D-shapes-KO.pdf	 Unit-05---Constructions-and-congruency-

Year 9	Term 2					
Unit title	Numbers	Using percentages	Maths and money	Deduction	Rotation and translation	Pythagoras' Theorem
Approximate Number of Lessons	6	6	6	6	6	6
Curriculum Content	<ul style="list-style-type: none"> Explore integers, real and rational numbers Work with directed number Solve problems with integers and decimals Calculate the HCF and LCM Add, subtract, multiply and divide fractions Solve problems with fractions Write numbers in standard form Understand and use surds Simplify surds 	<ul style="list-style-type: none"> Use equivalence of fractions, decimals and percentages Calculate percentage increase and decrease Express a change as a percentage Solve reverse percentage problems Recognise and solve percentage problems with and without a calculator Solve problems with repeated percentage change Understand growth and decay and its applications 	<ul style="list-style-type: none"> Solve problems with bills and bank statements Calculate simple and compound interest Solve problems with Value Added Tax Calculate wages and taxes Solve problems and exchange rates Solve unit pricing problems Calculate the time period given principal, rate and final amount. Understand and use the terms debit and credit 	<ul style="list-style-type: none"> Recap angles in parallel lines Solve angle problems, using chains of reasoning Solve angle problems with algebra Conjecture with angles Conjecture with shapes Link constructions and geometrical reasoning Use the angle sum of polygons to solve algebraic problems. 	<ul style="list-style-type: none"> Identify the order of rotational symmetry of a shape Compare and contrast rotational symmetry with lines of symmetry Rotate a shape about a point on, or not on, a shape Translate points and shapes by a given vector Compare rotation and reflection of shapes Find the result of a series of transformations Describe transformations fully 	<ul style="list-style-type: none"> Use squares and square roots Identify the hypotenuse of a right-angled triangle Determine whether a triangle is right-angled Calculate the hypotenuse and missing sides of a right-angled triangle Use Pythagoras' Theorem on coordinate axes Explore proofs of Pythagoras' Theorem Use Pythagoras' Theorem in 3D shapes Prove a triangle is right-angled, using Pythagoras' Theorem
Links to prior learning	<ul style="list-style-type: none"> Times tables facts to 12 x 12 Use the four operations, including written methods 	<ul style="list-style-type: none"> Understand how to find a percentage of an amount with and without a calculator 	<ul style="list-style-type: none"> Convert between pounds and pence 	<ul style="list-style-type: none"> Angles on a straight line, in a triangle and a quadrilateral 	<ul style="list-style-type: none"> Understand lines of symmetry in regular polygons 	<ul style="list-style-type: none"> Understand the meaning of square numbers and square roots
Cultural Capital Opportunities	Lowest Common Multiple Sudoku	Calculating your pocket money	VAT explained	Logic Puzzles	Transformation Art	Calculate the diagonal Length of your garden Real Life Use of Pythagoras
Assessment Focus	Formative assessment on the half term's content covering a full variety of fluency, application and problem-solving questions, lasting approximately 45 minutes.			Whiterose end of term assessment on the full term's content, lasting approximately 45 minutes-90 minutes depending on Maths set.		
Knowledge Organiser	 Unit-06---Numbers-KO.pdf	 Unit-07---Using-Percentages-KO.pdf	 Unit-08---Maths-and-Money-KO.pdf	 Unit-09---Deduction-KO.pdf	 Unit-10---Rotations-and-Translation-KO.pdf	 Unit-11---Pythagoras-Theorem-KO.pdf

Year 9	Term 3				
Unit title	Enlargement and similarity	Solving ratio and proportion problems	Rates	Probability	Algebraic representation
Approximate Number of Lessons	6	6	6	6	3
Curriculum Content	<ul style="list-style-type: none"> Recognise enlargement and similarity Enlarge a shape by a positive integer Enlarge a shape by a positive integer from a point Enlarge a shape by a fractional scale factor Work out missing sides and angles in a pair of given similar shapes Enlarge a shape by a negative scale factor Solve problems with similar triangles Explore ratios in right-angled triangles 	<ul style="list-style-type: none"> Solve problems with direct proportion Use direct proportion and conversion graphs Solve problems with inverse proportion Solve ratio problems given the whole or a part Solve best buy problems Identify graphs of inverse relationships Solve problems with ratio and algebra 	<ul style="list-style-type: none"> Solve speed, distance and time problems with and without a calculator Use distance time graphs Solve problems with density, mass and volume Solve flow problems and their graphs Calculate rates of change and understand the units used Convert compound units Convert between L and cm^3 	<ul style="list-style-type: none"> Find the probability of single events Find the relative frequency of an event happening Calculate the number of expected outcomes, given the relative frequency Understand independent and dependent events Use diagrams to work out probabilities Use probability notation Use tree diagrams to calculate the probability of two independent events Use tree diagrams to solve 'without replacement' problems, with dependent events 	<ul style="list-style-type: none"> Recap substitution into expressions Complete a table of values Recognise patterns in a table of values for quadratic graphs Draw and interpret quadratic graphs Compare quadratic graphs and their intercepts Interpret other graphs, including reciprocal, cubic and exponentials Represent inequalities on a set of axes Draw multiples of reciprocal graphs Investigate graphs of simultaneous equations
Links to prior learning	<ul style="list-style-type: none"> Understand what the term scale factor means Know times tables facts to 12 x 12 Understand how to find a fraction of an amount 	<ul style="list-style-type: none"> Simplify ratios Find equivalent ratios Share a ratio into an amount 	<ul style="list-style-type: none"> Understand how to convert between units of measure 	<ul style="list-style-type: none"> Know and use the language of probability e.g. likely, unlikely, certain. 	<ul style="list-style-type: none"> Understand how to substitute numerical values into formulae and expressions Understand how to simplify expressions
Cultural Capital Opportunities	Fractional scale factors in real life How big is Hagrid?	On a shopping trip work out the best buys for different product sizes and amounts	Work out the average speed of a journey you make (Eg: a car journey)	What is the probability of winning the National Lottery? Probability in real life	The perfect throw
Assessment Focus	Formative assessment on the half term's content covering a full variety of fluency, application and problem-solving questions, lasting approximately 45 minutes.			Whiterose end of term assessment on the full term's content, lasting approximately 45 minutes-90 minutes depending on Maths set.	
Knowledge Organiser	 Unit-12---Enlargement-and-Similarity-Ki	 Unit-12---Solving-ratio-and-proportion-pr	 Unit-13---Rates-KO.pdf	 Unit-14---Probability-KO.pdf	 Unit-15---Algebraic-Representation-KO.pc