# YEAR 8 COURSE GUIDE

| | Selected Success Criteria, from this year's course (Higher objectives in bold) | |
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| **UNIT 1: RATIO AND SCALE** | <ul><li>Understand the meaning and representation of ratio and ratio notation</li><li>Solve problems involving ratios in the form 1:n (or n:1) and m:n</li><li>Divide a value into a given ratio</li><li>Express ratios in their simplest integer form</li><li>Compare ratios and related fractions</li><li>Understand π as the ratio between diameter and circumference</li></ul> | |
| **UNIT 2: MULTIPLICATIVE CHANGE** | <ul><li>Solve problems involving direct proportion</li><li>Explore conversion graphs and convert between currencies</li><li>Explore relationships between similar shapes</li><li>Understand scale factors (include enlarging shapes)</li><li>Draw and interpret scale diagrams and interpret map using scale and ratio</li></ul> | |
| **UNIT 3: MULTIPLYING AND DIVIDNG FRACTIONS** | <ul><li>Represent multiplication of fractions</li><li>Multiply a fraction by an integer and find the product of any pair of fractions</li><li>Divide an integer by a fraction and divide any pair of fractions</li><li>Understand and use the reciprocal</li></ul> | |
| **UNIT 4: WORKING IN THE CARTESIAN PLANE** | <ul><li>Work with coordinates in all four quadrants</li><li>Identify and draw lines that are parallel to the axes</li><li>Recognise and use the line y =x and y = x + a</li><li>Recognise and use lines of the form y = kx and link to direct proportion</li><li>Explore graphs with negative gradient</li><li>Link graphs to linear sequences</li><li>Plot graphs of the form y = mx + c</li></ul> | |
| **UNIT 5: REPRESENTING DATA** | <ul><li>Draw and interpret scatter graphs including correlation and lines of best fit</li><li>Identify non-linear relationships</li><li>Identify different types of data</li><li>Read and interpret ungrouped and grouped frequency tables</li><li>Represent grouped discrete data and grouped continuous data</li><li>Represent data in two-way tables</li></ul> | |
| **UNIT 6: TABLES AND PROBABILITY** | <ul><li>Construct sample spaces for 1 or more events</li><li>Find probabilities from a sample space, Venn diagrams and two way tables</li></ul> | |
| **UNIT 7: BRACKETS, EQUATIONS AND INEQUALITIES** | <ul><li>Form algebraic expressions and use directed number with algebra</li><li>Multiply out a single bracket and multiple single brackets</li><li>Factorise into a single bracket</li><li>Form and solve equations with brackets</li><li>Form and solve inequalities</li><li>Identify and use formulae, expressions, identities and equations</li></ul> | |
| **UNIT 8: SEQUENCES** | <ul><li>Generate sequences from rules in words and algebra</li></ul> | |
| **UNIT 9: INDICES** | <ul><li>Adding and subtract expressions with indices</li><li>Multiply and divide algebraic expressions containing indices</li><li>Using the addition and subtraction law containing indices</li></ul> | |

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| **UNIT 10: FRACTIONS AND PERCENTAGES** | • Convert fluently between key fractions, decimals and percentages. (FDP) <br> • Calculate key FDP's of an amount with and without a calculator. <br> • Convert between decimals and percentages greater than 100% <br> • Calculate percentage increase and decrease using a multiplier <br> • Write one number as a fraction or percentage of another | |
| **UNIT 11: STANDARD FORM** | • Work with numbers in standard form, including writing and ordering. <br> • +. – x and ÷ numbers in standard form with and without a calculator <br> • Understand and use negative and fractional indices | |
| **UNIT 12: NUMBER SENSE** | • Round numbers to a given number of decimal places, powers of 10 and 1s.f. <br> • Calculate using the order or operations and estimate an answer <br> • Solve problems involving money, time and the calendar <br> • Convert using metric measures of length, mass and capacity | |
| **UNIT 13: ANGLES IN PARALLEL LINES AND POLYGONS** | • Understand and use basic angles rules and notation <br> • Identify and use co-interior, alternate and corresponding angles <br> • Construct triangles and special quadrilaterals and use their properties. <br> • Calculate and use the sum of the exterior angles and interior of any polygon | |
| **UNIT 14: AREA OF TRAPEZIA AND CIRCLES** | • Calculate the area of triangles, rectangles, parallelograms and trapeziums. <br> • Calculate the area of a circle and parts of a circle with/without a calculator <br> • Calculate the perimeter and area of compound shapes | |
| **UNIT 15: REFLECTION** | • Recognise line symmetry <br> • Reflect a shape in a horizontal, vertical or diagonal line | |
| **UNIT 16: THE DATA HANDLING CYCLE** | • Set up a statistical enquiry and design and criticise questionnaires <br> • Draw and interpret pictograms, bar charts and vertical line charts <br> • Draw and interpret pie charts, line graphs and multiple bar charts <br> • Find and interpret the range <br> • Compare distributions using graphs and identify misleading graphs. | |
| **UNIT 17: MEASURES OF LOCATION** | • Understand and use the mean, median and mode <br> • Compare distributions using averages and the range and identify outliers | |