Year 8	Number	Algebra	Ratio and Proportion (including FDP)	Geometry	Data Handling and Probability
Emerging	Investigate positive powers of 10. Calculate using the order of operations. Calculate with money. Solve problems involving time and the calendar.	Work with coordinates in all 4 quadrants. Form algebraic expressions. Use directed number with algebra.	Understand the meaning and represenation of ratio. Represent multiplication of fractions. Convert fluently between key decimals, fractions and percentages.	Understand and use basic angle rules and notation. Investigate angles between parallel lines and the transversal. Calculate the area of triangles, rectangles and parallelograms. Recognise line symmetry.	Draw and interpret scatter graphs. Identify different types of data. Cnstruct sample spaces for one or more events. Understand and use the mean, median, mode and range. Set up a statistical enquiry and design/criticise questionnaires.
Developing	Work with numbers greater than 1 in standard form. Investigate negative powers of 10. Convert metric units of length, weight and capacity.	Identify and draw lines that are parallel to the axes. Recognise and use the ine y=x. Multiply out a single bracket. Generate sequences given a rule in words. Add and subtract expressions with indices.	Understand and use ratio notation. Solve problems involving direct proportion. Multiply a fraction by an Intger. Convert between decimals and percentages greater than 100%. Calculate fractions, decimals and percentages of amounts.	Identify and calculate with alternate, co-interior and corresponding angles. Calculate the area of a trapezium. Reflect a shape in a horizontal or vertical line.	Understand and describe linear correlation. Draw and use a line of best fit. Find probabilities from sample space diagrams. Draw and interpret pictograms, bar charts, vertical line graphs and multiple bar charts.
Securing	Work with numbers between 0 and 1 in standard form. Compare and order numbers in standard form. Add, subtract, multiply and divide numbers in standard form. Round numbers to powers of 10 and 1 significant figure. Round numbers to a given number of decimal places.	Recognise and use lines in the form y=kx and link it to direct proportion problems. Recognise and use lines in the form y=k+a. Expand Multiple single brackets and simplify. Factorise into a single bracket. Form and solve equations, including with brckets. Generate sequences given a simple algebraic rule. Simplify algebraic expressions by multipliying and dividing indices.	Compare ratios and fractions. Express ratios in their simplest form. Divide into a given ratio. Solve problems involving ratios of the form 1:n and m:n. Explore relationships between similar shapes and find scale factors. Convert between currencies. Explore conversion graphs. Multiply and divide with unit fractions. Express one number as a percentage or fraction of another. Calculate percentage increase and decrease with a multiplier.	Solve complex problems with parallel line angles. Construct triangles and special quadrilaterals. Investigate properties of quadrilaterals. Identify and calculate with sides and angles of quadrilaterals. Calculate the area and perimeter of compound shapes. Investigate the area of a circle. Reflect a shape in a diagonal line.	Read and interpret grouped and ungrouped frequency tables. Represent grouped discrete and continuous data. Construct and interpret two-way tables. Find probabilities from two-way tables and Venn diagrams. Choose the most appropriate average. Draw and interpret pie charts and line graphs. Choose the most appropriate diagram for a given set of data. Represent and interpret grouped quantative data.
Advancing	Use a calculator to work with numbers in standard form. Estimate the answer to a calculation.	Multiply and divide with algebraic fractions. Plot graphs of the form y=mx+c. Explore graphs with negative gradients. Link graphs to linear sequences. Identify and use formulae, equations, expressions and identities. Understand and solve inequalities. Generate sequences given a complex algebraic rule. Use the addition and subtraction laws for indices.	Understand pi as a ratio. Interpret maps using scale factors and ratios. Draw and interpret Scale Diagrams. Multiply and divide with any fractions, including mixed numbers. Work with percentage change. Choose appropriate methods to solve percentage problems.	Understand and use the interior and exterior angles of any polygon. Calculate interior and exterior angles in regular polygons. Calculate the area of a circle and parts of a circle. Calculate the area and perimeter of more complex compound shapes	Use the product rule for finding the total number of possible outcomes. Compare distributions using the averages and the range. Compare distributions using charts. Identify outliers.
Mastering	Understand and use negative and fractional indices. Understand and use error interval notation. Convert metric units of area and volume.	Expore the gradient of lines in the form y=kx. Explore non-linear graphs. Find the midpoint of a line segment. Expand a pair of binomials. Solve equations and inequalities with unknowns on both sides. Find the rule for the nth term of a linear sequence. Explore powers of powers.	Express ratios in the form 1:n. Understand gradient as a ratio. Explore direct proportion graphs. Find the original amount given a percentage less than or more than 100%. Choose appropriate methods to solve complex percentage problems.	Prove simple geometric facts. Construct an angle bisector. Construct a perpendicular bisector.	Identify misleading graphs. Find the mean from an ungrouped and grouped frequency table.