

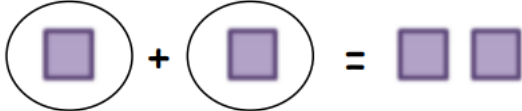


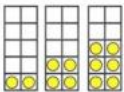

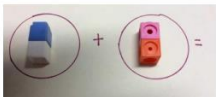



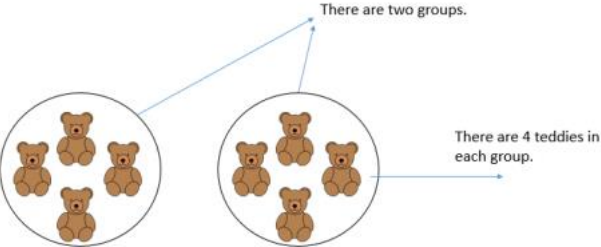
# Calculation Policy

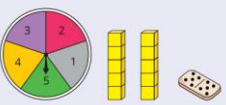
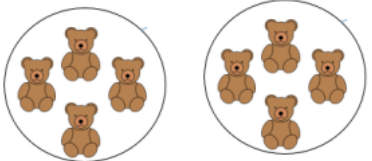
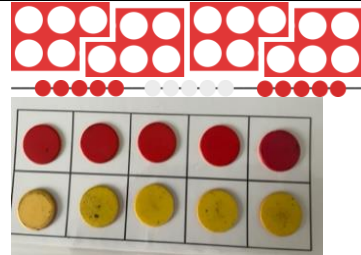
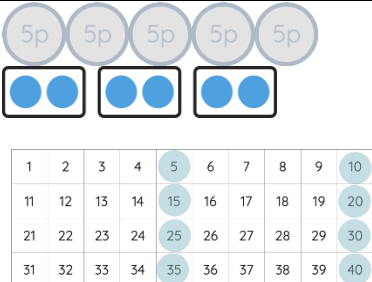
# Multiplication


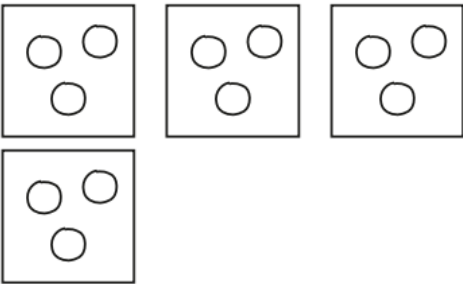
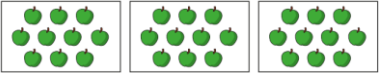


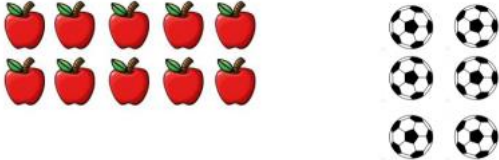









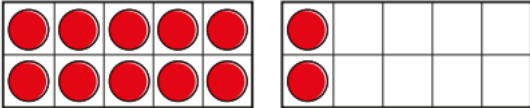
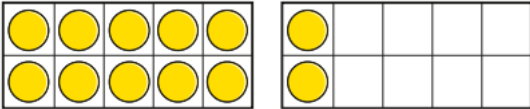
September 2024


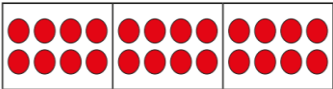


## Multiplication


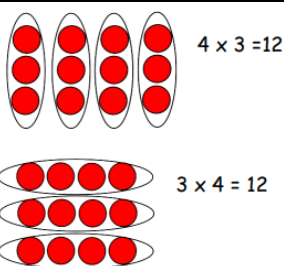
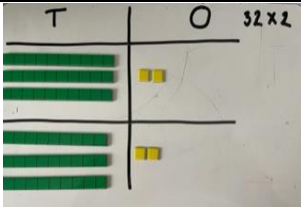
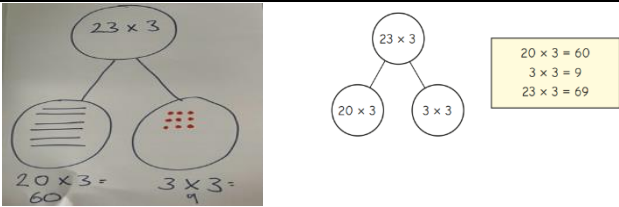
<b>EYFS:</b>			
<b>Vocabulary :</b>	Double Equal Groups Grouping	<b>Manipulatives &amp; scaffolds:</b>	Fingers Five frames Ten frames Double sided counters Numicon Cubes Bead strings Part-whole model
<b>Small step:</b>	<b>Concrete:</b>	<b>Pictorial:</b>	<b>Abstract:</b>
Doubling	The link between addition and multiplication can be introduced through doubling. Domino and dice fames can be used to do this as well as fingers. Representing the even number pair-wise on 10 frames supports the children to make the link between doubling and halving. They can also be used to illustrate the odd and even patterns of numbers	Children have a go at recording by drawing pictures in groups 	$1 + 1 = 2$ Double 1 equals 2  Double ____ is ____


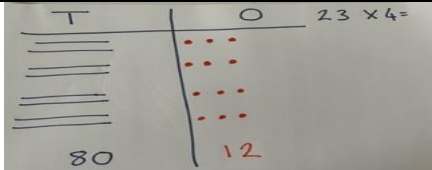
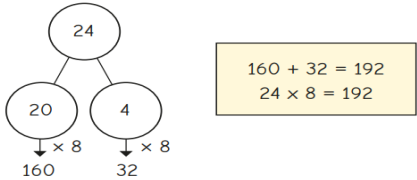

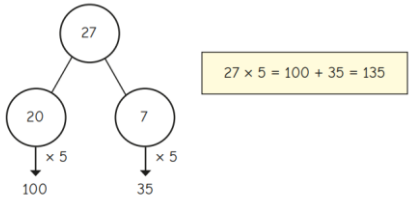
	  		
Doubles to 10	 <p>There are 3 here and 3 there. Double 3 is 6. 6 is double 3.</p>	 <p>There are 5 here and 5 there. Double 5 is 10. 10 is double 5.</p>	<p>There are ___ here and ___ there. Double ___ is ___ ___ is double ___</p>
Grouping	<p>Children will experience equal groups of objects. Children will be encouraged to count the groups, then count how many objects are in a group – 4 and 4</p> 	 <p>There are two groups.</p> <p>There are 4 teddies in each group.</p>	<p>Stem sentence: There are ___ groups There are ___ in each group</p>

Play with and build doubles	<p>Children find and make doubles. Progress this to showing children a double and asking them to say what number has been doubled, by finding the inverse.</p> <p>Ask children to spin a 1 to 5 spinner. Double the number the spinner lands on by building towers or drawing spots on blank dominoes.</p> <p>What number did you land on? What is the double?</p> 	 <p>I can see 4 and 4 Double 4 is 8</p>	<p>Double __ is __</p> <p>I can see __ and __</p> <p>I can see __ altogether</p> <p>This is double __</p>
<b>Y1</b>			
<b>Vocabulary :</b>	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of	<b>Manipulatives &amp; scaffolds:</b>	<p>Ten frames</p> <p>Double sided counters</p> <p>Numicon</p> <p>Cubes</p> <p>Bead strings</p> <p>Number line</p> <p>Bar model</p>
<b>Small step:</b>	<b>Concrete:</b>	<b>Pictorial:</b>	<b>Abstract:</b>
Counting in multiples – 2s, 5, 10s			<p>Say/write sequences:</p> <p>2, 4, 6, 8...</p> <p>10, 20, 30, 40...</p> <p>5, 10, 15, 20, 25, 30...</p>

<p>Recognise equal groups</p>	 <p>There are _____ equal groups of _____ pencils.</p>	 <p>There are _____ equal groups of _____</p>	<p>There are _____ equal groups of _____</p>
<p>Add equal groups</p>	 <p><math>10 + 10 + 10 = 30</math></p>	<p><math>5 + 5 + 5 = 15</math></p> 	<p><math>5 + 5 + 5 = 15</math></p>
<p>Make arrays</p>	 <p>There are ____ rows.          There are ____ in a row.          There are ____ in total.          There are ____ columns.          There are ____ in a column.          There are ____ altogether.</p>	 <p>There are ____ rows.          There are ____ in a row.          There are ____ in total.          There are ____ columns.          There are ____ in a column.          There are ____ altogether.</p>	<p><math>2 + 2 + 2 = 6</math>  <math>3 + 3 = 6</math>          There are 6 altogether</p>
<p>Make doubles</p>	<p> +  = </p> <p> +  = </p> <p> +  = </p>	 	<p>Double 6 is ____</p>

		Double 12 is ____	
<b>Y2</b>			
<b>Vocabulary :</b>	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative	<b>Manipulatives &amp; scaffolds:</b>	Ten frames Double sided counters Numicon Cubes Bead strings Number line Bar model
<b>Small step:</b>	<b>Concrete:</b>	<b>Pictorial:</b>	<b>Abstract:</b>
Multiplication symbol	 $5 + 5 + 5 + 5 + 5 + 5 =$ There are 6 lots of 5 $5 \times 6 = 30$	 There are ____ equal groups with ____ in each group. $_____ + _____ + _____ = 24$ $_____ \times _____ = 24$	$_____ + _____ + _____ = _____$ $_____ \times _____ = _____$
Multiplication sentences	 $3 + 3 + 3 + 3 = 12$ ____ lots of 3 = 12 ____ multiplied by ____ = 12 $_____ \times _____ = 12$	 $5 + 5 + 5 = 15$ $3 + 3 + 3 + 3 + 3 = 15$ $5 \times 3 = 15$ $3 \times 5 = 15$	$5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$ $5 \times 4 = 20$

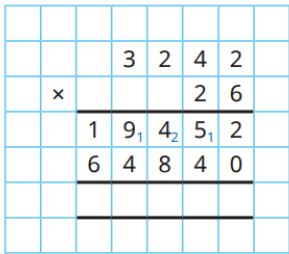
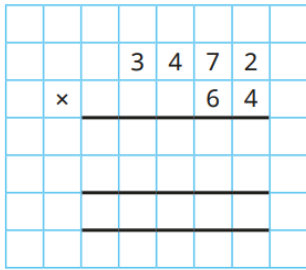
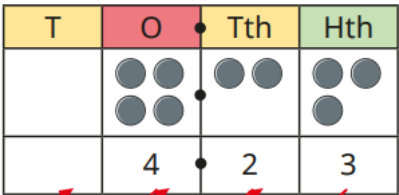
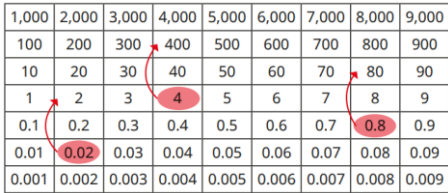
Use arrays	 $5 \times 3 = 15$ $3 \times 5 = 15$	 $4 \times 3 = 12$ $3 \times 4 = 12$	$\_\_ \times \_\_ = 20$ $\_\_ \times \_\_ = 20$
<b>Y3:</b>			
<b>Vocabulary:</b>	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product	<b>Manipulatives and scaffolds:</b>	Base 10/Dienes Place value charts Part whole models
<b>Small step:</b>	<b>Concrete:</b>	<b>Pictorial:</b>	<b>Abstract:</b>
Multiply a 2-digit number by a 1-digit number (no exchange)	 $3 \text{ tens} \times 2 = \_\_ \text{ tens}$ $2 \text{ ones} \times 2 = \_\_ \text{ ones}$ $\_\_ + \_\_ =$ $32 \times 2 =$		$42 \times 3$ $= \_\_ \text{ tens} \times 3 + \_\_ \text{ ones} \times 3$ $= \_\_ + \_\_$ $= \_\_$

<p>Multiply a 2-digit number by a 1-digit number (with exchange)</p>	 <p>2 tens <math>\times 4 =</math> __ tens  3 ones <math>\times 4 =</math> __ ones  <math>24 \times 3 =</math> __ + __  <math>24 \times 3 =</math> __</p>	  <p><math>160 + 32 = 192</math>  <math>24 \times 8 = 192</math></p>	<p><math>24 \times 8</math>  <math>= 20 \times 8 + 4 \times 8</math>  <math>=</math> __ + __  <math>=</math> __</p>
<p><b>Y4</b></p>			
<p><b>Vocabulary:</b></p>	<p>equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product</p>	<p><b>Manipulatives &amp; scaffolds:</b></p>	<p>Base 10/Dienes  Place value charts  Place value counters  Part whole models</p>
<p><b>Small step:</b></p>	<p><b>Concrete:</b></p>	<p><b>Pictorial:</b></p>	<p><b>Abstract:</b></p>
<p>Informal methods</p>	 <p><math>3 \times 26 = 60 + 18 = 78</math></p>	 <p><math>27 \times 5 = 100 + 35 = 135</math></p>	<p><math>36 \times 4 = 160 + 35 = 195</math></p>





Multiply a 4-digit number by a 1-digit number	<table><tr><th>Th</th><th>H</th><th>T</th><th>O</th></tr><tr><td>1000</td><td>100</td><td>10</td><td>1</td></tr><tr><td>1000</td><td>100</td><td>10</td><td>1</td></tr><tr><td>1000</td><td>100</td><td>10</td><td>1</td></tr></table> <table><tr><td>1</td><td>1</td><td>5</td><td>2</td></tr><tr><td>x</td><td></td><td></td><td>3</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	Th	H	T	O	1000	100	10	1	1000	100	10	1	1000	100	10	1	1	1	5	2	x			3									$2341 \times 3 =$ <table><tr><th>Th</th><th>H</th><th>T</th><th>O</th></tr><tr><td>00</td><td>0000</td><td>00000</td><td>0</td></tr><tr><td>00</td><td>0000</td><td>00000</td><td>0</td></tr><tr><td>00</td><td>0000</td><td>00000</td><td>0</td></tr><tr><td>7</td><td>0</td><td>2</td><td>3</td></tr></table>	Th	H	T	O	00	0000	00000	0	00	0000	00000	0	00	0000	00000	0	7	0	2	3	<table><tr><th></th><th>Th</th><th>H</th><th>T</th><th>O</th></tr><tr><td></td><td>1</td><td>8</td><td>2</td><td>6</td></tr><tr><td>x</td><td></td><td></td><td></td><td>3</td></tr><tr><td></td><td>5</td><td>4</td><td>7</td><td>8</td></tr><tr><td></td><td>2</td><td></td><td>1</td><td></td></tr></table>		Th	H	T	O		1	8	2	6	x				3		5	4	7	8		2		1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Multiply a 4-digit number by a 2-digit number		 $(3,242 \times \underline{\quad})$ $(3,242 \times \underline{\quad})$	 $(\underline{\quad} \times \underline{\quad})$ $(\underline{\quad} \times \underline{\quad})$
Multiply decimals – missing values	$4.23 \times \underline{\quad} = 42.3$ 	$4.82 \times \underline{\quad} = 482$ 	$3.4 \times \underline{\quad} = 34$ $\underline{\quad} \times 5.62 = 5,620$ $1,000 \times \underline{\quad} = 345$
<b>Y6</b>			
<b>Vocabulary:</b>	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product	<b>Manipulatives &amp; scaffolds:</b>	Base 10/Dienes Place value charts Place value counters Part whole models
<b>Small step:</b>	<b>Concrete:</b>	<b>Pictorial:</b>	<b>Abstract:</b>

Multiply up to a 4-digit number by a 2-digit number

		2	3	
x		6	4	
		9	2	
+			0	

$(23 \times 4)$   
 $(23 \times 60)$

		3	1	2
x			2	3
		9	3	6
+				

$(312 \times 3)$   
 $(312 \times 20)$

		3	0	4	6
x				7	3

Multiply decimals by integers

O	Tth	Hth
1 1 1	0 0 0	0 0
1 1 1	0 0 0	0 0
1 1 1	0 0 0	0 0
1 1 1	0 0 0	0 0

			3	4	2
x					3
		1	0	2	6

3.24 X 3 =

O	t	h
0 0 0	0 0	0 0 0 0
0 0 0	0 0	0 0 0 0
0 0 0	0 0	0 0 0 0

9 ones    6 tenths    12 hundredths

O	t	h
0 0 0	0 0	0 0 0 0
0 0 0	0 0	0 0 0 0
0 0 0	0 0	0 0 0 0

9 ones    6 tenths    12 hundredths

9 ones    7 tenths    2 hundredths

		4	9	2
x		3		
		1	4	7
				6