

Y4	National Curriculum	Multiplication	Division	Models and images	Maths Talk																			
	<p>Recall multiplication and division facts for multiplication tables up to 12×12. Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers. Recognise and use factor pairs and commutativity in mental calculations. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. Calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths & hundredths.</p>	<p>Know by heart all the multiplication and division facts up to $12 \times 12/144 \div 12$. Recognise factors up to 12 of two-digit numbers. Multiply and divide whole numbers by 10, 100 to give whole number answers or answers with one decimal place, e.g. $5632 \div 10 = 563.2$, etc.</p> <table border="1" data-bbox="504 327 1601 438"> <thead> <tr> <th>1000s</th> <th>100s</th> <th>10s</th> <th>1s</th> <th>0.1s ($\frac{1}{10}$)</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>6</td> <td>3</td> <td>2</td> <td></td> </tr> <tr> <td></td> <td>5</td> <td>6</td> <td>3</td> <td>2</td> </tr> </tbody> </table> <p>Multiply multiples of 10, 100, 1000 by single digit numbers. (E.g. 300×6 or 4000×8 by knowing $4 \times 8 = 32$ then multiplying by 1000, Divide multiples of 100 by 1-digit numbers using division facts. (E.g. $3200 \div 8 = 400$)</p> <p>Use understanding of place value and number facts in mental multiplication. (E.g. 36×5 is half of 36×10 and $50 \times 60 = 3000$) Use place value and number facts in mental division. (E.g. $245 \div 20$ is double $245 \div 10$)</p> <p>Find doubles to double 100 and beyond using partitioning Find halves of even numbers to 200 and beyond using partitioning</p> <table border="1" data-bbox="392 790 750 869"> <tr> <td colspan="2">34</td> </tr> <tr> <td>172</td> <td>172</td> </tr> </table> <p>Begin to double amounts of money. (E.g. £35.60 doubled = £71.20.) Begin to halve amounts of money. (E.g. Half of £52.40 = £26.20)</p> <p>Begin to reduce fractions to their simplest forms. E.g. $\frac{12}{15} = \frac{4}{5}$ Find unit and non-unit fractions of larger amounts.</p>	1000s	100s	10s	1s	0.1s ($\frac{1}{10}$)	5	6	3	2			5	6	3	2	34		172	172	<p>Divide larger numbers mentally by subtracting the 10th or 20th multiple as appropriate. (E.g. $156 \div 6$ is $20 + 6$ as $20 \times 6 = 120$ and $6 \times 6 = 36$) Written method: Efficient chunking to divide a 2-digit or a 3-digit-number by a single-digit number. Give remainders as whole numbers. E.g. $86 \div 3 = 28 \text{ r } 2$ $\square \times 3 = 86$ $20 \times 3 = 60$ $\quad 26$ $8 \times 3 = 24$ $\quad 2$</p>	<p>Concrete apparatus: counting equipment, numicon, multilink, etc. Fingers Bead string/bead bar/beaded line number line 100 grid Bar model Arrays Fraction wall Fraction strips</p>	<p>Counting on and back in multiples Clever counting (all tables) Doubling Halving Set/lots of/array Division 'undoes' multiplication 'Inverse operations' Factors fit into numbers Counting in fractions Prime numbers</p>
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		<p>Partition 2-digit numbers to multiply by a single-digit number mentally. (E.g. 4×24 as 4×20 and 4×4) Multiply near multiples using rounding. (E.g. 33×19 as $33 \times 20 - 33$) Written method: Grid method to multiply a 2-digit number by a number between 10 and 20 by partitioning:</p> <table border="1" data-bbox="392 1300 1041 1460"> <tr> <td>x</td> <td>20</td> <td>9</td> <td></td> </tr> <tr> <td>30</td> <td>600</td> <td>270</td> <td>870</td> </tr> <tr> <td>4</td> <td>80</td> <td>36</td> <td>116</td> </tr> <tr> <td></td> <td></td> <td></td> <td>986</td> </tr> </table>	x	20	9		30	600	270	870	4	80	36	116				986	<p>Diagram showing 226 partitioned into 400, 40, and 12.</p>					
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