YEAR 10 COURSE GUIDE

	Selected Success Criteria, from this year's course	
Powers and roots	• Evaluate powers with and without a calculator. • Work with square and cube numbers, and their respective roots • Use order of operations with powers and roots • Understand and evaluate powers negative powers and roots. • Use index laws (including power of 0) including with algebra	
Ratio and scale	• Simplify and divide into a ratio. • Draw and interpret accurate scale diagrams (map scales 1cm:4km etc) • Plot and interpret a bearing in a scale diagram	
Brackets	• Multiply our single and double brackets. • Factorise an expression into a single bracket	
Perimeter	• Work out and use the perimeter of shapes, compound shapes (including circles) • Calculate the circumference of a circle, and leaving your answer in terms of pi	
Algebra	• Be able to substitute positive and negative values into expressions and formulae. • Recognise between expressions, identities, equations, and formulas.	
Area	• Calculate the area of shapes up to quadrilaterals (including compound shapes) • Solve problems including more than one shape (area of a ... is 5 times the area of..) • Calculate the area of a circle leaving answers in terms of pi.	
Equations and inequalities	• Solve multi step linear equations (including unknown on both sides) • Solve equations linked to perimeter. • Identify and draw an inequality on a number line.	
Solids	• Draw plans and elevations. • Identify 3D shapes from 2D representations and label faces, edges, and vertices, including nets of simple 3D shapes. • Calculate the surface area of cubes, cuboids, and triangular prisms.	
Fractions	• Convert between fractions decimals and percentages. • Compare fractions with different denominators. • Use all four operations with fractions	
Angles	• Find missing angles (point, straight line, vertically opposite, triangles, quadrilaterals) • For and solve a linear equation in context of angles	
Linear graphs	• Plot linear lines that are parallel including (x= and y=) • Plot a line in the form of y = mx+c including a table of values	
Decimals	• Compare and order positive decimals. • Multiply and divide two decimals	
Statistics 1	• Look at and evaluate methods of data collection. • Find the mean, mode, median and range from a list of data. • Compare two distributions using averages and the ranges of data. • Find the mean, mode, median and range from a list of data from grouped data. • Plot points and identify correlation type from a scatter graph, describe the relationship shown. • Use a line of best fit to make predictions and identify outliers. • Understand that predictions will be unreliable outside the range of data (extrapolation)	
Formulae and functions	• Use function machines using values and algebra (find input and output) • Change the subject of a 2-step formula using all four operations	
Pythagoras	• Use Pythagoras to find missing lengths in right angled triangles. • Use Pythagoras to determine if a triangle is right angled. • Use Pythagoras to solve problems involving two joined triangles.	

Multiples, factors & primes	• Evaluate complex calculations involving integers and decimals. • Identify odd, even, and prime numbers. And understand multiples and factors. • Find HCF and LCM of numbers. • Express a number as a product of its primes	
Volume	• Calculate the volume of cubes, cuboids, triangular prisms, and cylinders. • Solve problems in context with volume of solids	
Rounding	• Round numbers to a given significant figure or decimal place. • Estimate by rounding, including when multiplying a decimal in context. • Decide whether an estimate is an over or underestimate. • Estimate when dividing by a decimal. • Identify the upper and lower bound of a number (power of 10, integer) • Truncate a decimal to a given number of decimal places	
Units and proportion	• Convert between standard metric units of length, mass, and capacity. • Solve simple problems involving speed, distance, and time. • Plot, interpret and complete a distance-time graph, including using the gradient as speed. • Solve problems involving density. • Solve simple problems in context with direct proportion. • Solve best buy/ best value problems.	
Percentages	• Calculate percentages without and with a calculator. • Increase/decrease amounts by a percentage and using a multiplier. • Compare two quantities using calculators. • Find the result of repeated percentage change using a calculator & multiplier. • Identify the percentage of a give change for profit or loss	
Statistics 2	• Use a sample to infer properties of a population using proportional reasoning. • Interpret and complete bar charts, bar line charts, and comparative bar charts. • Construct/interpret frequency polygons and pictograms. • Identify misleading diagrams and frequency trees	
Sequences	• Find the next term in a sequence and use the term-to-term rule • Use the position to term rule to identify terms of a sequence. • Find the nth term of an increasing or decreasing sequences	
Probability	• Use and know the probability scale. • Identify theoretical probability and use data to identify relative frequencies. • Calculate expected outcomes. • Use a Venn diagrams, two-way tables and sample space diagrams to identify theoretical probabilities. • Find missing probabilities in a table of numerical probabilities	