

## Mathematics - Pathway 1 (sets 1 and 2)

### Key Stage 2 Curriculum includes

**Number:** negative numbers, rounding, fractions, percentages, multiples, factors and primes, basic ratio, conversions

**Algebra:** Use simple formula, generate a linear number sequence, simple equations

**Shape:** Area of triangles, rectangles and parallelograms, volume of cubes and cuboids, 2d and 3d shapes, name parts of circles, angles (triangle, on a straight line, around a point, vertically opposite).

**Data:** Averages from a list, bar charts, line graphs, pie charts, plotting coordinates

	Year 7	Year 8	Year 9	Year 10	Year 11
A u t u m n 1	<p><b>Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>Find equivalent ratios</li> <li>Divide amounts in a ratio</li> <li>Solve problems involving the unitary method</li> </ul> <p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>Convert between fractions, decimals and percentages including improper fractions and percentages over 100%</li> </ul> <p><b>Directed Numbers</b></p> <ul style="list-style-type: none"> <li>Carry out all 4 operations with directed numbers.</li> <li>Use a calculator to do calculations involving negative numbers.</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Indices</li> <li>Multiply and divide integer powers of 10</li> <li>Understand power 0</li> <li>Prime factor decomposition</li> <li>LCM using PFD</li> <li>Word problems involving HCF and LCM</li> <li>Write numbers in standard form</li> <li>Convert from standard form to ordinary</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Bearings</li> <li>Pythagoras' Theorem</li> <li>Constructions: perpendicular bisector, angle bisector, perpendicular from a point to a line</li> <li>Construct Loci and definite regions</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Calculating with standard form</li> <li>Order numbers in standard form</li> <li>Apply standard form in context</li> <li>Related calculations</li> <li>Product rule for counting</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Use Pythagoras' Theorem to find area</li> <li>Understand pythagorean triples</li> <li>Trigonometry: use sine, cosine and tangent functions to find missing side lengths and angles</li> <li>Solve problems involving pythagoras and trigonometry including those with bearings</li> <li>Know the exact trig values of <math>\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ</math> and <math>90^\circ</math></li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Indices (negative)</li> <li>Surds                             <ul style="list-style-type: none"> <li>simplifying</li> <li>arithmetic</li> <li>using in exact calculations</li> </ul> </li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Circle Theorems                             <ul style="list-style-type: none"> <li>angle in a semicircle</li> <li>angle at the centre twice the angle at the circumference</li> <li>angles in same arc</li> <li>cyclic quadrilateral</li> </ul> </li> <li>Pythagoras in 3D</li> <li>Trigonometry in 3D</li> <li>Loci - constructions</li> </ul> <p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Expand 3 brackets</li> <li>Factorise quadratics of the form <math>ax^2+bx+c</math></li> <li>Factorise difference of two squares</li> <li>Algebraic proof</li> </ul>	<p><b>Prepare for mock exam -</b> revision of key areas which may include any of the previously covered work from Years 7-10</p> <p>Would expect coverage of</p> <ul style="list-style-type: none"> <li>Fractions</li> <li>Ratio</li> <li>Proportion</li> <li>Percentages</li> <li>Surds</li> <li>Angles</li> <li>Algebraic Manipulation</li> <li>Solving equations</li> <li>Drawing graphs</li> <li>Probability</li> <li>Pythagoras and Trigonometry</li> <li>Statistical diagrams</li> </ul>

<p><b>Fractions Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>● Order fractions decimals and percentages</li> <li>● Problem solving with fractions decimals and percentages</li> <li>● Add, subtract, multiply and divide fractions with mixed numbers</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>● Draw and measure angles</li> <li>● Complex problems with angle sums</li> <li>● Form and solve equations with angles</li> <li>● Parallel lines (alternate angles, allied, corresponding)</li> <li>● Interior and exterior angles of polygons</li> <li>● Properties of triangles and quadrilaterals</li> <li>● Parts of a circle</li> <li>● Plans and Elevations</li> <li>● Constructing triangles</li> </ul> <p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>● Substitution involving fractions and decimals</li> <li>● Collect like terms</li> <li>● Multiply out a single bracket</li> <li>● Factorise expressions involving multiple letters and powers             <ul style="list-style-type: none"> <li>● Write algebraic expressions</li> </ul> </li> <li>● Basic Proof</li> </ul>	<p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Simply an expression with multiple single brackets</li> <li>● Factorise by identifying all common factors either numerical or algebraic</li> <li>● Multiply out a pair of linear brackets</li> <li>● Write algebraic expressions</li> <li>● Proof by counterexample</li> <li>● Write algebraic expressions involving powers</li> <li>● Substitution involving small integer powers</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Scatter Graphs</li> <li>● Correlation</li> <li>● Line of best fit</li> <li>● Estimate the mean of grouped data</li> <li>● Median class of grouped data</li> <li>● Modal class interval of grouped data</li> </ul>	<p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Simplify expressions with index notation</li> <li>● Introduction to formal methods of proof including identify symbol</li> <li>● Multiply out a pair of linear brackets to find areas algebraically</li> <li>● Factorise quadratics where the coefficient of x is 1</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Represent grouped data using frequency diagrams</li> <li>● Appreciate the difference between a bar chart and frequency diagram</li> <li>● Interpret data set given a frequency diagram</li> <li>● Tables and line graphs for time series data</li> </ul>	<p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Cumulative frequency</li> <li>● Drawing Box Plots from CF and raw data</li> <li>● Calculate IQR</li> <li>● Compare two sets of data from box plots</li> </ul> <p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Direct proportion</li> <li>● Inverse proportion</li> <li>● Exponential growth and decay</li> <li>● Complex ratio problems and connections with fractions</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Volume of a pyramid</li> <li>● Volume of a frustum</li> <li>● Problems involving volume</li> <li>● Problems involving area and algebra</li> </ul>	<p><b>Time to reflect on mock exams and continue with scheme</b></p> <p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Converting recurring decimals</li> <li>● Know when fractions convert to terminating decimals</li> <li>● Recognise proportional graphs</li> <li>● Solve problems involving direct and inverse proportion</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Area of a segment</li> </ul> <p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Quadratic inequalities</li> <li>● Iteration</li> <li>● Equation of a circle</li> <li>● Find equation of a tangent to a circle</li> </ul>
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S p r i n g 1	<p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>● Pie charts</li> <li>● Compare sets of data using average and range</li> <li>● Average and range of ungrouped data</li> <li>● Frequency diagrams and polygons - Discrete and continuous data</li> </ul> <p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>● Decimals</li> <li>● Order of operations</li> <li>● Metric Units</li> <li>● Factors and multiples</li> <li>● LCM and HCF</li> <li>● Squares, cubes and roots</li> </ul>	<p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Multiply fractions</li> <li>● Cancel fractions including cross cancelling</li> <li>● Reciprocals</li> <li>● Divide fractions</li> <li>● Percentage increase and decrease</li> <li>● Percentage change</li> <li>● Use proportion as equality of ratio</li> <li>● Application of ratio</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Find radius of a circle given area and circumference</li> <li>● Solve problems involving circles</li> <li>● Write answers in terms of pi</li> <li>● Volume of prisms including a cylinder</li> <li>● Convert between units of volume</li> <li>● Surface area of prisms</li> </ul>	<p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Reverse percentages</li> <li>● Compound percentage change <ul style="list-style-type: none"> <li>○ Simple and compound interest</li> <li>○ Depreciation</li> </ul> </li> <li>● Direct proportion</li> <li>● Inverse proportion</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Area of sector</li> <li>● Arc length and perimeter of sectors</li> <li>● Volume of cone or pyramid</li> <li>● Volume of sphere</li> <li>● Surface area of spheres, pyramids and cones</li> <li>● Composite shapes constructed from cubes, cuboid, cones, pyramids, cylinders, spheres and hemispheres</li> </ul>	<p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Non-linear simultaneous equations</li> <li>● Solving equations with fractions (numerical denominators)</li> <li>● Solving quadratic equations of the form <math>ax^2+bx+c=0</math> by <ul style="list-style-type: none"> <li>○ factoring</li> <li>○ formula</li> <li>○ completing the square</li> </ul> </li> <li>● Set up and solve quadratics from a physical problem</li> </ul> <p><b>Probability</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Conditional probability from a <ul style="list-style-type: none"> <li>○ two way table</li> <li>○ Venn diagram</li> <li>○ tree diagram</li> </ul> </li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Calculations with upper and lower bounds</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Vector geometry <ul style="list-style-type: none"> <li>○ sum and difference</li> <li>○ parallel</li> <li>○ collinear</li> <li>○ solve geometric problems in 2D</li> </ul> </li> </ul> <p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Sketch and recognise exponential and trigonometric graphs</li> <li>● Transformations of graphs</li> </ul>
S p r i n g 2	<p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>● Perimeters</li> <li>● Areas rectangles, triangles, parallelogram and trapeziums</li> <li>● Compound areas</li> <li>● Area unit conversion</li> <li>● Volume- cuboid</li> <li>● Parts of a circle</li> <li>● Circumference and area of a circle including semi</li> </ul>	<p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Solve linear equations with x on both sides including those with brackets and where x is negative</li> <li>● Solve linear equations with fractions</li> <li>● Represent inequalities on a number line</li> </ul>	<p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Solve quadratic equations by factorisation where the coefficient of x is 1</li> <li>● Solve simultaneous equations graphically and by elimination</li> <li>● Rearrange formulae by balancing</li> </ul> <p><b>Probability</b></p>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Exact answers</li> <li>● Round answers to an appropriate degree of accuracy</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> </ul>	<p><b>Time to reflect on second mock exam and continue with scheme</b></p> <p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Functions <ul style="list-style-type: none"> <li>○ inverse</li> <li>○ composite</li> </ul> </li> <li>● Estimate gradient of a curve</li> </ul>

	<p>circles and physical problems</p> <p><b>Equations</b></p> <ul style="list-style-type: none"> <li>● Solve linear equations with x on one side including those with brackets and where x is negative</li> <li>● Solve linear equations including those with x on both sides and negative constant terms</li> </ul>	<ul style="list-style-type: none"> <li>● List integer solutions of an inequality</li> <li>● Solve inequalities including those in context</li> </ul> <p><b>Probability</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Relative frequency</li> <li>● Combine probabilities</li> <li>● Tree Diagrams</li> <li>● AND rule when events are independent</li> </ul>	<ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Further sets and venn diagrams</li> <li>● Understand and use subset and the complement</li> <li>● More tree diagrams including non- standard</li> <li>● OR rule when events are mutually exclusive</li> </ul>	<ul style="list-style-type: none"> <li>● Enlargements by a negative scale factor</li> <li>● Invariance</li> <li>● Understand the effect of enlargements on area and volume</li> </ul> <p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Finding the equation of perpendicular line</li> <li>● Plot non-standard functions</li> <li>● Graph inequalities</li> <li>● Find <math>n^{\text{th}}</math> term of a quadratic sequence</li> <li>● Recognise and use a geometric progression</li> </ul>	<ul style="list-style-type: none"> <li>● Interpret the gradient as a rate of change</li> <li>● Find area under a quadratic</li> </ul> <p><b>Prepare for GCSE exams</b></p>
S u m m e r 1	<p><b>Probability</b></p> <ul style="list-style-type: none"> <li>● Probability Scale</li> <li>● Theoretical and experimental probabilities</li> <li>● Sample space diagrams</li> <li>● Sets and Venn diagrams</li> </ul> <p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Rounding to decimal places</li> <li>● Estimating calculations</li> <li>● Timetables, bills and bank statements</li> <li>● Best value</li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Rounding to significant figures</li> <li>● Estimating calculations</li> <li>● Compound measures: Speed, density and pressure</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Enlargement (negative and fractional scale factors)</li> <li>● Scale drawing</li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Convert metric units of speed</li> <li>● Calculate average speed</li> <li>● Kinematics formulae</li> <li>● Truncation</li> <li>● Bounds of accuracy</li> <li>● Error intervals</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Congruency and similarity</li> <li>● Vectors</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Fractional indices</li> <li>● Expanding brackets with surds</li> <li>● Rationalising the denominator</li> <li>● Use exact trig values in an expression</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Circle Theorems <ul style="list-style-type: none"> <li>○ Tangent to a circle</li> <li>○ Alternate Segment Theorem</li> <li>○ Including proofs</li> </ul> </li> <li>● Non right angled trigonometry including the ambiguous case</li> </ul>	<p><b>Prepare for GCSE exams</b></p>

<p style="text-align: center;">S u m m e r 2</p>	<p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Reflection</li> <li>● Rotation</li> <li>● Translation</li> <li>● Enlargement (positive scale factors)</li> <li>● Combined Transformations</li> </ul> <p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>● Generate sequence from a position to term rule</li> <li>● Identify term to term rule for a sequence</li> <li>● Drawing straight line graphs from a table of values</li> <li>● Parallel lines</li> <li>● Understand gradient and y-intercept</li> <li>● Draw lines in form <math>ax+by=c</math></li> </ul>	<p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Linear sequences in context</li> <li>● Quadratic sequences</li> <li>● Geometric progressions</li> <li>● Triangular numbers</li> <li>● Fibonacci type sequences</li> <li>● Real life linear graphs</li> <li>● Distance time and velocity time graphs</li> <li>● Interpret non linear real life graphs</li> <li>● Recognise graphs of quadratics, cubics and reciprocals</li> </ul>	<p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Parallel lines</li> <li>● Equation of a line from two points or point and a gradient</li> <li>● Sketch cubic and reciprocal function</li> <li>● Coordinates in 3 dimensions</li> <li>● Midpoint of a line segment given coordinates in 2D or 3D</li> <li>● Draw quadratic graphs</li> <li>● Solve quadratics graphically</li> </ul>	<p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Algebraic Fractions <ul style="list-style-type: none"> <li>○ Simplify</li> <li>○ Add/subtract</li> <li>○ multiply/divide</li> <li>○ Solve equations</li> </ul> </li> <li>● Rearranging Formulae</li> <li>● Algebraic proof</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Histograms</li> </ul>	
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## Mathematics - Pathway 2 (set 3)

### Key Stage 2 Curriculum includes

**Number:** negative numbers, rounding, fractions, percentages, multiples, factors and primes, basic ratio, conversions

**Algebra:** Use simple formula, generate a linear number sequence, simple equations

**Shape:** Area of triangles, rectangles and parallelograms, volume of cubes and cuboids, 2d and 3d shapes, name parts of circles, angles (triangle, on a straight line, around a point, vertically opposite).

**Data:** Averages from a list, bar charts, line graphs, pie charts, plotting coordinates

	Year 7	Year 8	Year 9	Year 10	Year 11
A u t u m n 1	<p><b>Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>Find equivalent ratios</li> <li>Divide amounts in a ratio</li> <li>Solve problems involving the unitary method</li> </ul> <p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>Convert between fractions, decimals and percentages including improper fractions and percentages over 100%</li> </ul> <p><b>Directed Numbers</b></p> <ul style="list-style-type: none"> <li>Carry out all 4 operations with directed numbers.</li> <li>Use a calculator to do calculations involving negative numbers.</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Decimals</li> <li>Order of operations</li> <li>Metric Units</li> <li>Factors and multiples</li> <li>LCM and HCF</li> <li>Squares, cubes and roots</li> <li>Carry out all 4 operations with directed numbers.</li> <li>Use a calculator to do calculations involving negative numbers.</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Draw and measure angles</li> <li>Complex problems with angle sums</li> <li>Form and solve equations with angles</li> <li>Parallel lines (alternate angles, allied, corresponding)</li> <li>Interior and exterior angles of polygons</li> <li>Properties of triangles and quadrilaterals</li> <li>Parts of a circle</li> <li>Plans and Elevations</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Indices</li> <li>Multiply and divide integer powers of 10</li> <li>Understand power 0</li> <li>Prime factor decomposition</li> <li>LCM using PFD</li> <li>Word problems involving HCF and LCM</li> <li>Write numbers in standard form</li> <li>Convert from standard form to ordinary</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Bearings</li> <li>Pythagoras' Theorem</li> <li>Constructions: perpendicular bisector, angle bisector, perpendicular from a point to a line</li> <li>Construct Loci and definite regions</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Calculating with standard form</li> <li>Order numbers in standard form</li> <li>Apply standard form in context</li> <li>Related calculations including those involving decimals</li> <li>Product rule for counting</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Pythagoras' Theorem</li> <li>Understand pythagorean triples</li> <li>Trigonometry: to find missing side lengths and angles</li> <li>Solve problems involving pythagoras and trigonometry</li> <li>Know exact trig values of <math>\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ</math> and <math>90^\circ</math></li> </ul> <p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Simplify expressions with index notation</li> </ul>	<p><b>Prepare for mock exam</b> - revision of key areas which may include any of the previously covered work from Years 7-10</p> <p>Would expect coverage of</p> <ul style="list-style-type: none"> <li>Fractions</li> <li>Ratio</li> <li>Proportion</li> <li>Percentages</li> <li>Angles</li> <li>Algebraic Manipulation</li> <li>Solving equations</li> <li>Drawing graphs</li> <li>Probability</li> <li>Pythagoras and Trigonometry</li> <li>Statistical diagrams</li> <li>Area and perimeter</li> </ul>

		<ul style="list-style-type: none"> <li>Constructing triangles</li> </ul>		<ul style="list-style-type: none"> <li>Introduction to formal methods of proof including identify symbol</li> <li>Multiply out a pair of linear brackets to find areas algebraically</li> <li>Factorise quadratics where the coefficient of x is 1</li> </ul>	
A u t u m n 2	<p><b>Fractions Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>Equivalent fractions</li> <li>simplify a fraction</li> <li>Write simple fractions as decimals</li> <li>Order fractions with different denominator</li> <li>Add and subtract fractions with different denominators</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Draw and measure angles</li> <li>Angles in a triangle and quadrilateral</li> <li>Nets</li> <li>3D shapes</li> <li>Constructing triangles</li> </ul> <p><b>Manipulating Algebra</b></p> <ul style="list-style-type: none"> <li>Write algebraic expressions</li> <li>Substitution (positive integers)</li> <li>Collect like terms</li> <li>Multiply out a single bracket</li> <li>Factorise simple expressions</li> </ul>	<p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Substitution involving fractions and decimals</li> <li>Collect like terms</li> <li>Multiply out a single bracket</li> <li>Factorise expressions involving multiple letters and powers</li> <li>Write algebraic expressions</li> <li>Basic Proof</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Pie charts</li> <li>Compare sets of data using average and range</li> <li>Average and range of ungrouped data</li> <li>Frequency diagrams and polygons - Discrete and continuous data</li> </ul>	<p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Simply an expression with multiple single brackets</li> <li>Factorise by identifying all common factors either numerical or algebraic</li> <li>Multiply out a pair of linear brackets</li> <li>Write algebraic expressions</li> <li>Proof by counterexample</li> <li>Write algebraic expressions involving powers</li> <li>Substitution involving small integer powers</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Scatter Graphs</li> <li>Correlation</li> <li>Line of best fit</li> <li>Estimate the mean of grouped data</li> <li>Median class of grouped data</li> <li>Modal class interval of grouped data</li> </ul>	<p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Represent grouped data using frequency diagrams</li> <li>Appreciate the difference between a bar chart and frequency diagram</li> <li>Interpret data set given a frequency diagram</li> <li>Tables and line graphs for time series data</li> </ul> <p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Reverse percentages</li> <li>Compound percentage change <ul style="list-style-type: none"> <li>Simple and compound interest</li> <li>Depreciation</li> </ul> </li> <li>Direct proportion</li> <li>Inverse proportion</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Area of sector</li> <li>Arc length and perimeter of sectors</li> <li>Volume of cone or pyramid</li> <li>Volume of sphere</li> </ul>	<p><b>Time to reflect on mock exams and continue with scheme</b></p> <p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Direct proportion</li> <li>Inverse proportion</li> <li>Exponential growth and decay</li> <li>Complex ratio problems and connections with fractions</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Volume of a pyramid</li> <li>Volume of a frustum</li> <li>Problems involving volume</li> <li>Problems involving area and algebra</li> </ul> <p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Non-linear simultaneous equations</li> <li>Solving equations with fractions (numerical denominators)</li> </ul>



				<ul style="list-style-type: none"> <li>• Surface area of spheres, pyramids and cones</li> <li>• Composite shapes constructed from cubes, cuboid, cones, pyramids, cylinders, spheres and hemispheres</li> </ul>	<ul style="list-style-type: none"> <li>• Solving quadratic equations of the form <math>ax^2+bx+c=0</math> by <ul style="list-style-type: none"> <li>○ factoring</li> <li>○ formula</li> <li>○ completing the square</li> </ul> </li> <li>• Set up and solve quadratics from a physical problem</li> </ul>
S p r i n g 1	<p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>• Line Graphs</li> <li>• Bar charts including composite and dual</li> <li>• Mean, median, mode and range for a small set of data</li> </ul> <p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>• Decimals</li> <li>• Factors and multiples</li> <li>• LCM and HCF</li> <li>• Order of operations</li> </ul>	<p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Equivalent fractions</li> <li>• simplify a fraction</li> <li>• Write simple fractions as decimals</li> <li>• Order fractions with different denominator</li> <li>• Add and subtract fractions with different denominators</li> <li>• Convert between fractions, decimals and percentages including improper fractions and percentages over 100%</li> <li>• Find equivalent ratios</li> <li>• Divide amounts in a ratio</li> <li>• Solve problems involving the unitary method</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Perimeters</li> <li>• Areas rectangles, triangles, parallelogram and trapeziums</li> <li>• Compound areas</li> </ul>	<p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Multiply fractions</li> <li>• Cancel fractions including cross cancelling</li> <li>• Reciprocals</li> <li>• Divide fractions</li> <li>• Percentage increase and decrease</li> <li>• Percentage change</li> <li>• Use proportion as equality of ratio</li> <li>• Application of ratio</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Find radius of a circle given area and circumference</li> <li>• Solve problems involving circles</li> <li>• Write answers in terms of pi</li> <li>• Volume of prisms including a cylinder</li> <li>• Convert between units of volume</li> <li>• Surface area of prisms</li> </ul>	<p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Solve quadratic equations by factorisation where the coefficient of x is 1</li> <li>• Solve simultaneous equations graphically and by elimination</li> <li>• Rearrange formulae by balancing</li> </ul> <p><b>Probability</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Further sets and venn diagrams</li> <li>• Understand and use subset and the complement</li> <li>• More tree diagrams including non- standard</li> <li>• OR rule when events are mutually exclusive</li> </ul>	<p><b>Probability</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Conditional probability from a <ul style="list-style-type: none"> <li>○ two way table</li> <li>○ Venn diagram</li> <li>○ tree diagram</li> </ul> </li> </ul> <p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Exact answers</li> <li>• Round answers to an appropriate degree of accuracy</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Enlargements by a negative scale factor</li> <li>• Invariance</li> <li>• Understand the effect of enlargements on area and volume</li> </ul>



		<ul style="list-style-type: none"> <li>• Area unit conversion</li> <li>• Volume- cuboid</li> <li>• Parts of a circle</li> <li>• Circumference and area of a circle including semi circles and physical problems</li> </ul>			
SpRING 2	<p><b>Area and Perimeter</b></p> <ul style="list-style-type: none"> <li>• Perimeter of compound shapes</li> <li>• Compound areas</li> <li>• Areas rectangles, triangles and parallelogram</li> <li>• Units for length and area</li> </ul> <p><b>Equations</b></p> <ul style="list-style-type: none"> <li>• Form equations for physical problems</li> <li>• Solve linear equations including those with brackets and x on both sides</li> <li>• Form formulae from word problems or physical contexts</li> <li>• Rearrange a formula where the subject appears twice</li> </ul>	<p><b>Equations</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Solve linear equations with x on one side including those with brackets and where x is negative</li> <li>• Solve linear equations including those with x on both sides and negative constant terms</li> </ul> <p><b>Probability</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Theoretical and experimental probabilities</li> <li>• Sample space diagrams</li> <li>• Sets and Venn diagrams</li> </ul>	<p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Solve linear equations with x on both sides including those with brackets and where x is negative</li> <li>• Solve linear equations with fractions</li> <li>• Represent inequalities on a number line</li> <li>• List integer solutions of an inequality</li> <li>• Solve inequalities including those in context</li> </ul> <p><b>Probability</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Relative frequency</li> <li>• Combine probabilities</li> <li>• Tree Diagrams</li> <li>• AND rule when events are independent</li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Convert metric units of speed</li> <li>• Calculate average speed</li> <li>• Kinematics formulae</li> <li>• Truncation</li> <li>• Bounds of accuracy</li> <li>• Error intervals</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Congruence and similarity</li> <li>• Vectors</li> </ul> <p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Parallel lines</li> <li>• Equation of a line from two points or point and a gradient</li> <li>• Sketch cubic and reciprocal function</li> <li>• Coordinates in 3 dimensions</li> <li>• Midpoint of a line segment given coordinates in 2D or 3D</li> <li>• Draw quadratic graphs</li> <li>• Solve quadratics graphically</li> </ul>	<p><b>Time to reflect on second mock exam and continue with scheme</b></p> <p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Finding the equation of perpendicular line</li> <li>• Plot non-standard functions</li> <li>• Graph inequalities</li> <li>• Find <math>n^{\text{th}}</math> term of a quadratic sequence</li> <li>• Recognise and use a geometric progression</li> </ul> <p><b>Prepare for GCSE exams</b></p>

S u m m e r 1	<p><b>Probability</b></p> <ul style="list-style-type: none"> <li>● Probability Scale</li> <li>● Probability in words</li> <li>● Theoretical probabilities</li> <li>● Experimental probabilities</li> <li>● Mutually exclusive outcomes</li> </ul> <p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Rounding to powers of 10</li> <li>● Formal methods of multiplication and division</li> <li>● Multiply and divide a decimal by an integer</li> <li>● Money problems</li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Rounding to decimal places</li> <li>● Estimating calculations</li> <li>● Timetables, bills and bank statements</li> <li>● Best value</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Reflection</li> <li>● Rotation</li> <li>● Translation</li> <li>● Enlargement (positive scale factors)</li> <li>● Combined Transformations</li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Rounding to significant figures</li> <li>● Estimating calculations</li> <li>● Compound measures: Speed, density and pressure</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Enlargement (negative and fractional scale factors)</li> <li>● Scale drawing</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Indices (negative)</li> <li>● Surds <ul style="list-style-type: none"> <li>○ simplifying</li> <li>○ arithmetic</li> <li>○ using in exact calculations</li> </ul> </li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Circle Theorems <ul style="list-style-type: none"> <li>○ angle in a semicircle</li> <li>○ angle at the centre twice the angle at the circumference</li> <li>○ angles in same arc</li> <li>○ cyclic quadrilateral</li> </ul> </li> <li>● Pythagoras in 3D</li> <li>● Trigonometry in 3D</li> <li>● Loci - constructions</li> </ul>	Prepare for GCSE exams
S u m m e r 2	<p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Reflection</li> <li>● Rotation</li> </ul> <p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>● Know what a linear sequence is</li> <li>● Generate sequence from a position to term rule</li> <li>● Identify term to term rule for a sequence</li> <li>● Understand a linear sequence as a shifted times table</li> <li>● Determine whether a term will appear in a sequence</li> <li>● Find rules for sequences and coordinate patterns</li> </ul>	<p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Generate sequence from a position to term rule</li> <li>● Identify term to term rule for a sequence</li> <li>● Drawing straight line graphs from a table of values</li> <li>● Parallel lines</li> <li>● Understand gradient and y-intercept</li> <li>● Draw lines in form <math>ax+by=c</math></li> </ul>	<p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Linear sequences in context</li> <li>● Quadratic sequences</li> <li>● Geometric progressions</li> <li>● Triangular numbers</li> <li>● Fibonacci type sequences</li> <li>● Real life linear graphs</li> <li>● Distance time and velocity time graphs</li> <li>● Interpret non linear real life graphs</li> <li>● Recognise graphs of quadratics, cubics and reciprocals</li> </ul>	<p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Expand 3 brackets</li> <li>● Factorise quadratics of the form <math>ax^2+bx+c</math></li> <li>● Factorise difference of two squares</li> <li>● Algebraic proof</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Cumulative frequency</li> <li>● Drawing Box Plots from CF and raw data</li> <li>● Calculate IQR</li> <li>● Compare two sets of data from box plots</li> </ul>	

	<p>and express these rules in words</p> <ul style="list-style-type: none"><li>● Plot and read coordinates</li><li>● Drawing straight line graphs from a table of values</li><li>● Draw horizontal and vertical lines (<math>x=</math>, <math>y=</math>)</li></ul>				
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## Mathematics - Pathway 3 (sets 4 and 5)

### Key Stage 2 Curriculum includes

**Number:** negative numbers, rounding, fractions, percentages, multiples, factors and primes, basic ratio, conversions

**Algebra:** Use simple formula, generate a linear number sequence, simple equations

**Shape:** Area of triangles, rectangles and parallelograms, volume of cubes and cuboids, 2d and 3d shapes, name parts of circles, angles (triangle, on a straight line, around a point, vertically opposite).

**Data:** Averages from a list, bar charts, line graphs, pie charts, plotting coordinates

	Year 7	Year 8	Year 9	Year 10	Year 11
A u t u m n 1	<p><b>Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>Use the language of Ratio</li> <li>Calculate using simple simple ratios</li> </ul> <p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>Recognise and use visual representations of fractions and percentages</li> <li>Represent fractions and decimals on a number line</li> </ul> <p><b>Directed Numbers</b></p> <ul style="list-style-type: none"> <li>Understand what directed numbers are</li> <li>Solve problems involving directed numbers</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Decimals</li> <li>Factors and multiples</li> <li>LCM and HCF</li> <li>Order of operations</li> <li>Order positive and negative integers</li> <li>Add and subtract directed integers</li> <li>Calculate with directed integers in context</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Draw and measure angles</li> <li>Angles in a triangle and quadrilateral</li> <li>Nets</li> <li>3D shapes</li> <li>Constructing triangles</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Decimals</li> <li>Order of operations</li> <li>Metric Units</li> <li>Factors and multiples</li> <li>LCM and HCF</li> <li>Squares, cubes and roots</li> <li>Carry out all 4 operations with directed numbers.</li> <li>Use a calculator to do calculations involving negative numbers.</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Draw and measure angles</li> <li>Complex problems with angle sums</li> <li>Form and solve equations with angles</li> <li>Parallel lines (alternate angles, allied, corresponding)</li> <li>Interior and exterior angles of polygons</li> <li>Properties of triangles and quadrilaterals</li> <li>Parts of a circle</li> <li>Plans and Elevations</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Indices</li> <li>Multiply and divide integer powers of 10</li> <li>Understand power 0</li> <li>Prime factor decomposition</li> <li>LCM using PFD</li> <li>Word problems involving HCF and LCM</li> <li>Write numbers in standard form</li> <li>Convert from standard form to ordinary</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Bearings</li> <li>Pythagoras' Theorem</li> <li>Constructions: perpendicular bisector, angle bisector, perpendicular from a point to a line</li> <li>Construct Loci and definite regions</li> </ul> <p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Simply an expression with multiple single brackets</li> </ul>	<p><b>Prepare for mock exam -</b> revision of key areas which may include any of the previously covered work from Years 7-10</p> <p>Would expect coverage of</p> <ul style="list-style-type: none"> <li>Fractions</li> <li>Ratio</li> <li>Proportion</li> <li>Percentages</li> <li>Angles</li> <li>Algebraic Manipulation</li> <li>Solving equations</li> <li>Drawing graphs</li> <li>Probability</li> <li>Pythagoras and Trigonometry</li> <li>Statistical diagrams</li> <li>Area and perimeter</li> </ul>

			<ul style="list-style-type: none"> <li>Constructing triangles</li> </ul>	<ul style="list-style-type: none"> <li>Factorise by identifying all common factors either numerical or algebraic</li> <li>Multiply out a pair of linear brackets</li> <li>Write algebraic expressions</li> <li>Proof by counterexample</li> <li>Write algebraic expressions involving powers</li> <li>Substitution involving small integer powers</li> </ul>	
A u t u m n 2	<p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>Understand percentages</li> <li>Shading fractions</li> <li>Adding fractions with same denominator</li> <li>Calculate unit fraction</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise angle facts</li> <li>Name angles</li> <li>Draw and measure angles</li> <li>Estimate angles</li> <li>Angles on a straight line</li> <li>Nets</li> <li>Draw a circle</li> </ul> <p><b>Manipulating Algebra</b></p> <ul style="list-style-type: none"> <li>Substitution (no negatives)</li> <li>Write simple algebraic expressions</li> <li>Collect like terms</li> </ul>	<p><b>Manipulating Algebra</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Write algebraic expressions</li> <li>Substitution (positive integers)</li> <li>Collect like terms</li> <li>Multiply out a single bracket</li> <li>Factorise simple expressions</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Line Graphs</li> <li>Bar charts including composite and dual</li> <li>Mean, median, mode and range for a small set of data</li> </ul>	<p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Substitution involving fractions and decimals</li> <li>Collect like terms</li> <li>Multiply out a single bracket</li> <li>Factorise expressions involving multiple letters and powers</li> <li>Write algebraic expressions</li> <li>Basic Proof</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Pie charts</li> <li>Compare sets of data using average and range</li> <li>Average and range of ungrouped data</li> <li>Frequency diagrams and polygons - Discrete and continuous data</li> </ul>	<p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Scatter Graphs</li> <li>Correlation</li> <li>Line of best fit</li> <li>Estimate the mean of grouped data</li> <li>Median class of grouped data</li> <li>Modal class interval of grouped data</li> </ul> <p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Multiply fractions</li> <li>Cancel fractions including cross cancelling</li> <li>Reciprocals</li> <li>Divide fractions</li> <li>Percentage increase and decrease</li> <li>Percentage change</li> <li>Use proportion as equality of ratio</li> <li>Application of ratio</li> </ul> <p><b>Length, Area and Volume</b></p>	<p><b>Time to reflect on mock exams and continue with scheme</b></p> <p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Reverse percentages</li> <li>Compound percentage change <ul style="list-style-type: none"> <li>Simple and compound interest</li> <li>Depreciation</li> </ul> </li> <li>Direct proportion</li> <li>Inverse proportion</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Area of sector</li> <li>Arc length and perimeter of sectors</li> <li>Volume of cone or pyramid</li> <li>Volume of sphere</li> <li>Surface area of spheres, pyramids and cones</li> <li>Composite shapes constructed from cubes,</li> </ul>

				<ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Find radius of a circle given area and circumference</li> <li>● Solve problems involving circles</li> <li>● Write answers in terms of pi</li> <li>● Volume of prisms including a cylinder</li> <li>● Convert between units of volume</li> <li>● Surface area of prisms</li> </ul>	<p>cuboid, cones, pyramids, cylinders, spheres and hemispheres</p> <p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Solve quadratic equations by factorisation where the coefficient of x is 1</li> <li>● Solve simultaneous equations graphically and by elimination</li> <li>● Rearrange formulae by balancing</li> <li>●</li> </ul>
S p r i n g 1	<p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>● Tally charts</li> <li>● Construct a frequency table and draw appropriate chart from this</li> <li>● Bar charts</li> <li>● Mean median mode and range of a small set of data</li> <li>● Begin to interpret data in context</li> </ul> <p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>● Timetables up to 12 x 12</li> <li>● Order decimals</li> <li>● Factors and multiples</li> <li>● Multiply by 10, 100 and 1000</li> <li>● Solve problems involving money, time and temperature</li> </ul>	<p><b>FDP, ratio and proportion</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Equivalent fractions</li> <li>● simplify a fraction</li> <li>● Write simple fractions as decimals</li> <li>● Order fractions with different denominator</li> <li>● Add and subtract fractions with different denominators</li> <li>● Convert between simple fractions, decimals and percentages</li> <li>● Find equivalent ratios</li> <li>● Simplify ratios</li> <li>● Share an amount in a ratio</li> <li>● Understand difference between ratio (part to part) and proportion (part to whole)</li> </ul> <p><b>Length and Area</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> </ul>	<p><b>FDP, Ratio and Proportion</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Equivalent fractions</li> <li>● simplify a fraction</li> <li>● Write simple fractions as decimals</li> <li>● Order fractions with different denominator</li> <li>● Add and subtract fractions with different denominators</li> <li>● Convert between fractions, decimals and percentages including improper fractions and percentages over 100%</li> <li>● Find equivalent ratios</li> <li>● Divide amounts in a ratio</li> <li>● Solve problems involving the unitary method</li> </ul> <p><b>Length, Area and Volume</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Perimeters</li> </ul>	<p><b>Equations and Inequalities</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Solve linear equations with x on both sides including those with brackets and where x is negative</li> <li>● Solve linear equations with fractions</li> <li>● Represent inequalities on a number line</li> <li>● List integer solutions of an inequality</li> <li>● Solve inequalities including those in context</li> </ul> <p><b>Probability</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Relative frequency</li> <li>● Combine probabilities</li> <li>● Tree Diagrams</li> <li>● AND rule when events are independent</li> </ul>	<p><b>Probability</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Further sets and venn diagrams</li> <li>● Understand and use subset and the complement</li> <li>● More tree diagrams including non- standard</li> <li>● OR rule when events are mutually exclusive</li> </ul> <p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Convert metric units of speed</li> <li>● Calculate average speed</li> <li>● Kinematics formulae</li> <li>● Truncation</li> <li>● Bounds of accuracy</li> <li>● Error intervals</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>● Revise previous year</li> <li>● Congruence and similarity</li> <li>● Vectors</li> </ul>

		<ul style="list-style-type: none"> <li>Perimeter of compound shapes</li> <li>Compound areas</li> <li>Areas rectangles, triangles and parallelogram</li> <li>Units for length and area</li> </ul>	<ul style="list-style-type: none"> <li>Areas rectangles, triangles, parallelogram and trapeziums</li> <li>Compound areas</li> <li>Area unit conversion</li> <li>Volume- cuboid</li> <li>Parts of a circle</li> <li>Circumference and area of a circle including semi circles and physical problems</li> </ul>		
S p r i n g 2	<p><b>Area and Perimeter</b></p> <ul style="list-style-type: none"> <li>Perimeters including compound shapes</li> <li>Areas of rectangles and triangles</li> <li>Units for area and length</li> </ul> <p><b>Equations</b></p> <ul style="list-style-type: none"> <li>Number machines</li> <li>Use inverse to undo two step worded scenarios</li> <li>Solving 1 and two 2 step equations</li> <li>Writing algebraic expressions and equations for simple physical situations</li> </ul>	<p><b>Equations</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Form equations for physical problems</li> <li>Solve linear equations including those with brackets and x on both sides</li> <li>Form formulae from word problems or physical contexts</li> <li>Rearrange a formula where the subject appears twice</li> </ul> <p><b>Probability</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Probability Scale</li> <li>Probability in words</li> <li>Theoretical probabilities</li> <li>Experimental probabilities</li> <li>Mutually exclusive outcomes</li> </ul>	<p><b>Equations</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Solve linear equations with x on one side including those with brackets and where x is negative</li> <li>Solve linear equations including those with x on both sides and negative constant terms</li> </ul> <p><b>Probability</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Theoretical and experimental probabilities</li> <li>Sample space diagrams</li> <li>Sets and Venn diagrams</li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Rounding to significant figures</li> <li>Estimating calculations</li> <li>Compound measures: Speed, density and pressure</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Enlargement (negative and fractional scale factors)</li> <li>Scale drawing</li> </ul> <p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Linear sequences in context</li> <li>Quadratic sequences</li> <li>Geometric progressions</li> <li>Triangular numbers</li> <li>Fibonacci type sequences</li> <li>Real life linear graphs</li> <li>Distance time and velocity time graphs</li> <li>Interpret non linear real life graphs</li> </ul>	<p><b>Time to reflect on second mock exam and continue with scheme</b></p> <p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Parallel lines</li> <li>Equation of a line from two points or point and a gradient</li> <li>Sketch cubic and reciprocal function</li> <li>Coordinates in 3 dimensions</li> <li>Midpoint of a line segment given coordinates in 2D or 3D</li> <li>Draw quadratic graphs</li> <li>Solve quadratics graphically</li> </ul>



				<ul style="list-style-type: none"> <li>Recognise graphs of quadratics, cubics and reciprocals</li> </ul>	
S u m m e r 1	<p><b>Probability</b></p> <ul style="list-style-type: none"> <li>Probability Scale</li> <li>Probability in words</li> <li>Numerical Probabilities</li> </ul> <p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>Formal methods of addition and subtraction</li> <li>Add and subtract decimals</li> <li>Timetables up to 12 x 12</li> <li>Round to powers of 10</li> <li>Money problems</li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Rounding to powers of 10</li> <li>Formal methods of multiplication and division</li> <li>Multiply and divide a decimal by an integer</li> <li>Money problems</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Reflection</li> <li>Rotation</li> </ul>	<p><b>Calculations</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Rounding to decimal places</li> <li>Estimating calculations</li> <li>Timetables, bills and bank statements</li> <li>Best value</li> </ul> <p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Reflection</li> <li>Rotation</li> <li>Translation</li> <li>Enlargement (positive scale factors)</li> <li>Combined Transformations</li> </ul>	<p><b>The Number System</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Calculating with standard form</li> <li>Order numbers in standard form</li> <li>Apply standard form in context</li> <li>Related calculations including those involving decimals</li> <li>Product rule for counting</li> </ul> <p><b>Angles and Constructions</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Pythagoras' Theorem</li> <li>Understand pythagorean triples</li> <li>Trigonometry: to find missing side lengths and angles</li> <li>Solve problems involving pythagoras and trigonometry</li> <li>Know exact trig values of <math>\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ</math> and <math>90^\circ</math></li> </ul>	
S u m m e r 2	<p><b>Transformations</b></p> <ul style="list-style-type: none"> <li>Reflect in the y axis and x axis</li> <li>Reflect in a given diagonal line</li> <li>Lines of symmetry</li> <li>Rotational symmetry</li> </ul> <p><b>Sequences and Graphs</b></p>	<p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Know what a linear sequence is</li> <li>Generate sequence from a position to term rule</li> <li>Identify term to term rule for a sequence</li> </ul>	<p><b>Sequences and Graphs</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Generate sequence from a position to term rule</li> <li>Identify term to term rule for a sequence</li> <li>Drawing straight line graphs from a table of values</li> <li>Parallel lines</li> </ul>	<p><b>Manipulation and Substitution</b></p> <ul style="list-style-type: none"> <li>Revise previous year</li> <li>Simplify expressions with index notation</li> <li>Introduction to formal methods of proof including identify symbol</li> <li>Multiply out a pair of linear brackets to find areas algebraically</li> </ul>	<b>Prepare for GCSE exams</b>

	<ul style="list-style-type: none"> <li>• Continue a sequence or pattern and describe the rule</li> <li>• Determine whether a term will appear in a sequence</li> <li>• Find rules for sequences and coordinate patterns and express these rules in words</li> <li>• Plot and read coordinates</li> </ul>	<ul style="list-style-type: none"> <li>• Understand a linear sequence as a shifted times table</li> <li>• Determine whether a term will appear in a sequence</li> <li>• Find rules for sequences and coordinate patterns and express these rules in words</li> <li>• Plot and read coordinates</li> <li>• Drawing straight line graphs from a table of values</li> <li>• Draw horizontal and vertical lines (<math>x=</math>, <math>y=</math>)</li> </ul>	<ul style="list-style-type: none"> <li>• Understand gradient and y-intercept</li> <li>• Draw lines in form <math>ax+by=c</math></li> </ul>	<ul style="list-style-type: none"> <li>• Factorise quadratics where the coefficient of x is 1</li> </ul> <p><b>Comparing and displaying data</b></p> <ul style="list-style-type: none"> <li>• Revise previous year</li> <li>• Represent grouped data using frequency diagrams</li> <li>• Appreciate the difference between a bar chart and frequency diagram</li> <li>• Interpret data set given a frequency diagram</li> <li>• Tables and line graphs for time series data</li> </ul>	
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