

<u>Y8 Autumn HT 1 -</u>	<u>Y8 Autumn HT 2 -</u>	<u>Y8 Spring HT 1 -</u>	<u>Y8 Spring HT 2 -</u>	<u>Y8 Summer HT 1 -</u>	<u>Y Summer HT 2 -</u>
<u>Unit 1: Ratio and Scale</u> <ul style="list-style-type: none"> - Understand the meaning and representation of ratio. - Understand and use ratio notation. - Solve problems involving ratios of the form $1:n$ (or $n:1$). - Solve proportional problems involving the ratio $m:n$. - Divide a value into a given ratio. - Express ratios in their simplest integer form. - Express ratios in the form $1:n$. - Compare ratios and related fractions. - Understand π as the ratio between diameter and circumference. - Understand gradient of a line as a ratio <u>Unit 2: Multiplicative Change</u> <ul style="list-style-type: none"> - Solve problems involving direct proportion. - Explore conversion graphs. - Convert between currencies. - Explore direct proportion graphs. 	<u>Unit 4: Working in the Cartesian plane</u> <ul style="list-style-type: none"> - Work with co-ordinates in all four quadrants. - Identify and draw lines that are parallel to the axes. - Recognise and use the line $y=x$. - Recognise and use lines of the form $y=kx$. - Link $y=kx$ to direct proportion problems. - Explore the gradient of the line $y=kx$. - Recognise and use lines of the form $y=x+a$. - Explore graphs with negative gradient ($y=-kx$, $y=a-x$, $x+y=a$). - Link graphs to linear sequences. - Plot graphs of the form $y=mx+c$. - Explore non-linear graphs. - Find the midpoint of a line segment. <u>Unit 5: Representing data</u> <ul style="list-style-type: none"> - Draw and interpret scatter graphs. - Understand and describe linear correlation. - Draw and use line of best fit. 	<u>Unit 7: Brackets, equations and inequalities</u> <ul style="list-style-type: none"> - Form algebraic expressions. - Use directed number with algebra. - Multiply out a single bracket. - Factorise into a single bracket. - Expand multiple single brackets and simplify - Expand a pair of binomials. - Solve equations, including with brackets. - Form and solve equations with brackets. - Understand and solve simple inequalities. - Form and solve inequalities. - Solve equations and inequalities with unknowns on both sides. - Form and solve equations and inequalities with unknowns on both sides. - Identify and use formulae, expressions, identities and equations. 	<u>Unit 10: Fractions and percentages</u> <ul style="list-style-type: none"> - Convert fluently between key fractions, decimals and percentages. - Calculate key fractions, decimals and percentages of an amount without a calculator. - Calculate fractions, decimals and percentages of an amount using calculator methods. - Convert between decimals and percentages greater than 100%. - Percentage decrease with a multiplier. - Calculate percentage increase and decrease using a multiplier. - Express one number as a fraction or a percentage of another without a calculator. - Express one number as a fraction or a percentage of another using calculator methods. - Work with percentage change. - Choose appropriate methods to solve percentage problems. - Find the original amount given the percentage less than 100%. - Find the original amount given the percentage greater than 100%. - Choose appropriate methods to solve complex percentage problems. <u>Unit 11: Standard index form</u> <ul style="list-style-type: none"> - Investigate positive powers of 10. - Work with numbers greater than 1 in standard form. - Investigate negative powers of 10. 	<u>Unit 13: Angles in parallel lines and polygons</u> <ul style="list-style-type: none"> - Understand and use basic angles rules and notation. - Investigate angles between parallel lines and the transversal. - Identify and calculate with alternate and corresponding angles. - Identify and calculate with co-interior, alternate and corresponding angles. - Solve complex problems with parallel line angles. - Construct triangles and special quadrilaterals. - Investigate the properties of special quadrilaterals. - Identify and calculate with sides and angles in special quadrilaterals. - Understand and use the properties of diagonals of quadrilaterals. - Understand and use the sum of exterior angles of any polygon. - Calculate and use the sum of the interior angles in any polygon. - Calculate missing interior angles in regular polygons. - Prove simple geometric facts. - Construct an angle bisector. 	<u>Unit 16: The data handling cycle</u> <ul style="list-style-type: none"> - Set up a statistical enquiry. - Design and criticise questionnaires. - Draw and interpret pictograms, bar charts and vertical line charts. - Draw and interpret multiple bar charts. - Draw and interpret pie charts. - Draw and interpret line graphs. - Choose the most appropriate diagram for given set of data. - Represent and interpret grouped quantitative data. - Find and interpret the range, - Compare distributions using charts. - Identify misleading graphs. <u>Unit 17: Measures of location</u>

<ul style="list-style-type: none"> - Explore relationships between similar shapes. - Understand scale factors as multiplicative representations. - Draw and interpret scale diagrams. - Interpret maps using scale factors and ratios. <p><u>Unit 3: Multiplying & Dividing Fractions</u></p> <ul style="list-style-type: none"> - Represent multiplication of fractions. - Multiply a fraction by an integer. - Find the product of a pair of unit fractions. - Find the product of a pair of any fractions. - Divide an integer by a fraction. - Divide a fraction by a unit fraction - Understand and use the reciprocal. - Divide any pair of fractions. 	<ul style="list-style-type: none"> - Identify non-linear relationships. - Identify different types of data. - Read and interpret ungrouped frequency tables. - Read and interpret grouped frequency tables. - Represent grouped discrete data. - Represent continuous data grouped into equal classes. - Represent data in two-way tables. <p><u>Unit 6: Tables & Probability</u></p> <ul style="list-style-type: none"> - Construct sample spaces for 1 or more events. - Find probabilities from a sample space. - Find probabilities from two-way tables. - Find probabilities from Venn diagrams. - Use the product rule for finding the total number of possible outcomes. 	<p><u>Unit 8: Sequences</u></p> <ul style="list-style-type: none"> - Generate sequences given a rule in words. - Generate sequences given a simple algebraic rule. - Generate sequences given a complex algebraic rule. - Find the rule for the nth term of a linear sequence. <p><u>Unit 9: Indices</u></p> <ul style="list-style-type: none"> - Adding and subtracting expressions with indices. - Simplifying algebraic expressions by multiplying indices. - Simplifying algebraic expressions by dividing indices. - Using the addition law for indices. - Using the addition and subtraction law for indices. - Exploring powers of powers. 	<ul style="list-style-type: none"> - Work with numbers between 0 and 1 in standard form. - Compare and order numbers in standard form. - Mentally calculate with numbers in standard form. - Add and subtract numbers in standard form. - Multiply and divide numbers in standard form. - Use a calculator to work with numbers in standard form. - Understand and use negative indices. - Understand and use fractional indices. <p><u>Unit 12: Number sense</u></p> <ul style="list-style-type: none"> - Round numbers to powers of 10, and 1 significant figure. - Round numbers to a given number of decimal places. - Estimate the answer to a calculation. - Understand and use error interval notation. - Calculate using the order of operations. - Calculate with money. - Covert metric measures of length. - Convert metric units of weight and capacity. - Convert metric units of area. - Convert metric units of volume. - Solve problems involving time and the calendar. 	<ul style="list-style-type: none"> - Construct a perpendicular bisector of a line segment. <p><u>Unit 14: Area of trapezia and circles</u></p> <ul style="list-style-type: none"> - Calculate the area of triangles, rectangles and parallelograms. - Calculate the area of a trapezium. - Investigate the area of a circle - Calculate the area of a circle and parts of a circle without a calculator. - Calculate the area of a circle and parts of a circle with a calculator. - Calculate the perimeter and area of compound shapes. <p><u>Unit 15: Line symmetry and reflection</u></p> <ul style="list-style-type: none"> - Recognise line symmetry. - Reflect a shape in a horizontal or vertical line. - Reflect a shape in a diagonal line. 	<ul style="list-style-type: none"> - Understand and use the mean, median and mode. - Choose the most appropriate average. - Find the mean from an ungrouped frequency table. - Find the mean from a grouped frequency table. - Identify outliers. - Compare distributions using averages and the range.
--	---	--	---	---	---