



Year 10 Mathematics Curriculum:						
Year 11 Curriculum Concepts:						
<ul style="list-style-type: none"> accurately recall facts, terminology, and definitions use and interpret notation correctly. accurately carry out routine procedures or set tasks requiring multi-step solutions. make deductions, inferences and draw conclusions from mathematical information. construct chains of reasoning to achieve a given result. 			<ul style="list-style-type: none"> present arguments and proofs assess the validity of an argument and critically evaluate a given way of presenting information. translate problems in mathematical or non-mathematical contexts into a process or a series of mathematical processes. make and use connections between different parts of mathematics. interpret results in the context of the given problem. evaluate methods used and results obtained. evaluate solutions to identify how they may have been affected by assumptions made. 			
interpret and communicate information accurately						
National Curriculum Links: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/239058/SECONDARY_national_curriculum_-_Mathematics.pdf						
Edexcel Specification Link: Edexcel GCSE and GCE 2014 (pearson.com)						
	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Topic - Block	<ul style="list-style-type: none"> Congruence, Similarity and Enlargement Trigonometry 	<ul style="list-style-type: none"> Represent solutions of equations & inequalities Simultaneous Equations 	<ul style="list-style-type: none"> Angles and Bearings Working with Circles Vectors 	<ul style="list-style-type: none"> Ratios and Fractions Percentages and Interest Probability 	<ul style="list-style-type: none"> Collecting, Representing and Interpreting Data Non-Calculator Methods 	<ul style="list-style-type: none"> Types of Numbers & Sequences Indices and Roots Manipulating Expressions
Vocab/ Literacy	<ul style="list-style-type: none"> Enlarge/Similar/Congruent Scale factor Ratio/Proportion Object/Image Fractional/ Negative scale factor Opposite/Adjacent/Hypotenuse Sine/Cosine/Tangent Inverse Exact value Sine/Cosine Rule 	<ul style="list-style-type: none"> Inverse Inequality Linear Intersect Satisfy Factorise Infinite/Finite Eliminate Coefficient Roots 	<ul style="list-style-type: none"> Bearing Chord/Tangent Arc/Circumference Sector/Segment Subtend Sphere/Hemisphere Cone/Frustrum/Cylinder Magnitude Resultant Collinear 	<ul style="list-style-type: none"> Convert Exchange rate Depreciate Growth/decay Simple/Compound Interest Power/Index/Exponent Iterate Complement Intersection Union 	<ul style="list-style-type: none"> Biased Outlier Trend Interpolate/Extrapolate Distribution Upper/Lower Quartile Interquartile Range Credit/Debit Error interval/truncate Quotient 	<ul style="list-style-type: none"> Arithmetic/Geometric Fibonacci Coefficient Index/Indices Exponent Standard form Identity Prove/Show/Justify Example/Counterexample Sum/Difference/Product
Knowledge, Skills and Understanding	<ul style="list-style-type: none"> Enlarge a shape with a positive integer, fractional and negative scale factors. Identify similar shapes and find missing lengths and angles. Calculate similar shapes area and volume. Understand the conditions of congruency. Prove triangles are congruent. Solve 2D Trigonometry problems finding missing lengths and angles. Solve 3D Trigonometry problems. Use the Trig formula to calculate triangle areas. Use the Sine and Cosine rules to find missing lengths and angles 	<ul style="list-style-type: none"> Form and solve equations and inequalities. Show solutions and interpret inequalities on a number line. Draw straight line graphs. Solve equations graphically. Represent and interpret graphical inequalities. Solve equations and inequalities with unknowns both sides. Solve quadratic equations by factorisation. Solve quadratic inequalities with one variable. Form and solve simultaneous equations algebraically and graphically (including one linear, one quadratic) Solve simultaneous equations with a third unknown 	<ul style="list-style-type: none"> Draw and interpret scale diagrams. Understand and represent bearings. Measure, read and calculate with bearings. Solve bearing problems using Pythagoras, Trigonometry, Sine, and Cosine Rules Recognise and label circle parts. Calculate arc lengths and sector areas. Circle theorems Calculate the volume and surface area of a cylinder, cone, or sphere. Solve similar shape (area/volume) problems. Understand, represent, and draw vectors (inc parallel vectors) Explore collinear points using vectors. Use vectors in geometric arguments and proofs 	<ul style="list-style-type: none"> Calculate with ratios (inc area and volume) Calculate Currency conversion and “Best Buy” problems. Convert/compare fractions, decimals and percentages. Calculate and solve problems with percentages. Calculate simple and compound interest. Growth and decay problems Iterative processes Solve percentage, ratio and fraction problems. Theoretical and experimental probabilities Calculate probabilities from diagrams and tables. Construct/interpret sample spaces. Draw and interpret independent and dependent tree diagrams. Construct and interpret conditional probabilities from diagrams/tables 	<ul style="list-style-type: none"> Construct a stratified sample. Construct and interpret frequency tables, frequency polygons, two-way tables, pie/line/bar charts, time series/scatter graphs, stem and leaf diagrams, cumulative frequency diagrams and box plots. Criticise graphs and charts. Construct and interpret histograms. Find and interpret averages from a list or table. Find and compare distributions. Apply $+ - \times \div$ mental/written methods for integers/decimals. Apply $+ - \times \div$ to fractions. Convert recurring decimals into fractions. Use and calculate with surds. Understand and use the limits of accuracy. Find and calculate with upper and lower bounds 	<ul style="list-style-type: none"> Express a prime number as a product if its prime factor. Find the HCF and LCM of a set of numbers. Describe and continue sequences (arithmetic, geometric, other, surds) Find the nth term rule of a linear or quadratic sequence. Calculate with indices (including fractional indices) Calculate with standard form. Simplify algebraic expressions and use identities. Add/Subtract/Multiply and Divide algebraic fractions. Form and solve equations and inequalities with fractions. Solve equations with algebraic fractions. Represent numbers algebraically. Algebraic arguments and proof
What we will assess	Summative assessment at the end of each block covering all topic areas including solving problems in context and exam style questions.					
Personal Development (Career applications)	<ul style="list-style-type: none"> CAD engineer Animator/Digital imaging Cartographer Game developer Surveyor/Architect Architecture/construction Clean energy engineers Crime scene investigators Music therapy 	<ul style="list-style-type: none"> Civil engineer Chemical engineer Electrical engineering Mechanical engineer Aerospace engineer Physicist Astronomers Insurance underwriter Mortgage lender/bank 	<ul style="list-style-type: none"> Transportation industry Architect Fashion/Product designer Artist Pilots/Sea captain Doctors/Scientists Epidemic analyst Meteorologist Engineers 	<ul style="list-style-type: none"> Banking/Finance/Real Estate Professional chefs Stockbrokers Computer programmer Architects Carpenters/Roofers Painters/Electricians Fire fighter Health support worker 	<ul style="list-style-type: none"> Actuarial analyst Civil service Data analyst/Scientist Financial risk analyst Market/Operational researcher Business analyst Chartered accountant Financial manager/trader Research scientist 	<ul style="list-style-type: none"> Fashion designer Architect Bio scientist Engineering Cryptologist Scientist/Geologists Demographics analyst Economists Bank/Insurance risk assessors

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Edexcel Specification Link: Edexcel GCSE and GCE 2014 (pearson.com)										
	Half term 1		Half term 2		Half term 3	Half term 4	Half term 5			
Topic	<ul style="list-style-type: none"> Number Skills (revision for foundation only) Transformations Equations and Inequalities Non-right-angled trigonometry 		<ul style="list-style-type: none"> Angle Facts and Circle Theorems Vectors Representing Data (revision for foundation only) Number Skills (revision for foundation only) 		Algebraic Graphs & Proof	Revision based on mock exams	Revision based on mock exams.			
Vocab/ Literacy	Fraction Numerator Denominator Decimal Percentage Positive/Negative Integer Equal to/Not equal to Inequality Bracket Index/indices Division Multiplication Addition Subtraction Factorise Transformation	Centre of rotation/enlargement Invariance Similar Congruent Variable Solve/Solution Inequality Linear Quadratic Inverse Greater/less than (or equal to) Set notation. Union Solid/dashed line	Roots Sum Product Sketch Axes Sine Cosine Reflect Rotate Translate Enlarge Scale factor Vector Mirror line Origin Satisfy Region	Bisect Right angle Column vector Direction Scalar Size Magnitude Arrow Parallel Multiplier Opposite Resultant Express Vector journey Fractional Collinear Justify/Prove	Show Pictogram Bar chart Line chart Tally Frequency Round Integer Decimal Add Subtract Multiply Divide Index/indices Bracket Square/Cube Roots	Radius Diameter Chord Centre Tangent Arc Sector Segment Semi-circle Circumference Hour Minute Second Multiple Factor Prime Divisible	Asymptote Infinity Reciprocal Tends towards Substitute Axes Co-ordinate Quadratic Cubic Gradient Intercept	Exponential Growth Decay Rapid Radius Diameter Pythagoras' Theorem Equation Origin Proof Odd Even Consecutive	Show that. Explain Give reasons. Evaluate Calculate Work out. Measure Construct Prove Simplify	Show that. Explain Give reasons. Evaluate Calculate Work out. Measure Construct Prove Simplify
Knowledge, Skills and Understanding	<ul style="list-style-type: none"> Convert between fractions, decimals, and percentages. Order fractions, decimals and percentages, positive and negative numbers Understand and use place value. Use efficient written methods for the four operations. Enlarge a shape using integer, fractional and negative scale factors. Describe transformations. Interpret and show solutions to inequalities on a number line. Solve linear and quadratic inequalities. Represent solutions to inequalities on a graph. Solve linear and quadratic simultaneous equations algebraically and graphically. Use the Sine and Cosine Rules to calculate missing sides and angles. 		<ul style="list-style-type: none"> Know and be able to use basic angle facts for triangles, quadrilaterals, straight line, at a point. Label and recognise parts of circles. Know and use the Circle theorems to work out missing angles. How to calculate with column vectors How to show a column vector in a diagram How to express a journey using vector notation Construct proof using vectors. How to represent information in a diagram, such as a bar chart or pictogram and read information. How to work with time in the 12- and 24-hour clocks How to list factors, multiples, and primes How to round to the nearest integer, 10, 100, 1000 and decimal places How to calculate squares, cubes, and roots How to use BIDMAS effectively 		<ul style="list-style-type: none"> How to plot reciprocal and exponential graphs using a table of values Work with the equation of a circle and find the equation of the tangent to a circle. How to sketch the transformations of functions How to construct a formal algebraic proof 	Revise a variety of topics based on class performance in mock exams, tailored to the class. This will build confidence and allow students to gain knowledge and understanding of the topics studied. This will lead to improved performance in exams.	Revise a variety of topics based on class performance in mock exams, tailored to the class. This will build confidence and allow students to gain knowledge and understanding of the topics studied. This will lead to improved performance in exams.			
What we will assess	Two complete series mock exams. Regular assessment will be interleaved using past exam questions and exam style questions to review attainment and progress.									
Personal Development	Design Architect Graphical designer Sales and retail	Roofer Builders Architects Joiners	Statistician Sports data analyst Research analyst Sales and retail Being able to tell the time and calculate with time, to be at a destination on time	Algebra skills are a key part of mathematics and are used in all branches of GCSE maths. <ul style="list-style-type: none"> Mechanics Scientists Mathematicians 	Preparation for final GCSE Maths exams and beyond.	Preparation for final GCSE Maths exams and beyond.				

