

KS4 Higher Tier Maths	Topic/Learning Pathway	Key Words	Links to previous learning	Links to wider curriculum
<b>AUTUMN 1</b>	<p><b><u>Calculating</u></b>                      Negative Numbers                      Indices                      Standard Form                      Inequalities                      Limits of Accuracy</p> <p><b><u>Visualising and Constructing</u></b>                      Enlargements                      Scale diagrams                      Plans and Elevations                      Loci                      Constructions</p>	<p><b><u>Calculating</u></b>                      Negative number,                      Directed number, Improper fraction, Top-heavy fraction, Mixed number, Operation, Inverse, Long multiplication, Short division, Power, Indices, Roots</p> <p><b><u>Visualising and Constructing</u></b>                      Similar, Similarity, Enlarge, enlargement, Scaling, Scale factor, Centre of enlargement, Object, Image, Scale drawing, Bearing, Plan, Elevation</p>	<p><b><u>Calculating</u></b>                      BIDMAS, Prime factor form, Calculating with indices, Rounding, HCF, LCM, Prime Numbers, Multiplying by powers of 10</p> <p><b><u>Visualising and Constructing</u></b>                      Reflections, Rotations, Translations, Multiplication, Plans and Elevations, scale drawings</p>	<p><b>English</b> - Mathematical Vocabulary  <b><u>Calculating</u></b>                      Science – Standard Form - Sizes of planets                      Geography – Standard Form - Population                      History – Standard form - Number of years                      PE – Limits of accuracy - Track times</p> <p><b><u>Visualising and Constructing</u></b>                      Art – Enlargements and scale drawings                      PE – Loci – Track, Netball positions                      Construction – Plans and elevations – design drawing</p>
<b>AUTUMN 2</b>	<p><b><u>Algebraic Proficiency (Tinkering)</u></b>                      Simplifying Expressions                      Factorising                      Rearranging formulae                      Expanding Brackets                      Factorising Quadratics                      Difference of 2 squares</p> <p><b><u>Proportional Reasoning</u></b>                      Ratio                      Compound Units                      Direct proportion                      Inverse proportion                      Congruency &amp; Similar shapes</p>	<p><b><u>Algebraic Proficiency (Tinkering)</u></b>                      Product, Variable, Term, Coefficient, Common factor, Factorise, Power, Indices, Formula, Formulae, Subject, Change the subject</p> <p><b><u>Proportional Reasoning</u></b>                      Ratio, Proportion, Proportional, Multiplier, Speed, Unitary method, Units, Compound unit</p>	<p><b><u>Algebraic Proficiency (Tinkering)</u></b>                      Solving simple equations, factorise linear expressions, collect like terms, Factors, Multiples, HCF, LCM</p> <p><b><u>Proportional Reasoning</u></b>                      Ratio, Proportion, Fractions, Straight Line Graphs, Shapes, Units of Measure, Solving Equations</p>	<p><b>English</b> - Mathematical Vocabulary  <b><u>Algebraic Proficiency (Tinkering)</u></b>                      Science – Rearranging Formulae – Balancing chemical equations  <b><u>Proportional Reasoning</u></b>                      Cooking – Ratio – Recipes                      Construction – Similar Shapes – Scale drawings                      PE – Compound units – Calculating speeds                      Science – Ratio – Chemistry Experiments</p>

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<p><b>SPRING 1</b></p>	<p><b><u>Pattern Sniffing</u></b> Sequences &amp; Nth Term Fibonacci Quadratic Sequences Geometric Progression <b><u>Solving Equations and Inequalities</u></b> Solving linear equations and inequalities Solving equations and inequalities with unknowns on both sides Solving equations and inequalities involving brackets Constructing equations and inequalities Solving simultaneous equations by elimination Solving simultaneous equations by substitution</p>	<p><b><u>Pattern Sniffing</u></b> Sequence, Linear, Term, Difference, Term-to-term rule, Position-to-term rule, Ascending, Descending <b><u>Solving Equations and Inequalities</u></b> Algebra, algebraic, algebraically, Unknown, Equation, Operation, Solve, Solution, Brackets, Symbol, Substitute, Graph, Point of intersection</p>	<p><b><u>Pattern Sniffing</u></b> Ratio, Proportion, Fractions, expressions, solving equations, forming equations, addition, subtraction, multiplication, division, indices <b><u>Solving Equations and Inequalities</u></b> Expressions, solving equations, forming equations, addition, subtraction, multiplication, division, indices, substitution, collecting like terms</p>	<p><b>English</b> - Mathematical Vocabulary <b><u>Pattern Sniffing</u></b> Art – Fibonacci – real world patterns Caring for children – sequences – leaning to count <b><u>Solving Equations and Inequalities</u></b> Construction – Area - Scale Drawings Construction – Perimeter - Scale Drawings Construction – Volume - Scale Drawings</p>
<p><b>SPRING 2</b></p>	<p><b><u>Calculating space</u></b> Properties of 2D Shapes Area Perimeter Area and Perimeter of Arcs and Sectors Pythagoras theorem Surface area Volume Angles in Parallel Lines Angles in Polygons Geometric Proofs Trigonometric Ratios Trigonometric Bearings Area Perimeter Area and Perimeter of Arcs and Sectors Pythagoras theorem Surface area</p>	<p><b><u>Calculating space</u></b> Circle, Centre, Radius, diameter, chord, circumference, Pi, (Right) prism, Cross-section, Cylinder, Polygon, polygonal, Solid <b><u>Conjectures</u></b> Degrees, Right angle, acute angle, obtuse angle, reflex angle, Vertically opposite, Geometry, geometrical, Parallel, Alternate angles, corresponding angles, Interior angle, exterior angle, Regular polygon</p>	<p><b><u>Calculating space</u></b> Expressions, addition, subtraction, multiplication, division, indices, substitution, fractions of amounts, area, circumference, perimeter <b><u>Conjectures</u></b> Area, Perimeter, Rearranging Formulae, Ratio, Proportion, Shapes, Angles, Substitution, Solving Equations, Using a Calculator</p>	<p><b>English</b> - Mathematical Vocabulary <b><u>Calculating space</u></b> Construction – Area - Scale Drawings Construction – Perimeter - Scale Drawings Construction – Volume - Scale Drawings <b><u>Conjectures</u></b> Art – Angles in Parallel Lines - Scale Drawings Outdoor Ed – Trigonometric Bearings – Map Reading</p>

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	<p>Volume  <u>Conjectures</u>                      Angles in Parallel Lines                      Angles in Polygons                      Geometric Proofs                      Trigonometric Ratios                      Trigonometric Bearings</p>			
<b>SUMMER 1</b>	<p><u>Algebraic Proficiency (Visualising)</u>                      Linear graphs                      Quadratic Graphs                      Cubic functions                      Reciprocal functions                      Turning points and intercepts  <u>Solving Equations and Inequalities ii</u>                      Real life graphs                      Solving equations and inequalities graphically</p>	<p><u>Algebraic Proficiency (Visualising)</u>                      Plot, Equation (of a graph), Function, Formula, Linear, Coordinate plane, Gradient, y-intercept, Substitute, Quadratic, Piece-wise linear, Model, Kinematic, Speed, Distance  <u>Solving Equations and Inequalities ii</u>                      Plot, Equation (of a graph), Function, Formula, Linear, Coordinate plane, Gradient, y-intercept, Substitute, Quadratic, Piece-wise linear, Model, Kinematic, Speed, Distance</p>	<p><u>Algebraic Proficiency (Visualising)</u>                      Rearranging Formulae, Ratio, Proportion, Substitution, Solving Equations, Using a Calculator, Coordinates, Plotting Graphs, Compound Measures  <u>Solving Equations and Inequalities ii</u>                      Rearranging Formulae, Ratio, Proportion, Substitution, Solving Equations, Using a Calculator, Coordinates, Plotting Graphs, Compound Measures</p>	<p><b>English</b> - Mathematical Vocabulary  <u>Algebraic Proficiency (Visualising)</u>                      Science – Linear Graphs – Rates of Change  <u>Solving Equations and Inequalities ii</u>                      PE – Real Life Graphs – Speed</p>
<b>SUMMER 2</b>	<p><u>Understanding Risk</u>                      Venn Diagrams                      Calculating Probability                      Dependant Events                      Independent Events                      Experimental Probability                      Histograms                      Scatter Graphs of bivariate data                      Time series graphs                      Compound bar charts                      Frequency polygons                      Stem and leaf diagrams                      Line of best fit</p>	<p><u>Understanding Risk</u>                      Outcome, Event, Experiment, Combined experiment, Frequency tree, Enumerate, Set, Venn diagram, Possibility space, sample space, Equally likely outcomes, Theoretical probability, Random, Bias, Fairness, Relative frequency  <u>Presentation of Graphs</u>                      Data, Categorical data,</p>	<p><u>Understanding Risk</u>                      Ratio, Proportion, Using a Calculator, Fractions, Experimental Probability, Likelihood, Relative Frequency Experiments  <u>Presentation of Graphs</u>                      Bar Charts, Scatter Graphs, Probability, Straight Line Graphs, Equation of a Line, Gradient</p>	<p><b>English</b> - Mathematical Vocabulary</p>

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	<p>Calculating Probability                  Dependant Events                  Independent Events                  Experimental Probability  <u><b>Presentation of Graphs</b></u>                  Histograms                  Scatter Graphs of bivariate data                  Time series graphs                  Compound bar charts                  Frequency polygons                  Stem and leaf diagrams                  Line of best fit</p>	<p>Discrete data, Continuous data, Grouped data, Table, Frequency table, Frequency, Histogram, Scale, Graph, Axis, axes, Scatter graph (scatter diagram, scattergram, scatter plot), Bivariate data, (Linear) Correlation, Positive correlation, Negative correlation</p>		
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