

Key Stage 3 - Maths

	Topic / Objectives	Knowledge taught	Big picture links	Keywords	Key Skills
Autumn Term 1 st Half-term	Number Properties 1 Geometry and Measure / Angles Number Properties 2 Algebra	Review of written methods of four operations; using place value for integers and decimals and directed numbers Angle names, methods and facts Testing for divisibility, finding factors, primes and prime factors Using symbols and simplifying algebraic expressions	DT – calculation skills Maths skills are skills for life	Integer, direct number, factor, multiple, prime; simplify, term, expression;	calculation skills and using facts about properties of number; substituting values into formula; using algebraic notation
Autumn Term 2 nd Half-Term	Data charts / Averages Algebra 2 Fraction /Decimals /Percentages Proportion1/Ratio/Scales	-Drawing/presenting data graphs, table and charts. -Finding averages using mean, mode, median and range. Algebra: simplify, expand and factorise -Converting between FDP Finding the percentage of an amount Reducing ratio to its lowest form. Understanding equivalent ratio. -Compare proportion, understanding a recipe. Sharing in a ratio.	Geography – presenting data about global warming; average temperatures DT –using ratio and scale Maths is relevant to their daily lives	averages, mode, median, mean and range; expand, factorise, indices; fraction, decimal, percentage, denominator, numerator, equivalent; ratio, proportion	data skills and presenting data in a table; using algebraic methods; understanding and using equivalence of fractions, decimals when working with ratio.
Spring Term 1 st Half-Term	Sequences/Graphs Estimation Shape properties	-Generate a sequence given the nth term. Identify the term-to-term rule. -Plotting graphs by recognising patterns with co-ordinates. Plotting simple linear functions. - Place value and rounding to 2sf -Recognising basic 2D and 3D shapes. -Be able to sketch and accurately draw shapes. -Identify properties of regular polygons. Recognise order of symmetry in planes of shapes; measure and converting between metric units.	Geography – population dynamics DT – measure and time	sequence, square, cube and triangular numbers, coordinates, plot; estimating and rounding, significant figure; perpendicular, parallel, polygon, symmetrical	problem-solving by using a general rule; making estimates; using properties of shape to solve problems;
Spring Term 2 nd Half-Term	Algebra 3 Transformation Probability	-Substitute values into standard formulae including areas, volume SUVAT equation and compound measures. -Recognise differences between equation/ identify/ formula. -Rearranging formulae to make the subject.	PSHE – language of probability Geography – substituting values	formula, substitution, speed, density, mass; translate; reflect, rotate and	problem-solving by using formula; using methods to transform shapes; using known facts to work with probability

		<ul style="list-style-type: none"> -Recall 2D shapes. Identify symmetries, rotation and reflection. Recognise congruent shapes. -Enlargement of 2D shapes, including given centre of enlargement and positive scale factor. -Understand the meaning of basic language of probability. -Create combination and sample space. -Carry out simple dice experiments and record results. 	Maths is relevant to their daily lives	enlarge; outcome, event, frequency	
Summer Term 1 st Half-Term	Circles and tessellations Interpreting data Triangle and Construction;	<ul style="list-style-type: none"> -use compass to draw circles. Identify and label parts of a circle -Identify formulas for area and circumference of circles. To tessellate shapes and know why some shapes tessellate -Plotting co-ordinates on a scatter graph. -describing the relationship between two variable, drawing line of best fit to find estimated values. -Using rules and compass to construct a given triangle. -Bisecting a line and an angle. Recognise and use perpendicular distance from a point to a line as the shortest distance to the line. 	Art – Fibonacci sequence and tessellating Geography – global warming Science – data and size of particles	radius, circumference, diameter, arc, sector, segment; correlation, line of best fit, outlier; construct, arc, bisect, equidistant; tessellation	geometrical skills when working with circles; statistical skills when interpreting scatter graphs; geometrical skills when constructing shapes
Summer Term 2 nd Half-Term	Proportion2 Plotting graphs Equation/Inequalities	<ul style="list-style-type: none"> -Be able to use percentages, understand simple proportion and able to plot graphs where quantities are in direct proportion. -Understand direct and inverse proportion. -Plotting coordinates in all 4 quadrants. -Be able to substitute integers into formulae and equations. -Draw straight line graphs using a table of values. -Recognise gradient and intercepts, understanding $y=mx+c$ -Solving one and two stage equations. -Be able to solve with brackets. -Be able to create an equation given a worded problem and then solve it. 	Geography – plotting / interpreting graphs about natural disasters History – plotting and interpreting data about migration Maths skills are skills for life; solving mathematical problems can involve trial and error and making estimates	direct and inverse proportion, compound and simple interest; gradient; intercept, horizontal, vertical, linear, quadrant; equation, variable, solve.	numeracy skills in understanding proportion; graphical skills in plotting and recognising graphs; learn how to answer command “ solve” when solving equations