



**Key Stage 4 Maths
Programme of Study**



Year 9: GCSE Higher and Foundation					
Term 1		Term 2		Term 3	
Year 9 - A	Year 9 - B	Year 9 - A	Year 9 - B	Year 9 - A	Year 9 - B
<p>1 Number</p> <ul style="list-style-type: none"> Index notation and powers Multiply, add, subtract and divide (positive and negative numbers) <p>2 Number</p> <ul style="list-style-type: none"> Standard form notation Standard form calculations with and without a calculator <p>3 Number</p> <ul style="list-style-type: none"> Types of number - even, odd, prime, factors and multiples HCF and LCM BIDMAS <p>4 Algebra</p> <ul style="list-style-type: none"> Proof, simplifying and substitution Products, quotients, sums and differences <p>5 Algebra</p> <ul style="list-style-type: none"> Expanding brackets Factorising expressions <p>6 Algebra</p> <ul style="list-style-type: none"> Solving linear equations Understanding inequality notation and solving linear inequalities 	<p>7 Geometry</p> <ul style="list-style-type: none"> Angles on lines, around a point and parallel lines Properties of triangles, polygons, quadrilaterals and symmetry <p>8 Number</p> <ul style="list-style-type: none"> Equivalent, simplifying, mixed number, exact calculations and finding fractions of amounts Express one amount as a fraction of another amount <p>9 Number</p> <ul style="list-style-type: none"> Converting between fractions, decimals and percentages Order fractions, decimals and percentages Four operations with decimal including negative numbers without a calculator <p>10 Probability</p> <ul style="list-style-type: none"> Outcomes and relative frequency <p>11 Probability</p> <ul style="list-style-type: none"> Listing outcomes Venn diagrams <p>12 Geometry</p> <ul style="list-style-type: none"> Understanding the properties of 2D and 3d shapes 	<p>1 Algebra</p> <ul style="list-style-type: none"> Functions and changing the subject Generating sequences and finding the position to term rule <p>2 Algebra</p> <ul style="list-style-type: none"> Recognising special sequences and diagrammatical sequences Plotting co-ordinates from tables of values Using tables of values to plot quadratics functions <p>3 Number</p> <ul style="list-style-type: none"> Rounding to a whole number, decimal place, powers of 10 or significant figures Check and estimate without using a calculator Substitution decimal numbers into simple expressions <p>4 Algebra</p> <ul style="list-style-type: none"> Solve simultaneous equations graphically and use a graph to estimate a solution to a linear equation Recognise and sketch common graphs e.g. linear and quadratic Find approximate solutions to equations 	<p>5 Algebra</p> <ul style="list-style-type: none"> To find the gradient, y intercept and equation of a line Identify the equation of a line from more complication equations <p>6 Number</p> <ul style="list-style-type: none"> Comparing ratios to include comparing different units Use n:1 Share in a given ratio and express one ratio as fraction of another <p>7 Number</p> <ul style="list-style-type: none"> Reverse ratio, ratio problems in context, ratio and proportion problems in context <p>8 Geometry</p> <ul style="list-style-type: none"> To identify straight line graphs Complete reflections, rotations and translations using column vectors <p>9 Geometry</p> <ul style="list-style-type: none"> Complete enlargements with whole and fraction scale factors, identify scale factors and centre of enlargements o <p>10 Number</p> <ul style="list-style-type: none"> Complete percentage calculations 	<p>1 Geometry</p> <ul style="list-style-type: none"> Units of measure Perimeter and area <p>2 Geometry</p> <ul style="list-style-type: none"> Area of compound shapes Volume <p>3 Proportion</p> <ul style="list-style-type: none"> Conversion graphs Simple direct and inverse proportion <p>4 Geometry</p> <ul style="list-style-type: none"> Congruent triangles Similar shapes – linear, area and volume <p>5 Number</p> <ul style="list-style-type: none"> Compound units Kinematics formulae Speed, distance and time <p>6 Geometry</p> <ul style="list-style-type: none"> Pythagoras Trigonometry 	<p>7 Geometry</p> <ul style="list-style-type: none"> Pi, circumference, area and volume Surface area <p>8 Data</p> <ul style="list-style-type: none"> Presenting information in graphs and charts Interpreting information Averages <p>9 Statistics</p> <ul style="list-style-type: none"> Averages Analysing and interpreting data Plotting scatter diagrams <p>10 Geometry</p> <ul style="list-style-type: none"> Maps and scale drawings Constructing congruent triangles <p>11 Geometry</p> <ul style="list-style-type: none"> Constructing shapes, bisecting angles and perpendicular constructions

	<ul style="list-style-type: none"> To sketch in 2D and identify plans and elevations 	<ul style="list-style-type: none"> using systematic trial and improvement 	<ul style="list-style-type: none"> Percentage change Growth and decay 11 Geometry <ul style="list-style-type: none"> Polygons and symmetry Angles in a polygon 		
	Year 9 STEM day	Intermediate Maths Challenge			Maths Fun Day
Assessment: Teacher Assessment	Assessment: Autumn assessment	Assessment Teacher Assessment	Assessment: Spring assessment	Assessment: Teacher Assessment	Assessment: Summer assessment
Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.

Year 10: GCSE Higher					
Term 1		Term 2		Term 3	
<i>Year 10 - A</i>	<i>Year 10 - B</i>	<i>Year 10 - A</i>	<i>Year 10 - B</i>	<i>Year 10 - A</i>	<i>Year 10 - B</i>
1 Statistics <ul style="list-style-type: none"> Populations, samples and misconceptions Summarising data, averages and grouped frequency tables 2 Statistics <ul style="list-style-type: none"> Categorising data in graphs and identifying trends Constructing histograms and calculating average measures 3 Statistics <ul style="list-style-type: none"> Summarising data in cumulative frequency graphs and box plots Analysing data using averages such as the median, quartiles and interquartile range 4 Number <ul style="list-style-type: none"> Understanding prime numbers and index notation 	6 Algebra <ul style="list-style-type: none"> Factorising quadratics expressions where $a = 1$ and a is not $= 1$ Completing the square and substitution into formulae 7 Algebra <ul style="list-style-type: none"> Algebraic proof and formulae in real life context Changing the subject of a formula Kinematic formulae 8 Number <ul style="list-style-type: none"> Rounding and estimation Upper and lower bounds 9 Geometry <ul style="list-style-type: none"> Perimeter of shapes and circumference of a circle Area of a circle 	1 Geometry <ul style="list-style-type: none"> Perpendicular bisector and angle bisector Perpendicular from a point to a line Loci 2 Geometry <ul style="list-style-type: none"> Angles around a point, on a line and on parallel lines Angles in a polygon 3 Geometry <ul style="list-style-type: none"> Angles in a polygon Properties of triangles and quadrilaterals 4 Algebra and number <ul style="list-style-type: none"> Equivalent ratio and sharing in a ratio Direct proportion 5 Algebra <ul style="list-style-type: none"> Direct proportion Inverse proportion 6 Number <ul style="list-style-type: none"> Percentage change Growth and decay 	8 Algebra <ul style="list-style-type: none"> Linear equations in one unknown Quadratic equations in context 9 Algebra <ul style="list-style-type: none"> Completing the square and rearranging quadratic equations Simultaneous equations both linear in two variables Simultaneous equations with one linear and one quadratic in two variables 10 Number <ul style="list-style-type: none"> Calculations which include mixed numbers and BIDMAS Changing recurring decimals into fractions 	1 Number <ul style="list-style-type: none"> Index notation Estimating powers and roots Laws of indices and products and quotients 2 Number <ul style="list-style-type: none"> Standard form calculations 3 Number <ul style="list-style-type: none"> Exact calculations by leaving the answer as a fraction Leaving answers in terms of Pi, as surd or trigonometric value 4 Number <ul style="list-style-type: none"> Exact calculations, rounding and mensuration Manipulating surds and factorising 5 Algebra <ul style="list-style-type: none"> Solving linear and quadratic equations 	6 Algebra <ul style="list-style-type: none"> Solving linear inequalities graphically Plotting linear graphs from a table of values and representing them as dashed or solid line for the inequality 7 Geometry <ul style="list-style-type: none"> Units of measure Compound units of measure 8 Geometry <ul style="list-style-type: none"> Exact Trigonometric ratios Plans and elevations Pythagoras and Trigonometry Maps and scale drawings 9 Geometry <ul style="list-style-type: none"> Area of a triangle Applications of the Sine Rule, Cosine Rule and area of a triangle

Year 10: GCSE Foundation					
Term 1		Term 2		Term 3	
Year 10 - A	Year 10 - B	Year 10 - A	Year 10 - B	Year 10 - A	Year 10 - B
<p>1 Statistics</p> <ul style="list-style-type: none"> Populations, samples Summarising data, averages and ungrouped frequency tables and bar charts <p>2 Statistics</p> <ul style="list-style-type: none"> Categorical, numerical data and summary statistics Estimating averages from grouped data Understanding why they measures are estimates <p>3 Statistics</p> <ul style="list-style-type: none"> Categorical, numerical data and summary statistics Categorical and numerical data Populations, samples and summary statistics <p>4 Number</p> <ul style="list-style-type: none"> Understanding prime numbers and index notation Use prime factor decomposition to calculate the HCF and LCM <p>5 Algebra</p> <ul style="list-style-type: none"> Collecting like terms, products and quotients Multiplying out brackets, factorising squares and difference of two squares 	<p>6 Algebra</p> <ul style="list-style-type: none"> Factorising quadratics expressions where $a = 1$ and a is not $= 1$ <p>7 Algebra</p> <ul style="list-style-type: none"> Algebraic proof and formulae in real life context Changing the subject of a formula Kinematic formulae <p>8 Number</p> <ul style="list-style-type: none"> Rounding and estimation Upper and lower bounds <p>9 Geometry</p> <ul style="list-style-type: none"> Perimeter of shapes and circumference of a circle Area of a circle Surface area and volume of cones, spheres and pyramids <p>10 Geometry</p> <ul style="list-style-type: none"> Pythagoras' Theorem in 2D and understanding in relation to the diagonal of a rectangle Trigonometry in right angled triangles <p>11 Geometry</p> <ul style="list-style-type: none"> Change the subject of a formula Trigonometry in right angled triangles <p>12 Algebra</p> <ul style="list-style-type: none"> Terminology and proof 	<p>1 Geometry</p> <ul style="list-style-type: none"> Perpendicular bisector and angle bisector Perpendicular from a point to a line Loci <p>2 Geometry</p> <ul style="list-style-type: none"> Angles around a point and on a line Angles between intersecting and parallel lines <p>3 Geometry</p> <ul style="list-style-type: none"> Angles in a polygon Properties of triangles and quadrilaterals <p>4 Number</p> <ul style="list-style-type: none"> Equivalent ratio and sharing in a ratio Direct proportion <p>5 Algebra</p> <ul style="list-style-type: none"> Direct proportion Inverse proportion <p>6 Number</p> <ul style="list-style-type: none"> Percentage change Growth and decay <p>7 Algebra</p> <ul style="list-style-type: none"> x and y coordinates and plotting graphs Simultaneous equations graphically Approximating solutions using a graph 	<p>8 Algebra</p> <ul style="list-style-type: none"> Linear equations in one unknown Solving quadratic equations in context <p>9 Algebra</p> <ul style="list-style-type: none"> Setting-up and solving simple simultaneous equations Simultaneous equations both linear in two variables <p>10 Number</p> <ul style="list-style-type: none"> Calculations which include mixed numbers and BIDMAS Changing recurring decimals into exact fractions and vice versa Dividing decimal calculations without a calculator <p>11 Statistics</p> <ul style="list-style-type: none"> Interpreting scatter graphs and using a line of best fit Interpret correlation of the variables Understand outliers are possible 	<p>1 Number</p> <ul style="list-style-type: none"> Index notation Estimating powers and roots Laws of indices and products and quotients <p>2 Number</p> <ul style="list-style-type: none"> Standard form calculations <p>3 Number</p> <ul style="list-style-type: none"> Calculations with standard form <p>4 Algebra</p> <ul style="list-style-type: none"> Solving linear equations Understanding inequality notation and representing on a number line Solving linear inequalities 	<p>5 Algebra</p> <ul style="list-style-type: none"> Plotting linear graphs from a table of values To interpret the gradient of a line and understand $y=mx+c$ Find the equation of a line given one point and the gradient <p>6 Geometry</p> <ul style="list-style-type: none"> Units of measure Compound units of measure <p>7 Geometry</p> <ul style="list-style-type: none"> Maps and scale drawings <p>8 Geometry</p> <ul style="list-style-type: none"> Plans and elevations Surface area, volume, plans and elevations

	<ul style="list-style-type: none"> • Substitution into formulae and expressions • Change the subject of a formula • 				
		Intermediate Maths Challenge			
Assessment: Teacher Assessment	Assessment: Autumn Assessment	Assessment: Teacher assessment	Assessment: Spring Assessment	Assessment: Mock Exams 1	Assessment: Teacher Assessment
Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.

Year 11: GCSE Higher					
Term 1		Term 2		Term 3	
<i>Year 11 - A</i>	<i>Year 11 - B</i>	<i>Year 11 - A</i>	<i>Year 11 - B</i>	<i>Year 11 - A</i>	<i>Year 11 - B</i>
1 Number <ul style="list-style-type: none"> • Four operations to include negative numbers • Inverse operations, rounding and estimations 2 Geometry <ul style="list-style-type: none"> • Understand the properties of a circle • To apply and prove circle theorems 3 Geometry <ul style="list-style-type: none"> • To apply and prove circle theorems 4 Algebra <ul style="list-style-type: none"> • Straight line graphs $y=mx+c$ • Parallel and perpendicular lines 5 Probability	7 Probability <ul style="list-style-type: none"> • Tree diagrams • The multiplication law of probability and conditional probability 8 Algebra <ul style="list-style-type: none"> • Generating terms of a sequence 9 Algebra <ul style="list-style-type: none"> • Using standard formulae 10 Algebra <ul style="list-style-type: none"> • Gradients of a line to measure change in velocity, kinematics, speed and distance-time measures 11 Geometry <ul style="list-style-type: none"> • Graphs in real-life context 	1 Geometry <ul style="list-style-type: none"> • Reflections and rotations • Combined transformations 2 Geometry <ul style="list-style-type: none"> • Congruent triangles • Similar triangles 3 Geometry <ul style="list-style-type: none"> • Enlargements • Combined transformations 4 Number <ul style="list-style-type: none"> • Exact calculations • Similar triangles 5 Algebra <ul style="list-style-type: none"> • Polynomial functions – properties of quadratic graphs • Exponential functions 	6 Algebra Polynomial <ul style="list-style-type: none"> • Functions and composite functions • Translations and reflections 7 Algebra <ul style="list-style-type: none"> • Graphs of equations and functions • Polynomial functions – properties of special graphs 8 Geometry <ul style="list-style-type: none"> • Vectors arithmetic • Column vectors 9 Geometry <ul style="list-style-type: none"> • Vector arithmetic, simple geometry and proofs 	Revision and exam focus	N/A

<ul style="list-style-type: none"> Relative frequency and probability Sample spaces and combined events 6 Probability <ul style="list-style-type: none"> Venn diagrams and sets The additional law of probability 	<ul style="list-style-type: none"> Estimating areas under a graph 12 Algebra <ul style="list-style-type: none"> Trigonometric functions Equations of a circle Parallel and perpendicular lines to a circle and tangents 				
		Intermediate Maths Challenge			
Assessment: Mock Exams 2	Assessment: Teacher assessment	Assessment: Teacher assessment	Assessment: Mock Exams 3	Assessment: GCSE Revision	Assessment: N/A
Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.	Homework: Consolidation, revision, mymaths, Hegarty maths, topic related or research.

Year 11: GCSE Foundation					
Term 1		Term 2		Term 3	
<i>Year 11 - A</i>	<i>Year 11 - B</i>	<i>Year 11 - A</i>	<i>Year 11 - B</i>	<i>Year 11 - A</i>	<i>Year 11 - B</i>
1 Geometry <ul style="list-style-type: none"> Understand the properties of a circle To recap on area and circumference of a circle Angles at point on a line and angles between parallel lines 2 Geometry <ul style="list-style-type: none"> Recap angles in triangles and quadrilaterals Recap interior, exterior angles in a polygon and regular polygons 3 Geometry	7 Probability <ul style="list-style-type: none"> Tree diagrams The multiplication law of probability and conditional probability 8 Algebra <ul style="list-style-type: none"> Generating terms of a sequence 9 Algebra <ul style="list-style-type: none"> Using standard formulae 10 Algebra <ul style="list-style-type: none"> Gradients of a line to measure change in velocity, kinematics, speed and distance-time measures 	1 Geometry <ul style="list-style-type: none"> Reflections and rotations Combined transformations 2 Geometry <ul style="list-style-type: none"> Congruent triangles Similar triangles 3 Geometry <ul style="list-style-type: none"> Enlargements Combined transformations 4 Number <ul style="list-style-type: none"> Exact calculations Similar triangles 5 Algebra	6 Algebra Polynomial <ul style="list-style-type: none"> Functions and composite functions Translations and reflections 7 Algebra <ul style="list-style-type: none"> Graphs of equations and functions Polynomial functions – properties of special graphs 8 Geometry <ul style="list-style-type: none"> Vectors arithmetic Column vectors 9	Revision and exam focus	N/A

