

Timbertree Academy Mathematics Curriculum Progression Document

Strand	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value	<p>Link numerals and amounts/ Counting:</p> <ul style="list-style-type: none"> •Showing the right number of objects to match the numeral for 1 and 2. •Subitise small groups of objects. •Recite numbers to 5 •Begin to show 'finger numbers' up to 5 when joining number songs and rhymes <p>Link numerals and amounts/Counting:</p> <ul style="list-style-type: none"> •Recite numbers beyond 5 •Show 'finger numbers' up to 5 when joining number songs and rhymes •Showing the right number of objects to match the numeral for 3. •Subitise small groups of objects. •Say one number for each item in order: 1,2,3,4,5. <p>Linking numerals and amounts:</p> <ul style="list-style-type: none"> •Showing the right number of objects 	<p>Early Mathematical Experiences</p> <p>Counting rhymes and songs</p> <p>Classifying objects based on one attribute</p> <p>Matching equal and unequal sets</p> <p>Comparing objects and sets.</p> <p>Subitising.</p> <p>Ordering objects and sets</p> <p>Number recognition</p> <p>2D Shapes</p> <p>Compare Amounts: Use the vocabulary fewer, the same and more to compare groups of objects. Understanding 1-5: Make comparisons between groups of 1- 5 objects. Explore and notice the different compositions of 2 5</p> <p>Compare numbers to 5: Make comparisons between groups of 0- 5 objects. Use</p>	<p>Place value within 10</p> <p>- Autumn</p> <p>Place value within 20</p> <p>- beginning of Spring</p> <p>Place value within 50</p> <p>- Spring</p> <p>Place value within 100</p> <p>- Summer</p> <p>Count to and across 100, forwards and backwards, from 0, 1 or any given number</p> <p>Read and write numbers from 1 to 20 in numerals and words</p> <p>Count in multiples of 2, 5 and 10</p> <p>Count, read and write numbers to 100 in numerals</p> <p>Identify one more and one less than a given number</p> <p>Identify and represent numbers using concrete equipment and pictorial representations</p>	<p>Count in steps of 2, 3 and 5 from 0 and in 10 from any number</p> <p>– forwards and backwards</p> <p>Recognise the value of each digit in two-digit numbers</p> <p>Identify, represent and estimate numbers using different concrete and pictorial representations</p> <p>Compare and order numbers from 0 to 100; using equality symbols</p> <p>Read and write numbers to at least 100 in numerals and words</p> <p>Solve problems including place value and number facts</p>	<p>Count in multiples of 4, 8, 50 and 100 from 0.</p> <p>Find 10 or 100 more or less than a given number</p> <p>Recognise the place value of each digit in a three-digit number</p> <p>Identify, represent and estimate numbers using different representations (concrete and pictorial)</p> <p>Read and write numbers up to 1,000 in numerals and words</p> <p>Solve problems including place value</p> <p>Begin to partition numbers with up to three-digits</p> <p>Read roman numerals from I to XII (In</p>	<p>Count in multiples of 6, 7, 9, 25 and 1,000</p> <p>Find 1,00 0more or less than a given number</p> <p>Count backwards through zero; including negative numbers (not in WRM 3.0 but needs to be taught to prepare children for ordering temperatures)</p> <p>Recognise the value of each digit in a four digit number</p> <p>Order and compare numbers beyond 1,000 using equality symbols and language of greater than, less than and equal to</p> <p>Identify, represent and estimate numbers using different representations</p>	<p>Read and write numbers up to at least 1,000,000</p> <p>Order and compare numbers to 1,000,000, using language of comparison and the equality symbols</p> <p>Identify the value of each digit in numbers up to 1,000,000</p> <p>Count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000</p> <p>Interpret negative numbers in context</p> <p>Count forwards and backwards with positive and negative numbers, including through zero</p>	<p>Read and write numbers up to 10,000,000</p> <p>Order and compare numbers up to 10,000,000 using language of comparison and the equality symbols</p> <p>Identify the value of each digit in numbers up to 10,000,000</p> <p>Round any whole number to a required degree of accuracy</p> <p>Use negative numbers in contexts and calculate intervals across zero</p> <p>Solve multi-step problems including place value</p> <p>Use known facts to reason and predict before calculating (I</p>

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	<p>to match the numeral to 4.</p> <ul style="list-style-type: none"> •Experiment with their own symbols and marks as well as numerals. <p>Counting:</p> <ul style="list-style-type: none"> •Say one number for each item in order: 1,2,3,4,5. •Know that the last number reached when counting a small set of objects tells you how many there are in total. <p>Number</p> <ul style="list-style-type: none"> •Fast recognition of up to 3 objects, without having to count them. •Compare quantities using language: ‘more than’, ‘fewer than’ •Solve real world mathematical problems with numbers up to 5 •Showing the right number of objects to match the numeral, up to 5 •Begin to show ‘finger numbers’ up to 5 •Compare quantities using language: ‘more than’, ‘fewer than’ •Experiment with their own symbols and marks as well as numerals. 	<p>the number name zero and numeral 0 accurately.</p> <p>Recognise 1 to 7 by counting or subitising: Count and subitise how many. Make collections of between 1- 7 objects.</p> <p>Recognise and represent 8, 9 and 10: Identify representations of 8, 9 and 10 Explore the composition of 8.9 and 10</p> <p>Compare numbers to 10: Make comparisons between groups of 0-10 objects.</p> <p>Count beyond 10 Count verbally beyond 20 spotting patterns in 2-digit numbers. Link the number symbol (numeral) with its cardinal number value. Match sets of objects or actions with the correct numeral</p>	<p>Use language of: equal to, more than, less than (fewer), most, least</p>		<p>preparation for reading the time)</p>	<p>Round any given number to the nearest 10, 100 or 1,000</p> <p>Solve number and practical problems including increasingly large, positive numbers</p> <p>Use known facts to reason and predict before calculating (I know that... , I know that __ is not possible because...)</p> <p>Read Roman Numerals to 100 (I-C) and understand that the numeral system changed over time to include zero</p> <p>Count in tens and hundreds from any given number</p> <p>Recognise that the number system extends to decimals and fractions that children have worked with so far.</p>	<p>Round any number up to 1,000,000 to the nearest, 10, 100, 1,000, 10,000 and 100,000</p> <p>Solve multi-step problems including place value</p> <p>Use known facts to reason and predict before calculating (I know that... , I know that __ is not possible because...)</p> <p>Read Roman Numerals up to 1,000 (M) and recognise years written in Roman Numerals</p> <p>Recognise and describe linear number sequences including those involving fractions</p> <p>Find the term-totem rule for linear number sequences.</p>	<p>know that... , I know that __ is not possible because...)</p>
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<p>Addition and Subtraction</p>		<p>Explore 1 more or 1 less than numbers to 5</p> <p>Number Bonds to 10: Explore number bonds to 10 using real objects Find how many more to make 10</p> <p>Continue to explore the composition of numbers to 10: Partition and recombine sets.</p> <p>Automatically recall number bonds: Automatically recall number bonds for numbers 0–5.</p> <p>Automatically recall number bonds for numbers 0–10.</p>	<p>Represent and use number bonds and related subtraction facts within 20</p> <p>Add and subtract one digit and twodigit numbers up to 20, including 0.</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems</p>	<p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>Using concrete equipment and pictorial representations, add and subtract numbers including: A twodigit number and ones A two-digit number and tens Add two two-digit numbers Add three one-digit numbers</p> <p>Begin to practise strategies for the development of mental calculation (particularly of number bonds)</p> <p>Recognise and apply the inverse relationship between addition and subtraction and use this to check calculations</p>	<p>Mentally add and subtract numbers including: A three-digit number and ones A three-digit number and tens A three-digit number and hundreds</p> <p>Use the formal written method of column addition and subtraction to add and subtract numbers with up to three-digits. Children will begin to exchange ones for tens and tens for hundreds using this method.</p> <p>Estimate the answer to a calculation and use inverse operations to check answers</p> <p>Select efficient strategies to solve problems, including missing</p>	<p>Choose efficient strategies to calculate increasingly large numbers with more accuracy</p> <p>Use the formal written method of column addition and subtraction to add and subtract numbers with up to four-digits.</p> <p>Estimate the answers to calculations and apply the inverse operation to check.</p> <p>Solve two-step addition and subtraction problems in context; selecting an appropriate method.</p>	<p>Add and subtract numbers mentally with increasingly large numbers</p> <p>Add and subtract whole numbers with more than 4 digits, including using the column method</p> <p>Use rounding to estimate and check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>Solve multi-step addition and subtraction problems in contexts, selecting appropriate methods.</p> <p>Articulate clearly the choice of method in accordance to the type of problem.</p>	<p>Mentally calculate with a range of given numbers including with mixed operations and large numbers</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>Solve multi-step addition and subtraction problems in contexts, selecting efficient methods.</p> <p>Articulate clearly the choice of method in accordance to the type of problem.</p> <p>Solve addition and subtraction multi-step problems in</p>
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				<p>and solve missing number problems</p> <p>To use concrete and pictorial representations to solve problems including addition and subtraction; quantities and measures</p> <p>Children will be moving towards a written method.</p>	<p>number problems (i.e.: using number facts, place value, and more complex addition and subtraction)</p> <p>Use known facts to reason and predict before calculating (I know that... , I know that ___ is not possible because...)</p>			<p>contexts, deciding which operations and methods to use and why</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations</p>
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<p>Multiplication and Division</p>			<p>Count in multiples of 2's, 5's and 10's – identifying patterns</p> <p>Understand language of 'grouping' and 'sharing'</p> <p>Begin to double and halve quantities with support</p> <p>Use concrete equipment and pictorial representations (including arrays) to solve one-step problems involving multiplication and division</p>	<p>Recall multiplication and division facts for the 2,5 and 10 multiplication tables</p> <p>Recall and recognise odd and even numbers – linking them to the multiplication tables</p> <p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs</p>	<p>Recall and apply multiplication facts for the 3, 4 and 8 multiplication tables</p> <p>Solve problems including missing number problems, involving multiplication and division</p> <p>Develop efficient methods using commutativity and associativity to derive related facts</p> <p>Solve problems including positive integer scaling</p>	<p>Recall and apply multiplication and division facts for up to 12×12</p> <p>Use place value, known and derived facts to multiply and divide mentally (partitioning), including; multiplying by 0 and 1; dividing by 1; multiplying together 3 one digit numbers</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p>	<p>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</p> <p>Understand and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19</p>	<p>Mentally calculate with a range of given numbers including with mixed operations and large numbers</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>Articulate clearly the choice of method in accordance to the type of problem.</p>
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				<p>Understand/ show that the multiplication of two numbers is commutative and that division by another is not</p> <p>Solve problems including multiplication and division using a range of concrete and pictorial representations. For example, arrays, repeated addition, mental strategies and known multiplication and division facts</p> <p>Use the inverse to calculate missing number problems</p>	<p>problems and correspondence problems in which n objects are connected to m objects</p> <p>Write and calculate mathematical statements for both multiplication and division using the known multiplication tables, including for two-digit numbers and one-digit numbers.</p> <p>Use and apply mental methods for multiplication and division, moving towards formal written methods</p>	<p>Write statements about the equality of expressions (for example, use the distributive law $39 \times 7 = 30 \times 7 + 9 \times 7$ and associative law $(2 \times 3) \times 4 = 2 \times (3 \times 4)$).</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p> <p>Solve problems (including twostep problems) involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects</p>	<p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared and cubed</p> <p>Solve problems (including multistep problems) involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of</p>	<p>Multiply multi digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p> <p>Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p>
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						<p>Become fluent in the formal written method of short multiplication and short division with exact answers</p>	<p>these, including understanding the meaning of the equals sign,</p> <p>Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</p> <p>Multiply and divide numbers mentally drawing upon known facts</p> <p>Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</p> <p>Solve problems involving multiplication and division,</p>	<p>Perform mental calculations, including with mixed operations and large numbers</p> <p>Identify common factors, common multiples and prime numbers</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations</p>
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							<p>including scaling by simple fractions and problems involving simple rates.</p> <p>Interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding.</p>	
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<p>Key Stage 3</p>	<ul style="list-style-type: none"> • Order, sort and interpret any number (including decimals and negatives). • Use place value to multiply and divide any number by powers of 10. • Understand and apply the concept of multiples, factors and primes individual, pairs or groups of numbers. For example, finding the Lowest Common Multiples of a pair of numbers. • Use formal methods for addition, subtraction, multiplication and division fluently including increasingly complex decimals. • Explore and understand rules for adding and subtracting positive and negative integers. • Multiply and divide negative numbers. • • Use and apply BIDMAS to the number system, ensuring the calculations are carried out in order.
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<p>Fractions</p>			<p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>Recognise, find and name a quarter as being one of four equal parts of an object, shape or quantity</p> <p>Combine halves and quarters as parts of a whole.</p> <p>Write $\frac{1}{2}$, $\frac{1}{4}$ and some $\frac{3}{4}$ as fractions.</p>	<p>Recognise, find, name and write fractions – $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ ($\frac{1}{2}$) and $\frac{3}{4}$ and apply to lengths, shapes, objects or quantities</p> <p>Write simple fractions. For example; $\frac{1}{2}$ of 6 = 3.</p> <p>Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$</p> <p>Apply the language of grouping and sharing when finding fractions of amounts</p> <p>Count in fractions up to 10 starting from any number and counting in halves.</p>	<p>Count up and down in tenths; recognising that tenths arise from dividing an object into 10 equal parts.</p> <p>Divide one-digit numbers or quantities by 10</p> <p>Recognise, find and write fractions as a discrete set of objects: unit fractions and non-unit fractions with small denominators</p> <p>Recognise and use fractions as numbers, including where they sit on a number line</p> <p>Recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>Add and subtract fractions with the same denominator within one whole</p>	<p>Recognise and show, using diagrams, families of common equivalent fractions</p> <p>Count up and down in hundredths; recognising that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</p> <p>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</p> <p>Add and subtract fractions with the same denominator</p>	<p>Compare and order fractions whose denominators are all multiples of the same number.</p> <p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number.</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</p> <p>Multiply proper fractions and mixed numbers</p>	<p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</p> <p>Compare and order fractions, including fractions > 1</p> <p>Add and subtract fractions with different denominators.</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form.</p> <p>Divide proper fractions by whole numbers.</p> <p>Associate a fraction with division and calculate decimal equivalents; for a simple fraction.</p>
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					<p>Compare and order unit fractions and fractions with the same denominator</p> <p>Solve two-step problems including problems where the inverse operation can be applied.</p>	<p>Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$</p> <p>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.</p>	<p>by whole numbers, supported by materials and diagrams</p>	
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<p>Decimals</p>						<p>Extend the use of the number line to connect fractions, numbers and measures.</p> <p>Understand the relation between non - unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths</p> <p>Compare and order decimal amounts and quantities that are expressed to the same number of decimal places.</p> <p>Represent numbers with one or two decimal places in several ways, such as on number lines</p>	<p>Read and write decimal numbers as fractions - for example, $0.71 = \frac{71}{100}$</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>Read, write, order and compare numbers with up to three decimal places</p> <p>Solve problems involving number up to three decimal places</p> <p>Add and subtract decimals, including a mix of whole numbers</p>	<p>Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</p> <p>Multiply one - digit numbers with up to two decimal places by whole numbers</p> <p>Use written division methods in cases where the answer has up to two decimal places</p> <p>Solve multi - step problems which require answers to be rounded to specified degrees of accuracy</p> <p>Recall and use equivalences</p>
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								and decimals, decimals with different numbers of decimal places, and complements of 1.	between simple fractions, decimals and percentages, including in different contexts.
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<p>Fractions, Decimals and Percentages</p>				<p>Recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>Round decimals with one decimal place to the nearest whole number</p> <p>Compare numbers with the same number of decimal places up to two decimal places</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places</p> <p>Connect hundredths to tenths and place value and decimal measure.</p>	<p>Recognise the percent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal</p> <p>Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{2}{5}$ and $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25</p> <p>Make connections between percentages, fractions and decimals</p>	<p>Use the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity.</p> <p>Explore and make conjectures about converting a simple fraction to a decimal fraction.</p> <p>Round and estimate as a means of predicting and checking the order of magnitude of their answers to decimal calculations.</p>
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Key Stage 3	<ul style="list-style-type: none">• Round any number to any specified degree of accuracy, including decimals and measures.• Understand the concept of percentages and use this to find percentages of a quantity.
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	<ul style="list-style-type: none">• Compare the result of two percentage calculations. For example, 15% of 40 and 10% of 50.• Understand the interrelated nature of fractions, decimals and percentages, converting between them and ordering with increasing fluency.• Add, subtract and multiply fractions fluently
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Measure	<p>Make comparisons between objects relating to:</p> <ul style="list-style-type: none"> •size •length. •weight •capacity 	<p>Compare and order objects according to their size.</p> <p>Use mathematical language to describe size</p> <p>Compare length using appropriate mathematical vocabulary.</p> <p>Compare mass and capacity using appropriate mathematical vocabulary.</p> <p>Compare length, weight and capacity.</p> <p>Use comparative language accurately. Make a reasonable estimate about capacity and length.</p>	<p>Measure and begin to record lengths/height, mass/weight, capacity/volume, time (seconds, minutes and hours)</p> <p>Compare, describe and solve practical problems (including using the correct vocabulary) for:</p> <p>Length/height (long/short, taller/shorter, double/half)</p> <p>Mass/weight (heavy/light, heavier, lighter)</p> <p>Capacity/volume: (full/empty, more than, less than, half full, quarter)</p>	<p>Compare and order lengths, mass, volume/capacity and record the results using equality symbols</p> <p>Choose and use an appropriate standard unit to estimate and measure length/height in any direction (cm/m); mass (g/kg); temperature(c); capacity (ml/l) to the nearest appropriate unit – using rulers, thermometers and measuring vessels</p>	<p>Measure the perimeter of a 2D shapes; writing out an appropriate calculation</p> <p>Measure, compare, add and subtract measurements: lengths, mass, volume/capacity, including the use of the appropriate units (mm/cm/m, g/kg, ml/l)</p> <p>Begin to convert between units of measure</p>	<p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>Express perimeter algebraically as $2(a + b)$ where a and b are the dimensions in the same unit</p> <p>Find the area of rectilinear shapes by counting squares</p> <p>Convert between different units of measure (kilometre to metre; hour to minute)</p>	<p>Convert between different units of metric measure (kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) - using the correct units</p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>Calculate and compare the area of rectangles (including</p>	<p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</p> <p>Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places</p> <p>Convert between miles and kilometres Recognise that shapes with the same areas can have different perimeters and vice versa</p>
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							<p>squares), and including using standard units, square centimetres (cm²) and square metres (m²) Estimate the area of irregular shapes</p> <p>Estimate volume (using 1cm³ blocks to build cuboids (including cubes) and capacity (using water)</p> <p>Use all four operations to solve problems involving measure (length, mass, volume, money) using decimal notation, including scaling</p> <p>Calculate the area from scale drawings using given measurements</p>	<p>Recognise when it is possible to use formulae for area and volume of shapes</p> <p>Calculate the area of parallelograms and triangles</p> <p>Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units (addition of square and cube measurements)</p> <p>Add and subtract positive and negative integers for measures such as temperature</p> <p>Relate the area of rectangles to parallelograms and triangles, for example, by</p>
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							Missing measures questions expressed algebraically	dissection, and calculate their areas, understanding and using the formulae (in words or symbols) to do this
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<p>Measure: time</p>		<p>Use time related vocabulary to talk about their day.</p>	<p>Sequence events in chronological order using language of before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.</p> <p>Recognise and use language relating to dates (days of the week, weeks, months and years)</p> <p>Read and draw the time to the hour and half past the hour Time: (quicker, slower, earlier, later).</p>	<p>Compare and sequence intervals of time</p> <p>Read and write the time to 5-minute intervals including quarter past/to the hour</p> <p>Recall the number of minutes in an hour and the number of hours in a day</p> <p>Apply the 5 times table to supporting the reading of time</p>	<p>Read and write the time from an analogue display; including reading Roman Numerals from I to XII</p> <p>Estimate and read time with increasing accuracy to the nearest minute</p> <p>Record and compare times in seconds, minutes and hours</p> <p>Use vocabulary such as o'clock, a.m., p.m., morning, afternoon, noon and midnight</p> <p>Recall the number of seconds in a minute and days in each month, year and leap year</p>	<p>Read, write and convert time between analogue and digital 12- and 24-hour clocks</p> <p>Solve problems (including multistep) involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</p>	<p>Solve multi-step problems involving converting between units of time</p>	
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					<p>Compare durations of events</p> <p>Use both 12- hour analogue and digital clocks to read the time</p>			
Measure: money			<p>Recognise and know the value of different denominations of coins and notes</p>	<p>Recognise and use the symbols for pounds (£) and pence (p) Combine pounds and pence to make a given value Recognise and find combinations of coins that equal the same amount of money</p> <p>Solve problems in practical contexts involving the addition and subtraction of money of the same unit, including giving change</p>	<p>Add and subtract amounts of money to give change; using both pounds and pence, in practical contexts. Children must use the correct units (£) (p)</p>	<p>estimate, compare and calculate different measures, including money in pounds and pence – recording the correct units of £ and p</p>		

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<p>Geometry</p>	<p>Shape:</p> <ul style="list-style-type: none"> •Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. •Notice and talk about shapes in the environment. •Talk about and 	<p>Find and match objects that are the same. Sort objects according to colour, size or shape. Copy, continue and create simple repeating patterns.</p>	<p>Recognise and name common 2-D shapes including rectangles, squares, circles and triangles</p> <p>Recognise and name common 3D shapes including: cubes,</p>	<p>Identify and describe the properties of 2-D shapes, including the number of sides and vertical/horizontal lines of symmetry</p> <p>Identify and describe the properties of 3-D</p>	<p>Draw 2-D shapes and make 3-D shapes using modelling materials</p> <p>Recognise and describe 3-D shapes in different orientations</p>	<p>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</p> <p>Identify acute and obtuse angles</p>	<p>Identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p> <p>Know angles are measured in degrees</p>	<p>Draw 2-D shapes using given dimensions and angles</p> <p>Recognise, describe and build simple 3-D shapes, including making nets</p>
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	<p>explore 2D shapes (for example, circles, rectangles, and triangles) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.</p> <p>•Talk about and explore 3D shapes using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.</p>	<p>Explore AB patterns in a range of contexts. Find 2D shapes within 3D shapes. Recognise shapes in everyday objects and the environment. Describe some properties of squares and rectangles. Copy complex 2D pictures with 3D resources</p>	<p>cuboids, pyramids and spheres</p> <p>Recognise the common 2-D and 3-D shapes in different orientations</p> <p>Recognise the similarities and differences between common 2-D and 3-D shapes</p>	<p>shapes including the number of edges, vertices and faces</p> <p>Identify 2-D shapes on the surface of 3-D shapes</p> <p>Compare and sort common 2-D and 3-D shapes and everyday objects.</p> <p>Read shape names (suitable for their word reading and spelling)</p> <p>Draw lines and shapes using rulers</p>	<p>Recognise angles as a property of shape or description of turn</p> <p>Identify right angles, recognise that two right angles make a half-turn, three quarters of a turn and four make a complete turn</p> <p>Identify whether angles are greater than or less than a right-angle Identify and name horizontal and vertical lines</p> <p>Identify and name pairs of parallel and perpendicular lines</p> <p>Understand symmetrical and non-symmetrical polygons and polyhedral</p>	<p>Compare and order angles up to two right angles by size</p> <p>Identify lines of symmetry in 2-D shapes presented in different orientations</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry</p> <p>Continue to classify shapes using geometrical properties, extending to classifying different triangles (isosceles, equilateral, scalene) and quadrilaterals (for example, parallelogram, rhombus, trapezium)</p> <p>Compare and order angles in preparation for</p>	<p>Estimate and compare acute, obtuse and reflex angles – using mathematical names accurately</p> <p>Draw given angles, and measure them in degrees (o) Identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line (total 180o) and angles at other multiples of 90o</p> <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles</p> <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles</p>	<p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</p> <p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p> <p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</p> <p>Draw shapes and nets accurately, using measuring tools and conventional markings and labels for lines and angles</p> <p>Describe the properties of shapes and explain how unknown angles and lengths can be</p>
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Key Stage 3	<ul style="list-style-type: none">• Use the properties and vocabulary of 3D shapes and their nets to solve problems.• Calculate the area and perimeter of a variety of 2D and compound shapes, including triangles using a formula.• Represent 3D shapes in 2D.• Work with shapes on a 4-quadrant grid to translate, reflect and rotate in any direction or plane.• Use a ruler and a protractor to draw accurately.• Recognise, describe and name all common 2D shapes and apply angle facts to solve a variety of problems.• Understand and use place value when using different measures of length, mass, time and volume changing freely between different units of metric measures.
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<p>Geometry: position and direction</p>	<p>Positional Language:</p> <ul style="list-style-type: none"> • Understand position through words alone (above, underneath, next to) • Understand and use positional language through words alone. <p>Position and Direction:</p> <ul style="list-style-type: none"> • Describe a familiar route using spatial words. • Discuss routes and locations, using words like 'in front of' and 'behind'. Pattern: • Talk about and identifies the patterns around them. Use informal language like 'pointy', 'spotty', 'blobs' etc. • Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern. 	<p>Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</p> <p>Continue, copy and create repeating patterns</p> <p>Copy and continue repeating patterns</p>	<p>Describe position and movement including language of: whole, half, quarter and three quarter turns.</p> <p>Make connections between turns and movement on a clock face.</p> <p>Use language of left, right, top, bottom, on top of, in front of, above, between, around, near, close, far, up, down, forwards, backwards, inside and outside.</p>	<p>Order and arrange combinations of mathematical objects (counters, cubes) in patterns and sequences</p> <p>Recognise and recall patterns and sequences</p> <p>Continue given sequences; using the recognised pattern Recognise patterns in different orientations</p> <p>Use mathematical language to describe position, direction and movement in a straight line.</p> <p>Distinguish between rotation as a turn and in terms of right angles for quarter, half and three quarter turns. Use language of clockwise and anticlockwise)</p>		<p>Describe positions on a 2-D grid as coordinates in the first quadrant</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down</p> <p>Plot specified points and draw sides to complete a given polygon</p> <p>Draw a pair of axes in one quadrant, with equal scales and integer labels</p> <p>Read scales of different intervals moving towards being able to find missing numbers on a scale</p>	<p>Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed</p> <p>Recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2- D grid and coordinates in the first quadrant</p>	<p>Describe positions on the full coordinate grid (all four quadrants)</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes</p> <p>Draw and label a pair of axes in all four quadrants with equal scaling</p> <p>Draw and label rectangles (including squares), parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes. These might be expressed algebraically for example, translating vertex (a, b) to (a – 2, b + 3); (a, b) and (a + d, b + d) being opposite vertices of a square of side d.</p>
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<p>Statistics</p>				<p>Read and interpret simple pictograms, tally charts, block diagrams and simple tables</p> <p>Understand how to read a given key</p> <p>Construct simple pictograms, tally charts, block diagrams and simple tables</p> <p>Ask and answer simple questions by counting the number of objects in each category and sort categories by quantity</p> <p>Ask and answer questions about totalling and comparing categorical data</p>	<p>Interpret and present data using bar charts, pictograms and tables</p> <p>Solve one-step and two-step problems including comparison, sum and difference using information presented in scaled bar charts, pictograms and tables</p> <p>Read simple scales that increase or decrease in multiples of 1, 2, 5 and 10 units per cm</p>	<p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</p> <p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</p> <p>Understand and use a greater range of scales in their representations</p>	<p>Solve comparison, sum and difference problems using information presented in a line graph</p> <p>Complete, read and interpret information in tables, including timetables</p> <p>Connect their work on coordinates and scales to their interpretation of time graphs</p> <p>Begin to decide which representations of data are most appropriate and why</p>	<p>Interpret and construct pie charts and line graphs and use these to solve problems</p> <p>Calculate and interpret the mean as an average</p> <p>Encounter and draw graphs relating two variables, arising from their own enquiry</p> <p>Know when it is appropriate to find the mean of a data set</p>
<p>Key Stage 3</p>	<ul style="list-style-type: none"> • Create, use and interpret a variety of different tables and graphs to observe and analyse statistical information including; stem and leaf diagrams, vertical line charts and pie charts. • Use the mode, median, mean and range fluently to compare, describe and analyse groups of data. 							

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<p>Ratio and Proportion (Year 6 only)</p>	<ul style="list-style-type: none"> • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
	<ul style="list-style-type: none"> • Solve problems involving the calculation of percentages (of measures, and such as 15% of 360) and the use of percentages for comparison • Solve problems involving similar shapes where the scale factor is known or can be found • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples • Recognise proportionality in contexts when the relations between quantities are in the same ratio (for example, similar shapes and recipes) • Link percentages or 360° to calculating angles of pie charts • Compare quantities, sizes and scale drawings by solving a variety of problems • Solve problems involving unequal quantities
<p>Key Stage 3</p>	<ul style="list-style-type: none"> • Understand and use ratio notation, including reducing it to its simplest form. • Understand a relationship between two quantities and use this information to solve problems involving direct proportion.
<p>Algebra (Year 6 only)</p>	<ul style="list-style-type: none"> • Use simple formulae • Generate and describe linear number sequences • Express missing number problems algebraically • Find pairs of numbers that satisfy an equation with two unknowns • Enumerate possibilities of combinations of two variables • Make generalisations about number patterns and sequences • Find missing numbers within equations • Apply algebra to known concepts such as length, coordinates and angles
<p>Key Stage 3</p>	<ul style="list-style-type: none"> • Use and interpret algebraic notation including ab ($a \times b$) $3y$ ($3 \times y$), substituting numerical values into formula to find the value of an equation. • Combine variables within an equation or expression and simplify by collecting like terms. • Recognise and use the relationships between operations and use inverse to change the subject of a formula. • Use and interpret bracket notation with algebraic equations, multiplying out a single bracket. • Plot a linear function on a graph from an equation and interpret mathematically. • Understand linear sequences and finding a formula to solve the next and nth terms.

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