
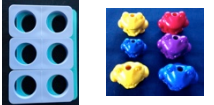






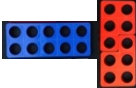






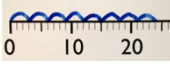


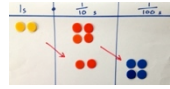




Multiplication

Year	1	2	3	4	5	6																											
Written Methods		Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs	Write and calculate mathematical statements for ÷ using the x tables they know progressing to formal written methods.	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout $\begin{array}{r} 243 \\ \times 6 \\ \hline 1458 \\ 1 \end{array}$	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 $\begin{array}{r} 243 \\ \times 36 \\ \hline 1458 \\ 7290 \\ \hline 8748 \\ 1 \end{array}$	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication $\begin{array}{r} 5172 \\ \times 38 \\ \hline 41376 \\ + 155160 \\ \hline 196536 \\ 1 \end{array}$																											
Developing conceptual understanding	2 frogs on each lily pad.     	5 frogs on each lily pad $5 \times 3 = 15$    $5 \times 2 = 2 \times 5$  Build tables on counting stick  Link to repeated addition 	If I know $10 \times 8 = 80$ then ...  So $13 \times 4 = 10 \times 4 + 3 \times 4$   Build tables on counting stick   	43 x 6 by partitioning <table border="1" data-bbox="1209 327 1422 422"> <tr> <td>X</td> <td>40</td> <td>3</td> </tr> <tr> <td>6</td> <td>240</td> <td>18</td> </tr> </table> $\begin{array}{l} 43 \times 6 = 240 \\ 3 \times 6 = 18 \\ 40 \times 6 + 3 \times 6 = 258 \end{array}$ If I know $4 \times 6 = 24$ then 40×6 is ten times bigger, 40×60 is one hundred times bigger. 13 x 16 by partitioning <table border="1" data-bbox="1198 630 1355 774"> <tr> <td></td> <td>10</td> <td>3</td> </tr> <tr> <td>10</td> <td>100</td> <td>30</td> </tr> <tr> <td>6</td> <td>60</td> <td>18</td> </tr> </table> $100 + 30 + 60 + 18 = 208$ Build tables on counting stick 	X	40	3	6	240	18		10	3	10	100	30	6	60	18	Grid method linked to formal written method <table border="1" data-bbox="1534 343 1736 430"> <tr> <td>x</td> <td>200</td> <td>40</td> <td>3</td> </tr> <tr> <td>30</td> <td>6000</td> <td>1200</td> <td>90</td> </tr> <tr> <td>6</td> <td>1200</td> <td>240</td> <td>18</td> </tr> </table> $\begin{array}{l} 7290 \\ = 1458 + 8748 \end{array}$ If I know 4×6 then 0.4×6 is ten times smaller 0.4×0.6 is ten times smaller again. 	x	200	40	3	30	6000	1200	90	6	1200	240	18	$\begin{array}{r} 5172 \\ \times 38 \\ \hline 41376 \\ + 155160 \\ \hline 196536 \\ 1 \end{array}$ $\begin{array}{r} 5172 \\ \times 38 \\ \hline 41376 \\ + 155160 \\ \hline 196536 \\ 1 \end{array}$
X	40	3																															
6	240	18																															
	10	3																															
10	100	30																															
6	60	18																															
x	200	40	3																														
30	6000	1200	90																														
6	1200	240	18																														
With jottings ... or in your head ...	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	Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	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	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. Recognise and use factor pairs and commutativity in mental calculations	Multiply and divide numbers mentally drawing upon known facts. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers establish whether a number up to 100 is prime	Perform mental calculations, including with mixed operations and large numbers																											
Just know it!	Count in multiples of twos, fives and tens	Recall and use x and ÷ facts for the 2, 5 and 10 x tables, including recognising odd and even numbers.	Recall and use x and ÷ facts for the 3, 4 and 8 times tables.	Recall x and ÷ facts for x tables up to 12 x 12.	Recall prime numbers up to 19 know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)																												
Foundations	Count in 2s	2 x table	Review 2x, 5x and 10x	4x, 8x tables 10 times bigger	4x, 8x tables 100, 1000 times bigger	Multiplication facts up to 12 x 12																											
	Count in 10s	10 x table	4x table	3x, 6x and 12x tables	3x, 6x and 12x tables 10, 100, 1000 times smaller	Partition to multiply mentally																											
	Doubles up to 10	Doubles up to 20 and multiples of 5	Double two digit numbers	Double larger numbers and decimals	Double larger numbers and decimals	Double larger numbers and decimals																											
	Count in 5s	5 x table	8 x table	3x, 9x tables	3x, 9x tables	Multiplication facts up to 12 x 12																											
	Double multiples of 10	Count in 3s	3 x table	11x, 7 x tables	11x, 7 x tables Partition to multiply mentally	Partition to multiply mentally																											
	Count in 2s, 5s and 10s	2 x, 5 x and 10 x tables	6 x table or review others	6x, 12 x tables	6x, 12 x tables	Double larger numbers and decimals																											

Division



Written Methods		Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs	Write and calculate mathematical statements for \div using the \times tables they know progressing to formal written methods.		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	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>Developing conceptual understanding</p> <p>6 \div 2 = 3 by sharing into 2 groups and by grabbing groups of 2</p> <p>15 \div 3 = 5 in each group (sharing)</p> <p>15 \div 3 = 5 groups of 3 (grouping)</p> <p>10 \div 2 = 5</p> <p>How many 2s?</p>		<p>15 \div 3 = 5 in each group (sharing)</p> <p>15 \div 3 = 5 groups of 3 (grouping)</p> <p>10 \div 2 = 5</p> <p>Use language of division linked to tables</p> <p>How many 2s?</p>	<p>Grouping using partitioning</p> <p>43 \div 3 If I know 10 \times 3 ...</p> <p>Use language of division linked to tables</p> <p>How many 3s?</p>	<p>Grouping using partitioning</p> <p>196 \div 6 If I know 3 \times 6 ... then 30 \times 6 ...</p> <p>'Chunking up' on a number line</p> <p>196 \div 6 = 32 r 4</p> <p>Use language of division linked to tables.</p>	<p>192 \div 6 using place value counters to support written method</p> <p>Exchange 100 for ten 10s</p> <p>19 tens into groups of 6</p> <p>3 groups so that is 30 \times 6, exchange remaining 10 for ten 1s</p> <p>So 192 \div 6 = 32</p>	<p>564 \div 13 = 43 r 5 = 43 $\frac{5}{13}$ = 43.38...</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>564 \div 13 = 43 r 5 = 43 $\frac{5}{13}$ = 43.4 (to 1dp)</p>
<p>With jottings</p> <p>... or in your head ...</p>	<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>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 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 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>Perform mental calculations, including with mixed operations and large numbers</p>
<p>Just know it!</p>	<p>Count in multiples of twos, fives and tens</p>	<p>Recall and use \times and \div facts for the 2, 5 and 10 \times tables, including recognising odd and even numbers.</p>	<p>Recall and use \times and \div facts for the 3, 4 and 8 times tables.</p>	<p>Recall \times and \div facts for \times tables up to 12 \times 12.</p>	<p>Recall prime numbers up to 19 know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p>	
<p>Year</p>	<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>	<p>5</p>	<p>6</p>
<p>Foundations</p>	<p>Count back in 2s</p> <p>Count back in 10s</p> <p>Halves up to 10</p> <p>Count back in 5s</p> <p>Halve multiples of 10</p> <p>How many 2s? 5s? 10s?</p>	<p>Division facts (2 \times table)</p> <p>Division facts (10 \times table)</p> <p>Halves up to 20</p> <p>Division facts (5 \times table)</p> <p>Count back in 3s</p> <p>Review division facts (2x, 5x, 10x table)</p>	<p>Review division facts (2x, 5x, 10x table)</p> <p>Division facts (4 \times table)</p> <p>Halve two digit numbers</p> <p>Division facts (8 \times table)</p> <p>Division facts (3 \times table)</p> <p>Division facts (6 \times table) or review others</p>	<p>Division facts (4x, 8x tables) 10 times smaller</p> <p>Division facts (3x, 6 x, 12x tables)</p> <p>Halve larger numbers and decimals</p> <p>Division facts (3x, 9x tables)</p> <p>Division facts (11x, 7x tables)</p> <p>Division facts (6x, 12x tables)</p>	<p>Division facts (4x, 8x tables) 100, 1000 times smaller</p> <p>Division facts (3x, 6 x, 12x tables) Partition to divide mentally</p> <p>Halve larger numbers and decimals</p> <p>Division facts (3x, 9x tables) 100, 1000 times smaller</p> <p>Review division facts (11x, 7x tables) Partition decimals to divide mentally</p> <p>Review division facts (6x, 12x tables) Halve larger numbers and decimals</p>	<p>Division facts (up to 12 \times 12)</p> <p>Partition to divide mentally</p> <p>Halve larger numbers and decimals</p> <p>Division facts (up to 12 \times 12)</p> <p>Partition to divide mentally</p> <p>Halve larger numbers and decimals</p>