

## Long Term Maths Plan

The long-term plan for mathematics at Bower Grove School is based on the White Rose Maths Scheme of Learning and is aspirational. Due to the nature of the school as a specialist setting for pupils with social, emotional and mental health needs, the curriculum plan makes use of statements which appear on the National Curriculum for pupils who are two academic years below the chronological age of our pupils. Therefore, National Curriculum content for Year 5 and 6 have been absorbed into Key Stage 3 Pupils' prior attainment, as recorded on Pupil ASSET, will be used to inform planned learning intentions, and thus small step targets. This may mean that learning objectives may be taken from stages below or above (**up to the pupils' equivalent chronological age**) to effectively support pupils' progress in mathematics. Wherever possible, pupils will be given opportunities to deepen their understanding of a topic by solving rich problems and developing conjectures & generalisations using their mathematical reasoning.

Additional time is allowed for teaching each topic to reflect the complex needs of our cohort. This means that certain topics have also been absorbed into Key Stage 3 to ensure that learning is not rushed in Key Stage 2 and so that pupils develop a deeper understanding of key concepts. These topics consist of algebra and specific aspects of geometry and statistics from the National Curriculum for Year 4.

**Teachers to extend pupils to Year above, when pupils are secure in the level placed on long term plan or down a level if the pupils are not secure with the level. All extensions must be related to the topics being taught within the classroom.**

	<b>Frogs - EYFS</b>	<b>Honeybees – Aspirational Level K7-K9/ Year 1</b>	<b>Hedgehogs – Aspirational Level Y1</b>	<b>Foxes – Aspirational Level Y2</b>	<b>Penguins/ Eagles – Aspirational Level Y3</b>	<b>Falcons/ Eagles – Aspirational Level Y4</b>
Term 1	<p><b>WRM Autumn Unit 1: Getting to know you</b> Pupils will settle into the start of term with constructive mathematical activities that develop their understanding of class routines, arrangements and structures.</p> <p><b>WRM Block 1: Match, sort and compare</b> Pupils will match physical objects, pictures and objects and identify a set. They will sort objects to and create their own rules for these, as well as comparing amounts.</p>	<p><b>Unit 1: Getting to know you</b> Pupils will settle into the start of term with constructive mathematical activities that develop their understanding of class routines, arrangements and structures.</p> <p><b>Time</b></p> <ul style="list-style-type: none"> <li>– Completes personal timetables and orders activities throughout the day that happen regularly. (P7)</li> <li>– Answers simple questions e.g. what is next? (P7)</li> <li>– Shows awareness of significant times in their day, such as meal times, bed times eg, ordering events in their day on a visual daily timetable. (P8)</li> <li>– Starts to relate activities in the timetable to days in the week. (P8)</li> </ul>	<p><b>Place Value</b> Count within 100, forwards and backwards, starting with any number. – Count on from any number – Count backwards within 10</p> <p>Reason about the location of numbers to 20 within the linear number system, including</p>	<p><b>Place Value</b> Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning. - Recognise tens and ones – Use a place value chart – Partition numbers to 100</p>	<p><b>Place Value</b> Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10 - Hundreds Recognise the place value of each digit in</p>	<p><b>Place Value</b> Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. – Thousands Recognise the place value of each digit</p>

<p>Identifying and making sets &amp; developing 1:1 correspondence.</p> <p><b>Block 2: Talk about Measure and Pattern</b> Pupils will compare size, mass and capacity. They will explore simple patterns, copying and continuing these and then creating their own patterns.</p> <p><b>Block 3: It's Me 1, 2, 3</b> Pupils will develop skills in representing, comparing and subitising, particularly with the numbers 1-3 (extending as appropriate). They will explore 1 more and 1 less than a number.</p>	<p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>- Says or signs number names to 10 in counting activities. (P7)</li> <li>- Counts at least 5 objects reliably. (P7)</li> <li>- Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>- Demonstrates an understanding of 'less'. (P7)</li> <li>- In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>- Joins in with rote counting to beyond 10. (P8)</li> <li>- Continues to rote count onwards from a given small number. (P8)</li> <li>- Recognises differences in quantity. (P8)</li> <li>- Recognises numerals from one to nine and relates them to sets of objects. (P8)</li> <li>- Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)</li> <li>- Estimates a small number (up to 10) and checks by counting. (P8)</li> <li>- Counts reliably with numbers from one to 20, placing them in order. (P9)</li> <li>- Says which number is one more than a given number. (P9)</li> <li>- Says which number is one less than a given number. (P9)</li> <li>- Writes numerals up to 20 with increasing accuracy. (P9)</li> <li>- Records numbers from 1-20 and associates these with the number of objects they have counted. (P9)</li> <li>- Recognises 0 and none and zero in stories and rhymes and counting and ordering. (P9)</li> </ul> <p><b>Unit 2: Just like me</b> Pupils will identify objects and quantities that are the same, and are not the same. Pupils will develop language that describes the shape and position of objects, comparing them to an object in the pupils' possession.</p> <p><b>Convention, notations &amp; units of measure</b></p> <ul style="list-style-type: none"> <li>- Uses familiar words in practical situations when they compare sizes and quantities using</li> </ul>	<p>comparing using <math>&lt;</math> <math>&gt;</math> and <math>=</math></p> <ul style="list-style-type: none"> <li>- Fewer, more, same</li> <li>- Less than, greater than, equal to</li> <li>- Compare numbers</li> <li>- Order objects and numbers</li> <li>- The number line</li> </ul> <p><b>Start Addition &amp; Subtraction within 10</b> Develop fluency in addition and subtraction facts within 10 - Number bonds within 10</p> <p>Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts. - Fact families – addition facts</p>	<ul style="list-style-type: none"> <li>- Flexibly partition numbers to 100</li> <li>- Write numbers in expanded form</li> </ul> <p>Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10</p> <ul style="list-style-type: none"> <li>- 10s on the number line to 100</li> <li>- 10s and 1s on the number line to 100</li> <li>- Estimate numbers on the number line</li> </ul> <p><b>Start Addition &amp; Subtraction</b> Secure fluency in addition and subtraction facts within 10, through continued practice.</p> <ul style="list-style-type: none"> <li>- Bonds to 10</li> <li>- Add by making 10</li> <li>- Add to the next 10</li> <li>- Subtract from a 10</li> </ul>	<p>three-digit numbers, and compose and decompose three-digit numbers using standard and nonstandard partitioning. Represent numbers to 1,000</p> <ul style="list-style-type: none"> <li>- Partition numbers to 1,000</li> <li>- Flexible partitioning of numbers to 1,000</li> <li>- Hundreds, tens and ones</li> </ul> <p>Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10</p> <ul style="list-style-type: none"> <li>- Find 1, 10 or 100 more or less</li> <li>- Number line to 1,000</li> <li>- Estimate on a number line to 1,000</li> <li>- Compare numbers to 1,000</li> <li>- Order numbers to 1,000</li> </ul>	<p>in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning.</p> <ul style="list-style-type: none"> <li>- Represent numbers to 10,000</li> <li>- Partition numbers to 10,000</li> <li>- Flexible partitioning of numbers to 10,000</li> </ul> <p>Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.</p> <ul style="list-style-type: none"> <li>- Find 1, 10, 100, 1,000 more or less</li> <li>- Number line to 10,000</li> <li>- Estimate on a number line to 10,000</li> <li>- Compare numbers to 10,000</li> </ul>
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		<p>the words heavy and light, more and less, enough and not enough to compare sizes or quantities. (P7)</p> <ul style="list-style-type: none"> <li>– Compares objects directly, focusing on one direction such as length or height where the difference is marked and can indicate 'the long one' or 'the tall one'. (P8)</li> </ul> <p><b>Transformations (&amp; movement)</b></p> <ul style="list-style-type: none"> <li>– Responds to 'forwards' and 'backwards'. (P7)</li> <li>– Uses everyday language for properties and positions eg, top, bottom or side. (P9)</li> </ul> <p><b>Geometrical properties and angles</b></p> <ul style="list-style-type: none"> <li>– In practical situations, uses familiar words and combinations to compare size and quantity large and small, heavy and light, more and less, enough. (P7)</li> <li>– Discriminates between two alike objects to specify the differences between them square vs rectangle. (P7)</li> <li>– Investigates shapes that will roll or not roll. (P7)</li> </ul> <p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>– Says or signs number names to 10 in counting activities. (P7)</li> <li>– Counts at least 5 objects reliably. (P7)</li> <li>– Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>– Demonstrates an understanding of 'less'. (P7)</li> <li>– In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>– Joins in with rote counting to beyond 10. (P8)</li> <li>– Continues to rote count onwards from a given small number. (P8)</li> <li>– Recognises differences in quantity. (P8)</li> <li>– Recognises numerals from one to nine and relates them to sets of objects. (P8)</li> <li>– Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)</li> <li>– Estimates a small number (up to 10) and checks by counting. (P8)</li> <li>– Counts reliably with numbers from one to 20, placing them in order. (P9)</li> <li>– Says which number is one more than a given number. (P9)</li> <li>– Says which number is one less than a given number. (P9)</li> </ul>			<p>Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.</p> <ul style="list-style-type: none"> <li>– Number line to 1,000</li> <li>– Estimate on a number line to 1,000</li> <li>– Count in 50s</li> </ul> <p><b>Shape</b></p> <p>Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.</p> <ul style="list-style-type: none"> <li>– Right angles</li> </ul> <p>Draw polygons by joining marked points, and identify parallel and perpendicular sides.</p> <ul style="list-style-type: none"> <li>– Parallel and perpendicular</li> <li>– Draw polygons</li> </ul>	<ul style="list-style-type: none"> <li>– Order numbers to 10,000</li> <li>– Round to the nearest 10</li> <li>– Round to the nearest 100</li> <li>– Round to the nearest 1,000</li> <li>– Round to the nearest 10,000</li> </ul> <p>Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.</p> <ul style="list-style-type: none"> <li>– Number line to 10,000</li> <li>– Estimate on a number line to 10,000</li> </ul> <p><b>Time</b></p> <p>Read, write and convert time between analogue and digital 12- and 24-hour clocks.</p> <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p>
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					– Subtract two numbers (across a 100)	
Term 2	<p><b>WRM Autumn</b> <b>Block 5: 1, 2, 3, 4, 5</b> Pupils will explore different representations of numbers.</p> <p><b>Block 4:</b> <b>Circles and Triangles</b> Pupils will identify and name circles &amp; triangles, identify shapes in the environment and describe their position.</p> <p><b>Block 6: Shapes with 4 Sides</b> Pupils will identify and names shapes with 4 sides and identify these in the environment. Pupils will talk about their daily routine and identify the differences between activities at night and during the day.</p>	<p><b>Unit 3: It's Me 1 2 3</b> Pupils will develop skills in representing, comparing and subitising, particularly with the numbers 1-3 (extending as appropriate). Pupils will learn that circles have one curved side and triangles have three straight sides. They will use positional language to describe life sized journeys and talk about where objects are and places they have been to.</p> <p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>– Says or signs number names to 10 in counting activities. (P7)</li> <li>– Counts at least 5 objects reliably. (P7)</li> <li>– Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>– Demonstrates an understanding of 'less'. (P7)</li> <li>– In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>– Joins in with rote counting to beyond 10. (P8)</li> <li>– Continues to rote count onwards from a given small number. (P8)</li> <li>– Recognises differences in quantity. (P8)</li> <li>– Recognises numerals from one to nine and relates them to sets of objects. (P8)</li> <li>– Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)</li> <li>– Estimates a small number (up to 10) and checks by counting. (P8)</li> <li>– Counts reliably with numbers from one to 20, placing them in order. (P9)</li> <li>– Says which number is one more than a given number. (P9)</li> <li>– Says which number is one less than a given number. (P9)</li> <li>– Writes numerals up to 20 with increasing accuracy. (P9)</li> </ul>	<p><b>Addition / Subtraction within 10</b> Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. – Number bonds within 10 – Systematic number bonds within 10 – Number bonds to 10</p> <p>Develop fluency in addition and subtraction facts within 10 - Number bonds to 10 – Systematic number bonds within 10 – Number bonds to 10</p> <p>Read, write and interpret equations containing</p>	<p><b>Addition / Subtraction</b> Add and subtract across 10 – Add across a 10 – Subtract across a 10 – Subtract from a 10 – Subtract 1-digit number from a 2-digit number (across a 10)</p> <p>Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a twodigit number. - Add across a 10 – Subtract across a 10 – Subtract from a 10 – Subtract 1-digit number from a 2-digit number (across a 10) – 10 more, 10 less</p>	<p><b>Addition / Subtraction</b> Calculate complements to 100 - Complements to 100</p> <p>Add and subtract up to three-digit numbers using columnar methods. Add two numbers (no exchange) – Subtract two numbers (no exchange) – Add two numbers (across a 10) – Add two numbers (across a 100) – Subtract two numbers (across a 10) – Subtract two numbers (across a 100) – Add 2-digit and 3-digit numbers – Subtract a 2-digit number from a 3-digit number</p>	<p><b>Addition / Subtraction</b> Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p> <p><b>Measurement – Area</b> Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.</p> <p>Find the area of rectilinear shapes by counting squares.</p>

		<ul style="list-style-type: none"> <li>Records numbers from 1-20 and associates these with the number of objects they have counted. (P9)</li> <li>Recognises 0 and none and zero in stories and rhymes and counting and ordering. (P9)</li> </ul> <p><b>Transformations (&amp; movement)</b></p> <ul style="list-style-type: none"> <li>Talks about, recognises and copies simple repeating patterns and sequences. (P8)</li> <li>Recognises terms describing position such as on top in front of behind in the middle and in-between. (P9)</li> <li>Recognises directional symbols such as arrows. (P9)</li> </ul> <p><b>Unit 4: Light and dark</b> Pupils will continue to develop their counting skills, following the five principles of counting. (One to one principle; stable-order principle; cardinal principle; abstraction principle and order-irrelevance principle.)</p> <p>Pupils will apply their knowledge to shapes, counting the sides of physical objects.</p> <p>Pupils will develop their time language, relating to the times of day, and experiment with time, using timers to measure the duration of events.</p> <p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>Says or signs number names to 10 in counting activities. (P7)</li> <li>Counts at least 5 objects reliably. (P7)</li> <li>Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>Demonstrates an understanding of 'less'. (P7)</li> <li>In practical situations, responds to 'add one' to a number of objects. (P7)</li> </ul>	<p>addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.</p> <ul style="list-style-type: none"> <li>Addition – add together</li> <li>Addition – add more</li> <li>Addition problems</li> <li>Find a part</li> <li>Subtraction – find a part</li> <li>Fact families – the eight facts</li> <li>Subtraction – take away/cross out (How many left?)</li> <li>Subtraction – take away (How many left?)</li> <li>Subtraction on a number line</li> </ul> <p><b>Consolidation</b></p>	<ul style="list-style-type: none"> <li>Add and subtract 10s</li> </ul> <p>Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.</p> <ul style="list-style-type: none"> <li>Add two 2-digit numbers (not across a 10)</li> <li>Add two 2-digit numbers (across a 10)</li> <li>Subtract two 2-digit numbers (not across a 10)</li> <li>Subtract two 2-digit numbers (across a 10)</li> <li>Mixed addition and subtraction</li> </ul> <p><b>Position &amp; Direction</b> Order and arrange combinations of mathematical objects in patterns and sequences Use mathematical vocabulary to describe position, direction and movement,</p>	<p>Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.</p> <ul style="list-style-type: none"> <li>Inverse operations</li> <li>Make decisions</li> </ul>	<p><b>Place Value</b> Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100</p> <ul style="list-style-type: none"> <li>Multiply by 10</li> <li>Multiply by 100</li> <li>Divide by 10</li> <li>Divide by 100</li> </ul>
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		shape: to recognise and name 2D and 3D shapes Introduce more than and less than symbols				
Term 3	<p><b>WRM Spring</b></p> <p><b>Block 1: Alive in 5</b> Pupils will develop their understanding of zero and counting back to zero. Pupils will develop their understanding that all numbers are made up from smaller numbers (composition) and be encouraged to subitise (recognising small quantities without counting).</p> <p><b>Block 2: Mass and Capacity</b> Pupils will compare the mass of items identifying which is heavier or lighter. They will explore and identify the capacity of containers, using non-standard units and then compare the capacity identifying which holds the most/least.</p> <p><b>Block 3: Growing 6, 7, 8</b> Pupils will represent the nos.6, 7, &amp; 8. They will explore 1 more and 1 less. Pupils will develop their skills in conceptual subitising (e.g. 'I know there are 8 because I see 4 and 4'). They will explore making pairs and combining 2 different groups.</p>	<p><b>Unit 5: Alive in 5</b> Pupils will develop their understanding of zero, and counting back to zero. Pupils will develop their understanding that all numbers are made up from smaller numbers (composition) and be encouraged to subitise (recognising small quantities without counting).</p> <p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>- Says or signs number names to 10 in counting activities. (P7)</li> <li>- Counts at least 5 objects reliably. (P7)</li> <li>- Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>- Demonstrates an understanding of 'less'. (P7)</li> <li>- In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>- Joins in with rote counting to beyond 10. (P8)</li> <li>- Continues to rote count onwards from a given small number. (P8)</li> <li>- Recognises differences in quantity. (P8)</li> <li>- Recognises numerals from one to nine and relates them to sets of objects. (P8)</li> <li>- Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)</li> <li>- Estimates a small number (up to 10) and checks by counting. (P8)</li> <li>- Counts reliably with numbers from one to 20, placing them in order. (P9)</li> <li>- Says which number is one more than a given number. (P9)</li> <li>- Says which number is one less than a given number. (P9)</li> <li>- Writes numerals up to 20 with increasing accuracy. (P9)</li> <li>- Records numbers from 1-20 and associates these with the number of objects they have counted. (P9)</li> <li>- Recognises 0 and none and zero in stories and rhymes and counting and ordering. (P9)</li> </ul>	<p><b>Place Value within 20</b> Count within 100, forwards and backwards, starting with any number. Count within 100, forwards and backwards, starting with any number. Count within 20 Reason about the location of numbers to 20 within the linear number system, including comparing using &lt; &gt; and = - The number line to 20 - Use a number line to 20 - Compare numbers to 20 - Order numbers to 20</p> <p><b>Addition &amp; Subtraction (within 20)</b></p>	<p><b>Multiplication &amp; division</b> Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. - Introduce the multiplication symbol - Multiplication sentences - The 2 times-table - The 10 times-table - The 5 times-table - The 5 and 10 times-tables</p> <p>Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division). - Make equal groups - Make equal groups – grouping</p>	<p><b>Multiplication &amp; division</b> Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. - Multiples of 2 4 – Multiples of 5 and 10 5 – Sharing and grouping 9 – Multiply by 4 11 – The 4 times-table</p> <p>Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.</p>	<p><b>Multiplication / division</b> Recall multiplication and division facts up to <math>12 \times 12</math> and recognise products in multiplication tables as multiples of the corresponding number. - Factor pairs - Use factor pairs - Related facts – multiplication and division - Informal written methods for multiplication - Multiply a 2-digit number by a 1-digit number - Multiply a 3-digit number by a 1-digit number</p> <p>Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret</p>



		<p><b>Unit 6: Growing 6, 7, 8</b>  Pupils will develop their skills in conceptual subitising (e.g. 'I know there are 8 because I see 4 and 4'). They will continue identifying one more and one less than a number and will experiment with making pairs and combining 2 different groups. Pupils will develop language that describes the length and height of things, and time vocabulary that describes the order of events (such as yesterday, today and tomorrow).</p> <p><b>Symbols operations and notation</b></p> <ul style="list-style-type: none"> <li>- In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>- Recognises differences in quantity - which is more or less; bigger or smaller? (P8)</li> <li>- In practical situations, responds to add one or take one away from a number of objects. (P8)</li> <li>- Finds the total number of items in two groups by counting all of them. (P8)</li> <li>- Using quantities and objects, adds and subtracts two single-digit numbers and counts on or back to find the answer. (P9)</li> <li>- Using numbers up to 10, solves problems involving addition or subtraction, including comparing two sets to find a numerical difference. (P9)</li> <li>- Moves forwards and backwards using a number line to 20. (P9)</li> <li>- Solves problems, including doubling, halving and sharing. (P9)</li> <li>- Recognises, reads and identifies number positions on a number line to 20. (P9)</li> <li>- Understands that 0 can be used as a place holder. (P9)</li> <li>- Understands the operations of division as repeated subtraction. (P9)</li> <li>- Understands the operations of multiplication as repeated addition (P9)</li> </ul>	<p>Develop fluency in addition and subtraction facts within 10</p> <ul style="list-style-type: none"> <li>- Add ones using number bonds</li> <li>- Subtract ones using number bonds</li> </ul>	<ul style="list-style-type: none"> <li>- Make equal groups – sharing</li> <li>- Divide by 2</li> <li>- Divide by 10</li> <li>- Divide by 5</li> </ul>	<p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</p>	<p>remainders appropriately according to the context.</p> <ul style="list-style-type: none"> <li>- Divide a 2-digit number by a 1-digit number (1)</li> <li>- Divide a 2-digit number by a 1-digit number (2)</li> <li>- Divide a 3-digit number by a 1-digit number</li> </ul> <p>Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100).</p> <ul style="list-style-type: none"> <li>- Multiply by 100</li> <li>- Divide by 100</li> <li>- Divide a 1- or 2-digit number by 100</li> </ul>
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		<p><b>Year 1</b></p> <p>Place value within 20 To start from any number forwards and back to 20</p> <p>Weight and volume: to continue to understand the different language related to weight and volume such as <math>\frac{1}{2}</math> or <math>\frac{3}{4}</math> full/empty</p> <p>Heavy and light</p> <p>To compare different heights and lengths introduce centimetres</p> <p>Time: to begin to understand o'clock</p>				
Term 4	<p><b>WRM Spring</b></p> <p><b>Block 4: Length, Height &amp; Time</b> Pupils will build on their previous knowledge and compare the length and height of items measuring them using non-standard objects. Pupils will begin to learn the days of the week and discuss what is happening tomorrow, next week or at the weekend.</p> <p><b>Block 5: Building 9 &amp; 10</b> Pupils will identify and experiment with increasingly larger numbers, using manipulatives to learn about number bonds. They will explore patterns of nos. and represent the nos. In different ways.</p> <p><b>Block 6: Explore 3D shape</b> Pupils will explore and name common 3D shapes and be able to identify a 2D shape. They will find 2D shapes within 3D shapes and identify these in the environment. Pupils will extend</p>	<p><b>Unit 7: Building 9 and 10</b> Pupils will identify and experiment with increasingly larger numbers, using manipulatives to learn about number bonds. Pupils will experiment with creating and describing patterns, and answer questions such as 'what's the same, and what's different?'</p> <p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>- Says or signs number names to 10 in counting activities. (P7)</li> <li>- Counts at least 5 objects reliably. (P7)</li> <li>- Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>- Demonstrates an understanding of 'less'. (P7)</li> <li>- In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>- Joins in with rote counting to beyond 10. (P8)</li> <li>- Continues to rote count onwards from a given small number. (P8)</li> <li>- Recognises differences in quantity. (P8)</li> <li>- Recognises numerals from one to nine and relates them to sets of objects. (P8)</li> <li>- Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)</li> <li>- Estimates a small number (up to 10) and checks by counting. (P8)</li> <li>- Counts reliably with numbers from one to 20, placing them in order. (P9)</li> </ul>	<p><b>Addition &amp; Subtraction (within 20)</b> Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts. Add by counting on within 20 - Subtract ones using number bonds - Subtraction - counting back - Subtraction - finding the difference - Missing number problems</p>	<p><b>Money</b> Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value Find different combinations of coins that equal the same amounts of money Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?".</p>	<p><b>Multiplication &amp; Division</b> Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10). - Multiples of 10 - Related calculations - Scaling - Fractions and scales - Equivalent fractions on a number line - Equivalent fractions as bar models Solve problems, including missing number problems, involving multiplication and division, including positive integer</p>	<p><b>Position &amp; Direction</b> Describe positions on a 2-D grid as coordinates in the first quadrant.  Describe movements between positions as translations of a given unit to the left/right and up/down.  Plot specified points and draw sides to complete a given polygon.  <b>Decimals</b> Recognise and write decimal equivalents of any number of tenths or hundredths.</p>

	<p>on their previous knowledge of patterns and identify more complex patterns as well as copy and continue patterns</p>	<ul style="list-style-type: none"> <li>– Says which number is one more than a given number. (P9)</li> <li>– Says which number is one less than a given number. (P9)</li> <li>– Writes numerals up to 20 with increasing accuracy. (P9)</li> <li>– Records numbers from 1-20 and associates these with the number of objects they have counted. (P9)</li> <li>– Recognises 0 and none and zero in stories and rhymes and counting and ordering. (P9)</li> </ul> <p><b>Symbols operations and notation</b></p> <ul style="list-style-type: none"> <li>– In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>– Recognises differences in quantity - which is more or less; bigger or smaller? (P8)</li> <li>– In practical situations, responds to add one or take one away from a number of objects. (P8)</li> <li>– Finds the total number of items in two groups by counting all of them. (P8)</li> <li>– Using quantities and objects, adds and subtracts two single-digit numbers and counts on or back to find the answer. (P9)</li> <li>– Using numbers up to 10, solves problems involving addition or subtraction, including comparing two sets to find a numerical difference. (P9)</li> <li>– Moves forwards and backwards using a number line to 20. (P9)</li> <li>– Solves problems, including doubling, halving and sharing. (P9)</li> <li>– Recognises, reads and identifies number positions on a number line to 20. (P9)</li> <li>– Understands that 0 can be used as a place holder. (P9)</li> <li>– Understands the operations of division as repeated subtraction. (P9)</li> <li>– Understands the operations of multiplication as repeated addition (P9)</li> </ul> <p><b>Statistical representations</b></p> <ul style="list-style-type: none"> <li>– Sorts objects/pictures by two given criterion. (P7)</li> <li>– Begins to record simple sorting activities or data e.g. circle sets, charts. (P7)</li> <li>– Begins to collect information through purposeful enquiries that can be recorded (with adult support). (P7)</li> <li>– Records simple sorting activities using pictorial representation on simple diagrams e.g. Venn, Carroll. (P8)</li> </ul>	<p><b>Shape (Covering Year 1 &amp; 2)</b></p> <p>Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.</p> <p>Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.</p> <p>Recognise and name 3-D shapes</p> <ul style="list-style-type: none"> <li>– Sort 3-D shapes</li> <li>– Recognise and name 2-D shapes</li> <li>– Sort 2-D shapes</li> <li>– Patterns with 2-D and 3-D shapes</li> </ul> <p>Recognise common 2D and 3D shapes presented in different orientations, and know that</p>	<p>Calculate complements to 100</p> <ul style="list-style-type: none"> <li>- Subtract money</li> <li>– Find change</li> </ul> <p>Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure.</p> <p>Understand and use the commutative property of addition, and understand the related property for subtraction.</p> <ul style="list-style-type: none"> <li>– Add money</li> <li>– Subtract money</li> <li>– Find change</li> </ul> <p><b>Mass, capacity &amp; temperature (Covering Year 1 &amp; 2)</b></p> <p>Compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> <li>- mass/weight</li> </ul>	<p>scaling problems and correspondence problems in which n objects are connected to m objects.</p> <p><b>Mass and capacity</b></p> <p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p><b>Statistics</b></p> <p>Interpret and present data using bar charts, pictograms and tables.</p> <p>Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.</p>	<p>Recognise and write decimal equivalents to 1/4, 1/2 and 3/4.</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>
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		<ul style="list-style-type: none"> <li>– Using numbers up to 10, solves problems involving addition or subtraction, including comparing two sets to find a numerical difference. (P9)</li> <li>– Moves forwards and backwards using a number line to 20. (P9)</li> <li>– Solves problems, including doubling, halving and sharing. (P9)</li> <li>– Recognises, reads and identifies number positions on a number line to 20. (P9)</li> <li>– Understands that 0 can be used as a place holder. (P9)</li> <li>– Understands the operations of division as repeated subtraction. (P9)</li> <li>– Understands the operations of multiplication as repeated addition (P9)</li> </ul> <p><b>Year 1</b></p> <p>Place value within 20/50 To start from any number forwards and back to 20</p> <p>Read and write numbers from 0-10 11-20 in numerals and words</p> <p>shape: to recognise and name 2D and 3D shapes</p> <p>Time: to begin to understand o'clock</p> <p>Money: to understand the different denominations Ordinal numbers</p> <p>Directional language</p>				
Term 5	<p><b>WRM Summer</b></p> <p><b>Block 1: To 20 and Beyond</b></p> <p>Pupils will develop their familiarity with nos. Beyond 10 (working to 13 initially and then to 20). Pupils will be encouraged to notice patterns that occur when counting with larger numbers and they will represent large numbers using a variety of objects,</p>	<p><b>Unit 9: To 20 and beyond</b></p> <p>Pupils will be encouraged to notice patterns that occur when counting with larger numbers (e.g. repeated 0 – 9 pattern at the end of the numbers). They will represent large numbers using a variety of objects, manipulatives, and pictorial representations. Pupils will experiment with spatial</p>	<p><b>Place value within 50</b></p> <p>Count within 100, forwards and backwards, starting with any number.</p> <p>– Count from 20 to 50</p>	<p><b>Fractions</b></p> <p>Recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</p>	<p><b>Money</b></p> <p>Add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <p><b>Fractions</b></p> <p>Interpret and write proper fractions to</p>	<p><b>Fractions</b></p> <p>Reason about the location of mixed numbers in the linear number system.</p> <p>– Number lines with mixed numbers</p>

<p>manipulatives, and pictorial representations.</p> <p><b>Block 2: How Many Now?</b> Pupils will build on their understanding exploring the concept of addition (augmentation) and adding more and then subtraction (reduction) as taking away.</p> <p><b>Block 3: Manipulate, Compose and Decompose</b> Pupils will extend their knowledge of 3D shapes and explore the properties of shapes and spatial relations. Pupils will manipulate shapes, compose shapes &amp; decompose shapes.</p>	<p>reasoning that involve selecting and rotating shapes, such as completing jigsaws.</p> <p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>- Says or signs number names to 10 in counting activities. (P7)</li> <li>- Counts at least 5 objects reliably. (P7)</li> <li>- Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>- Demonstrates an understanding of 'less'. (P7)</li> <li>- In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>- Joins in with rote counting to beyond 10. (P8)</li> <li>- Continues to rote count onwards from a given small number. (P8)</li> <li>- Recognises differences in quantity. (P8)</li> <li>- Recognises numerals from one to nine and relates them to sets of objects. (P8)</li> <li>- Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)</li> <li>- Estimates a small number (up to 10) and checks by counting. (P8)</li> <li>- Counts reliably with numbers from one to 20, placing them in order. (P9)</li> <li>- Says which number is one more than a given number. (P9)</li> <li>- Says which number is one less than a given number. (P9)</li> <li>- Writes numerals up to 20 with increasing accuracy. (P9)</li> <li>- Records numbers from 1-20 and associates these with the number of objects they have counted. (P9)</li> <li>- Recognises 0 and none and zero in stories and rhymes and counting and ordering. (P9)</li> </ul> <p><b>Symbols operations and notation</b></p> <ul style="list-style-type: none"> <li>- In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>- Recognises differences in quantity - which is more or less; bigger or smaller? (P8)</li> <li>- In practical situations, responds to add one or take one away from a number of objects. (P8)</li> <li>- Finds the total number of items in two groups by counting all of them. (P8)</li> </ul>	<p>3 – Count by making groups of tens Reason about the location of numbers to 20 within the linear number system, including comparing using &lt; &gt; and = The number line to 50 <b>Place value within 100</b> Count within 100, forwards and backwards, starting with any number. Count from 50 to 100</p> <p><b>Length &amp; height (Covering Year 1 &amp; 2)</b> Compare, describe and solve practical problems for: - lengths and heights Measure and begin to record the following: - lengths and heights</p>	<p>Recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math> Write simple fractions for example <math>\frac{1}{2}</math> of 6 = 3</p> <p>Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10). – Fractions and scales - Equivalent fractions on a number line – Equivalent fractions as bar models</p> <p><b>Multiplication</b> Children will be exposed to all the times tables in preparation for their times table test – government. 1-12 times-table Children must be able to: Count forwards and backwards in multiples of</p>	<p>represent 1 or several parts of a whole that is divided into equal parts. – Understand the denominators of unit fractions – Understand the numerators of non-unit fractions – Understand the whole</p> <p>Find unit fractions of quantities using known division facts (multiplication tables fluency). – Unit fractions of a set of objects</p> <p>Reason about the location of any fraction within 1 in the linear number system. – Compare and order unit fractions – Compare and order non-unit fractions – Fractions on a number line – Count in fractions on a number line</p>	<p>– Compare and order mixed numbers</p> <p>Convert mixed numbers to improper fractions and vice versa. – Convert mixed numbers to improper fractions – Convert improper fractions to mixed numbers</p> <p>Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers. – Add fractions and mixed numbers – Subtract from whole amounts – Subtract from mixed numbers</p> <p><b>Residential</b></p>
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- Organises and records pictorial data on simple charts or tables where one symbol represents one unit e.g. pictograms, block graphs. (P9)

**Unit 10: First, Then and Now**

Pupils will consolidate skills in comparing, ordering, subitising, counting, matching and the composition of numbers. This knowledge will be extended to develop understanding of adding and taking away. They will apply this to shapes: combining and removing parts of shapes to create new shapes and then describing what they see.

**Place Value and Ordering**

- Says or signs number names to 10 in counting activities. (P7)
- Counts at least 5 objects reliably. (P7)
- Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)
- Demonstrates an understanding of 'less'. (P7)
- In practical situations, responds to 'add one' to a number of objects. (P7)
- Joins in with rote counting to beyond 10. (P8)
- Continues to rote count onwards from a given small number. (P8)
- Recognises differences in quantity. (P8)
- Recognises numerals from one to nine and relates them to sets of objects. (P8)
- Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)
- Estimates a small number (up to 10) and checks by counting. (P8)
- Counts reliably with numbers from one to 20, placing them in order. (P9)
- Says which number is one more than a given number. (P9)
- Says which number is one less than a given number. (P9)
- Writes numerals up to 20 with increasing accuracy. (P9)

		<ul style="list-style-type: none"> <li>Records numbers from 1-20 and associates these with the number of objects they have counted. (P9)</li> <li>Recognises 0 and none and zero in stories and rhymes and counting and ordering. (P9)</li> </ul> <p><b>Year 1</b></p> <p>Multiplication: to begin to count on in 2,5, 10</p> <p>Double numbers</p> <p>Multiplication: to begin to understand groups of in object and pictorial representation</p> <p>Division: to begin to understand sharing with objects and pictorial representation</p> <p>Fractions: to begin to understand what is half of an amount of objects or shape</p> <p>Weight and volume: to continue to understand the different language related to weight and volume such as <math>\frac{1}{2}</math> or <math>\frac{3}{4}</math> full/empty</p>				
Term 6	<p><b>WRM Summer</b></p> <p><b>Block 4: Sharing and grouping</b> Children will begin to develop an understanding of sharing. They will investigate what sharing is and describe equal sharing as fair and unequal sharing as unfair.</p> <p><b>Block 5: Visualise, build and map</b> Children will deepen their understanding of different patterns, and will begin to develop a secure knowledge of pattern rules and the ability to verbalise their thinking and explain it to others.</p> <p><b>Block 6: Make Connections</b></p>	<p><b>Unit 11: Find my pattern</b> Pupils will experiment with patterns and relate them to numbers, thus identifying number patterns such as odd and even numbers. Pupils will explore doubling, sharing and grouping. Pupils will also learn about recreating real-world scenes and using positional and shape vocabulary to build their own models.</p> <p><b>Geometrical properties and angles</b></p> <ul style="list-style-type: none"> <li>Makes direct comparisons focusing on one dimension such as length or height. (P8)</li> <li>Recognises, creates and describes patterns. (P9)</li> <li>Explores characteristics of everyday objects and shapes and uses mathematical language</li> </ul>	<p><b>Multiplication &amp; division</b> Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.</p> <ul style="list-style-type: none"> <li>Count in 2s</li> <li>Count in 10s</li> <li>Count in 5s</li> <li>Tens to 100</li> </ul> <p><b>Money</b></p>	<p><b>Statistics</b> Interpret and 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 sorting the categories by quantity</p> <p>Ask and answer questions about totalling and</p>	<p><b>Length &amp; Perimeter</b> Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Measure the perimeter of simple 2-D shapes.</p> <p><b>Time</b> Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-</p>	<p><b>Money</b> Estimate, compare and calculate different measures, including money in pounds and pence.</p> <p><b>Decimals</b> Solve simple measure and money problems involving fractions and decimals to two decimal places</p> <p><b>Transition</b></p>

<p>Children will learn to develop connections between all the aspects of maths that have been covered through the year. The children will deepen their understanding through developing their reasoning and problem-solving strategies.</p>	<p>to describe them, using basic properties such as large, small, rectangle, triangle. (P9)</p> <ul style="list-style-type: none"> <li>- Responds to mathematical language describing properties of 2d and 3d shapes, beginning to recognise shapes by the number of sides (P9)</li> <li>- Responds to comparative language with regard to shape, and, when prompted, indicates which shape is larger or smaller. (P9)</li> </ul> <p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>- Says or signs number names to 10 in counting activities. (P7)</li> <li>- Counts at least 5 objects reliably. (P7)</li> <li>- Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>- Demonstrates an understanding of 'less'. (P7)</li> <li>- In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>- Joins in with rote counting to beyond 10. (P8)</li> <li>- Continues to rote count onwards from a given small number. (P8)</li> <li>- Recognises differences in quantity. (P8)</li> <li>- Recognises numerals from one to nine and relates them to sets of objects. (P8)</li> <li>- Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)</li> <li>- Estimates a small number (up to 10) and checks by counting. (P8)</li> <li>- Counts reliably with numbers from one to 20, placing them in order. (P9)</li> <li>- Says which number is one more than a given number. (P9)</li> <li>- Says which number is one less than a given number. (P9)</li> <li>- Writes numerals up to 20 with increasing accuracy. (P9)</li> <li>- Records numbers from 1-20 and associates these with the number of objects they have counted. (P9)</li> <li>- Recognises 0 and none and zero in stories and rhymes and counting and ordering. (P9)</li> </ul> <p><b>Unit 12: On the move</b> Pupils will investigate deeper patterns that connect numbers and shapes, creating symmetrical</p>	<p>Recognise and know the value of different denominations of coins and notes</p> <p>Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.</p> <p>- Count in coins</p>	<p>comparing categorical data</p> <p><b>Time (Covering Year 1 &amp; 2 stages)</b> Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] Recognise and use language relating to dates, including days of the week, weeks, months and years Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times Compare and sequence intervals of time Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times Know the number of minutes in an hour</p>	<p>hour and 24-hour clocks.</p> <p>Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year.</p> <p>Compare durations of events [for example to calculate the time taken by particular events or tasks].</p>	
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		<p>constructions and increasingly complex repeating patterns. Pupils will learn about creating maps to describe the position of objects and places.</p> <p><b>Place Value and Ordering</b></p> <ul style="list-style-type: none"> <li>- Says or signs number names to 10 in counting activities. (P7)</li> <li>- Counts at least 5 objects reliably. (P7)</li> <li>- Recognises numerals from one to five and understands that each represents a constant number or amount. (P7)</li> <li>- Demonstrates an understanding of 'less'. (P7)</li> <li>- In practical situations, responds to 'add one' to a number of objects. (P7)</li> <li>- Joins in with rote counting to beyond 10. (P8)</li> <li>- Continues to rote count onwards from a given small number. (P8)</li> <li>- Recognises differences in quantity. (P8)</li> <li>- Recognises numerals from one to nine and relates them to sets of objects. (P8)</li> <li>- Uses ordinal numbers - first, second, third when describing the position of objects, people or events. (P8)</li> <li>- Estimates a small number (up to 10) and checks by counting. (P8)</li> <li>- Counts reliably with numbers from one to 20, placing them in order. (P9)</li> <li>- Says which number is one more than a given number. (P9)</li> <li>- Says which number is one less than a given number. (P9)</li> <li>- Writes numerals up to 20 with increasing accuracy. (P9)</li> <li>- Records numbers from 1-20 and associates these with the number of objects they have counted. (P9)</li> <li>- Recognises 0 and none and zero in stories and rhymes and counting and ordering. (P9)</li> </ul> <p><b>Year 1</b></p> <p>Multiplication: to continue to understand groups of in object and pictorial representation: Multiples are addition of numbers 2+2+2</p> <p>Division: to continue to understand sharing with objects and pictorial representation</p>		<p>and the number of hours in a day Compare, describe and solve practical problems for time Measure and begin to record the time (hours, minutes, seconds)</p>		
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		<p>Geometry: to understand position and direction</p> <p>Money: to begin to add denominations together To use different coins to make the same amount.</p> <p>Time to introduce half past and the length of time: how long is 1 second etc.</p>				
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<p>Year 7 Content (skills and knowledge)</p> <p>Majority will be working within NC Years: 3 – 5 PA Stages: 3 – 5</p>	<p><b>Base 10 Numbers</b> Saying reading, writing, comparing, rounding and interpreting increasingly larger numbers; Calculating with money; Introduction to percentages; Baseline assessments; Practise learning, recalling and using number facts through personalised activities</p>	<p><b>Add &amp; Subtract</b> Developing addition &amp; subtraction mental and written calculation skills Pupils will be developing their addition and subtraction skills through games, investigations and intelligent practice. They will be also be applying their addition and subtraction skills to topics such as perimeter and money. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>	<p><b>Scales &amp; Symbols</b> Pupils will be learning about representing numbers within scales and symbols. Topics will depend on a pupils' prior attainment, and may include: pictograms; bar graphs; measuring mass; timelines; number lines (positive/negative whole numbers and decimals); function machines and substitution. Pupils may have the opportunity to use their date of birth and the current date to investigate how old they are in months, days, hours, minutes and/or seconds. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>	<p><b>Meaning of Multiplication</b> Pupils will be developing their understanding of multiplication as repeated addition. Pupils will learn about the connection between multiplication, arrays and area. Pupils will develop their understanding and recall of times tables and learn about multiples, factors and prime numbers. Pupils will have an opportunity to learn about multiplying large numbers. Pupils who demonstrate proficiency with multiplication of large and small numbers will also be learning about ratio. Pupils continue to practise learning, recalling and using addition, subtraction,</p>	<p><b>Understanding Fractions</b> Pupils will be using physical resources and pictorial methods to develop their understanding of fractions by identifying, comparing, adding and subtracting fractions. Pupils will also develop the skills in measuring length and converting measurements. They might extend their knowledge through learning about decimals and percentages. In addition, all pupils will investigate codes and apply this to understanding of roman numerals and/or simplifying algebra. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and</p>	<p><b>Numbers in Geometry &amp; Measure</b> Pupils will be consolidating their learning of number throughout the year, solving shape and measure problems, whilst developing their use and knowledge of shape and measure language. Topics include: angles; shape properties; time; reflection and money problems. Investigations may include tangrams and mask symmetry. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>
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					multiplication and division number facts throughout the year.	division number facts throughout the year.	
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	<p>Year 8 Content (skills and knowledge)</p> <p>Majority will be working within: NC Years: 3–6 PA Stages: 3 – 6</p>	<p><b>Add &amp; Subtract problems</b> Pupils will further develop addition and subtraction written and mental calculation skills with small/large whole numbers; decimals and/or negative numbers. They will develop these skills through games, investigations and intelligent practice directly and also indirectly within topics such as perimeter, and interpreting graphs. Pupils will develop skills in using scientific calculators by solving more complex problems. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>	<p><b>Meaning of Division</b> Pupils will develop their understanding of division as repeated subtraction, sharing and grouping. They will learn to relate this to their understanding of multiplication. They will be consolidating understanding of odd and even numbers whilst developing their skills, dividing increasingly larger numbers, extending to decimals. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>	<p><b>Equivalent Proportions</b> Pupils will learn about equivalence between fractions; capacity and volume; in money. Pupils will also have an opportunity to develop their understanding of time and money. Pupils who are confident in some of these topics may extend their understanding by looking at equivalence in algebra (simplifying expressions with brackets and solving equations), and be introduced to the nth term with sequences. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>	<p><b>Calculating with Angles &amp; 3D Shape</b> Pupils will learn to develop skills in measuring and drawing angles and learn to apply a more developed understanding of angles to calculating missing angles on straight lines and in shapes. In addition to this, pupils will learn about 3D shapes and their volume, extending to surface area. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>	<p><b>Applying Multiplication &amp; Division</b> Pupils will learn about applying their knowledge of multiplication and division within topics such as averages; multiples &amp; factors; fractions of amounts; pie charts and proportion. Pupils will be encouraged to further develop their recall of times tables and see the link between related multiplication facts. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>	<p><b>Using proportions</b> Pupils will learn to apply their developing understanding of proportion (fractions, decimals, percent) within measurement problems; probability and time. Furthermore, pupils will further develop their calculation skills with fractions and percentages. Pupils who demonstrate proficiency in these topics may learn how to plot straight line graphs. Pupils continue to practise learning, recalling and using addition, subtraction, multiplication and division number facts throughout the year.</p>
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	<p>Year 9 Content (skills and knowledge)</p> <p>Majority will be working within NC Years: 4-7 PA Stages: 4-7</p>	<p><b>Applying Calculation Skills</b> Pupils will develop their calculation skills, rounding their answers as appropriate. They will learn about BIDMAS and how this relates to scientific and basic calculators, extending to developing knowledge of powers and roots.</p>	<p><b>Using Unknowns</b> Pupils will develop their skills in solving problems involving unknowns, such as missing parts of number sentences; writing algebraic expressions; substituting and solving equations; finding unknowns in time problems (e.g. the start time) and finding missing dimensions in area and volume problems.</p>	<p><b>Scales &amp; Scaling</b> Pupils will learn about the connections between scaling and multiplication/division. Pupils will apply this to topics such as enlargement; proportion; using maps and decimals. Pupils will learn about scale ratios, and apply this to ratio problems, beginning with concrete and pictorial problems and extending to using ratio within abstract problems.</p>	<p><b>Calculating with Fractions</b> Pupils will develop skills in calculating with fractions, decimals and percentages. They will learn to relate this with their knowledge of units of measures. Pupils will learn to apply their understanding of fractions, decimals and percentages whilst also learning about probability.</p>	<p><b>Algebra &amp; Algebraic Graphs</b> Pupils will learn about sequences and relate this to linear graphs. Pupils will also develop their understanding and skills with negative numbers; co-ordinates; substitution and conversion graphs.</p>	<p><b>Number &amp; Algebra in Geometry</b> Pupils will learn about the relationship between the diameter and the circumference of a circle (<math>\pi</math>) and begin to find the circumference, and possibly the area, of a circle. Pupils will develop their understanding of 2D shapes and their angle properties. Pupils will learn about constructing shapes accurately and will be introduced to Pythagoras' theorem. Pupils demonstrating proficiency in these skills may learn about the tangent, then sine and cosine ratios in trigonometry.</p>
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	<p>Year 10 <b>Entry Level &amp; Functional Skills Level 1</b> Content (skills and knowledge)</p> <p>Majority will be working within NC Years: 3-6 PA Stages: 3-6</p>	<p><b>Money</b> Pupils will demonstrate increased confidence at using coins and notes. They will learn about using decimals in the context of money and explore the rough values of different commonly bought items. Pupils achieving these objectives at Entry 3 before the end of term will take a Functional Skills level 1 extension unit in fractions, decimals and percent.</p>	<p><b>Shape</b> Pupils will build on their language relating to properties of shapes and the names of 2D and 3D shapes, identifying lines of symmetry and nets of 3D solids. Pupils will also learn about giving directions using compass directions. Pupils achieving these objectives at Entry 3 before the end of term will extend their knowledge of coordinates and angles to functional skills level 1.</p>	<p><b>Place Value</b> Pupils will develop and demonstrate their understanding of the place value of numbers and apply this to rounding, ordering and comparison problems. Pupils achieving these objectives at Entry 3 before the end of term will take a Functional Skills level 1 extension unit in the order of operations.</p>	<p><b>Calculation</b> Pupils will demonstrate their skills in adding, subtracting, multiplying and dividing without a calculator. They will also learn about estimation. Pupils achieving these objectives at Entry 3 before the end of term will take a Functional Skills level 1 extension unit in multiplying and dividing by powers of ten.</p>	<p><b>Proportion</b> Pupils will develop understanding and skills with simple fractions, finding fractions of amounts, shapes and numbers. Furthermore, pupils will add and subtract fractions with the same denominator using a calculator. Pupils achieving these objectives at Entry 3 before the end of term will extend their knowledge of fractions to functional skills level 1.</p>	<p><b>Time</b> Pupils will develop their skills in reading, setting and solve simple problems with time, including converting between units of time. Pupils achieving these objectives at Entry 3 before the end of term will take Functional Skills level 1 extension units in word formulae and simple interest.</p>
	<p>Year 10 <b>GCSE Foundation</b> Content (skills and knowledge)</p> <p>Majority will be working within NC Years: 5-8 PA Stages: 5-8</p>	<p><b>Number &amp; Place Value</b> Pupils will solve problems with multiples and factors; calculate with BIDMAS; and extend their rounding skills to include rounding with decimal places and then significant figures.</p>	<p><b>Calculation</b> Pupils will develop written methods for addition, subtraction, multiplication and division with whole numbers and decimals. Pupils will develop calculator skills and begin to calculate with powers. Pupils will develop their understanding of simplifying algebraic expressions (including multiplying out brackets).</p>	<p><b>Proportional Reasoning</b> Pupils will demonstrate increased competence at calculating with fractions in a variety of contexts, including probability. Pupils will also learn about relating fractions and ratio.</p>	<p><b>Money</b> Pupils will calculate with money, and use language such as credit/debit; turnover/profit. They will learn about increasing and decreasing amounts by a percentage; solving proportion problems (including 'best buy problems) and calculating interest.</p>	<p><b>Algebra</b> Pupils will learn about distance time calculations and graphs and solve problems related to speed, extending to density and pressure calculations. Pupils will then extend their understanding of sequences continuing sequences given the nth term, and (for some pupils) working out the nth term of a sequence. Pupils will finish the term consolidating their understanding of coordinates and learning to draw and understand linear graphs.</p>	<p><b>Geometry &amp; Measure</b> Pupils will build their confidence working with formulae as they learn about finding the area and perimeter of various shapes. Pupils will learn about converting metric and imperial units of measure, including using scales and construction.</p>
	<p>Year 10 <b>GCSE Higher</b></p>	<p>GCSE Higher tier:</p>	<p>GCSE Higher tier:</p>	<p>GCSE Higher tier:</p>	<p>GCSE Higher tier:</p>	<p>GCSE Higher tier:</p>	<p>GCSE Higher tier:</p>

<p>Content (skills and knowledge)</p> <p>NC Years: 9-11 PA Stages: 9-11</p>	<p>Unit 1 - Non-calculator methods Solving more complex problems without a calculator.</p> <p>Unit 2 - Types of number and Sequences Calculating HCF and LCM through prime factorisation; learning about surds and finding the formula for a quadratic sequence.</p>	<p>Unit 1 - Representing solutions of equations and inequalities Pupils will recognise and sketch linear graphs. They will factorise and solve quadratic equations and solve linear &amp; quadratic inequalities.</p> <p>Unit 2 - Simultaneous equations Pupils will learn about solving simultaneous equations.</p>	<p>Unit 1 - Ratios and fractions Pupils will relate their understanding of ratios and fractions to real-life problems such as compound measurements &amp; comparing areas or volumes.</p> <p>Unit 2 - Collecting, representing and interpreting data. Pupils will develop their understanding of statistics including: measures of location and spread; representing data on histograms, box plots and scatter graphs; sampling techniques and applying statistics to populations.</p>	<p>Unit 1 - Percentages &amp; Interest Pupils will learn to apply understanding of percentages to more complex problems, including growth and decay problems, and work with general iterative processes.</p> <p>Unit 2 - Indices &amp; Roots Pupils will learn to calculate with roots; integer and fractional indices. They will estimate powers and roots and use standard form.</p>	<p>Unit 1 - Gradients &amp; Lines Pupils will plot and understand linear graphs, using the form <math>y=mx+c</math> to identify parallel and perpendicular lines.</p> <p>Unit 2 - Non-linear graphs Pupils will learn to sketch non-linear graphs such as quadratic, cubic, reciprocal graphs and exponential graphs.</p> <p>Unit 3 - Probability Pupils will learn to calculate probabilities to predict the likelihood of future events occurring. They will also calculate and interpret conditional probabilities.</p>	<p>Unit 1 - Angles and bearings; Pupils will interpret and use bearings. They will apply their knowledge of Pythagoras' theorem and simple trigonometric ratios to solve angle problems.</p> <p>Unit 2 - Working with Circles Pupils will learn to complete and understand a range of circle calculations including arc lengths and surface areas/volumes of spheres, pyramids and cones. Pupils will be introduced to four of the circle theorems.</p>
<p>Year 11 Content <b>Entry Level &amp; Functional Skills Level 1</b> (skills and knowledge)</p> <p>Majority will be working within NC Years: 3-6 PA Stages: 3-6</p>	<p><b>Measure</b> Pupils will learn about estimating and measuring length, weight and capacity; comparing measurements and solving problems in different standard metric units. Pupils achieving these objectives at Entry 3 will take a Functional Skills level 1 extension unit in reading and using scales and scale factors.</p>	<p><b>Statistics</b> Pupils will learn about reading, drawing and solving problems related to a variety of graphs and tables, including pictograms, bar graphs, tally charts and frequency tables. They will also plan and collect data. Pupils achieving these objectives at Entry 3 will take a Functional Skills level 1 extension unit in calculating the mean.</p>	<p><b>Complete EL portfolio</b> Pupils will complete their portfolios, consolidate and extend their understanding of components 1-4 (place value, calculation, proportion and money). Pupils taking the functional skills level 1 will complete extension units in: percentages of amounts; calculating discounts and estimating answers to calculations using fractions and decimals.</p>	<p><b>Complete EL portfolio</b> Pupils will complete their portfolios, consolidate and extend their understanding of components 5-7 (time, measure and shape). Pupils taking the functional skills level 1 will complete extension units in: volume; square numbers and probability.</p>	<p><b>Complete EL portfolio</b> Pupils will complete their portfolios, consolidate and extend their understanding of component 8 (statistics). Once their portfolio of evidence is complete, they will work at 'real-life' functional Maths activities. Pupils taking the functional skills level 1 examinations will be revising for this.</p>	<p><b>Revision &amp; Exams</b> Pupils will revise for and complete any remaining examinations and will then work at functional Maths skills and activities.</p>

<p>Year 11 Content <b>GCSE Foundation</b> (skills and knowledge)</p> <p>Majority will be working within NC Years: 6-9 PA Stages: 6-9</p>	<p><b>Geometry</b> Pupils will learn about transforming shapes on co-ordinate paper. They will build on their angle knowledge to solve more complex angle problems and calculate with angles.</p>	<p><b>Statistics</b> Pupils will plan, collect and learn to analyse statistics, interpreting and drawing scatter graphs and pie charts. Pupils will compare data by looking at averages. Pupils will learn about calculating the probability of two events occurring: using tree diagrams and calculating probabilities from Venn diagrams.</p>	<p><b>Pythagoras &amp; Algebra</b> Pupils will learn about Pythagoras' theorem and use it to solve problems. Pupils will learn about solving more complex equations, including simultaneous equations. Some pupils may reinforce key skills such as multiplying and dividing fractions; listing outcomes and reading two-way tables.</p>	<p><b>Trigonometry &amp; Powers</b> Pupils will extend their understanding of simplifying algebraic expressions, to include using powers. Pupils will learn about writing numbers in standard form and have the opportunity to develop their understanding of trigonometry. Some pupils may reinforce key skills such as calculating with whole and decimal numbers; generating sequences; proportion and using ratios.</p>	<p><b>Geometry, Algebra &amp; Revision</b> Pupils will be revising for their examinations, with additional learning for some pupils in quadratic equations and non-linear graphs.</p>	<p><b>Revision &amp; Exams</b> Pupils will revise for and complete any remaining examinations and will then work at functional Maths skills and activities.</p>
<p>Year 11 Content <b>GCSE Foundation</b> (skills and knowledge)</p> <p>NC Years: 10-11 (Higher) PA Stages: 9-12</p>	<p>Unit 1 – Congruence, similarity and enlargement Pupils will learn to transform shapes. Including using fractional and negative scale factors. Unit 2 – Vectors Pupils will learn to calculate with vectors. Unit 3 – Transforming and constructing</p>	<p>Unit 1 – Expanding and factorising Pupils will further develop skills in factorising and expanding quadratic expressions, solving them through factorisation and with the formula. Unit 2 – Changing the subject Pupils will develop fluency with algebraic equations. Unit 3 – Functions</p>	<p>Unit 1 – Trigonometry Pupils will revise and extend their understanding of trigonometry, including in 3 dimensions, knowing exact values of sin, cos and tan. Pupils will learn to use the sine rule and the cosine rule. Unit 2 – Multiplicative reasoning</p>	<p>Unit 1 – Algebraic reasoning Pupils will apply their understanding of algebra to increasingly more complex problems. Unit 2 – Listing and describing Pupils will apply their understanding of probability to increasingly more complex problems. They will also develop their skills in constructing and</p>	<p>Unit 1 – Show that. Pupils will develop skills in mathematical communication. Unit 2 – Revision Pupils will be revising for their examinations.</p>	<p>Pupils will revise for and complete any remaining examinations and will then work at functional Maths skills and activities.</p>

		<p>They will learn to sketch graphs of the trigonometric functions and translate and reflect graphs of functions.</p>	<p>Pupils will be introduced to formal function notation.</p>	<p>Pupils will expand and develop their understanding of direct and indirect proportion.</p> <p>Unit 3 – Geometric reasoning</p> <p>Pupils will apply their understanding of geometry to increasingly more complex problems.</p>	<p>interpreting 3D shapes.</p> <p>Unit 3 – Using graphs</p> <p>Pupils will learn about more complex aspects of algebraic graphs, including finding the area under a curve.</p>		
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