



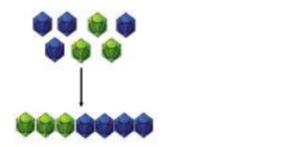
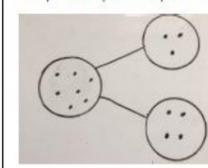
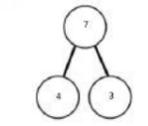
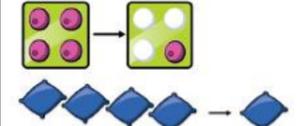
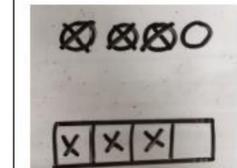
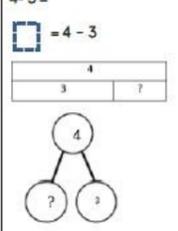
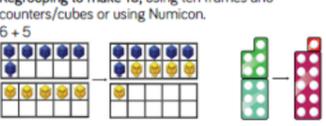
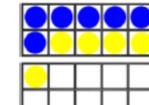
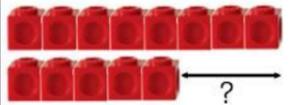
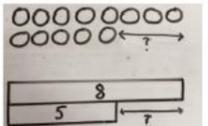
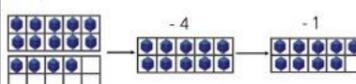
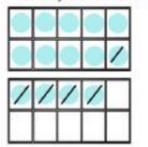
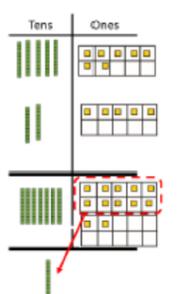
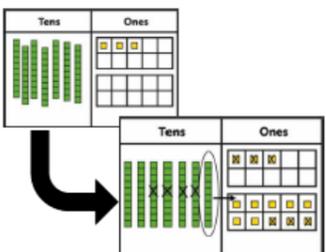
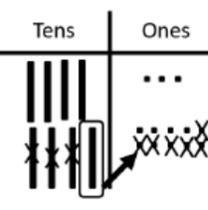
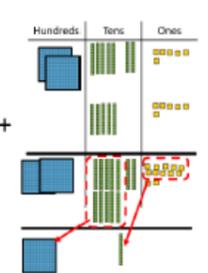
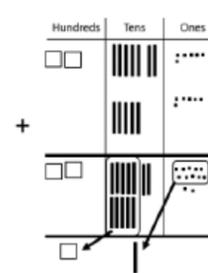
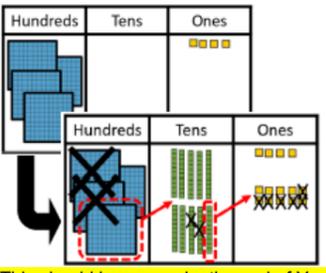
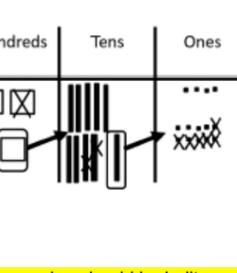
Addition and Subtraction

Mental Strategies for all	
Make 10 (addition)	$7 + 5 = 12$ $2 + 5 + 5 = 12$ Or $7 + 2 + 3 = 12$
Make 10 (subtraction)	$17 - 9 = 8$ $17 - 7 - 2 = 8$
Near 10s (subtraction)	$37 - 19 = 18$ $37 - 20 + 1 = 18$
Subtraction as the difference	$48 - 39 = 9$ Because $39 + 9 = 48$
Partitioning (addition)	$99 + 15 = 114$ $99 + 10 = 109$ $109 + 5 = 114$
Partitioning (subtraction)	$3 - 1.25 = 1.75$ $3 - 1 = 2$ $2 - 0.25 = 1.75$



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Maths Calculation Policy

Year	Mental	Written	Addition			Subtraction		
1	<p>1C1 Represent and use number bonds and related subtraction facts within 20</p>	<p>1C2a Add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>1C2b Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p>	<p>Concrete Combining two parts to make a whole (use other resources too e.g. eggs, shells, teddy bears, cars).</p> 	<p>Pictorial Children to represent the cubes using dots or crosses. They could put each part on a part whole model too.</p> 	<p>Abstract - Written symbolic $4 + 3 = 7$ Four is a part, 3 is a part and the whole is seven.</p> 	<p>Concrete Physically taking away and removing objects from a whole (ten frames, Numicon, cubes and other items such as beanbags could be used).</p> <p>$4 - 3 = 1$</p> 	<p>Pictorial Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used.</p> 	<p>Abstract - Written symbolic $4 - 3 =$</p> 
			<p>Regrouping to make 10; using ten frames and counters/cubes or using Numicon.</p> <p>$6 + 5$</p> 	<p>Children to draw the ten frame and counters/cubes.</p> 	<p>Children to develop an understanding of equality e.g.</p> <p>$6 + \square = 11$ $6 + 5 = 5 + \square$ $6 + 5 = \square + 4$</p>	<p>Finding the difference (using cubes, Numicon or Cuisenaire rods, other objects can also be used).</p> <p>Calculate the difference between 8 and 5.</p> 	<p>Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate.</p> 	<p>Find the difference between 8 and 5.</p> <p>$8 - 5$, the difference is <input type="text"/></p> <p>Children to explore why $9 - 6 = 8 - 5 = 7 - 4$ have the same difference.</p>
			<p>Making 10 using ten frames.</p> <p>$14 - 5$</p> 	<p>Children to present the ten frame pictorially and discuss what they did to make 10.</p> 	<p>Children to show how they can make 10 by partitioning the subtrahend.</p> <p>$14 - 5 = 9$</p>  <p>$14 - 4 = 10$ $10 - 1 = 9$</p>			
2	<p>2C1a Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>2C1b Add and subtract numbers mentally, including: - a two-digit number and ones - a two-digit number and tens - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers</p>	<p>2C2 Add and subtract numbers using concrete objects and pictorial representations, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers</p>	<p>Concrete</p> 	<p>Pictorial</p> 	<p>Abstract - Written symbolic</p> $\begin{array}{r} 50 + 7 \\ + 20 + 5 \\ \hline 80 + 12 \\ \hline 10 \end{array}$ <p>$57 + 25 = 92$</p>	<p>Concrete</p> 	<p>Pictorial</p> 	<p>Abstract - Written symbolic</p> $\begin{array}{r} 60 \quad 13 \\ - 40 \quad 6 \\ \hline 20 \quad 7 \end{array}$ <p>$73 - 46 = 27$</p>
3	<p>3C1 Add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds</p>	<p>3C2 Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p>	<p>Concrete</p> 	<p>Pictorial</p> 	<p>Abstract - Written symbolic</p> $\begin{array}{r} 276 \\ + 56 \\ \hline 332 \end{array}$ <p>$276 + 56 = 332$</p>	<p>Concrete</p> 	<p>Pictorial</p> 	<p>Abstract - Written symbolic</p> $\begin{array}{r} 404 \\ - 226 \\ \hline 178 \end{array}$ <p>$404 - 226 = 178$</p>
			<p>This should be secure by the end of Year 3. Regrouping should be built up slowly, one at a time.</p>			<p>This should be secure by the end of Year 3. Regrouping should be built up slowly, one at a time.</p>		
4		<p>4C2 Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p>	<p>Methods the same as Year 3.</p>			<p>Methods the same as Year 3.</p>		



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Maths Calculation Policy

5	5C1 Add and subtract numbers mentally with increasingly large numbers	5C2 Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Methods the same as Year 3.	Methods the same as Year 3.
6		Decimals?!?!	Methods the same as Year 3.	Methods the same as Year 3.



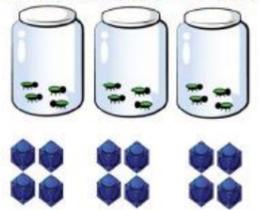
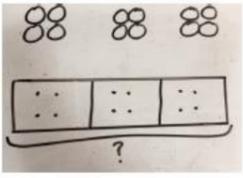
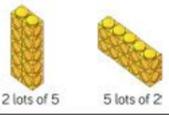
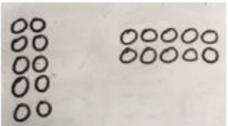
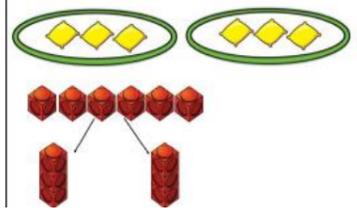
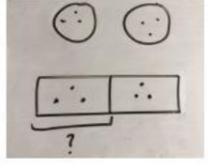
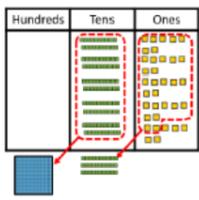
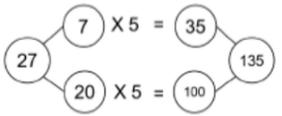
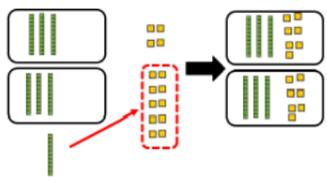
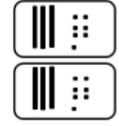
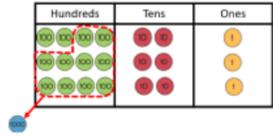
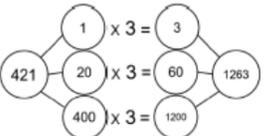
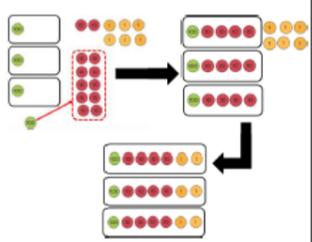
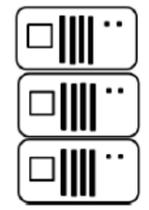
Multiplication and Division

Mental Strategies for all	
Use base facts (multiplication)	$20 \times 5 = 100$ $2 \times 5 = 10$ $10 \times 10 = 100$
Use base facts (division)	$1200 \div 60 = 20$ $12 \div 6 = 2$ $120 \div 6 = 20$
Use known facts (multiplication)	$99 \times 5 = 495$ $100 \times 5 = 500$ $500 - 5 = 495$
Use known facts (division)	$1326 \div 13 = 102$ $1300 = 13 \times 100$ $26 = 13 \times 2$



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Maths Calculation Policy

Year	Mental	Written	Multiplication	Division
1				
2	<p>2C6 Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p>	<p>2C7 Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs</p>	<p>Concrete Repeated grouping/repeated addition 3×4 $4 + 4 + 4$ There are 3 equal groups, with 4 in each group.</p>  <p>Pictorial - Jottings Children to represent the practical resources in a picture and use a bar model.</p>  <p>Abstract - Written symbolic $3 \times 4 = 12$ $4 + 4 + 4 = 12$</p> <p>Use arrays to illustrate commutativity counters and other objects can also be used. $2 \times 5 = 5 \times 2$</p>  <p>Pictorial - Jottings Children to represent the arrays pictorially.</p>  <p>Abstract - Written symbolic Children to be able to use an array to write a range of calculations e.g. $10 = 2 \times 5$ $5 \times 2 = 10$ $2 + 2 + 2 + 2 + 2 = 10$ $10 = 5 + 5$</p>	<p>Concrete Sharing using a range of objects. $6 \div 2$</p>  <p>Pictorial - Jottings Represent the sharing pictorially.</p>  <p>Abstract - Written symbolic $6 \div 2 = 3$</p>  <p>Children should also be encouraged to use their 2 times tables facts.</p>
3	<p>3C6 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p>	<p>3C7 Write and calculate mathematical statements for multiplication and division using the multiplication tables that children know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</p> <p>This should be secure by the end of Year 3. Regrouping should be built up slowly, one at a time.</p>	<p>Concrete</p>  <p>Pictorial - Jottings</p>  <p>Abstract - Written symbolic</p> $\begin{array}{r} 27 \\ \times 5 \\ \hline 135 \end{array}$ <p>$27 \times 5 = 135$</p>	<p>Concrete</p>  <p>Pictorial</p>  <p>Abstract - Written symbolic</p> $\begin{array}{r} 37 \\ 2 \overline{) 74} \\ \underline{6} \\ 14 \\ \underline{14} \\ 0 \end{array}$ <p>$74 \div 2 = 37$</p>
4	<p>4C6a Recall multiplication and division facts for multiplication tables up to 12×12</p> <p>4C6b 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>4C6c Recognise and use factor pairs and commutativity in mental calculations</p>	<p>4C7 Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p>	<p>Concrete</p>  <p>Pictorial - Jottings</p>  <p>Abstract - Written symbolic</p> $\begin{array}{r} 421 \\ \times 3 \\ \hline 1263 \end{array}$ <p>$421 \times 3 = 1263$</p>	<p>Concrete</p>  <p>Pictorial</p>  <p>Abstract - Written symbolic</p> $\begin{array}{r} 142 \\ 3 \overline{) 426} \\ \underline{3} \\ 12 \\ \underline{12} \\ 0 \end{array}$ <p>$426 \div 3 = 142$</p>



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Maths Calculation Policy

<p>5</p>	<p>5C6a Multiply and divide numbers mentally drawing upon known facts</p> <p>5C6b Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p>	<p>5C7a 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>5C7b 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>Concrete</p>	<p>Pictorial</p> <table border="1"> <tr> <td>x</td> <td>30</td> <td>2</td> <td></td> </tr> <tr> <td>10</td> <td>300</td> <td>20</td> <td>= 320</td> </tr> <tr> <td>6</td> <td>180</td> <td>12</td> <td>= 192</td> </tr> </table>	x	30	2		10	300	20	= 320	6	180	12	= 192	<p>Abstract - Written symbolic</p> $\begin{array}{r} 32 \\ \times 16 \\ \hline 192 \\ 320 \\ \hline 512 \end{array}$ <p>$32 \times 16 = 512$</p>	<p>Concrete</p>	<p>Pictorial</p>	<p>Abstract - Written symbolic</p> $\begin{array}{r} 12\frac{1}{2} \\ 6 \overline{) 75} \\ \underline{60} \\ 15 \\ \underline{12} \\ 30 \\ \underline{30} \\ 0 \end{array}$ <p>$75 \div 6 = 12\frac{1}{2}$</p> $\begin{array}{r} 12.5 \\ 6 \overline{) 75.0} \\ \underline{60} \\ 15 \\ \underline{12} \\ 30 \\ \underline{30} \\ 0 \end{array}$ <p>$75 \div 6 = 12.5$</p>								
x	30	2																										
10	300	20	= 320																									
6	180	12	= 192																									
<p>6</p>	<p>6C6 Perform mental calculations, including with mixed operations and large numbers</p>	<p>6C7a Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>6C7b 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>6C7c Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p>	<p>Concrete</p>	<p>Pictorial - Jottings Jottings: multiples of tricky multipliers</p> <table border="1"> <tr><td>6</td></tr> <tr><td>12</td></tr> <tr><td>18</td></tr> <tr><td>24</td></tr> <tr><td>30</td></tr> <tr><td>36</td></tr> <tr><td>42</td></tr> <tr><td>48</td></tr> <tr><td>54</td></tr> <tr><td>60</td></tr> <tr><td>66</td></tr> <tr><td>72</td></tr> </table>	6	12	18	24	30	36	42	48	54	60	66	72	<p>Abstract - Written symbolic</p> $\begin{array}{r} 21 \\ 34.2 \\ \times 6 \\ \hline 205.2 \end{array}$ <p>$34.2 \times 6 = 205.2$</p>	<p>Concrete</p> <p>With the use of a friendly number box.</p>	<p>Pictorial - Jottings Jottings: multiples of the divisor</p> <table border="1"> <tr><td>13</td></tr> <tr><td>26</td></tr> <tr><td>39</td></tr> <tr><td>52</td></tr> <tr><td>65</td></tr> <tr><td>78</td></tr> <tr><td>91</td></tr> <tr><td>104</td></tr> </table>	13	26	39	52	65	78	91	104	<p>Abstract - Written symbolic</p> $\begin{array}{r} 0232 \\ 13 \overline{) 3016} \\ \underline{26} \\ 41 \\ \underline{39} \\ 26 \\ \underline{26} \\ 0 \end{array}$ <p>$3016 \div 13 = 232$</p>
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