

Oswaldtwistle School Winter Maths Long Term Plan

KS3 Winter Maths	Topic/Learning Pathway	Key Words	Links to previous learning	Links to wider curriculum
AUTUMN 1	<p>1. <u>Number and the Number System</u>                      Prime, square and cube numbers                      Common factors and common multiples                      HCF and LCM                      Read, write and compare numbers                      Negative numbers                      Multiply and Divide by 10, 100 and 1000</p>	<p><b>Stage 5</b> - Multiple, Common Factor, Divisible, Factor Pairs, Prime Number, Composite Number, Square Number, Cube Number, Power  <b>Stage 6</b> - Place Value, Digit, Negative Number, Multiple, Factor, Divisible, Prime Number, Composite  <b>Stage 7</b> - Numbers HCF, LCM, Powers, Square and Cube Roots, Triangular Numbers, Square Numbers, Cube Numbers, Prime Numbers, Linear Sequence, Arithmetic Sequence</p>	<p>HCF and LCM                      Multiplying and dividing                      Read, write and compare numbers</p>	<p>English – Mathematical vocabulary                      Autumn 1 – Humanities – Chronology</p>
	<p>2. <u>Counting and Comparing</u>                      Place value                      Order, read write and compare numbers                      Negative numbers                      Use &lt;, &gt; and =                      Order integers and decimals                      Order fractions</p>	<p><b>Stage 5</b> - Place Value, Digit, Positive Number, Negative Number  <b>Stage 7</b> - Positive Number, Negative Number, Integer, Numerator Denominator</p>	<p>Fractions                      Order, read, write and compare numbers                      Comparing numbers</p>	<p>English – Mathematical vocabulary                      Autumn 1 – Humanities – Chronology                      Spring 1 – Humanities – Population growth</p>
AUTUMN 2	<p>3. <u>Addition and Subtraction</u>                      Add and subtract mentally                      Column addition and subtraction                      Solve multistep problems                      Add and subtract using decimals</p>	<p><b>Stage 5</b> - Addition, Subtraction, Sum, Total, Difference, Minus, Less, Column Addition, Column Subtraction, Exchange, Operation, Estimate  <b>Stage 6</b> - Addition, Subtraction, Sum, Total, Difference, Minus, Less, Column Addition and Subtraction, Operation  <b>Stage 7</b> - Addition, Subtraction, Sum, Total, Difference, Minus, Less, Column Addition and Subtraction, Operation</p>	<p>Addition and subtraction                      Problem solving</p>	<p>English – Mathematical vocabulary</p>

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	<p>4. <u>Visualising</u> 2-D and 3-D shape Constructing shape Symmetry Properties of shape</p>	<p><b>Stage 5</b> - Cube, Cuboid, Cylinder, Pyramid, Prism, Cone, Sphere, 2D, 3D, Net, Sketch, Isometric Paper, Rectangle, Square, Quadrilateral, Regular, Irregular, Polygon, Pentagon, Hexagon, Heptagon, Octagon, Parallel, Perpendicular, Coordinates <b>Stage 6</b> - Protractor, Measure, Nearest, Construct, Sketch, Cube, Cuboid, Cylinder, Pyramid, Prism, Net, Edges, Faces, Vertex, Vertices, Visualise <b>Stage 7</b> - Edges, Faces, Vertex, Vertices, Plane, Parallel, Perpendicular, Regular Polygon, Rotational Symmetry</p>	<p>Shape Symmetry</p>	<p>English – Mathematical vocabulary Spring 2 – Technology – Isometric drawing Spring 1 – Art – Famous buildings and how they look</p>
<p><b>SPRING 1</b></p>	<p>5. <u>Multiplication and Division</u> Multiplying and dividing Multiply and Divide by 10, 100 and 1000 Formal written methods for multiplication and division Use BIDMAS Solve multi-step problems</p>	<p><b>Stage 5</b> - Multiply, Times Product, Commutative, Divide, Division, Divisible, Divisor, Dividend, Quotient, Remainder, Factor, Short Multiplication, Long Multiplication, Short Division Operation, Estimate <b>Stage 6</b> - Addition, Subtraction, Sum, Total, Difference, Minus, Less, Column Addition and Subtraction, Operation, Multiply, Multiplication, Times, Product, Short Multiplication, Long Multiplication, Commutative, Divide, Division, Divisible, Divisor, Dividend, Quotient, Remainder, Factor, Short Division, Long Division, Remainder, Operation, Estimate <b>Stage 7</b> - Improper Fraction, Improper Fraction, Mixed Number, Operation, Inverse, Long Multiplication, Short Division, Long Division, Remainder</p>	<p>Multiplication and division Problem solving</p>	<p>English – Mathematical vocabulary</p>

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	<p>6. <u>Exploring FDP</u>          Compare, order and identify FDPs          Convert FDPs          Simplify fractions          Solve problems involving FDPs          FDP equivalents</p>	<p><b>Stage 5</b> - Fraction, Numerator, Denominator, Improper Fraction, Proper Fraction, Top Heavy Fraction, Tenth, Hundredth, Thousandth, Per cent, Percentage, Decimal, Equivalent  <b>Stage 6</b> - Fraction, Improper Fraction, Proper Fraction, Top Heavy Fraction, Percentage, Decimal, Proportion, Simplify, Equivalent, Lowest Term  <b>Stage 7</b> - Fraction, Improper Fraction, Proper Fraction, Top Heavy Fraction, Percentage, Proportion</p>	<p>FDP</p>	<p>English – Mathematical vocabulary          Food Technology – Decimal measurements and equivalents          Science – FDP Equivalents</p>
<p><b>SPRING 2</b></p>	<p>7. <u>Measuring Space</u>          Problem solving involving time and money          Convert between adjacent and non-adjacent units of measurement for length, volume/capacity, time and money          Use a rule and protractor accurately</p>	<p><b>Stage 5</b> - Millennium, Century, Decade, Year, Month, Week, Day          Hour, Minute, Second, Timetable, Length, Distance, Mass, Weight, Volume, Capacity, Metres, Centimetres, Millimetres, Tonne, Kilogram, Gram, Milligram, Litre, Millilitres, Inch, Foot, Yard, Pound, Ounce, Pint, Gallon  <b>Stage 6</b> - Length, Distance, Mass, Weight, Volume, Capacity, Metres, Centimetres, Millimetres, Tonne, Kilogram, Gram, Milligram, Litre, Millilitres, Hour, Minute, Second, Inch, Foot, Yard, Pound, Ounce, Pint, Gallon  <b>Stage 7</b> - Length, Distance, Mass, Weight, Volume, Capacity, Metres, Centimetres, Millimetres, Tonne, Kilogram, Gram, Milligram, Litre, Millilitres, Hour, Minute, Second, Inch, Foot, Yard, Pound, Ounce, Pint, Gallon, Line Segment</p>	<p>Units of measure          Angles          Problem solving</p>	<p>English – Mathematical vocabulary          All year – Technology – Measuring and accuracy          Autumn 1 – PSHE - Finance          Spring 2 – Outdoor Education – Average speeds          Spring 2 – Outdoor Education – Time keeping          Spring 1 – Technology – Time project</p>

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	<p>8. <u>Investigating Angles</u> Use a protractor Find unknown angles in shapes, around a point and on a straight line Problem solving Find vertically opposite angles</p>	<p><b>Stage 5</b> - Turn, Angles, Degrees, Right Angle, Acute Angle, Obtuse Angle, Reflex Angle, Protractor <b>Stage 6</b> - Angles, Degrees, Right Angle, Acute Angle, Obtuse, Angle, Reflex Angle, Protractor, Vertically opposite <b>Stage 7</b> - Angles, Degrees, Right Angle, Acute Angle, Obtuse, Angle, Reflex Angle, Protractor, Vertically opposite, Geometry, Geometrical</p>	<p>Angles Units of measure</p>	<p>English – Mathematical vocabulary Summer 1 – Outdoor Education - Bearings</p>
	<p>9. <u>Calculating FDP</u> Converting FDPs Adding and subtracting fractions Mixed number fractions Multiplying and dividing fractions Know equivalent FDPs</p>	<p><b>Stage 5</b> - Place Value, Tenth, Hundredth, Thousandth, Decimal, Proper Fraction, Improper Fraction, Top Heavy Fraction, Mixed Number, Numerator, Denominator, Per cent, Percentage <b>Stage 6</b> - Mixed Number, Equivalent Fraction, Simplify, Cancel, Lowest Terms, Proper Fraction, Improper Fraction, Top Heavy Fraction, Numerator, Denominator, Per cent, Percentage <b>Stage 7</b> - Mixed Number, Equivalent Fraction, Simplify, Cancel, Lowest Terms, Proper Fraction, Improper Fraction, Top Heavy Fraction, Numerator, Denominator, Per cent, Percentage, Multiplier, Increase, Decrease</p>	<p>FDP Addition and subtracting</p>	<p>English – Mathematical vocabulary</p>
<p><b>SUMMER 1</b></p>	<p>10. <u>Calculating Space</u> Area, volume and perimeter Circles Estimation</p>	<p><b>Stage 5</b> - Perimeter, Area, Volume, Capacity, Dimensions, Square, Rectangle, Composite Rectilinear, Polygon, Cube, Cuboid, Square mm, Square cm, Square m, Square km, Cubic Centimetre, Centimetre Cube <b>Stage 6</b> - Perimeter, Area, Volume, Surface Area, Capacity, Square, Rectangle, Parallelogram, Triangle, Trapezium, Polygon, Cube, Cuboids,</p>	<p>Shape and space Addition Properties of shapes</p>	<p>English – Mathematical vocabulary Autumn 2 – Technology - Packaging</p>

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		<p>Square mm, Square cm, Square m, Square km, Cubic Centimetre, Centimetre Cube, Formula, Formulae, Length, Breadth, Depth, Height, Width</p> <p><b>Stage 7</b> - Perimeter, Area, Volume, Surface Area, Capacity, Square, Rectangle, Parallelogram, Triangle, Trapezium, Polygon, Cube, Cuboid, Square mm, Square cm, Square m, Square km, Cubic Centimetre, Centimetre Cube, Formula, Formulae, Length, Breadth, Depth, Height, Width</p>		
	<p>11. <u>Checking, Approximation and Estimating</u> Rounding Estimation Significant figures</p>	<p><b>Stage 5</b> - Approximate, Round, Decimal Place, Check, Solution, Answer, Estimate, Accurate, Accuracy</p> <p><b>Stage 6</b> - Approximate, Round, Decimal Place, Check, Solution, Answer, Estimate, Order of Magnitude, Accurate, Accuracy</p> <p><b>Stage 7</b> - Approximate, Round, Decimal Place, Check, Solution, Answer, Estimate, Order of Magnitude, Accurate, Accuracy, Significant Figure, Cancel, Inverse, Operation</p>	<p>Estimation Addition and subtraction FDP</p>	<p>English – Mathematical vocabulary Technology – Estimation of size Food Technology – Estimation of weight</p>
<p><b>SUMMER 2</b></p>	<p>12. <u>Mathematical Movement</u> Translation Reflection Co-ordinates Problem solving 2-D shapes</p>	<p><b>Stage 5</b> - 2-D, Grid, Axis, Axes, x-axis, y-axis, Origin, Quadrant, (Cartesian) Coordinates, Point, Translation, Reflection, Transformation, Object, Image, Congruent, congruence</p> <p><b>Stage 6</b> - 2-D, Grid, Axis, Axes, x-axis, y-axis, Origin, Quadrant, (Cartesian) Coordinates, Point, Translation, Reflection, Transformation, Object, Image, Congruent, congruence</p>	<p>Shape Symmetry Problem solving</p>	<p>English – Mathematical vocabulary Spring 1 and 2 – Arts Award – Scale drawings, enlargements and drawing maps</p>

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		<p><b>Stage 7 - (Cartesian) Coordinates,</b>          Axis, Axes, x-axis, y-axis, Origin,          Quadrant, Translation, Reflection,          Rotation, Transformation, Object,          Image, Congruent, congruence,          Mirror Line, Vector, Centre of          Rotation</p>		
	<p>13. <u>Presentation of Data</u>          Line graphs, pie charts and bar          charts          One and two step problems          Read values from charts and          graphs          Problem solving</p>	<p><b>Stage 5 -</b> , Scale, Axis, Axes, Graph,          Frequency, Time Graph, Time          Series, Line Graph, Bar-Line Graph,          Vertical Line Chart, Maximum,          Minimum  <b>Stage 6 -</b> Data, Scale, Axis, Axes,          Graph, Frequency, Time Graph,          Time Series, Line Graph, Pie Chart,          Sector, Angle, Protractor, Degrees,          Maximum, Minimum  <b>Stage 7 -</b> Data, Categorical Data,          Discrete, Data, Pictogram, Symbol,          Key, Frequency, Table, Frequency          Table, Tally, Bar Chart, Time Graph,          Time Series, Bar-Line Graph,          Vertical, Line Chart, Scale, Graph,          Axis, Axes, Line Graph, Pie Chart,          Sector, Angle, Maximum, Minimum</p>	<p>Problem Solving          Angles          Co-ordinates</p>	<p>English – Mathematical vocabulary</p>