**NUMBER Progression *Addition & Subtraction, Multiplication & Division***

The Programmes of Study are organised in distinct domains, however, in practise they are not taught so discreetly and are interwoven with other areas, for example place value and the four operations. For further detail on how this achieved through our mastery curriculum, the approximate amount of time spent on each focus termly and specific teaching areas, please see our Maths Sequence of Learning Progressions.

<table>
<tr><th></th><th>Autumn</th><th>Spring</th><th>Summer</th></tr>
<tr><td rowspan="4">Year 1</td><td>Part-whole within 10<ul><li>Represent and use number bonds and related subtraction facts within 20.</li><li>Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs</li></ul></td><td rowspan="2">Addition within 20<ul><li>Add and subtract one-digit and two-digit numbers to 20, including zero</li><li>Represent and use number bonds and related subtraction facts within 20</li><li>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ♦ − 9.</li></ul></td><td rowspan="2">Multiplication & Division<ul><li>Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens (multiples of twos, fives and tens).</li><li>Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher</li></ul></td></tr>
<tr><td>Addition and subtraction within 10<ul><li>Represent and use number bonds and related subtraction facts within 20.</li><li>Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs.</li><li>Add and subtract one-digit and two-digit numbers to 20, including zero.</li><li>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ♦ − 9.</li></ul></td></tr>
<tr><td>Addition and subtraction<ul><li>Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.</li></ul></td><td>Subtraction within 20<ul><li>Represent and use number bonds and related subtraction facts within 20.</li><li>Add and subtract one-digit and two-digit numbers to 20, including zero.</li><li>Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs.</li><li>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ♦ − 9.</li></ul></td><td>Addition and subtraction within 100<ul><li>Represent and use number bonds and related subtraction facts within 20.</li></ul></td></tr>
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| Year 2 | Autumn | Spring | Summer |
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| | **Addition & subtraction within 100**<br>• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.<br>• Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.<br>• Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers<br>• Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods<br>• Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.<br>**Multiplication & Division**<br>• Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.<br>• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.<br>• Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts | **Multiplication and division**<br>• Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.<br>• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers<br>• Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. | **Problem solving and efficient methods**<br>• Use place value and number facts to solve problems<br>• Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems<br>• Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods<br>• Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.<br>• Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts |

| Year 3 | Autumn | Spring | Summer |
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| | **Addition & subtraction**<br>• Add and subtract numbers mentally, including:<br>- a three-digit number and ones<br>- a three-digit number and tens<br>- a three-digit number and hundreds<br>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.<br>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.<br>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.<br>• Estimate the answer to a calculation and use inverse operations to check answers.<br>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. | **Multiplication & division**<br>• Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.<br>• 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 | |
| | **Multiplication and division**<br>• Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.<br>• Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers multiply one-digit numbers, using mental and progressing to formal written methods.<br>• Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. | | |

| Year 4 | Autumn | Spring | Summer |
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| | **Addition and subtraction – 4-digit numbers**<br>• Find 1,000 more or less than a given number.<br>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.<br>• Round any number to the nearest 10, 100 or 1,000.<br>• Solve number and practical problems that involve all of the above and with increasingly large positive numbers<br>• Count in multiples of 6, 7, 9, 25 and 1,000.<br>• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate<br>• Estimate and use inverse operations to check answers to a calculation.<br>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why<br><br>**Multiplication and division**<br>• Recall multiplication and division facts for multiplication tables up to 12 × 12.<br>• Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.<br>• Count in multiples of 6, 7, 9, 25 and 1,000. | **Multiplication & division**<br>• Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.<br>• Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.<br>• Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.<br>• Recognise and use factor pairs and commutativity in mental calculations<br>• Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers<br>• Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. | |

| Year 5 | Autumn | Spring | Summer |
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| | **Addition and subtraction**<br>• Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)<br>• Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy<br>• Add and subtract numbers mentally with increasingly large numbers.<br>• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why<br>**Multiplication and division**<br>• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers<br>• Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes<br>• Establish whether a number up to 100 is prime and recall prime numbers up to 19.<br>• Know and use the vocabulary of prime numbers, prime factors<br>• Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).<br>• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. | **Multiplication & division**<br>• Multiply numbers up to 4 digits by a one or two-digit number using a formal written method, including long multiplication for two-digit numbers<br>• Multiply and divide numbers mentally drawing upon known facts.<br>• Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context | |

| Year 6 | Autumn | Spring | Summer |
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| | **Four operations**<br>• Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.<br>• Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.<br>• Identify common factors, common multiples and prime numbers.<br>• Use their knowledge of the order of operations to carry out calculations involving the four operations<br>• Perform mental calculations, including with mixed operations and large numbers.<br>• Solve problems involving addition, subtraction, multiplication and division. | | **Four operations – problem solving**<br>• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.<br>• Solve problems involving addition, subtraction, multiplication and division<br>• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.<br>• Use their knowledge of the order of operations to carry out calculations involving the four operations<br>• Solve problems involving addition, subtraction, multiplication and division |