YEAR 9 COURSE GUIDE

	Selected Success Criteria, from this year's course	
UNIT 1: STRAIGHT LINE GRAPHS	• Identify/use the equations of lines parallel to the axes, y=x, and y=-x • Use a table of values to plot a line graph • Understand and use the line equation y = mx + c • Identify the equation of a line from its graph • Interpret the gradient and y-intercept of real-life graphs	
UNIT 2: FORMING AND SOLVING EQUATIONS	• Solve 1-step and 2-step equations and inequalities, including brackets • Solve inequalities where negative numbers are involved • Solve equations and inequalities with the unknown on both sides • Substitute into formulae and expressions • Rearrange 1-step formulae	
UNIT 3: TESTING CONJECTURES	• Identify factors, common factors, and the highest common factor • Identify multiples, common multiples, and the lowest common multiple • Identify prime numbers • Identify statements as true or false • Identify statements as always, sometimes or never true • Use mathematical argument to show that a statement is true	
UNIT 4: 3D SHAPES	• Use the language of vertices and edges • Identify/sketch/construct nets of cuboids and other 3D shapes • Identify/draw plans and elevations of 3D shapes • Calculate the area of rectangles, triangles, parallelograms, trapeziums and circles • Calculate the surface area of cubes, cuboids, prisms and cylinders • Calculate the volume of cubes, cuboids, prisms and cylinders	
UNIT 5: CONSTRUCTION AND CONGRUENCY	• Draw and measure acute, obtuse and reflex angles • Interpret scale drawings • Construct the locus of a distance from a point, and distance from a line/shape, or equidistant from two points • Construct a perpendicular bisector and perpendicular to/from a point • Construct the locus of points equidistant from two lines • Construct an angle bisector • Construct triangles using protractor and compasses • Identify congruent triangles using SSS, SAS, ASA, RHS	
UNIT 6: NUMBERS	• Understand the terms integer, real number, rational number • Work with directed number in algebraic contexts • Use prime factorisation to identify HCF and LCM • Add, subtract, multiply and divide fractions • Solve problems with integers, decimals, fractions and standard form	
UNIT 7: USING PERCENTAGES	• Convert between fractions, decimals and percentages • Increase/decrease by a percentage using a calculator • Identify the percentage of a given increase, decrease, profit or loss • Solve reverse percentage problems	

UNIT 8: **MATHS &** **MONEY**	• Understand/interpret bills and bank statements • Calculate simple interest, compound interest, wages, tax and VAT • Understand/use exchange rates • Solve problems using unit pricing	
UNIT 9: **DEDUCTION**	• Identify/calculate angles near parallel lines • Solve angle problems involving algebra • Conjecture with angles and shapes	
UNIT 10: **ROTATION &** **TRANSLATION**	• Identify line symmetry and rotational symmetry • Rotate a shape on a grid or on co-ordinate axes • Translate a shape using a vector • Identify rotations, reflections and invariance	
UNIT 11: **PYTHAGORAS'** **THEOREM**	• Calculate missing sides in right-angled triangles • Use Pythagoras' theorem to decide whether a triangle is right-angled	
UNIT 12: **ENLARGEMENT** **& SIMILARITY**	• Enlarge a shape using a positive integer or fraction scale factor • Use a centre of enlargement • Work out missing sides and angles in similar shapes	
UNIT 13: **SOLVING RATIO** **& PROPORTION** **PROBLEMS**	• Solve problems involving direct proportion • Interpret conversion graphs and relate them to direct proportion • Solve problems involving inverse proportion • Solve problems involving division in a ratio • Solve 'best buy' problems • Solve ratio problems involving algebra	
UNIT 14: **RATES**	• Solve problems involving speed, distance and time • Plot/interpret distance-time graphs • Solve problems involving density, mass and volume • Understand the units used for different rates of change	
UNIT 15: **PROBABILITY**	• Identify simple theoretical probabilities as decimals and fractions • Use experimental data to identify relative frequency and expected outcomes • Construct/use a sample space diagram for independent events • Use Venn diagrams and two-way tables to identify probabilities	