

Oswaldtwistle School Foundation Maths Long Term Plan

KS4 Foundation Maths	Topic	Key Words	Links to previous learning	Links to wider curriculum
AUTUMN 1	<p><b><u>Unit 1 - Number and the Number System</u></b>                      Properties of Numbers                      Prime Factorisation                      HCF and LCM with and without Venns                      Rounding to DP, SF and Approximating Standard Form</p> <p><b><u>Unit 2 - Calculating</u></b>                      Directed Number                      BIDMAS with Negatives                      Calculating Indices                      Negative Numbers</p>	Prime, Prime Factor, Prime Factorisation, Product, Venn Diagram, HCF, LCM, Standard Form, Significant Figures Negative Number, Directed Number, Improper Fraction, Top Heavy Fraction, Mixed Number, Operation, Inverse, Long Multiplication, Short Division, Power, Indices Roots	Multiples, Factors, Primes, HCF and LCM, Rounding to 10, 100, 1000 and Decimal Places, Multiplying and Dividing by Powers of 10, BIDMAS, Calculating by Addition, Subtraction, Division and Multiplication	English - Mathematical Vocabulary Science – Standard Form - Sizes of planets Geography – Standard Form - Population History – Standard form - Number of years PE – Limits of accuracy - Track times
AUTUMN 2	<p><b><u>Unit 3 – Visualising and Constructing</u></b>                      Constructions                      Scale Drawings                      Bearings                      Enlargements</p> <p><b><u>Unit 4 – Understanding Risk</u></b>  <b><u>Part 1</u></b>                      Basic probability                      Combined Events                      Two-Way tables</p> <p><b><u>Unit 5 – Algebraic Proficiency</u></b>  <b><u>Part 1</u></b>                      Expand                      Factorise                      Indices</p>	Similar, Enlarge, Enlargement, Scaling, Scale Factor, Centre of Enlargement, Scale Drawing, Bearing, Plan, Elevation, Probability, Theoretical Probability, Event, Outcome, Impossible, Unlikely, Evens Chance, Likely, Certain, Equally Likely, Mutually Exclusive, Exhaustive, Possibility Space, Variable, Term, Coefficient, Factor, factorise, Power, Indices, Formula, Formulae, Subject	Drawing and Measuring Angles, Direction, Scale Drawings, Using Scales, Basic Probability, Knowledge of Powers and Roots, Negative Numbers	Art – Enlargements and scale drawings PE – Loci – Track, Netball positions Construction – Plans and elevations – design drawing Construction – Similar Shapes – Scale drawings Construction - Reading scales and accurate measuring Geography – Grid References

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<p><b>SPRING 1</b></p>	<p><b><u>Unit 6 - Exploring FDP</u></b>                  Equivalent FDP                  Fraction of an amount                  Percentage of an amount                  Terminating and Recurring                  Percentage increase and decrease                  Using Multipliers  <b><u>Unit 7 – Proportional Reasoning</u></b>                  Ratio and Proportion                  Best Buys                  Speed, Distance and Time  <b><u>Unit 8 – Number Sequences</u></b>                  Term-to-term rule                  Position-to-term rule                  Nth term</p>	<p>Fraction, Mixed Number, Improper Fraction, Proper Fraction, Top Heavy Fraction, Percentage, Decimal, Terminating, Recurring, Simplify, Cancel, Ratio, Proportion, Multiplier, Speed, Units, Compound Units, Sequence, Linear, Term, Difference, Term-to-Term Rule, Position-to-Term Rule, Ascending, Descending,</p>	<p>Equivalents between Fractions, Decimals and Percentages, Ordering whole numbers, negatives and Decimals, Simplify ratio, Divide a ratio into a given amount, Term-to-Term Rule, Position-to-Term Rule,</p>	<p>English - Mathematical Vocabulary                  Cooking – Ratio - Recipes                  PE – Compound units – Calculating speeds                  Science – Ratio – Chemistry Experiments                  Art – Fibonacci – real world patterns                  Caring for children – sequences – leaning to count                  History - Time lines and sequencing dates                  PSHE - Percentages - Country Populations and Religions</p>
<p><b>SPRING 2</b></p>	<p><b><u>Unit 9 Investigating Angles</u></b>                  Basic angle facts                  Vertically opposite angles                  Angles in polygons                  Angles in Parallel Lines                  Problem Solving with Angles  <b><u>Unit 10 – Calculating with FDP</u></b>                  Adding Fractions                  Subtracting Fractions                  Multiplying Fractions                  Dividing Fractions                  Problem Solving with Fractions  <b><u>Unit 11 – Solving Equations</u></b>                  Solve multi-step equations including brackets                  Solve equations with unknowns on both sides                  Solve inequalities                  Show inequalities on a number line                  Identify the set of integers that satisfies an inequality</p>	<p>Angles, Degrees, Right Angle, Acute, Obtuse, Reflex, Protractor, Vertically Opposite, Parallel, Alternate, Corresponding and Interior Angles, Exterior Angle, Regular Polygon, Proper Fraction, Improper Fraction, Mixed Number, Simplify, Cancel, Lowest Term, Percent, Percentage, Percentage Change, Original Amount, Multiplier, Simple Interest, Algebra, Algebraic, Unknown, Equation, Operation, Solve, Solution, Brackets, Symbol, Substitute, Inequality</p>	<p>Basic Angle facts, Angles around a Point and on a Straight Line, Common Denominators, Mixed Numbers and Improper Fractions, Calculating 10%, 5%, 25% and 50%, Solving Simple Equations, Collecting Like Terms, Expanding Brackets</p>	<p>English - Mathematical Vocabulary                  Art - Lines and angles in drawings                  PSHE - Percentages - Country Populations and Religions                  Science - Working with Scientific Formulae                  History - Population Growth                  Construction - Lines, angles and measuring</p>

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<p><b>SUMMER 1</b></p>	<p><b><u>Unit 12 – Calculating Space</u></b>            Area and Perimeter            Area and Circumference            Composite Shapes            Volume of 3D Shapes            Surface Area of 3D Shapes            Area and circumference of circles            Pythagoras' Theorem  <b><u>Unit 13 – Algebraic Proficiency Part 2</u></b>            Linear Graphs            Understand <math>y = mc + c</math>            Construct and describe all 4 transformations            Gradient of a line            Equation of a line            Plot a draw quadratic and cubic graphs</p>	<p>Circle, centre, Radius, Diameter, Chord, Circumference, Pi, Prism, Cross Section, Cylinder, Polygon, Solid, Equation (of a graph), Function, Formula, Linear, Coordinate, Gradient, y-intercept, Substitute, Quadratic, Speed, Distance</p>	<p>Knowledge of formulae for area and perimeter for all 2D shapes, Units of measure, Names 2D and 3D shapes, Coordinates, Substitution</p>	<p>English - Mathematical Vocabulary            Art - Shapes and nets            History - Drawing graphs and charts</p>
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<p><b>SUMMER 2</b></p>	<p><b><u>Unit 14 - Understanding Risk</u></b>  <b>2</b>                  Understand the probability scale                  List outcomes and comment                  Theoretical probability                  Tree diagrams  <b><u>Unit 15 – Presenting Data</u></b>                  Pie charts                  Frequency Tables                  All bar charts                  Scatter graphs, LOBF and correlation                  Stem-and-leaf Diagrams                  Time Series Graphs                  Frequency Polygons  <b><u>Unit 16 – Measuring Data</u></b>                  Mean, Median, Mode and Range                  Averages from a frequency table                  Averages from grouped data                  Estimate the range</p>	<p>Outcome, Event,                  Experiment, Combined                  Experiment, Frequency                  Tree, Enumerate, Set,                  Venn Diagram, Sample                  Space, Equally Likely                  Outcomes, Theoretical                  Probability, Random,                  Bias, Fairness, Relative                  Frequency                  Data, Categorical Data,                  Discrete Data,                  Continuous Data,                  Grouped Data,                  Frequency Table,                  Frequency, Histogram,                  Scale, Graph, Axis,                  Axes, Scatter Graph                  (Scatter Diagram,                  Scattergram, Scatter                  Plot)                  Bivariate Data, (Linear)                  Positive and Negative                  Correlation</p>	<p>Probabilities add up to 1,                  List Outcomes,                  Understanding of probability                  Vocabulary, Knowledge of                  graphs, Tables and Charts,                  Read and Represent Data,                  Ordering Numbers, X and Y                  Axis</p>	<p>English - Mathematical Vocabulary                  PE - Race times collected and analysed                  PSHE - Analysing data                  PSHE - Probability and Risk                  History - Analysing data and drawing                  graphs and charts</p>
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