

KS3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7	Applications of Number	Algebraic Thinking	Place Value & FDP	Fractions	Reasoning with Number	Lines & Angles
Core Knowledge/Skills	<p>UNIT 1 - Developing Number Sense</p> <ul style="list-style-type: none"> Mental strategies for calculations with integers Mental strategies for decimals & fractions Use factors to simplify calculations Use number facts to derive other facts Know when to use a mental strategy, written calculation or calculator. <p>UNIT 2 - Solving problems with addition & subtraction</p> <ul style="list-style-type: none"> Mental strategies for addition & subtraction Formal methods for addition Formal methods for subtraction Solve perimeter problems Money, tables & timetables Use frequency trees, bar charts & line graphs? <p>UNIT 3 - Solving problems with multiplication & division</p> <ul style="list-style-type: none"> Factors & HCF Multiples & LCM Multiply & divide by powers of 10 Convert metric units Formal methods for multiplication Formal methods for division The mean Algebraic expressions? 	<p>UNIT 4 - Algebraic Notation</p> <ul style="list-style-type: none"> Single function machines Find the input Use letters Function machines & algebra Find functions from expressions (single) Substitute into expressions 2-step function machines with algebra 2-step function machines Find functions from expressions (2-step) Substitute values into 2-step expressions <p>UNIT 5 - Equality & Equivalence</p> <ul style="list-style-type: none"> 1-step linear equations +/- 1-step linear equations x/\div Like and unlike terms Equality & equivalence Collect like terms <p>UNIT 6 - Sequences</p> <ul style="list-style-type: none"> Sequences from diagrams Sequences in tables & graphs Continue & describe sequences Generate sequences Find the nth term rule for a linear sequence 	<p>UNIT 7 - Place Value & Ordering Numbers</p> <ul style="list-style-type: none"> Intro to place value Number lines Rounding & comparing integers Order integers Median & range Place Value One significant figure Powers of 10 (intro to standard form) (negative powers) <p>UNIT 8 - Fraction, Decimal & Percentage Equivalence</p> <ul style="list-style-type: none"> Tenths & Hundredths Fractions & decimals Fractions, decimals & percentages Fractions & percentage diagrams Equivalent fractions More FDP More than one whole <p>UNIT 9 - Fractions & Percentages of amounts</p> <ul style="list-style-type: none"> Fraction of an amount Fraction problems Percentage of an amount Use fractions & percentages more than one whole 	<p>UNIT 10 - Addition & Subtraction of Fractions</p> <ul style="list-style-type: none"> Representations of fractions Add & subtract fractions with the same denominator Fractions & integers Equivalent fractions Add & subtract fractions with different denominators Mixed numbers & fractions Algebraic contexts Fractions & decimals equivalence Add and subtract simple algebraic fractions. <p>UNIT 11 - Multiplying & Dividing Fractions</p> <ul style="list-style-type: none"> Representing multiplication of fractions Multiply a fraction by an integer or unit fraction Multiply any fractions Divide an integer by a fraction Understand the reciprocal Divide any fractions Multiply mixed fractions Divide mixed fractions 	<p>UNIT 12 - Directed numbers</p> <ul style="list-style-type: none"> Order directed numbers Adding & Subtracting directed numbers Multiplying directed numbers Multiplying & dividing directed numbers Algebraic expressions Order of operations Powers and roots <p>UNIT 13 - Prime Numbers</p> <ul style="list-style-type: none"> Factors & multiples Prime numbers Square & Triangle numbers Prime factors HCF & LCM 	<p>UNIT 14 – Constructing & measuring</p> <ul style="list-style-type: none"> Label lines, angles and geometric shapes Classify angles Draw & measure angles (up to 180°) Draw & measure angles (180°-360°) Types of polygon Construct triangles Construct triangles & polygons Interpret pie charts Draw pie charts <p>UNIT 15 - Geometric Reasoning</p> <ul style="list-style-type: none"> Angles at a point Angles on a straight line Vertically opposite angles Angles in a triangle Angles in a quadrilateral Angles in polygons
	Tests	Learning Cycle 1 - November				
All units have mini topic tests after each mini topic (teacher marked) & a 50 question quiz at the end of the unit (pupil marked).						
All units have a booklet that is followed in lessons and a Knowledge Organiser.						

KS3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
8	Ratio & Proportion	Graphs	Algebraic Techniques	Percentages	Geometry	Data Handling
Core Knowledge/Skills	<p>UNIT 1 - Ratio & Scale</p> <ul style="list-style-type: none"> • Introduction to ratio • Use ratio • Divide in a given ratio • Simplify ratios • Simplify ratios 2 • Ratios & fractions • Solve ratio problems • Understand pi • Understand gradient <p>UNIT 2 - Multiplicative Change</p> <ul style="list-style-type: none"> • Direct proportion • Conversion graphs • Convert currencies • Similar shapes • Scale diagrams • Maps & scales <p>UNIT 3 - Ratio & Proportion Problems</p> <ul style="list-style-type: none"> • Direct proportion problems • Inverse proportion • Inverse proportion graphs • Ratio problems • Best buy problems • Ratio & Algebra 	<p>UNIT 4 - Working in the Cartesian Plane</p> <ul style="list-style-type: none"> • Coordinates • Lines parallel to the axes • Lines of the form $y = kx$ • Link to direct proportion • Gradients • Lines of the form $y = x + a$ • Graphs & linear sequences • Plot straight line graphs • Midpoint of a line segment • Non-linear graphs <p>UNIT 5 - Straight Line Graphs</p> <ul style="list-style-type: none"> • Lines parallel to the axes • Using tables of values • Gradients & intercepts • Understand & use $y = mx + c$ • Write an equation in the form $y = mx + c$ • Find the equation of a straight line • Real life graphs • Perpendicular lines 	<p>UNIT 6 - Brackets, Equations & Inequalities</p> <ul style="list-style-type: none"> • Form algebraic expressions • Multiply out single brackets • Expand & Simplify • Expand double brackets • Factorise (common factors) • Solve equations 1 • Solve equations 2 • Form & solve equations • Inequalities • Form & solve inequalities • Unknowns on both sides • Expressions, Formulae, Equations & Identities <p>UNIT 7 - Indices & Standard Form</p> <ul style="list-style-type: none"> • Adding & subtracting with indices • Multiplying indices • Dividing indices • Powers of powers • Positive powers of 10 • Big numbers in standard form • Negative powers of 10 • Small numbers in standard form • Compare numbers in standard form 	<p>UNIT 8 - Fractions & Percentages</p> <ul style="list-style-type: none"> • Convert between fractions, decimals & percentages • Calculate fractions, decimals and percentages of an amount (non calculator) • Calculate fractions, decimals and percentages of an amount (calculator) • Calculate percentage increase & decrease using a multiplier • Express one number as a percentage of another • Solve percentage problems • Find the original amount <p>UNIT 9 - Maths & Money</p> <ul style="list-style-type: none"> • Bills & bank statements • Simple & compound interest • VAT • Wages & Taxes • Exchange rates • Unit pricing problems 	<p>UNIT 10 - Area of Trapezia & Circles</p> <ul style="list-style-type: none"> • Area of triangles, rectangles, parallelograms & trapezia • Area & perimeter of compound shapes • Calculate the area of a circle (non calculator) • Calculate the area of a circle (calculator) • Compound shapes including circles <p>UNIT 11 - Line Symmetry & Reflection</p> <ul style="list-style-type: none"> • Recognise line symmetry • Reflection in a horizontal or vertical line • Reflection a diagonal line <p>UNIT 12 - Rotation & Translation</p> <ul style="list-style-type: none"> • Identify the order of rotational symmetry • Rotate a shape about a point • Translate a shape by a vector • Combinations of transformations <p>UNIT 13 - Enlargement & Similarity</p> <ul style="list-style-type: none"> • Enlarge a shape • Enlarge a shape from a point • Enlarge a shape by a fractional scale factor • Similar shapes 	<p>UNIT 14 - Representing Data</p> <ul style="list-style-type: none"> • Scatter graphs • Correlation & lines of best fit • Types of data • Grouped frequency tables • Two way tables • Bar charts & pictograms • Pie charts • Line graphs • Compare distributions • Choosing diagrams & misleading graphs <p>UNIT 15 - Probability</p> <ul style="list-style-type: none"> • Single event probabilities • Relative frequency • Expected outcomes • Two way tables • Venn Diagrams • Sample space diagrams • Independent events • Use the product rule for number of outcomes • Using diagrams for probability
	Tests			Learning Cycle 3 - November		Learning Cycle 4 - May
All units have mini topic tests after each mini topic (teacher marked) & a 50 question quiz at the end of the unit (pupil marked).						
All units have a booklet that is followed in lessons and a Knowledge Organiser						

KS3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
9						
Core Knowledge	<p>Foundation</p> <ul style="list-style-type: none"> Basic Number Sequences Number 1 Angles & Shapes 1 Algebra 1 Quadrilaterals <p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Basic Number Sequences Decimals & Fractions Angles & Shapes 1 Algebra 1 <p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Basic Number Sequences Decimals & Fractions Angles & Shapes 1 Algebra 1 	<p>Foundation</p> <ul style="list-style-type: none"> Decimals Scatter Graphs Fractions 1 Area & Perimeter 1 Circles Processing, Representing & Interpreting Data <p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Scatter Graphs Number 1 Area & Perimeter 1 Circles Processing, Representing & Interpreting Data <p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Scatter Graphs Number 1 Area & Perimeter 1 Circles Processing, Representing & Interpreting Data 	<p>Foundation</p> <ul style="list-style-type: none"> Measure Linear Equations Fractions 2 <p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Measure Linear Equations Linear Inequalities Percentages <p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Measure Linear Equations Linear Inequalities Percentages 	<p>Foundation</p> <ul style="list-style-type: none"> Averages & Ranges Pythagoras' Theorem Transformations 1 <p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Averages & Ranges Pythagoras' Theorem Transformations <p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Averages & Ranges Pythagoras' Theorem Transformations 	<p>Foundation</p> <ul style="list-style-type: none"> Transformations 1 Graphs 1 Standard Form Rev. Representing & Interpreting Data <p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Transformations Graphs 1 Standard Form Rev. Representing & Interpreting Data Rev. Averages & Ranges <p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Transformations Graphs 1 Standard Form Simultaneous equations 	<p>Foundation</p> <ul style="list-style-type: none"> Time Series Transformations 2 Ratio & Proportion Functional Skills Exam Questions <p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Cumulative Frequency, Box Plots & Histograms Ratio & Proportion Functional Skills Exam Questions <p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Cumulative Frequency, Box Plots & Histograms Ratio & Proportion Functional Skills Exam Questions
	Tests			Learning Cycle 5 - Jan		
All topics have a mini topic test						

KS4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
10						
Core Knowledge	<p>Foundation</p> <ul style="list-style-type: none"> Rev. Angles 1 Angles 2 Rev. Algebra 1 Factorise Quadratics Rev. Area & Perimeter 1 & Circles Volume & Surface Area 	<p>Foundation</p> <ul style="list-style-type: none"> Ratio & Proportion revision Rev. Linear Equations Linear Inequalities Rev. Fractions 1 Rev. Fractions 2 Fractions 3 Percentages 	<p>Foundation</p> <ul style="list-style-type: none"> Rev. Graphs 1 lockdown topic Real Life Graphs Accurate Drawing & Scale Drawing Probability 	<p>Foundation</p> <ul style="list-style-type: none"> Rev. Graphs 1 Graphs 2 Graphs 2 Rev. Linear Equations Simultaneous Equations 1 	<p>Foundation</p> <ul style="list-style-type: none"> Constructions & Loci Rev. Representing Data & Time series Collecting & Recording Data 	<p>Foundation</p> <ul style="list-style-type: none"> Number Skills 3D Shapes Rev. Linear Equations Formulae
	<p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Rev. Angles & Shapes 1 Angles & Shapes 2 Rev. Algebra 1 Factorise Quadratics Rev. Area & Perimeter 1 & Circles Volume & Surface Area 	<p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Ratio & Proportion Rev. Linear Equations Formulae Rev. Standard Form Indices Rev. Graphs 1 	<p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Real Life Graphs Trigonometry 1 Probability 	<p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Rev. Graphs 1 & Inequalities Inequalities & Regions Graphs 2 Rev. Linear Equations Simultaneous Equations 1 	<p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Constructions & Loci Rev. Representing Data, Cum Freq & Histograms Collecting & Recording Data 	<p>Higher (B3/W1)</p> <ul style="list-style-type: none"> Rev – indices and standard form Surds Rev. Angles & Shapes 1 & 2 Circle Geometry
	<p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Rev. Angles & Shapes 1 Angles & Shapes 2 Rev. Algebra 1 Factorise Quadratics Rev. Area & Perimeter 1 & Circles Volume & Surface Area Ratio & Proportion 	<p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Rev. Linear Equations & Inequalities Formulae Rev. Number 1 & Standard Form lockdown topic Indices Surds Rev. Graphs 1 	<p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Real Life Graphs Trigonometry 1 Probability Rev. Graphs 1 & Inequalities Inequalities & Regions 	<p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Graphs 2 Accurate Drawing & Scale Drawing & 3D Shapes Rev. Angles & Shapes 1 & 2 Circle Geometry 	<p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Constructions & Loci Rounding, Estimating & Bounds Rev. Representing Data, Cum Freq & Histograms Collecting & Recording Data 	<p>Higher (B1/B2)</p> <ul style="list-style-type: none"> Quadratic Equations Direct and Inverse proportion
Tests	All topics have a mini topic test					
	Exam board: Edexcel Course code: 1MA1 Course title: GCSE (9 - 1) in Mathematics					

KS4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
11	<p>Foundation</p> <ul style="list-style-type: none"> • Rev. Pythagoras' Theorem revision • Trigonometry 1 • Rounding & Estimating • Vectors • Rev. Algebra /1 revise standard form lockdown <p>Higher (B3/W1)</p> <ul style="list-style-type: none"> • Rev. Pythagoras & Trigonometry 1 • Trigonometry 2 • Rounding & Estimating & Bounds • Vectors • Rev. Factorising Quadratics • Quadratic Equations • Rev. Sim Eqns 1 & Do Sim Equations 2 <p>Higher (B1/B2)</p> <ul style="list-style-type: none"> • Rev. Pythagoras & Trigonometry 1 • Trigonometry 2 • Vectors • Direct & Inverse Proportion • Rates of change • Iteration 	<p>Foundation</p> <ul style="list-style-type: none"> • Indices • Rates of change & Direct & Inverse Proportion • Rev. Transformations & Do Congruence & Similarity • Quadratic Equations <p>Higher (B3/W1)</p> <ul style="list-style-type: none"> • Direct & Inverse Proportion • Rates of change & Iteration • Rev. Transformations & Do Congruence & Similarity • Functions & Transformations of Graphs <p>Higher (B1/B2)</p> <ul style="list-style-type: none"> • Rev. Sim Eqns & Quadratic Eqns • Simultaneous Equations 2 • Algebraic Fractions & Proofs • Rev. Transformations • Congruence & Similarity • Functions & Transformations of Graphs 	<p>Foundation</p> <p>Revision Program-Number</p> <ul style="list-style-type: none"> • Negative numbers • Factors, multiples & primes, (including finding prime factors) • Estimation, Decimal places & Significant figures • Bodmas • Percentages; finding a percentage of a quantity, expressing a quantity as a percentage • Fractions; simplifying & ordering fractions, finding a fraction of a quantity, adding & subtracting fractions, multiplying & dividing fractions • Ratios, simplifying ratios, dividing a quantity in a given ratio • Upper & lower bounds <p>Revision Program-Algebra</p> <ul style="list-style-type: none"> • Simplifying Algebra, including removing brackets etc • Factorising (putting in the brackets) • Solving Equations • Substituting into Formulae • Rules for Sequences (nth term) • Plotting graphs • Simultaneous equations 	<p>Foundation</p> <p>Revision Program-Statistics and probability</p> <ul style="list-style-type: none"> • Pie Charts • Scatter Diagrams • Stem and Leaf Diagrams • Averages & Range • Probability <p>Revision Program-Geometry</p> <ul style="list-style-type: none"> • Angles • Shapes • Accurate drawing • Plan & Elevation • Perimeter, Area and Volume (including circles) • Symmetry • Transformations (Reflections, Rotations, Translations & Enlargements) • Pythagoras • Trigonometry (sohcahtoa) 	<p>Foundation</p> <p>Revision</p>	
			Higher (B3/W1) Revision Program-Number	Higher (B3/W1)	Higher (B3/W1) Revision	

Core Knowledge

			<ul style="list-style-type: none"> • Ratio and proportion • Percentages (including compound interest), fractions and decimals • Rounding and Estimation • Using a calculator • Prime Factors/HCF/LCM • Error intervals and Upper and Lower bounds • Standard Form • Indices (powers) • Direct and Inverse proportion • Surds Revision Program-Algebra • Basic algebra (simplifying, foil rule, factorising etc) • Sequences (nth term, including quadratic sequences) • Equations • Formulae including changing the subject of a formula • Trial and Improvement • Straight line Graphs • Plotting Quadratic Graphs • Shapes of Graphs & real life graphs • Gradients and areas under graphs • Simultaneous Equations • Inequalities • Functions • Iteration • Quadratic Equations – by factorising and by the formula • Completing the square • Transformation of Graphs • Proofs 	<p>Revision Program-Statistics and probability</p> <ul style="list-style-type: none"> • Pie Charts • Scatter Diagrams including correlation and lines of best fit • Mean from Grouped Data • Mode, Median, Range • Stem and Leaf Diagrams • Venn Diagrams • Cumulative Frequency Curves • Medians, Quartiles and Box and Whisker Diagrams • Histograms • Sampling and Questionnaires • Probability <p>Revision Program-Geometry</p> <ul style="list-style-type: none"> • Angles – alternate/corresponding, interior/exterior • Bearings • Loci/Constructions • Pythagoras • Trigonometry • Sin Rule and Cosine Rule • Area & Volume (including surface area of 3D shapes and arcs/sectors of circles) • Transformations (Reflections, Rotations, Translations, Enlargements) • Similar Shapes (including the effect on area & volume) • Circle Theorems • Vectors 		
			<p><u>Higher (B1/B2)</u> <i>Revision Program-Number</i></p>	<p><u>Higher (B1/B2)</u></p>	<p><u>Higher (B1/B2)</u> <i>Revision</i></p>	

			<ul style="list-style-type: none"> • Ratio and proportion • Percentages (including compound interest), fractions and decimals • Rounding and Estimation • Using a calculator • Prime Factors/HCF/LCM • Error intervals and Upper and Lower bounds • Standard Form • Indices (powers) • Direct and Inverse proportion • Surds <p>Revision Program-Algebra</p> <ul style="list-style-type: none"> • Basic algebra (simplifying, foil rule, factorising etc) • Sequences (nth term, including quadratic sequences) • Equations • Formulae including changing the subject • Trial and Improvement • Straight line Graphs • Plotting Quadratic Graphs • Shapes of Graphs & real life graphs • Gradients and areas under graphs • Simultaneous Equations • Inequalities • Functions • Iteration • Quadratic Equations – by factorising and by the formula • Completing the square • Transformation of Graphs • Proofs 	<p>Revision Program-Statistics and probability</p> <ul style="list-style-type: none"> • Pie Charts • Scatter Diagrams including correlation and lines of best fit • Mean from Grouped Data • Mode, Median, Range • Stem and Leaf Diagrams • Venn Diagrams • Cumulative Frequency Curves • Medians, Quartiles and Box and Whisker Diagrams • Histograms • Sampling and Questionnaires • Probability <p>Revision Program-Geometry</p> <ul style="list-style-type: none"> • Angles – alternate/corresponding, interior/exterior • Bearings • Loci/Constructions • Pythagoras • Trigonometry • Sin Rule and Cosine Rule • Area & Volume (including surface area of 3D shapes and arcs/sectors of circles) • Transformations (Reflections, Rotations, Translations, Enlargements) • Similar Shapes (including the effect on area & volume) • Circle Theorems • Vectors 		
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Exam board: Edexcel Course code: 1MA1 Course title: GCSE (9 - 1) in Mathematics

3 x 1h30 exams, 1 non-calculator, 2 calculator, 3 x 80 marks = 240 marks