

## Factual fluency progression

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Additive factual fluency</b>	Addition and subtraction within 10.	Addition and subtraction across 10.	Secure and maintain fluency in addition and subtraction within and across 10, through continued practice.		
<b>Multiplicative factual fluency</b>			Recall the 10 and 5 multiplication tables, and corresponding division facts.	Recall the 3, 6 and 9 multiplication tables, and corresponding division facts.	Secure and maintain fluency in all multiplication tables, and corresponding division facts, through continued practice.
			Recall the 2, 4 and 8 multiplication tables, and corresponding division facts.	Recall the 7 multiplication table, and corresponding division facts.	
				Recall the 11 and 12 multiplication tables, and corresponding division facts.	

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Programme	Mastering Number	Mastering Number	Mastering Number	Mastering Number (Autumn Term) NumberSense TT's (Spring onwards) TTRS	NumberSense TT's TTRS	NumberSense TT's TTRS	NumberSense TT's TTRS
Timing	As main part of maths lesson	15 minutes 4x per week	15 minutes 4x per week	15 minutes 4x per week (Autumn) 10 minutes 5x per week (Spring onwards)	10 minutes 5x per week	Daily booklet practice in Autumn term. Gradually moving to weekly booklet practice with conceptual animation activities	Weekly booklet practice with conceptual animation activities
Explicit application			Weekly fluency/arithmetic session	Weekly fluency/arithmetic session	Weekly fluency/arithmetic session	Weekly fluency/arithmetic session	

# Mastering Number

## Reception Overview

Term 1	Term 2	Term 3
<p>Pupils will build on previous experiences of number from their home and nursery environments, and further develop their subitising and counting skills. They will explore the composition of numbers within 5. They will begin to compare sets of objects and use the language of comparison.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• identify when a set can be subitised and when counting is needed</li> <li>• subitise different arrangements, both unstructured and structured, including using the Hungarian number frame</li> <li>• make different arrangements of numbers within 5 and talk about what they can see, to develop their conceptual subitising skills</li> <li>• spot smaller numbers 'hiding' inside larger numbers</li> </ul>	<p>Pupils will continue to develop their subitising and counting skills and explore the composition of numbers within and beyond 5. They will begin to identify when two sets are equal or unequal and connect two equal groups to doubles. They will begin to connect quantities to numerals.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals</li> <li>• begin to identify missing parts for numbers within 5</li> <li>• explore the structure of the numbers 6 and 7 as '5 and a bit' and connect this to finger patterns and the Hungarian number frame</li> <li>• focus on equal and unequal groups when comparing numbers</li> </ul>	<p>Pupils will consolidate their counting skills, counting to larger numbers and developing a wider range of counting strategies. They will secure knowledge of number facts through varied practice.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• continue to develop their counting skills, counting larger sets as well as counting actions and sounds</li> <li>• explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame</li> <li>• compare quantities and numbers, including sets of objects which have different attributes</li> <li>• continue to develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2</li> </ul>

<ul style="list-style-type: none"> <li>• connect quantities and numbers to finger patterns and explore different ways of representing numbers on their fingers</li> <li>• hear and join in with the counting sequence, and connect this to the 'staircase' pattern of the counting numbers, seeing that each number is made of one more than the previous number</li> <li>• develop counting skills and knowledge, including: that the last number in the count tells us 'how many' (cardinality); to be accurate in counting, each thing must be counted once and once only and in any order; the need for 1:1 correspondence; understanding that anything can be counted, including actions and sounds</li> <li>• compare sets of objects by matching</li> <li>• begin to develop the language of 'whole' when talking about objects which have parts</li> </ul>	<ul style="list-style-type: none"> <li>• understand that two equal groups can be called a 'double' and connect this to finger patterns</li> <li>• sort odd and even numbers according to their 'shape'</li> <li>• continue to develop their understanding of the counting sequence and link cardinality and ordinality through the 'staircase' pattern</li> <li>• order numbers and play track games</li> <li>• join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers</li> </ul>	<ul style="list-style-type: none"> <li>• begin to generalise about 'one more than' and 'one less than' numbers within 10</li> <li>• continue to identify when sets can be subitised and when counting is necessary</li> <li>• develop conceptual subitising skills including when using a rekenrek</li> </ul>
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# Mastering Number

## Year 1 Overview

Term 1	Term 2	Term 3
<p>Pupils will have an opportunity to consolidate the Early Learning Goals and continue to explore the composition of numbers within 10, and the position of these numbers in the linear number system.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• subitise within 5, including when using a rekenrek, and re-cap the composition of 5</li> <li>• develop their understanding of the numbers 6 to 9 using the '5 and a bit' structure</li> <li>• compare numbers within 10 and use precise mathematical language when doing so</li> <li>• re-cap the order of numbers within 10 and connect this to '1 more' and '1 less' than a given number</li> </ul>	<p>Pupils will continue to explore the composition of numbers within 10 and explore addition and subtraction structures and the related language (without the use of symbols).</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• explore the composition of each of the numbers 7 and 9</li> <li>• explore the composition of odd and even numbers, seeing that even numbers can be made of two odd or two even parts, and that odd numbers can be composed of one odd part and one even part</li> <li>• identify the number that is two more or two less than a given odd or even number, identifying that two more/ less than an odd number is the next/ previous odd number, and two more/ less than an even number is the next/ previous even number</li> </ul>	<p>Pupils will explore the composition of numbers within 20 and their position in the linear number system. They will connect addition and subtraction expressions and equations to 'number stories').</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"> <li>• explore the composition of the numbers 11 to 19 as '10 and a bit' and compare numbers within 20</li> <li>• connect the composition of the numbers 11 to 19 to their position in the linear number system, including identifying the midpoints of 5, 10 and 15</li> <li>• compare numbers within 20</li> <li>• understand how addition and subtraction equations can represent previously explored structures of addition and subtraction (aggregation/ partitioning/ augmentation/ reduction)</li> </ul>

<ul style="list-style-type: none"> <li>• explore the structure of even numbers (including that even numbers can be composed by doubling any number, and can be composed of 2s)</li> <li>• explore the structure of the odd numbers as being composed of 2s and 1 more</li> <li>• explore the composition of each of the numbers 6, 8, and 10</li> <li>• explore number tracks and number lines and identify the differences between them</li> </ul>	<ul style="list-style-type: none"> <li>• explore the aggregation and partitioning structures of addition and subtraction through systematically partitioning and re-combining numbers within 10 and connecting this to the part-part-whole diagram, including using the language of parts and wholes</li> <li>• explore the augmentation and reduction structures of addition and reduction using number stories, including introducing the 'first, then, now' language structure</li> </ul>	<ul style="list-style-type: none"> <li>• practise retrieving previously taught facts and reason about these</li> </ul>
<p>This term will build and consolidate the Early Learning Goals and support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>• 1AS-1</li> <li>• 1NF-1</li> <li>• 1NPV-2</li> </ul>	<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>• 1AS-1</li> <li>• 1NF-1</li> </ul>	<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <p>1AS-2</p> <p>1NF-1</p> <p>1NPV-2</p>

# Mastering Number

## Year 2 Overview

Term 1	Term 2	Term 3
<p>Pupils will have an opportunity to consolidate their understanding and recall of number bonds within 10; they will re-cap the composition of the numbers 11 to 20 and reason about their position within the linear number system.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"><li>• review the composition of the numbers 6 to 9 as '5 and a bit'</li><li>• compare numbers using the language of comparison and use the symbols <math>&lt;</math> <math>&gt;</math> <math>=</math></li><li>• review the structure of even numbers (including exploring how even numbers can be composed of two odd parts or two even parts) and the composition of each of 6, 8 and 10</li><li>• review the structure of odd numbers (including exploring how odd numbers can be composed of one odd part and one even part) and the composition of each of 7 and 9</li></ul>	<p>Pupils will have an opportunity to use their knowledge of the composition of numbers within 10 to calculate within 20; they will explore the links between the numbers in the linear number system within 10 to numbers within 100, focusing on multiples of 10 and the midpoint of 50.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"><li>• explore how the numbers 6 to 9 can be doubled using the '5 and a bit' and '10 and a bit' structure</li><li>• use doubles to calculate near doubles</li><li>• use bonds of 10 to reason about bonds of 20, in which the given addend is greater than 10</li><li>• use known number bonds within 10 to calculate within 20, working within the 10-boundary</li></ul>	<p>Pupils will have further opportunities to use their knowledge of the composition of numbers within 10 to calculate within 20 and to reason about equations and inequalities.</p> <p><b>Pupils will:</b></p> <ul style="list-style-type: none"><li>• continue to explore a range of strategies to subtract across the 10-boundary</li><li>• review bonds of 20 in which the given addend is greater than 10, and reason about bonds of 20, in which the given addend is less than 10</li><li>• practise previously explored strategies to support their reasoning about inequalities and equations</li><li>• review doubles and near doubles and transform additions in which two addends are adjacent odd/ even numbers into doubles</li></ul>

<ul style="list-style-type: none"> <li>consolidate their understanding of the numbers 10 and 20 as '10 and a bit'</li> <li>consolidate their understanding of the linear number system to 20 and reason about midpoints</li> </ul>	<ul style="list-style-type: none"> <li>use their knowledge of bonds of 10 to find three addends that sum to 10</li> <li>use their knowledge of the composition of numbers within 20 to add and subtract across the 10-boundary</li> <li>use their understanding of the linear number system to 10 to position multiples of 10 on a 0--100 number line and reason about midpoints</li> </ul>	<ul style="list-style-type: none"> <li>consolidate previously taught facts and strategies through continued, varied practice</li> </ul>
<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>1NPV-2</li> <li>2NF-1</li> </ul>	<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>2NPV-2</li> <li>2NF-1</li> <li>2AS-1</li> </ul>	<p>This term will particularly support the teaching and consolidation of the following RtP criteria:</p> <ul style="list-style-type: none"> <li>2NF-1</li> <li>2AS-1</li> <li>2AS-2</li> </ul>

## NumberSense Times Tables Fluency Programme Overview

	Autumn			Spring						Summer			
Year 3				Doubles		2 Times Table		Square Times Table		5 Times Table		Consolidation	
				<i>5 weeks</i>		<i>5 weeks (8 facts)</i>		<i>5 weeks (7 new facts)</i>		<i>5 weeks (6 new facts)</i>		<i>3-5 weeks 21 out of 36 facts learnt by end of Year 3</i>	
Year 4	Recap	3 Times Table	4 Times Table	6 Times Table	7 Times Table	8 TT	9 TT	More squares	10&11 TT	12 Times Table	MTC Prep	MTC	Consolidation
	<i>3 weeks</i>	<i>5 weeks (5 new facts)</i>	<i>5 weeks (4 new facts)</i>	<i>3 weeks (3 new facts)</i>	<i>3 weeks (2 new facts)</i>	<i>2 weeks (1 new fact)</i>	<i>2 weeks (0 new facts)</i>	<i>1 wk</i>	<i>1 wk (Remaining facts needed for MTC learnt)</i>	<i>4 weeks</i>	<i>3 weeks</i>	<i>1 wk</i>	<i>3-5 weeks</i>
	<i>30 out of 36 facts learnt by end of Autumn Term</i>			<i>All 36 facts learnt by mid Spring 2</i>									
Year 5	Daily consolidation			Weekly consolidation (weekly fluency session and weekly conceptual animation)									
Year 6	Weekly consolidation												

Weekly Number/Arithmetic Coverage (Year 2 - Year 5)

Strand	Year 2	Year 3	Year 4	Year 5
Number and Place Value	<p>Partition (compose and decompose) 2-digit numbers and know the value of each digit</p> <p>Reason about the position of 2-digit numbers and the nearest multiples of 10</p> <p>Fluently recall addition and subtraction facts to 10</p>	<p>Recognise the place value of each digit in three-digit numbers. Compose and decompose three-digit numbers using standard and non-standard partitioning</p> <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> <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> <p>Secure fluency in addition and subtraction facts that bridge 10</p>	<p>Know that numbers can be 10/100 times bigger/smaller than other numbers and calculate this</p> <p>Partition (compose and decompose) 4-digit numbers and know the value of each digit</p> <p>Reason about the position of 4-digit numbers and the nearest multiples of 100/1000</p> <p>Equally divide 1000 by 2,4,5 and 10 and read scales with these equal parts</p> <p>Know and recall multiplication and division facts and recognise products up to <math>12 \times 12</math> and their multiples</p> <p>Divide 2-digit numbers by a 1-digit number including remainders</p> <p>Apply knowledge of place value and scaling (by 100) to</p>	<p>Recognise the place value of each digit in numbers of up to 2 decimal places and compose and decompose numbers with up to 2 decimal places</p> <p>Reason about the location of any number with up to 2 decimal places and identify the previous and next multiple of 1 and 0.1, rounding to the nearest of each</p> <p>Divide 1 into 2, 4, 5 and 10 equal parts and read scales marked in units of 1 with 2, 4, 5 and 10 equal parts</p> <p>Convert between units of measure, including using common decimals and fractions</p> <p>Continue to recall multiplication and division facts</p> <p>Apply place value knowledge</p>

			addition and multiplication facts	to known additive and multiplicative facts (scaling facts by 1 tenth or 1 hundredth)
Addition and Subtraction	<p>Add and subtract across 10</p> <p>Recognise and answer questions that find the difference using subtraction</p> <p>Use number facts to add/subtract 1s or 10s to/from a 2-digit number</p> <p>Use number facts to add and subtract any two 2-digit numbers within 100</p>	<p>Calculate complements to 100</p> <p>Add and subtract up to three-digit numbers using a column method</p>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction</p>	<p>add and subtract whole numbers with more than 4 digits, including using formal written methods</p> <p>Add and subtract decimal numbers</p>
Multiplication and Division	<p>Recognise and represent repeated addition as multiplication within the 2, 5 and 10 times tables.</p> <p>Find missing number problems in multiplication/division problems with unknown groups</p>	<p>Apply known multiplication and division facts to solve contextual problems with different structures, including quotative and partitive division</p>	<p>Multiply and divide numbers by 10 and 100 and know it makes numbers 10 or 100 times bigger/smaller</p> <p>Multiply a whole 2 or 3-digit number by a 1-digit number using a formal method</p> <p>multiply by 0 and 1; divide by 1 and multiply together 3 numbers</p>	<p>Multiply and divide numbers by 10, 100 and 1000</p> <p>Find factors and multiples of positive whole numbers, including common factors and multiples</p> <p>Multiply any whole number up to 4-digits by a 2-digit number using a formal method</p> <p>divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret</p>

				<p>remainders</p> <p>recognise and use square numbers and cube numbers, and the notation for squared and cubed</p>
Fractions		<p>Interpret and write proper fractions</p> <p>Find unit fractions of quantities using known division facts</p> <p>Reason about the location of any fraction within 1 in the linear number system</p> <p>Add and subtract fractions with the same denominator, within 1</p>	<p>Reason about the location of mixed numbers in a number sequence</p> <p>Convert mixed numbers to improper fractions and vice versa</p> <p>Add and subtract improper and mixed fractions with the same denominator</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 by whole numbers</p>

By the end of KS1, we aim for all children to confidently recall the following facts with automaticity:

<b>+</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	Y1 facts <input type="checkbox"/>
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