

## Calculation in Years 1-6

### Age Related Expectations

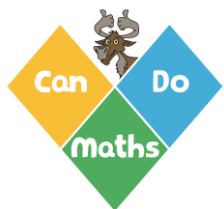
#### Mental and Written Methods (Addition and Subtraction)

Year					
1	2	3	4	5	6
<p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \square - 9</math></p>	<p><i>Add and subtract two two-digit numbers using concrete objects, pictorial representations progressing to formal written methods</i></p> <p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> <li>* a two-digit number and ones</li> <li>* a two-digit number and tens</li> <li>* two two-digit numbers</li> <li>* adding three one-digit numbers</li> </ul>	<p>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p> <p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> <li>* a three-digit number and ones</li> <li>* a three-digit number and tens</li> <li>* a three-digit number and hundreds</li> </ul>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition where appropriate signs</p> <p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</p>	<p>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>Add and subtract numbers mentally with increasingly large numbers</p>	<p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>Perform mental calculations, including with mixed operations and large numbers</p>



### Mental and Written Methods (Multiplication and Division)

Year					
1	2	3	4	5	6
<p>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</p>	<p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (=) signs</p> <p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</p> <p>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</p>	<p>Write and calculate mathematical statements for <math>\div</math> using the <math>\times</math> tables they know progressing to formal written methods.</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 methods</p> <p>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</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p>	<p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p>	<p>Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</p> <p>Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</p> <p>Multiply and divide numbers mentally drawing upon known facts</p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p>	<p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>Divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context</p> <p>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p> <p>Perform mental calculations, including with mixed operations and large numbers</p>



## Number Facts

Year					
1	2	3	4	5	6
<p>Represent &amp; use number bonds and related subtraction facts within 20</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero</p>	<p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>Recall and use <math>\times</math> and <math>\div</math> facts for the 2, 5 and 10 <math>\times</math> tables, including recognising odd and even numbers.</p>	<p>Recall and use <math>\times</math> and <math>\div</math> facts for the 3, 4 and 8 times tables.</p>	<p>Recall <math>\times</math> and <math>\div</math> facts for <math>\times</math> tables up to 12 <math>\times</math> 12.</p>	<p>Recall prime numbers up to 19</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (<math>^2</math>) and cubed (<math>^3</math>)</p>	<p>Recall <math>\times</math> and <math>\div</math> facts for <math>\times</math> tables up to 12 <math>\times</math> 12 and use to find other related facts</p>

*Calculation Policy taken from CanDoMaths*