

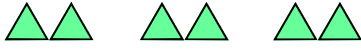

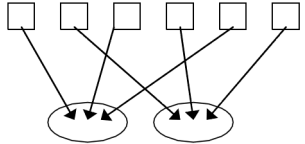
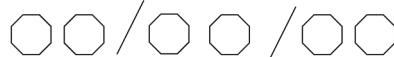


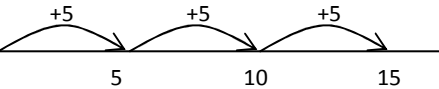
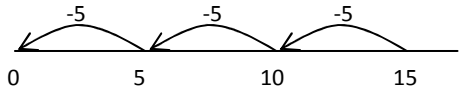
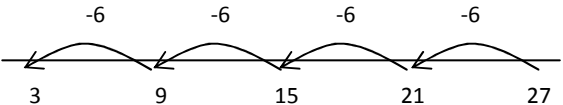


Stage	Multiplication		Missing Number Problems	Division	
	Multiplication	Examples		Division	Examples
Stage 1 and 2	Counting practically in repeated groups/patterns.	 Two Four Six		Sharing objects in a group, through practical contexts.	For example, sharing 6 biscuits between 3 children (show them that $6 \div 3 = 2$). 
Stage 3	Grouping And introduce the inverse	$3 \times 2 = 6$  $4 \times 3 = 12$  If we know that $3 \times 2 = 6$, we can begin to explore that if we share those 6 among 3 people we will each have 2. Demonstrate practically.	$3 \times \square = 6$ $\square \div 2 = 6$ $\square \times \square = 12$	Children will develop their understanding of division and use jottings to support calculation	Sharing equally 6 sweets shared between 2 people, how many do they each get?  So we know $6 \div 2 = 3$ Grouping or repeated addition There are 6 sweets, how many people can have 2 sweets each? 
Stage 4	Arrays	$3 \times 4 = 12$ or $4 \times 3 = 12$ 	$3 \times \square = 12$ $\square \div 3 = 5$ $\square \times \square = 24$	Using arrays and linking multiplication and division	$12 \div 3 = 4$ or $12 \div 4 = 3$ 
Stage 5	Repeated Addition 5 times 3 is $5 + 5 + 5 = 15$ or 3 lots of 5 or 5×3	$5 \times 3 = 5 + 5 + 5 = 15$ 	$3 \times \square = 12$ $\square \div 3 = 5$ $\square \times \square = 24$	Repeated subtraction using a number line or bead bar. Still use apparatus as required.	$15 \div 5 = 3$  Show them, using apparatus, why we are subtracting.
Stage 6	Partitioning	$13 \times 5 =$ $10 \times 5 = 50$ and $3 \times 5 = 15$ $50 + 15 = 65$	$13 \times \square = 65$ $\square \div 6 = 4r3$ $\square \times \square = 24$	Calculations involving remainders through repeated subtraction.	$27 \div 6 = 4 r 3$ 

Stage	Multiplication			Missing Number Problems	Division																															
	Multiplication	Informal examples	Formal Method		Division	Examples																														
Stage 7	Multiplication of TU x U	<table style="margin: auto; border-collapse: collapse;"> <tr><td style="border-right: 1px solid black; padding: 5px;">×</td><td style="padding: 5px;">7</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">30</td><td style="padding: 5px;">210</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">8</td><td style="padding: 5px;">56</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px; border-top: 1px solid black;">266</td></tr> </table>	×	7	30	210	8	56		266	$\begin{array}{r} 38 \\ \times 7 \\ \hline 266 \\ \hline 5 \end{array}$	Using the methods children are learning about $3\square \times 7 = 266$ $\square \div 6 = 4r3$ $\square \times \square = 420$	Long Division by subtraction of multiples TU ÷ U	$\begin{array}{r} 4r3 \text{ or } 4\frac{3}{6} \\ 6 \overline{)27} \\ \underline{-24} \quad (4 \times 6) \\ 3 \end{array}$																						
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Stage 8	Multiplication of HTU x U Then THU x U	$6 \times 345 = 2070$ <table style="margin: auto; border-collapse: collapse;"> <tr><td style="border-right: 1px solid black; padding: 5px;">×</td><td style="padding: 5px;">300</td><td style="border-right: 1px solid black; padding: 5px;">40</td><td style="padding: 5px;">5</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">6</td><td style="padding: 5px;">1800</td><td style="border-right: 1px solid black; padding: 5px;">240</td><td style="padding: 5px;">30</td></tr> </table>	×	300	40	5	6	1800	240	30	$\begin{array}{r} 345 \\ \times 6 \\ \hline 2070 \\ \hline 23 \end{array}$	Using the methods children are learning about $3\square 5 \times \square = 2070$ $\square \div 6 = 23r1$	Long Division by subtraction of multiples HTU ÷ U	$\begin{array}{r} 23r1 \text{ or } 23\frac{1}{6} \\ 6 \overline{)139} \\ \underline{-60} \quad (10 \times 6) \\ 79 \\ \underline{-60} \quad (10 \times 6) \\ 19 \\ \underline{-18} \quad (3 \times 6) \\ 18 \end{array}$																						
×	300	40	5																																	
6	1800	240	30																																	
Stage 9	Multiplication of TU x TU then HTU x TU	52×27 <table style="margin: auto; border-collapse: collapse;"> <tr><td style="border-right: 1px solid black; padding: 5px;">×</td><td style="padding: 5px;">20</td><td style="border-right: 1px solid black; padding: 5px;">7</td><td style="padding: 5px;"></td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">50</td><td style="padding: 5px;">1000</td><td style="border-right: 1px solid black; padding: 5px;">350</td><td style="padding: 5px;">1350</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">6</td><td style="padding: 5px;">120</td><td style="border-right: 1px solid black; padding: 5px;">42</td><td style="padding: 5px;">162</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px;"></td><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px; border-top: 1px solid black;">1512</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px;"></td><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px; text-align: center;">1</td></tr> </table>	×	20	7		50	1000	350	1350	6	120	42	162				1512				1	124×26 becomes $\begin{array}{r} 124 \\ \times 26 \\ \hline 744 \\ 2480 \\ \hline 3224 \\ \hline 11 \end{array}$	Using the methods children are learning about $2\square \times 52 = 1512$ $432 \div \square = 28r12$	HTU ÷ TU	$432 \div 15$ becomes <table style="margin: auto; border-collapse: collapse;"> <tr><td style="border-right: 1px solid black; padding: 5px;">15</td><td style="padding: 5px;">28</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">432</td><td style="padding: 5px;">300</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px; border-top: 1px solid black;">132</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px;">120</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px; border-top: 1px solid black;">12</td></tr> </table> $\frac{12}{15} = \frac{4}{5}$ Answer: $28\frac{4}{5}$	15	28	432	300		132		120		12
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Stage 10	Multiplying decimals	42×5.3 <table style="margin: auto; border-collapse: collapse;"> <tr><td style="border-right: 1px solid black; padding: 5px;">5</td><td style="padding: 5px;">0.3</td><td style="padding: 5px;"></td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">40</td><td style="padding: 5px;">200</td><td style="padding: 5px;">12</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;">2</td><td style="padding: 5px;">10</td><td style="padding: 5px;">0.6</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px; border-top: 1px solid black;">10.6</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px; border-top: 1px solid black;">222.6</td></tr> </table>	5	0.3		40	200	12	2	10	0.6			10.6			222.6	$\begin{array}{r} 42 \\ \times 5.3 \\ \hline 12.6 \\ 210.0 \\ \hline 222.6 \end{array}$	Short Division																	
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				$432 \div 5$ becomes $\begin{array}{r} 86r2 \\ 5 \overline{)432} \end{array}$ Answer: 86 remainder 2	$496 \div 11$ becomes $\begin{array}{r} 45r1 \\ 11 \overline{)496} \end{array}$ Answer: $45\frac{1}{11}$	$154 \div 8 = 19r2$ $\begin{array}{r} 019.25 \\ 8 \overline{)154.20} \end{array}$																														

Stage	Multiplication			Division																																								
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Stage 8	<p>Grid Method It is better to place the number with the most digits in the left-hand column of the grid so that it is easier to add the answers of each part of the multiplication together. $7 \times 38 =$</p> <p>Then move onto to HTU x U using the same method (e.g.) 346×5</p>	<p>$38 \times 7 = 266$</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">×</td> <td style="padding: 5px;">7</td> <td colspan="2"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">30</td> <td style="padding: 5px;"></td> <td style="padding: 5px;">210</td> <td></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">8</td> <td style="padding: 5px;"></td> <td style="padding: 5px;">56</td> <td></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">266</td> <td></td> </tr> </table>		×	7			30		210		8		56				266		<p>Introduce short division with no remainders for small divisors. Ensure children understand their place value. Do this for TU ÷ U questions with no remainder.</p> <p>Link to their knowledge of times tables.</p>	<p>$56 \div 4 = 14$</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">4</td> <td style="padding: 5px;">14</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">516</td> </tr> </table> <p>We know this because we know that $4 \times 10 = 40$ and $4 \times 4 = 16$, $40 + 16 = 56$</p> <p>Use apparatus to demonstrate.</p>		4	14		516																		
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Stage 9	<p>Multiplying two, two digit numbers This follows the same steps as the first grid method but for 2 digit numbers.</p> <p>Then move onto HTU x TU using the same method (e.g.) 427×36</p>	<p>$56 \times 27 = 1512$</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">×</td> <td style="padding: 5px;">20</td> <td style="padding: 5px;">7</td> <td></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">50</td> <td style="padding: 5px;">1000</td> <td style="padding: 5px;">350</td> <td style="padding: 5px;">1350</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">6</td> <td style="padding: 5px;">120</td> <td style="padding: 5px;">42</td> <td style="padding: 5px;">162</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">1512</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">1</td> </tr> </table>		×	20	7		50	1000	350	1350	6	120	42	162				1512				1	<p>Develop this into TU ÷ U with remainders, still keeping divisor relatively small. Check responses with the inverse.</p>	<p>$79 \div 6 =$</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">6</td> <td style="padding: 5px;">13r1</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">719</td> </tr> </table> <p>Check with $6 \times 13 = 78$ $78 + 1 = 79$</p>		6	13r1		719														
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Stage 10	<p>Using grid method to multiply decimals. Start with TU x U.t</p> <p>Then move on to U.t x U.t (e.g.) 4.6×5.9</p>	<p>42×5.3</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">0.3</td> <td></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">40</td> <td style="padding: 5px;">200</td> <td style="padding: 5px;">12</td> <td style="padding: 5px;">212</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">2</td> <td style="padding: 5px;">10</td> <td style="padding: 5px;">0.6</td> <td style="padding: 5px;">10.6</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">222.6</td> </tr> </table>			5	0.3		40	200	12	212	2	10	0.6	10.6				222.6	<p>Short division is used for HTU ÷ U questions with remainders (which may be turned into decimals by level 5 children)</p> <p>Extension—use short division for HTU ÷ TU (where the divisor is less than 20 to begin with), writing down multiples first.</p>	<p>$154 \div 8 = 19 \text{ r } 2$ ($1\frac{2}{8} = 19\frac{1}{4}$) -</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">8</td> <td style="padding: 5px;">019.25</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">1¹5⁷4 . ²0⁴0</td> </tr> </table> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">17</td> <td style="padding: 5px;">32</td> <td style="padding: 5px;">17</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">54³4</td> <td style="padding: 5px;">34</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">51</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">68</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">85</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">102</td> </tr> </table>		8	019.25		1 ¹ 5 ⁷ 4 . ² 0 ⁴ 0	17	32	17		54 ³ 4	34			51			68			85			102
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NEW LEAKE PRIMARY SCHOOL
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COLLABORATIVE PARTNERSHIP