

Year 7	Content	Extension
Place value, addition and subtraction	Place value (including decimals)	Investigate how numbers are represented in different bases. Consider the advantages/disadvantages of addition and subtraction in these bases.
	Add and subtract (including decimals)	
	Estimation	
	Perimeter	
	Word problems	
Place value, multiplication and division	Factors, HCF, multiples, LCM	Explore and compare different multiplication methods
	Multiply and divide (including decimals)	
	Area of rectangle and triangle	
	Calculate the mean	
Geometry: 2D shape in a 3D world	Draw, measure and name acute and obtuse angles	Use geoboards to find different types of triangles with a given area.
	Find unknown angles (straight lines, at a point, vertically opposite)	
	Properties of triangles and quadrilaterals	
Fractions	Equivalent fractions	Show me an equivalent calculation to $\frac{3}{5}$ which: - uses fractions - does not use fractions
	Compare and order fractions and decimals	
	Change mixed numbers to improper fractions and vice versa	
	Fraction of a quantity	
	Multiply and divide fractions	
Applications of algebra	Order of operations	Discuss the ambiguous sequence: 3,7,15...

	Substitution	What assumptions do we make? What is the least amount of information we need to define a sequence?
	Simplify algebraic expressions	
	Solve word problems with expressions	
	Sequences (term-to-term, not nth term)	
Percentages and pie charts	Construct and interpret statistical diagrams including pie charts	Kieran, Tyrell and Sian were sharing a pizza. Kieran's share was 80% the size of Tyrell's. Sian's share was 25% the size of Kieran. What percentage of the pizza did they each receive?
	Convert between percentages, vulgar fractions and decimals	
	Percentage of a quantity	
	Find the whole, given the part and the percentage	

Year 8		Content	Extension
Autumn 1	Number	Prime factorisation to find LCM, HCF, squares, cubes	Find a multiple of 5 and a multiple of 6 that have a difference of 11, find a multiple of 7 and a multiple of 4 that add to make a total of 100.
		Primes and indices	
		Venn diagrams	
		Enumerating sets	
		fractions	
Autumn 2	Algebraic expressions	Negative numbers and inequality statements	How many squares (of all sizes) are there on a chessboard? Investigate, recording the frequency of different sized squares
		Formulate and evaluate expressions	
		Linear equations	
		Expressions and equations from real-world situations	
		Linear sequences: nth term	
Spring 1	2-D geometry	Draw accurate triangles and quadrilaterals (ruler, protractor, compasses)	Four rods, two of length a and two of length b , are linked to form a kite, as shown in the diagram. The linkage is moveable so that the angles change. What is the maximum area of the kite?
		Find unknown angles (including parallel lines)	
		Conversion between length units and between area units	
		Areas and perimeters of composite figures	
		Circumference and area of a circle	
		Areas of parallelograms and trapeziums	

Spring 2	Proportional reasoning	Convert between percentages, vulgar fractions and decimals	Which is the better special offer?
		Percentage increase and decrease, finding the whole given the part and the percentage	
		Ratio (equivalent, of a quantity) and rate	
Summer 1	Statistics	Collect and organise data	There are several sets of five positive whole numbers with the following properties: median = 4 mean = 3 and mode = 3 Can you find all the different sets of five positive whole numbers that satisfy these conditions?
		Interpret and compare statistical representations	
		Mean, median and mode averages	
		The range and outliers	
		Probability	
Summer 2	3D Geometry	Speed, distance, time	The areas of the faces of a cuboid are 3, 12 and 25 cm ² . What is the volume of the box?
		Visualise and identify 3-D shapes and their nets	
		Volume of cuboid, prism, cylinder, composite solids	
		Introduction to Pythagoras' Theorem	
		Transformations	