Main Scheme - 8 x 1hrs per fortnight

Constructions	R - construct and interpret scale drawings
	Locus of distance from a point
	Locus of distance from a straight line/shape
	Locus of points equidistant from two points
	construct a perpendicular bisector
	Construct a perpendicular from a point
	Construct a perpendicular to a point
	Locus of distance from two lines
	Construct an angle bisector
	Construct triangles from given information
	Solve loci problems
Congruence, similarity & enlargement	Enlarge a shape by a positive integer scale factor
	Enlarge a shape by a fractional scale factor
	H - Enlarge a shape by a negative scale factor
	Identify similar shapes
	R - Work out missing sides and angles in a pair given similar shapes
	R - Use parallel line rules to work out missing angles; Establish a pair of triangles are similar
	H - Explore areas of similar shapes
	H - Explore volumes of similar shapes
	H - Solve mixed problems involving similar shapes
	Understand the difference between congruence and similarity
	Understand and use conditions for congruent triangles
	H - Prove a pair of triangles are congruent
Representing Linear Equations & inequalities	Understand the meaning of a solution
	R - Form and solve one-step and two-step inequalities
	R - Form and solve one-step and two-step equations
	R - Form and solve equations with unknowns on both sides
	Form and solve inequalities with unknowns on both sides
	Form and solve more complex equations and inequalities (inc. with brackets and fractions)
	Form and solve equations and inequalities in the context of shape Show solutions to inequalities on a number line
	Interpret representations on number lines as inequalities
	H - Represent solutions to inequalities using set notation
	R - Draw straight line graphs
	Find solutions to equations using straight line graphs
	H - Represent solutions to single inequalities on a graph
	H - Represent solutions to multiple inequalities on a graph

Simultaneous Equations	Understand that equations can have more than one solution
	Determine whether a given (x, y) is a solution to a pair of linear simultaneous equations
	Solve a pair of linear simultaneous equations by substituting a known variable
	Solve a pair of linear simultaneous equations by substituting an expression
	Solve a pair of linear simultaneous equations by using graphs
	Solve a pair of linear simultaneous equations by subtracting equations
	Solve a pair of linear simultaneous equations by adding equations
	R - Use a given equation to derive related factors
	Solve a pair of linear simultaneous equations by adjusting one equation
	Solve a pair of linear simultaneous equations by adjusting both equations
	Form and solve a pair of linear simultaneous equations from given information
Non-calculator methods	R - Mental/written methods of integer/decimal addition and subtraction
	R - Mental/written methods of integer/decimal multiplication and division
	R - The four rules of fraction arithmetic
	Use number sense (related calculations & mental strategies)
	H - Rational and irrational numbers (convert recurring decimals here)
	H - Understand and use surds
	H - Calculate with surds
	R - Rounding to decimal places and significant figures
	R - Estimating answers to calculations
	Understand and use limits of accuracy (error intervals)
	H - Upper and lower bounds
Angles and Bearings	R - Use cardinal directions and related angles
	Understand and represent bearings
	Measure and read bearings
	R - Draw and interpret scale diagrams
	Make scale drawings using bearings
	Calculate bearings using angles rules
Trigonometry	Explore ratio in similar right-angled triangles; Work fluently with the hypotenuse, opposite and adjacent side
	Use the tangent ratio to find missing side lengths
	Use the sine and cosine ratio to find missing side lengths
	Use sine, cosine and tangent to find missing angles
	R - calculate sides in right-angled triangles using Pythagoras' Theorem
	Select the appropriate method to solve right-angled triangle problems
	Work with key angles in right-angled triangles (non-calc trig, including exact values)
	H - Use trigonometry in 3-D shapes
	H - Use the formula 1/2abSinC to find the area of a triangle
	H - Understand and use the sine rule to find missing lengths
	H - Understand and use the sine rule to find missing angles
	H - Understand and use the cosine rule to find missing lengths
	H - Understand and use the cosine rule to find missing angles
	H - Choosing and using the sine and cosine rules
	Solve bearings problems using Pythagoras and trigonometry **(H - inc sine and cosine rules)**

Working with circles	Recognise and label parts of circle
	Calculate fractional parts of a circle
	Calculate the length of an arc
	Calculate the area of a sector
	Understand and use the volume of a cylinder and cone
	Understand and use the volume of a sphere
	Undertand and use the surface area of a sphere
	Understand and use the surface area of a cylinder and cone
	R - H - Solve area and volume problems involving similar shapes
Vectors	Undertand and use the surface area of a sphere
	R - H - Solve area and volume problems involving similar shapes
	Understand and represent vectors
	Use and read vector notation
	Draw and understand vectors multiplied by a scale
	Draw and understand addition of vectors
	Draw and understand addition and subtraction of vectors
	H - Explore a vector journeys in shapes
	H - Explore quadrilaterals using vectors
	H - Understand parallel vectors
	H - Explore collinear points using vectors
	H - Use vectors to construct geometric arguments and proofs
Types of Number and sequences	*R - Understand the difference between factors and multiples*
	R - Understand primes and express a number as a product of its prime factors
	R - Find the HCF and LCM of a set of numbers
	Describe and continue arithmetic and geometic sequences
	Explore other sequences
	H - Describe and continue sequences involving surds
	R - Find the rule for the nth term of a linear sequence
	H - Find the rule for the nth term of a quadratic sequence
Ratio & Fractions	*R- Compare quantities using a ratio*
	R - Share in a ratio (given total or one part)
	R - Link ratios and fractions
	Use ratios and fractions to make comparisons
	R - Link ratios and graphs
	Solve problems with currency conversion
	R - Link ratios and scales
	Use and interpret ratios of the form 1:n and n:1
	Solve 'best buy' problems
	Combine a set of ratios
	Link ratio and algebra
	H - Ratio in area problems
	H - Ratio in volume problems
	Mixed ratio problems

Probability	*R - Know how to add, subtract and multiply fractions*
	R - Find probabilities using equally likely outcomes
	R - Use the property that probabilities sum to 1
	Using experimental data to estimate probabilties
	Work with organised lists
	H - Use the product rule for counting
	R - Construct and interpret sample spaces for more than one event
	Find probabilities from tables, Venn diagrams and frequency trees
	Calculate probability with independent events
	Use tree diagrams for independent events
	User tree diagrams for dependent events
	H - Contstruct and interpret conditional probabilities (Tree diagrams)
	H - Construct and interpret conditional probabilities (Venn diagrams and two-way tables)
Collecting, representing & interpreting data	Understanding populations and samples; Primary and secondary data
	Construct and interpret frequency tables and frequency polygons
	Construct and interpret line and bar charts (including composite bar charts)
	R - Construct and interpret pie charts
	Criticise charts and graphs
	H - Construct histograms
	H - Interpret histograms
	R - Find and interpret averages from a list
	R - Find and interpret averages from a table
	R - Construct and interpret time series graphs
	H - Construct and interpret cumulative frequency diagrams
	H - Use cumulative frequency diagrams to find measures
	H - Construct and interpret box plots
	Compare distributions using charts and measures/**H - Compare distributions using complex charts and measures**
	R - Construct and interpret scatter graphs
	R - Draw and use a line of best fit
	Understand extrapolation