



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Number skills</b>	Calculate with integer values  Multiply and divide by powers of 10	Add  Subtract  Multiply  Divide	1) Addition and subtractions  2) Multiplying and dividing by powers of 10  3) Multiplication  4) Division	Place value  Powers of 10  Written methods of calculating with numbers	One written homework on multiplication and division.
<b>Fractions</b>	To simplify fractions and understand equivalence  To convert fractions between mixed and improper  To be able to calculate with fractions, including mixed and improper.	Mixed number  Equivalent fraction  Simplify, cancel, lowest terms  Proper fraction  Improper fraction  Multiplier	1) Simplifying fractions  2) Equivalent fractions  3) Converting between mixed and improper fractions  4) Fractions of amounts  5) Multiplying and dividing fractions  6) Multiplying fractions and dividing fractions including mixed numbers  7) Adding and subtracting fractions  8) Adding and subtracting fractions including mixed numbers  9) Mixed calculations including mixed numbers  10) Worded problems  11) Fractional calculations using a calculator  12) End of assessment	Equivalent fractions  Converting fractions between mixed and improper fractions  Using fractions as measurements	One written piece and one retrieval piece on multiplying and dividing fractions and adding and subtracting fractions.



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Probability</b>	<p>To develop understanding of basic probability.</p> <p>Calculate simple probabilities.</p> <p>Understand and use the probability scales.</p>	<p>Event</p> <p>Outcome</p> <p>Impossible, Unlikely,</p> <p>Even chance,</p> <p>Likely, Certain</p> <p>Mutually exclusive</p> <p>Possibility space</p> <p>Experiment</p>	<p>1) The probability scale, representing probabilities as FDPs and probabilities adding to 1.</p> <p>2) Basic theoretical probability</p> <p>3) Relative frequency (calculating from tables and the importance of number of trials and reliability)</p> <p>4) Possibility spaces</p> <p>5) Combinations, listing outcomes as well as finding possible combinations</p> <p>6) Constructing frequency trees and finding probabilities from them.</p>	<p>Simplifying fractions</p> <p>Collecting data</p> <p>Samples</p> <p>Representations of collected data</p>	<p>One written piece and one retrieval piece on calculating with probability and frequency trees.</p>



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Negatives with BIDMAS</b>	Work correctly with the order of operations  Calculate accurately with negative numbers	Negative number Directed number Operation Inverse Power Index Root	1) Negatives in context 2) Ordering negatives 3) Powers and roots 4) Adding and Subtracting negatives 5) Adding and Subtracting negatives 6) Multiplying and Dividing negatives 7) Mixed negative numbers calculations 8) Basic BIDMAS 9) BIDMAS (including powers etc) 10) BIDMAS with negatives and fractions 11) Non-explicit BIDMAS questions. Correcting an incorrect equation. Justify who is correct and why. 12) Exploration of brackets for multiplicative purposes.	Square numbers Cube numbers Negative numbers Negatives in context Number lines	One written piece and one retrieval piece on calculations with negative numbers and BIDMAS with powers and negatives.



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Basic Algebra</b>	Simplify algebraic expressions Substitution into expressions and formulae	Expression, Term, Formula (formulae), Equation, Function, Variable Input, Output Represent Substitute Evaluate Like terms Simplify / Collect	1) Algebraic notation 2) Forming expressions from scenarios. 3) Simplifying expressions through addition and subtraction 4) Simplifying expressions through addition and subtraction including examples where there are powers on the terms 5) Simplifying expression with multiplication and division 6) Substitution into expressions with positives and fractions 7) Substitution with negatives 8) Substitution into formulae	Function machines Order of operations Inverse functions Laws of indices Calculating with negatives Scientific formulae	One written piece and one retrieval piece on solving equations and working with substitution.



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Place value and rounding</b>	Accurately round numbers to given degrees of accuracy Estimate with numbers	Round Decimal place Solution Estimate	1) Place value and interpreting digit values in written numbers 2) Reading and writing numbers 3) Rounding to 10's 100's and whole numbers 4) Rounding to decimal places	Rounding to powers of 10 Rounding to decimal places Place value	One written piece on rounding to decimal places.
<b>4 operations with decimals</b>	Calculate accurately with decimals	Round Decimal place Solution Estimate	1) Ordering decimals 2) Adding and subtracting decimals with a written method 3) Multiplying decimals 4) Dividing decimals 5) Applications with decimals	Understanding place value Multiplication and division of integers Written methods of multiplication and division	One written piece on calculating with decimals



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Representing Data</b>	To represent data in a variety of ways  To understand and use a variety of representations of data	Discrete data Pictogram Key Frequency Tally Bar chart Scale, Graph Axis, axes	1) Frequency tables 2) Drawing pictograms 3) Interpreting pictograms 4) Drawing bar charts 5) Drawing comparative bar charts 6) Interpreting bar charts	Samples Bar charts Frequency tables Data collection Angles Proportion	One written piece and one retrieval piece on pictograms and bar charts.
<b>Area and Perimeter</b>	Exploring and understanding the properties of 2D shapes  Calculate the perimeter of a variety of 2D shapes  Calculate the area of a variety of 2D shapes	Perimeter Area Square Rectangle, Parallelogram Triangle Trapezium Polygon Units Quadrilateral Compound	1) Naming and exploring 2D shapes 2) Basic perimeter 3) Perimeter of compound shapes, including algebraic expressions to extend 4) Area of rectangles and parallelograms. 5) Area of triangles. 6) Area of compound shapes with addition 7) Area of compound shapes with subtractions 8) Problem type questions involving costs. 9) End of unit assessment	Distance Measures Properties of shapes Line and angle notation Parallel and perpendicular lines Money	One written piece and one retrieval piece on area of basic shapes and problems involving compound shapes.



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Ratio and Proportion</b>	<p>Understand how to represent ratios</p> <p>To simplify ratios and write them as fractions</p> <p>Share into ratios</p> <p>Solve problems involving ratios and parts</p> <p>Understand the unitary method for direct proportion</p>	<p>Ratio</p> <p>Proportion</p> <p>Multiplier</p> <p>Unitary method</p> <p>Units</p>	<p>1) Setting up ratio from words</p> <p>2) Simplifying a ratio</p> <p>3) Linking ratio to fractions and percentages</p> <p>4) Sharing in a ratio</p> <p>5) Ratio when one part is given and other problems</p> <p>6) Basic proportion – unitary method</p> <p>7) Basic proportion – unitary method</p>	<p>Fractions</p> <p>Simplifying</p> <p>FDP</p> <p>Direct proportion</p>	<p>One written piece and one retrieval piece on simplifying ratio and sharing in a ratio.</p>
<b>Primes Factors and Multiples</b>	<p>Understand the properties of numbers</p> <p>Develop an understanding of factors and multiples</p> <p>Work with HCF and LCM in real life situations</p>	<p>Multiple</p> <p>Lowest common multiple (LCM)</p> <p>Factor</p> <p>Highest common factor (HCF)</p> <p>(Square and cube) root</p> <p>Prime number</p>	<p>1) Prime numbers</p> <p>2) Factors and multiples</p> <p>3) HCF</p> <p>4) LCM</p> <p>5) Worded/Functional questions</p>	<p>Multiplication</p> <p>Division</p> <p>Properties of numbers</p> <p>Prime numbers</p>	<p>One written piece and one retrieval piece on factors and multiples and HCF LCM.</p>



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Linear sequences</b>	<p>Understand the relationship between patterns and numbers</p> <p>Develop an understanding of term to term rules</p> <p>Relate picture sequences to number patterns</p>	<p>Fibonacci</p> <p>Sequence</p> <p>Linear</p> <p>Term</p> <p>Ascending</p> <p>Descending</p>	<p>1) Fibonacci sequence – exploring</p> <p>2) Basic sequences – identifying term to term rules</p> <p>3) Picture sequences</p> <p>4) Pattern spotting (common sequences e.g. Triangle and square and cubic and links to them)</p>	<p>Multiplication</p> <p>Patterns</p>	<p>One written piece on basic sequences.</p>
<b>Linear Graphs</b>	<p>To develop the ability to work on a coordinate grid</p> <p>Be able to plot and read coordinates</p> <p>Plot basic lines on a graph</p> <p>Understand and use a table of values</p>	<p>Plot</p> <p>Equation</p> <p>Linear</p> <p>Coordinate</p> <p>Gradient</p> <p>y-intercept</p> <p>Substitute</p>	<p>1) Plotting and reading coordinates in the positive quadrant</p> <p>2) Plotting all coordinates</p> <p>3) Reading all coordinates</p> <p>4) Exploring horizontal and vertical lines</p> <p>5) Plotting horizontal and vertical lines <math>x=</math> <math>y=</math></p> <p>6) Plotting a graph from a given table of values</p> <p>7) Plotting a graph by completing a table of values</p>	<p>Substitution</p> <p>Basic algebra</p> <p>Coordinates</p> <p>Plotting</p> <p>Scale</p>	<p>One written piece and one retrieval piece on plotting linear graphs.</p>
<b>Averages</b>	<p>To develop an understanding of the different types of average</p> <p>Calculate averages</p> <p>Compare data using averages</p>	<p>Average</p> <p>Spread</p> <p>Mean</p> <p>Median</p> <p>Mode</p> <p>Range</p>	<p>1) Mode and Range</p> <p>2) Median</p> <p>3) Mean</p> <p>4) Comparing data</p>	<p>Representing data</p> <p>Ordering numbers including negatives</p> <p>Calculating with decimals</p> <p>Understanding frequency</p>	<p>One written piece on averages from listed data.</p>





Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>FDP</b>	<p>To understand how to convert between fractions and decimals</p> <p>To understand how to convert between fractions and percentages</p> <p>To be able to convert all FDP</p> <p>To order numbers written in different formats</p>	<p>Positive number</p> <p>Negative number</p> <p>Integer</p> <p>Numerator</p> <p>Denominator</p> <p>Mixed number</p> <p>Improper fraction</p> <p>Percentage</p> <p>Decimal</p>	<p>1) Converting fractions to decimals</p> <p>2) Converting decimals to fractions</p> <p>3) Converting between fractions and percentages</p> <p>4) Equivalence with a calculator</p> <p>5) Ordering fractions</p> <p>6) Ordering FDP</p> <p>7) Worded problems involving equivalence</p> <p>8) Consolidation or end of unit test</p>	<p>Equivalent fractions</p> <p>Place value</p> <p>Understanding the term percentage</p>	<p>One written piece and one retrieval piece on converting FDP and ordering FDP.</p>
<b>Solving Equations</b>	<p>To understand the term inverse</p> <p>Know the inverse functions of each operation</p> <p>Be able to solve simple one step equations</p> <p>To be able to solve two step equations</p>	<p>Equation</p> <p>Function</p> <p>Operation</p> <p>Solve</p> <p>Solution</p> <p>Brackets</p> <p>Substitute</p>	<p>1) Solving basic equations with function machines and bar modelling</p> <p>2) Solving basic equations</p> <p>3) Solving equations written in non-standard format</p> <p>4) Solving equations involving fractions</p> <p>5) Solving a mixture of equations</p> <p>6) Forming and solving equations</p>	<p>Simplifying algebra</p> <p>Functions</p> <p>Inverse operations</p> <p>Order of operations</p>	<p>One written piece and one retrieval piece on solving basic equations and solving equations with fractions.</p>



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Angles</b>	<p>To understand how to draw and measure angles accurately</p> <p>To understand the relationship between the angles in a triangle</p> <p>To understand the relationship between the angles in a quadrilateral.</p>	Degrees Right angle Acute angle Obtuse angle Reflex angle Protractor Vertically opposite Triangle Quadrilateral	<ol style="list-style-type: none"> <li>1) Shape notation</li> <li>2) Measuring angles</li> <li>3) Drawing angles</li> <li>4) Basic angles facts (straight line, point and vertically opposite)</li> <li>5) Angles and triangles</li> <li>6) Angles in special triangles</li> <li>7) Finding missing angles in quadrilaterals</li> <li>8) Exploring angles in special quadrilaterals</li> </ol>	Basic angle facts Properties of 2D shapes Angle and line notation	One written piece and one retrieval piece on angles in triangles and angles in quadrilaterals.
<b>Percentages</b>	<p>To understand how to calculate a percentage using written methods.</p> <p>To understand a decimal multiplier</p> <p>To calculate percentages using a calculator</p> <p>To increase and decrease an amount by a percentage</p>	Percent Multiplier Increase, decrease	<ol style="list-style-type: none"> <li>1) Basic percentage of amounts mental methods</li> <li>2) Basic percentage of amounts mental methods</li> <li>3) Multiplier for percentage of amounts</li> <li>4) Increase decrease mental methods</li> <li>5) Increase decrease mental methods</li> <li>6) Expressing one quantity as a percentage of another</li> <li>7) Real life percentages e.g. shopping and discounts</li> <li>8) Financial percentages</li> </ol>	Converting FDP Finance Tax Interest	One written piece and one retrieval piece on calculating percentage increase/decrease and calculating percentage change.



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<b>Volume</b>	<p>To calculate the volume of cubes and cuboids</p> <p>To understand the method used for calculating the volume of prisms</p>	<p>(Right) prism</p> <p>Volume</p> <p>Capacity</p> <p>Compound</p> <p>Parallelogram</p>	<p>1) Volume of cubes and cuboids</p> <p>2) Volume of triangular and those with a parallelogram cross sectional prism</p> <p>3) Volume of prisms with compound cross sections using cubes and cuboids</p> <p>4) Volume of prisms with all types of compound cross section</p>	<p>Area of 2D shapes</p> <p>Properties of shapes</p> <p>Understanding units</p>	<p>One written piece on volume of prisms.</p>
<b>Coordinate geometry</b>	<p>To understand and work with coordinates.</p>	<p>Plot</p> <p>Co-ordinate</p> <p>Axis, axes</p>	<p>1) Constructing shapes on a coordinate grid when given 2 or more points</p> <p>2) Exploring geometry</p>	<p>Plotting coordinates</p> <p>Understanding scale</p>	<p>One written piece on coordinate geometry,</p>