

Grade	Number	RP&ROC	Geometry	Algebra
6	Use inequality notation to specify simple error intervals due to truncation or rounding	Use expressions of the form $y \propto x^2$	Prove and use the fact that the angle in a semicircle is a right angle ;	Solve quadratic equations by completing the square
	Estimate powers and roots of any given positive number	Identify direct proportion from a table of values by comparing ratios of values	Prove and use the fact that angles in the same segment are equal	Expand double brackets $(ax \pm b)(cx \pm d)$
	Recall that $n^0 = 1$ and $n^{-1} = 1/n$ for positive integers $n$ as well as $n^{1/2} = \sqrt{n}$ and $n^{1/3} = \sqrt[3]{n}$ for any positive number $n$		Prove and use the fact that opposite angles of a cyclic quadrilateral sum to $180^\circ$	Square a linear expression and collect like terms
5	Convert between large and small numbers into standard form and vice-versa	Find the original amount given the final amount after a percentage change ( reverse percentages)	Solve problems involving angles, triangles and circles	Solve quadratic equations algebraically by factorising
	Multiply and divide numbers in standard form	Understand the implications of enlargement for perimeter	Use and apply Pythagoras' theorem to solve problems	Identify the line of symmetry of a quadratic graph
	Add and subtract in standard form	Identify the scale factor of an enlargement as the ratio of the lengths of any two corresponding line segments	Use the sine, cosine and tangent ratios to find the lengths of unknown sides in a right-angled triangle, using straight-forward algebraic manipulation, e.g. calculate the adjacent (using cosine), or the opposite (using sine or tangent ratios)	Identify and interpret roots, intercepts and turning points of a quadratic graph
	Order numbers written in standard index form		Understand the language of planes, and recognise the diagonals of a cuboid	
4			Add and Subtract vectors	
	Use prime factorisation to represent a number as a product of its primes using index notation	Use compound interest	Draw the locus equidistant between 2 points or from a point	Use systematic trial and improvement to find the approximate solution to one decimal place of equations such as $x^3 = 29$
	Find HCF and LCM using Prime Factors	Express a multiplicative relationship between two quantities as a ratio or a fraction	Mark on a diagram the position of point B given its bearing from the point A	Multiply out brackets involving positive terms such as $(a + b)(c + d)$ and collect like terms
	Find the reciprocal of simple numbers/fractions mentally, e.g. 10 and $1/10$ , $1/3$ and 3 etc.	Use measures in ratio and proportion problems ( currency conversion, rates of pay, best value)	Use accurate drawing to solve bearings problems	Rearrange simple equations
			Calculate the interior angles of polygons	Know that the gradient of a line is the change in $y$ over change in $x$ .
			Understand and use vector notation	Generate points and plot graphs of simple quadratic functions, then more general functions
3	Extend the patterns by using the index law for division established for positive power answers, to show that any number to the power of zero is 1	Use percentages in real-life situations: VAT, value of profit or loss, simple interest, income tax calculations	Use the sum of the exterior angles of any polygon is $360^\circ$	Plot the graphs of simple linear functions in the form $y = mx + c$ in four quadrants
	Multiply and divide by decimals, dividing by transforming to division by an integer	Convert between area measures (e.g. $\text{mm}^2$ to $\text{cm}^2$ , $\text{cm}^2$ to $\text{m}^2$ , and vice versa)	Know the formulae for the circumference and area of a circle	Solve linear equations with integer coefficients in which the unknown appears on either side or on both sides of the equation.
	Use standard column procedures to add and subtract integers and decimals of any size, including a mixture of large and small numbers with different numbers of decimal places	Solve a ratio problem in context	Identify congruent shapes	Substitute a positive value into the expression $x^2$
2	Know all the squares of numbers less than 16 and be able to know the square root given the square number	Convert one metric unit to another, including decimals (e.g. 3250 grams to 3.25 kilograms, or 3.25kg to 3250g)	Use straight edge and compasses to construct the mid point and perpendicular bisector of a line segment	Solve simple two-step linear equations with integer coefficients, of the form $ax \pm b = c$ , e.g. $3x + 7 = 25$
	Use division to convert a fraction to a decimal	Use a multiplier to increase or decrease by a percentage		Generate four quadrant coordinate pairs of simple linear functions
	Add and subtract simple fractions with denominators of any size			Substitute positive and negative integers into simple formulae
				Construct expressions from worded descriptions, using addition and subtraction $(a+3, 50-c)$ E.g. add 7 to a number (answer $n+7$ )
1	Check a result by considering if it is of the right order of magnitude	Find a percentage of a quantity using a multiplier	Use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS)	Simplify algebraic expressions by collecting like terms
	Order fractions, decimals and percentages	Use ratio notation	Know the definition of a set of lines which are perpendicular to each other	Find outputs of more complex functions and inputs using inverse operations
	Simplify fractions by cancelling all common factors		Use sum of angles in a triangle to find missing angle values	Read $x$ and $y$ coordinate in all four quadrants
	Use inverse operations			Multiply together two simple algebraic expressions, e.g. $2a \times 3b$
	Use the order of operations with brackets, including in more complex calculations			Read values from straight-line graphs for real-life situations
				Draw, label and scale axes
AE	Recognise and use multiples and factors (divisors) and use simple tests of divisibility	Recognise the equivalence of percentages, fractions and decimals	Distinguish between acute, obtuse and reflex angles	Use function machines to find coordinates
	Know and use the order of operations	Define percentages as number of parts per hundred	Use the formula for the area of a rectangle/square	Generate and describe simple integer sequences – square and triangle numbers
	Round numbers to decimal places	Draw lines and shapes to scale		Simplify simple linear algebraic expressions by collecting like terms (e.g. $a + a + a, 3b + 2b$ )
		Use and interpret maps and scale drawings, using a variety of scales and units		Read $x$ and $y$ coordinate in the first quadrant
		Estimate length using a scale diagram		Find outputs of simple functions in words and symbols
AS		Read and construct scale drawings	Use correct notation for labelling lines	
			Identify parallel lines	
AD	Use standard column procedures to add and subtract whole numbers	Convert a percentage to a number of hundredths or tenths.	Identify and name common solids: cube, cuboid, cylinder, prism, pyramid, sphere and cone	
	Add, subtract, multiply and divide integers - positive and negative		Know the terms face, edge and vertex	
			Record readings from scales to a suitable degree of accuracy	
			Understand and use the language associated with translations	
			Scale a shape on a grid (without a centre specified)	