



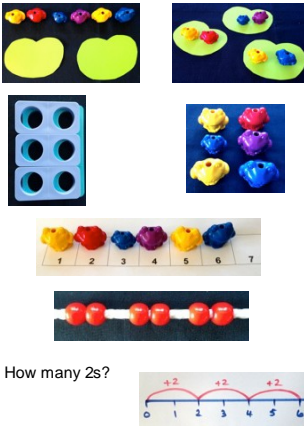

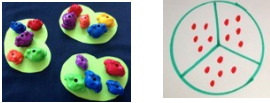

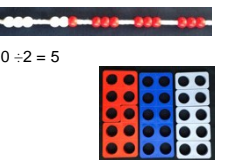
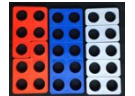


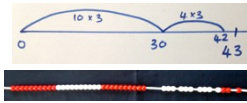
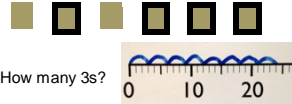
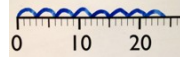
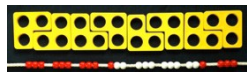

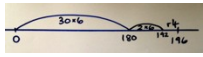


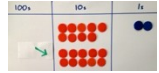

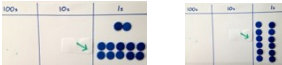
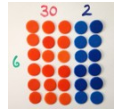
Multiplication



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 (\times), division (\div) and equals (=) signs	Write and calculate mathematical statements for \div using the \times tables they know progressing to formal written methods.	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	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. Multiply units	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication																		
Developing conceptual understanding	<p>2 frogs on each lily pad.</p>	<p>5 frogs on each lily pad $5 \times 3 = 15$</p>	<p>If I know $10 \times 8 = 80$ then ...</p> <p>So $13 \times 4 = 10 \times 4 + 3 \times 4$</p>	<p>43×6 by partitioning</p> <table border="1"> <tr> <td>\times</td> <td>40</td> <td>3</td> </tr> <tr> <td>6</td> <td>240</td> <td>18</td> </tr> </table> <p>$43 \times 6 = 240 + 18 = 258$</p> <p>If I know $4 \times 6 = 24$ then 40×6 is ten times bigger, 40×60 is one hundred times bigger.</p> <p>13×16 by partitioning</p> <p>$100 + 30 + 60 + 18 = 208$ Build tables on counting stick</p>	\times	40	3	6	240	18	<p>Grid method linked to formal written method</p> <table border="1"> <tr> <td>\times</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> <p>$= 7290 + 1458 + 8748 = 196536$</p> <p>Teach grid method when children unable to access long multiplication method.</p> <p>If I know 4×6 then 0.4×6 is ten times smaller 0.4×0.6 is ten times smaller again.</p>	\times	200	40	3	30	6000	1200	90	6	1200	240	18	
\times	40	3																						
6	240	18																						
\times	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 \times and \div facts for the 2, 5 and 10 \times tables, including recognising odd and even numbers.	Recall and use \times and \div facts for the 3, 4 and 8 times tables.	Recall \times and \div facts for \times tables up to 12 \times 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)																			
Basic Skills	Count in 2s	2 \times table	Review 2 \times , 5 \times and 10 \times	4 \times , 8 \times tables 10 times bigger	4 \times , 8 \times tables 100, 1000 times bigger	Multiplication facts up to 12 \times 12																		
	Count in 10s	10 \times table	4 \times table	3 \times , 6 \times and 12 \times tables	3 \times , 6 \times and 12 \times 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 \times table	8 \times table	3 \times , 9 \times tables	3 \times , 9 \times tables	Multiplication facts up to 12 \times 12																		
	Double multiples of 10	Count in 3s	3 \times table	11 \times , 7 \times tables	11 \times , 7 \times tables Partition to multiply mentally	Partition to multiply mentally																		
	Count in 2s, 5s and 10s	2 \times , 5 \times and 10 \times tables	6 \times table or review others	6 \times , 12 \times tables	6 \times , 12 \times tables	Double larger numbers and decimals																		

Division



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.	Divide numbers up to 3 digits by a one-digit number using the formal written method of short division $\begin{array}{r} 31 \\ 5 \overline{) 155} \end{array}$	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 $\begin{array}{r} 32 \\ 6 \overline{) 192} \end{array}$ $\begin{array}{r} 32 \text{ r } 2 \\ 6 \overline{) 194} \end{array}$	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 $\begin{array}{r} 43 \text{ r } 5 \\ 13 \overline{) 564} \end{array}$ $\begin{array}{r} 43 \text{ r } 8 \\ 13 \overline{) 564} \end{array}$ $\begin{array}{r} 43 \text{ r } 8 \\ 13 \overline{) 564} \end{array}$
Developing conceptual understanding	6 ÷ 2 = 3 by sharing into 2 groups and by grabbing groups of 2  How many 2s? 	15 ÷ 3 = 5 in each group (sharing)  Link to fractions  15 ÷ 3 = 5 groups of 3 (grouping)  10 ÷ 2 = 5  Use language of division linked to tables  How many 2s? 	Grouping using partitioning 43 ÷ 3 If I know 10 x 3 ...  $\begin{array}{r} 14 \text{ r } 1 \\ 3 \overline{) 43} \end{array}$ $\begin{array}{r} 43 \\ 30 \div 3 = 10 \\ 13 \div 3 = 4 \text{ r } 1 \end{array}$ Use language of division linked to tables  How many 3s?  	Grouping using partitioning 196 ÷ 6 If I know 3 x 6 ... then 30 x 6 ...  'Chunking up' on a number line 196 ÷ 6 = 32 r 4  Use language of division linked to tables. 	192 ÷ 6 using place value counters to support written method  Exchange 100 for ten 10s  19 tens into groups of 6  3 groups so that is 30 x 6, exchange remaining 10 for ten 1s  So 192 ÷ 6 = 32 	564 ÷ 13 = 43 r 5 = 43 $\frac{5}{13}$ = 43.38... $\begin{array}{r} 43 \text{ r } 5 \\ 13 \overline{) 564} \end{array}$ $\begin{array}{r} 43 \text{ r } 8 \\ 13 \overline{) 564} \end{array}$ 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 564 ÷ 13 = 43 r 5 = 43 $\frac{5}{13}$ = 43.38... $\begin{array}{r} 43 \text{ r } 8 \\ 13 \overline{) 564} \end{array}$ $\begin{array}{r} 43 \text{ r } 8 \\ 13 \overline{) 564} \end{array}$
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	Perform mental calculations, including with mixed operations and large numbers Mentally halve a number. Know that to divide by 4, you can halve and then halve again. Similarly for dividing by 8.
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	
Basic Skills	Count back in 2s Count back in 10s Halves up to 10 Count back in 5s Halve multiples of 10 How many 2s? 5s? 10s?	Division facts (2 x table) Division facts (10 x table) Halves up to 20 Division facts (5 x table) Count back in 3s Review division facts (2x, 5x, 10x table)	Review division facts (2x, 5x, 10x table) Division facts (4 x table) Halve two digit numbers Division facts (8 x table) Division facts (3 x table) Division facts (6 x table) or review others	Division facts (4x, 8x tables) 10 times smaller Division facts (3x, 6 x, 12x tables) Halve larger numbers and decimals Division facts (3x, 9x tables) Division facts (11x, 7x tables) Division facts (6x, 12x tables)	Division facts (4x, 8x tables) 100, 1000 times smaller Division facts (3x, 6 x, 12x tables) Partition to divide mentally Halve larger numbers and decimals Division facts (3x, 9x tables) 100, 1000 times smaller Review division facts (11x, 7x tables) Partition decimals to divide mentally Review division facts (6x, 12x tables) Halve larger numbers and decimals	Division facts (up to 12 x 12) Partition to divide mentally Halve larger numbers and decimals Division facts (up to 12 x 12) Partition to divide mentally Halve larger numbers and decimals

