Year 9	Big Questions	Small Questions Foundation	Small Questions Higher
Autumn 1	Calculations	• Read and write numbers • Understand place value of numbers • Order positive, negative and decimal numbers • Round to decimal places • Round to significant figures	• Order positive, negative and decimal numbers • Use of inequality signs • Round to decimal places • Round to significant figures • Listing outcomes (simple combination work)
		• Add and subtract positive numbers • Add and subtract negative numbers • Multiply and divide negative numbers	• Add and subtract positive and negative numbers • Multiply and divide negative numbers • Multiply and divide decimals • Calculations involving money • Order of operations
		• Multiply and divide decimals • Calculations involving money • Order of operations	• Writing numbers in standard form • Writing numbers from standard form • Multiplying and dividing in standard form
	MINI TEST		
	Standard Form / Algebra	• Writing numbers in standard form • Writing numbers from standard form • Multiplying and dividing in standard form	• Use algebraic notation • Substitute positive and negative values into expressions • Understand the difference between expressions, equation and formula • Simplify expressions by $+, -, \times, \div$
	Algebra	• Use algebraic notation • Substitute positive and negative values into expressions • Understand the difference between expressions, equation and formula • Simplify expressions by adding and subtracting • Simplify expressions by multiplying and dividing • Forming expressions	• Understand and use the laws of indices (multiplication, division and brackets) • Negative and fractional indices • Solving problems which involve indices (if $u=3^x$ show that 9^x+3^{x+1} can be written as u^2+3u)
		• Understand and use the laws of indices (multiplication, division and brackets) • Expand single brackets • Expand and simplify two sets of single brackets • Factorise into a single bracket	• Expand single brackets • Expand and simplify two sets of single brackets • Factorise into a single bracket • Factorise pairs of single brackets • Algebraic fractions

	MINI TEST		
	Angles and Polygons	• Recognise and name angles • Understand conventions for naming lines and angles • Calculate angles on a straight line and round a point • Calculate vertically opposite angles • Calculate missing angles in triangles and quadrilaterals • Calculate exterior angles in triangle and quadrilaterals	• Understand conventions for naming lines and angles • Calculate angles on a straight line and round a point • Calculate vertically opposite angles • Calculate missing angles in triangles and quadrilaterals • Calculate exterior angles in triangle and quadrilaterals • Derive and apply properties of special quadrilaterals
	HALF TERM ASSESSMENT		

Year 9	Big Questions	Small Questions Foundation	Small Questions Higher
Autumn 2	Angles and Polygons	• Calculate angles between parallel lines (alternate, corresponding and allied) • Give full geometric reasons for missing angles • Bearings	• Calculate angles between parallel lines (alternate, corresponding and allied) • Give full geometric reasons for missing angles • Bearings
	Algebra	• Solve linear equations: unknowns on one side and brackets • Solve linear equations: unknowns on both sides, including brackets	• Solve linear equations: unknowns on one side and brackets • Solve linear equations: unknowns on both sides, including brackets • Solve equations with fractional values
		• Solve equations involving fractions • Form algebraic expressions for angle problems • Solve missing angles problems using algebra (prior knowledge of simple equations required)	• Form algebraic expressions for angle problems • Solve missing angles problems using algebra (prior knowledge of simple equations required) • Give full geometric reasons for missing angles
	MINI TEST		
	Angles and Polygons	• Understand congruence and similarity • Prove congruence • Find missing lengths using similar shapes • Apply similarity to area and volume (extension)	• Understand congruence and similarity • Use congruence criteria for triangles (SSS, SAS, ASA, RHS) • Derive results about angles and sides • Prove congruence • Find missing lengths using similar shapes • Apply similarity to area and volume (extension)
		• Calculate interior and exterior angles in polygons • Calculate the angle sum of a polygon • Calculate missing angles in polygon problems • Solve missing angle problems using algebra (prior knowledge of simple equations required)	• Calculate interior and exterior angles in polygons • Calculate the angle sum of a polygon • Calculate missing angles in polygon problems • Solve missing angle problems using algebra (prior knowledge of simple equations required)
	MINI TEST		
	Sequences	• Describe a sequence • Generate a sequence from a term to term or position to term rule • Find the nth term of a linear sequence	• Describe a sequence • Generate a sequence from a term to term or position to term rule • Find the nth term of a linear sequence • Nth term of a quadratic sequence

	HALF TERM ASSESSMENT

Year 9	**Big Questions**	**Small Questions Foundation**	**Small Questions Higher**
1Spring	Handling Data	• Construct and use tally charts • Understand and explain sampling • Read and interpret data from: tables, bar charts, pie charts, frequency polygons	• Collecting data • Sampling methods • Constructing and reading two way tables
		• Constructing and reading two way tables • Construct pictograms • Construct bar charts, including comparative • Construct pie charts	• Construct and interpret bar charts • Construct and interpret pie charts • Construct and interpret histograms • Construct cumulative frequency and box and whisker plots
	MINI TEST		
	Handling Data	• Calculate the mean, mode, median and range • Calculate the mean, mode, median and range from a frequency table • Estimate the mean from a grouped frequency table	• Calculate the mean, mode, median and range • Calculate the mean, mode, median and range from a frequency table • Estimate the mean from a grouped frequency table
	Volume	• Properties of 3D shapes • Volume of a cuboid • Volume of a triangular prism • Volume of a cylinder	• Properties of 3D shapes • Volume of a cuboid • Volume of a prism • Volume of cones and spheres
	MINI TEST		
	Surface Area	• Surface area of a cuboid • Surface area of a triangular prism • Surface area of a cylinder (may need to recap area and circumference of a circle)	• Surface area of a cuboid • Surface area of a prism • Surface area of a cylinder (may need to recap area and circumference of a circle) • Surface area of cones and spheres • Volume and surface area of compound shapes
	HALF TERM ASSESSMENT		

Year 9	Big Questions	Small Questions Foundation	Small Questions Higher
Spring 2	Fractions, Decimals & Percentages	• Simplify fractions • Equivalent fractions • Convert between mixed and improper fractions • Order fractions and decimals • Converting between fractions, decimals and percentages	• Simplify fractions • Equivalent fractions • Fractions of an amount • Converting between fractions, decimals and percentages
		• Find a fraction of an amount • Add and subtract fractions • Multiply and divide fractions • Calculate with mixed numbers	• Add and subtract fractions • Multiply and divide fractions • Calculate with mixed numbers • Recurring decimals
	MINI TEST		
	Fractions, Decimals & Percentages	• Calculate the percentage of an amount • Find percentage increases and decreases • Percentage change • Calculate reverse percentages • Compound interest (extension)	• Calculate the percentage of an amount • Find percentage increases and decreases • Percentage change • Calculate reverse percentages • Compound interest (extension)
	Pythagoras & Trig	• Use Pythagoras to find the hypotenuse • Use Pythagoras to find a short side • Use Pythagoras to find any side • Use Pythagoras to find the length of a line	• Use Pythagoras to find the hypotenuse • Use Pythagoras to find a short side • Use Pythagoras to find any side • Use Pythagoras to find the length of a line
	MINI TEST		
	Pythagoras & Trig	• Label sides on a right angled triangle • Find missing sides using trig • Find missing angles using trig • Solve problems using Pythagoras and trig	• Label sides on a right angled triangle • Find missing sides and angles using trig • Solve problems using Pythagoras and trig • Angles of elevation and depression • 3D Pythagoras and trig (extension) • Introduce sine and cosine rule (extension)
	HALF TERM ASSESSMENT		

Year 9	Big Questions	Small Questions Foundation	Small Questions Higher
Summer 1	Formulae & Functions	• Substitute into formula • Using mathematical formula • Rearranging formula (changing the subject)	• Substitute into formula • Substitute into mathematical formulae • Rearranging formula (changing the subject)
		• Expand single brackets • Expand double brackets • Factorise single brackets • Factorise double brackets (of the form x^2+bx+c)	• Understand notation of functions • Calculate inputs and outputs of functions • Find composite functions • Inverse functions
	MINI TEST		
	Working in 2D/Algebra	• Measuring lines and angles • Understand conventions for labelling lines and angles • Draw and measure angles • Draw and measure bearings	• Algebraic equivalences • Expanding double brackets • Factorising quadratics (including the form ax^2+bx+c) • Solve quadratics using factorising • Completing the square (extension)
	Working in 2D	• Calculate the area of rectangles and triangles • Calculate the area of trapeziums • Calculate the area of compound shapes • Functional problems on area	• Measuring and drawing angles (revision) • Draw and measure bearings • Bearings problems • Recap of area of regular shapes • Compound area • Functional area problems • Area of circles and sectors (extension)
	HALF TERM ASSESSMENT		

Year 9	Big Questions	Small Questions Foundation	Small Questions Higher
Summer 2	Transformations	• Identify lines of symmetry • Reflect shapes in horizontal, vertical and diagonal lines • Reflect shape on a set of axes • Describe reflections • Identify rotational symmetry • Rotate shapes on a set of axes • Describe rotations	• Draw and describe reflections • Draw and describe rotations
		• Translate shapes on a set of axes using column vectors • Describe translations using column vectors • Enlarge shapes: positive and fractional scale factors • Enlarge shapes from a centre of enlargement • Describe enlargements	• Draw and describe translations • Draw and describe enlargements from a point, including negative scale factors
	MINI TEST		
	Ratio and Proportion	• Understand how to write ratio • Write ratio as a fraction • Simplify ratio • Divide an amount in a given ratio	• Simplify ratio • Write ratio as 1:n and n:1 • Divide an amount in a given ratio • Calculate proportion
		• Recipe problems • Unitary method • Direct proportion • Proportion problems	• Recipe problems • Unitary method • Direct proportion – leading to formal method • Inverse proportion – leading to formal method
	MINI TEST		
	Probability	• Use words to describe probability • Understand and use probability scales • Write probability as fractions (equally likely events)	• Write probability as fractions (equally likely events) • Probability experiments • Mutually exclusive events

		• Probability experiments • Expected outcomes • Mutually exclusive events • Draw and read Venn diagrams • Draw and read simple tree diagrams (extension)	• Draw and read Venn diagrams • Draw and read simple tree diagrams
	END OF YEAR ASSESSMENT		