

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

Oswaldtwistle School Higher Tier Maths Long Term Plan

<p>SPRING 1</p>	<p><u>Sequences</u> Sequences & Nth Term Fibonacci Quadratic Sequences Geometric Progression <u>Algebra 2</u> 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><u>Sequences</u> Sequence, Linear, Term, Difference, Term-to-term rule, Position-to-term rule, Ascending, Descending <u>Algebra 2</u> Algebra, algebraic, algebraically, Unknown, Equation, Operation, Solve, Solution, Brackets, Symbol, Substitute, Graph, Point of intersection</p>	<p><u>Sequences</u> Ratio, Proportion, Fractions, expressions, solving equations, forming equations, addition, subtraction, multiplication, division, indices <u>Algebra 2</u> Expressions, solving equations, forming equations, addition, subtraction, multiplication, division, indices, substitution, collecting like terms</p>	<p>English - Mathematical Vocabulary <u>Sequences</u> Art – Fibonacci – real world patterns Caring for children – sequences – leaning to count <u>Algebra 2</u> Construction – Area - Scale Drawings Construction – Perimeter - Scale Drawings Construction – Volume - Scale Drawings</p>
<p>SPRING 2</p>	<p><u>Shape 2</u> 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 Volume <u>Shape 3</u></p>	<p><u>Shape 2</u> Circle, Centre, Radius, diameter, chord, circumference, Pi, (Right) prism, Cross-section, Cylinder, Polygon, polygonal, Solid <u>Shape 3</u> 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><u>Shape 2</u> Expressions, addition, subtraction, multiplication, division, indices, substitution, fractions of amounts, area, circumference, perimeter <u>Shape 3</u> Area, Perimeter, Rearranging Formulae, Ratio, Proportion, Shapes, Angles, Substitution, Solving Equations, Using a Calculator</p>	<p>English - Mathematical Vocabulary <u>Shape 2</u> Construction – Area - Scale Drawings Construction – Perimeter - Scale Drawings Construction – Volume - Scale Drawings <u>Shape 3</u> Art – Angles in Parallel Lines - Scale Drawings Outdoor Ed – Trigonometric Bearings – Map Reading</p>

Oswaldtwistle School Higher Tier Maths Long Term Plan

	<p>Angles in Parallel Lines Angles in Polygons Geometric Proofs Trigonometric Ratios Trigonometric Bearings</p>			
SUMMER 1	<p><u>Algebra 3</u> Linear graphs Quadratic Graphs Cubic functions Reciprocal functions Turning points and intercepts <u>Algebra 4</u> Real life graphs Solving equations and inequalities graphically</p>	<p><u>Algebra 3</u> Plot, Equation (of a graph), Function, Formula, Linear, Coordinate plane, Gradient, y-intercept, Substitute, Quadratic, Piece-wise linear, Model, Kinematic, Speed, Distance <u>Algebra 4</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>Algebra 3</u> Rearranging Formulae, Ratio, Proportion, Substitution , Solving Equations, Using a Calculator, Coordinates, Plotting Graphs, Compound Measures <u>Algebra 4</u> Rearranging Formulae, Ratio, Proportion, Substitution , Solving Equations, Using a Calculator, Coordinates, Plotting Graphs, Compound Measures</p>	<p>English - Mathematical Vocabulary <u>Algebra 3</u> Science – Linear Graphs – Rates of Change <u>Algebra 4</u> PE – Real Life Graphs – Speed</p>
SUMMER 2	<p><u>Probability</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 Calculating Probability Dependant Events</p>	<p><u>Probability</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>Statistics</u> Data, Categorical data, Discrete data, Continuous data, Grouped data, Table,</p>	<p><u>Probability</u> Ratio, Proportion, Using a Calculator, Fractions, Experimental Probability, Likelihood, Relative Frequency Experiments <u>Statistics</u> Bar Charts, Scatter Graphs, Probability, Straight Line Graphs, Equation of a Line, Gradient</p>	<p>English - Mathematical Vocabulary</p>

Oswaldtwistle School Higher Tier Maths Long Term Plan

	<p>Independent Events Experimental Probability <u>Statistics</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>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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