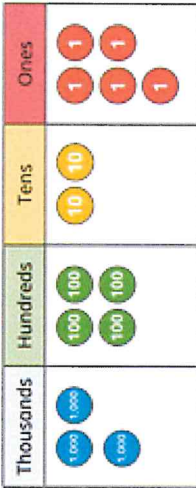
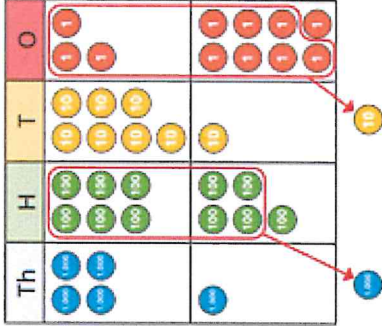
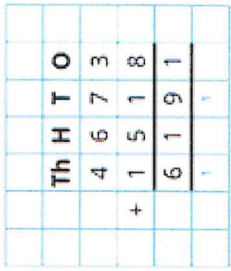
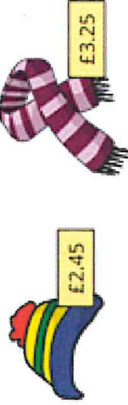
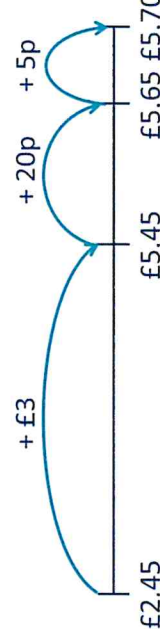
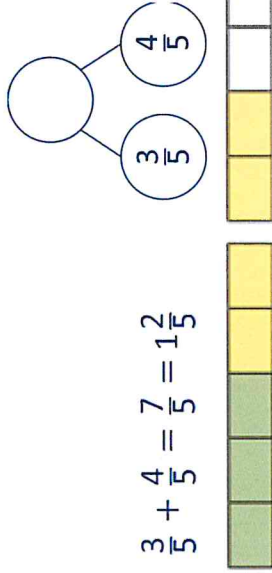
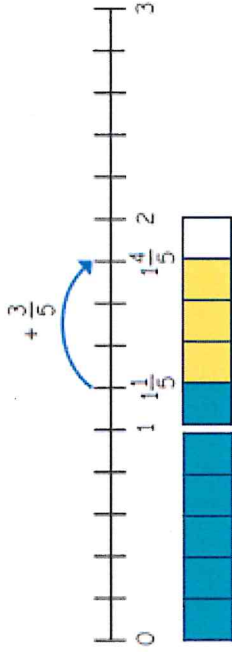


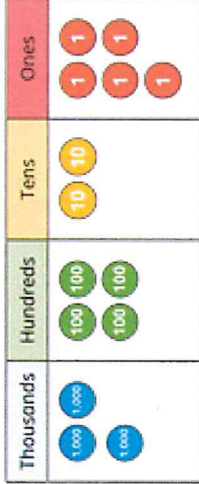
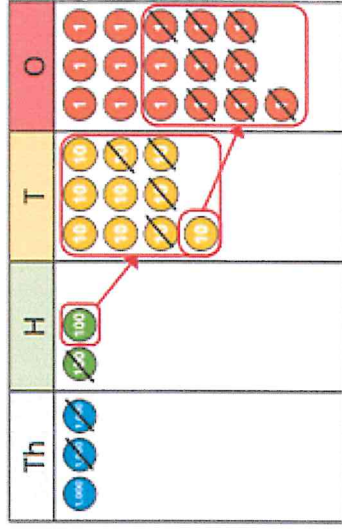
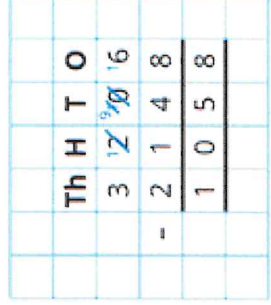
Addition

<p>Year 4</p>	<ul style="list-style-type: none"> • Add numbers with up to 4 digits using a formal written method. • Solve simple measure and money problems involving fractions and decimals to 2 decimal places. • Add fractions with the same denominator. 	
<p>Progression of skills</p>		
<p>Add 1s, 10s and 100s to a 4-digit number</p> <p>Emphasis on mental strategies including number bonds and related facts.</p> <p>Prompt children to notice which digit changes.</p>	<p>The ones/tens/hundreds/thousands column will increase by ...</p>  $3,425 + 3 = 3,425 + 3,000 =$ $3,425 + 30 = 3,425 + 3,000 =$	<p>What patterns do you notice?</p> $2,350 + 3 =$ $2,350 + 30 =$ $2,350 + 300 =$ $2,350 + 3,000 =$ $6,040 + 200 =$ $6,040 + 500 =$ $6,040 + 900 =$
<p>Add up to two 4-digit numbers</p> <p>Formal written method with up to 3 exchanges.</p> <p>Encourage children to estimate and use inverse operations to check answers to calculations.</p>	<p>There are ... ones/tens/hundreds so I do/do not need to make an exchange.</p> <p>I can exchange 10 ... for 1 ...</p>	 

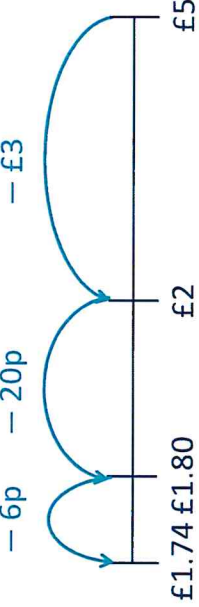
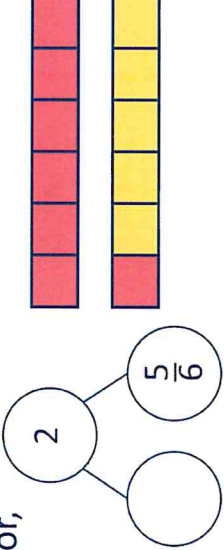
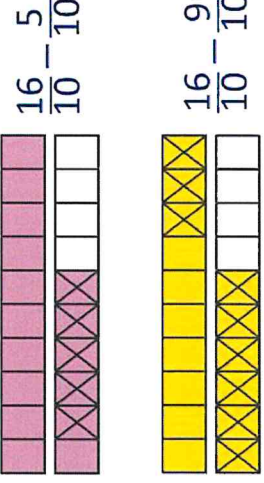
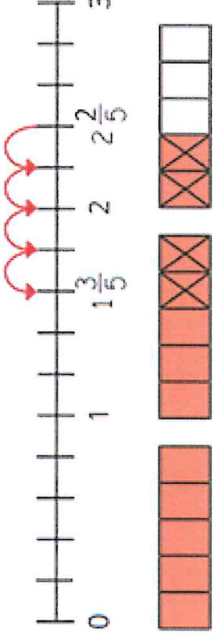
Addition

Progression of skills	Key representations	
<p>Add decimal numbers in the context of money</p> <p>Emphasis on partitioning and use of number lines rather than formal written calculations.</p>	<p>... pence + ... pence = ... pence ... pounds + ... pounds = ... pounds</p>  <p> $45\text{p} + 25\text{p} = 70\text{p}$ $\text{£}2 + \text{£}3 = \text{£}5$ $\text{£}5 + 70\text{p} = \text{£}5.70$ </p>	<p>£3.25 can be partitioned into $\text{£}3 + 20\text{p} + 5\text{p}$</p> 
<p>Add fractions and mixed numbers with the same denominator beyond 1 whole</p>	<p>When adding fractions with the same denominator, I only add the numerator. ... fifths + ... fifths = ... fifths</p>  <p> $3\frac{4}{5} + \frac{7}{5} = 1\frac{2}{5}$ </p>	

Subtraction

<p>Year 4</p>	<ul style="list-style-type: none"> Subtract numbers with up to 4 digits using a formal written method. Solve simple measure and money problems involving fractions and decimals to 2 decimal places. Subtract fractions with the same denominator.
<p>Key representations</p>	
<p>Subtract 1s, 10s, 100s and 1,000s from a 4-digit number</p> <p>Emphasis on mental strategies including number bonds and related facts. Prompt children to notice which digit changes.</p>	<p>The ones/tens/hundreds/thousands column will decrease by ...</p>  <p> $3,425 - 2 = 3,425 - 200 =$ $3,425 - 20 = 3,425 - 2,000 =$ </p> <p>What patterns do you notice?</p> <p> $4,356 - 3 =$ $4,356 - 30 =$ $4,356 - 300 =$ $4,356 - 3,000 =$ $6,940 - 200 =$ $6,940 - 300 =$ $6,940 - 400 =$ </p> <p> $4,433 - \square = 4,430$ $4,433 - \square = 4,033$ $4,433 - \square = 4,403$ </p>
<p>Subtract up to two 4-digit numbers</p> <p>Formal written method with up to 3 exchanges. Encourage children to estimate and use inverse operations to check answers to calculations.</p>	<p>I need to subtract... ones/tens/hundreds. I do/do not need to make an exchange.</p> <p>I can exchange 1... for 10...</p>  

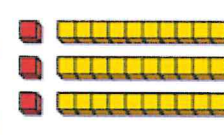
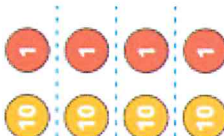

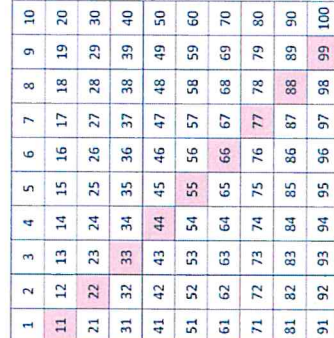
Subtraction

Progression of skills	Key representations	
<p>Subtract decimal numbers in the context of money</p> <p>Emphasis here is on partitioning and use of number lines rather than formal written calculations.</p>	<p>I can partition £... into £... and 100p</p> <p>£... - £... = £...</p> <p>100p - ...p = ...p</p> <p>£5 - £3.26 $£4 - £3 = £1$ $100p - 26p = 74p$ $£5 - £3.26 = £1.74$</p> 	<p>£3.26 can be partitioned into £3 + 20p + 6p</p> 
<p>Subtract fractions and mixed numbers with the same denominator</p> <p>Include subtracting fractions from wholes.</p>	<p>When subtracting fractions with the same denominator, I only subtract the numerator.</p> <p>... tenths - ... tenths = ... tenths</p> 	

Multiplication

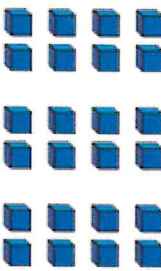
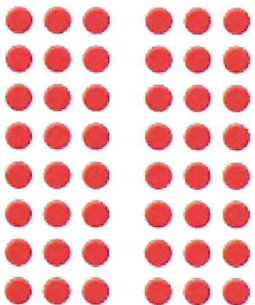
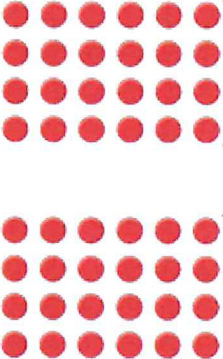
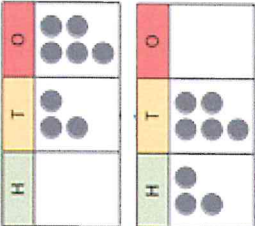
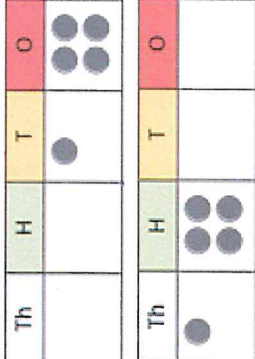
<p>Year 4</p>	<ul style="list-style-type: none"> Recall multiplication facts for multiplication tables up to 12×12 Use place value, known and derived facts to multiply mentally, including: multiplying by 0 and 1; multiplying together three numbers. Recognise and use factor pairs and commutativity in 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 one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.
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<p>Progression of skills</p>	<p>Key representations</p>
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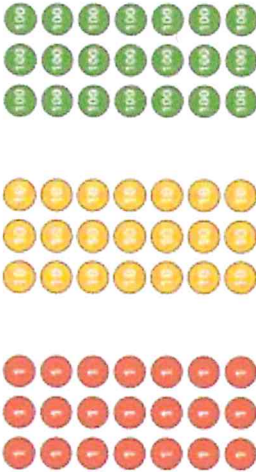
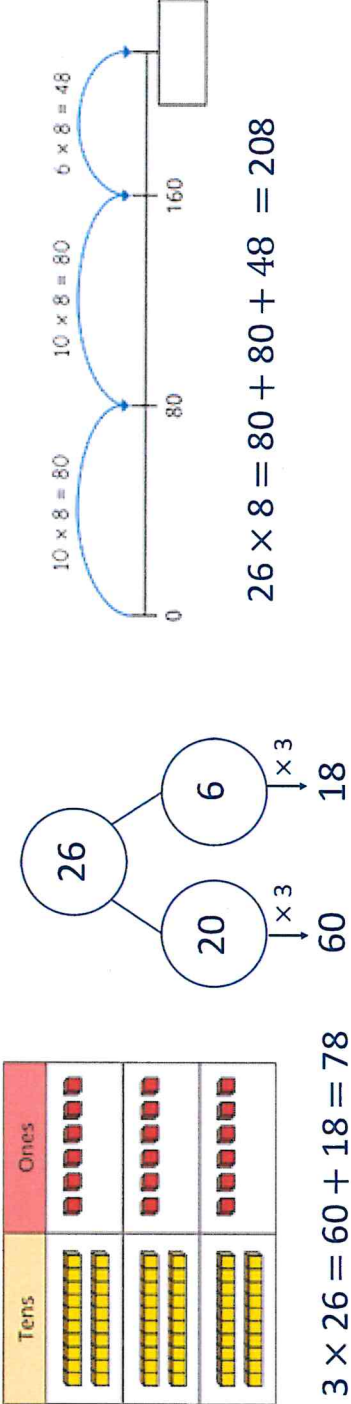
<p>Times-table facts to 12×12</p> <p>Encourage daily counting in multiples both forwards and back. Encourage children to notice links between related times-tables.</p>	<p>... groups of ... =</p> <p>... times ... is equal to ...</p> <p>... X ... =</p>    
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<p>Multiply by 1 and 0</p>	<p>Any number multiplied by 1 is equal to ...</p> <p>Any number multiplied by 0 is equal to ...</p>  <p>... X ... = ...</p> <p>$1 \times 1 = 1$ $1 \times 0 = 0$</p> <p>$2 \times 1 = 2$ $2 \times 0 = 0$</p> <p>$3 \times 1 = 3$ $3 \times 0 = 0$</p> <p>$4 \times 1 = 4$ $4 \times 0 = 0$</p>
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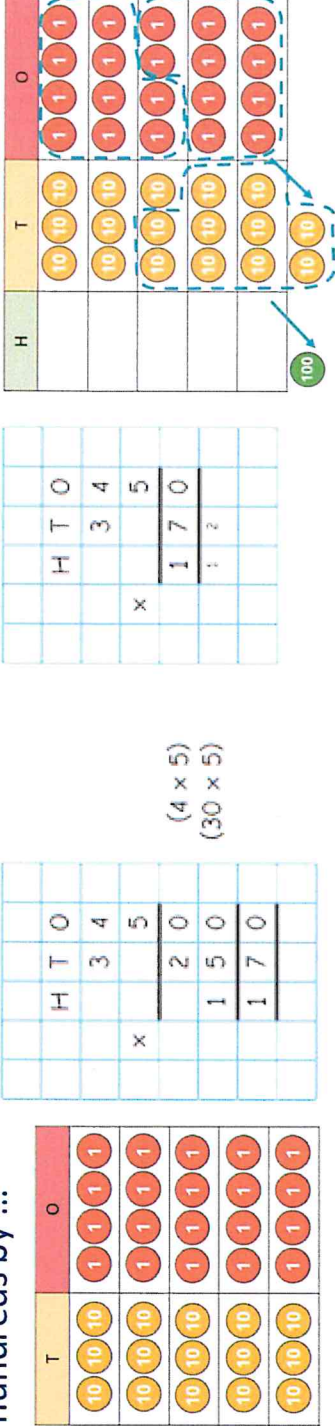

Multiplication

Progression of skills	Key representations	
<p>Multiply 3 numbers</p> <p>Children use their understanding of commutativity to multiply more efficiently.</p>	<p>To work out ... \times ... \times ..., I can first calculate ... \times ... and then multiply the answer by ...</p>  $4 \times 2 \times 3 = 8 \times 3 = 24$ $2 \times 3 \times 4 = 6 \times 4 = 24$ $3 \times 4 \times 2 = 12 \times 2 = 24$	
<p>Factor pairs</p> <p>Children explore equivalent calculations using different factors pairs.</p>	<p>$12 = \dots \times \dots$, so ... $\times 12 = \dots \times \dots \times \dots$</p>  $8 \times 6 = 8 \times 3 \times 2$ $8 \times 6 = 24 \times 2$	 $6 \times 8 = 6 \times 4 \times 2$ $6 \times 8 = 24 \times 2$
<p>Multiply by 10 and 100</p> <p>Some children may generalise that multiplying by 10 or 100 always results in adding zeros. This will cause issues later when multiplying decimals.</p>	<p>When I multiply by 10, the digits move ... place value column to the left. ... is 10 times the size of ...</p>  $35 \times 10 = 350$	<p>When I multiply by 100, the digits move ... place value columns to the left. ... is 100 times the size of ...</p>  $14 \times 100 = 1,400$

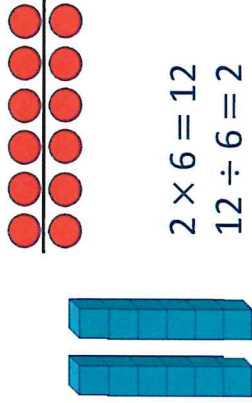
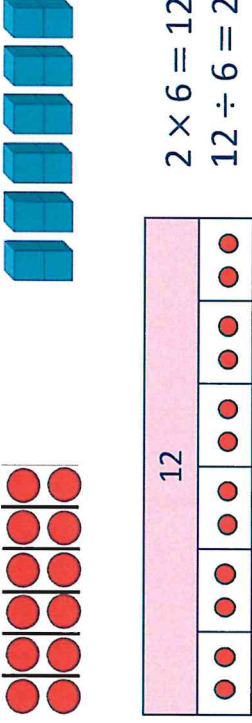

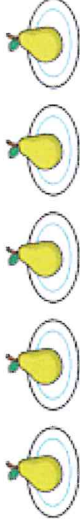
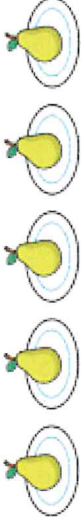

Multiplication

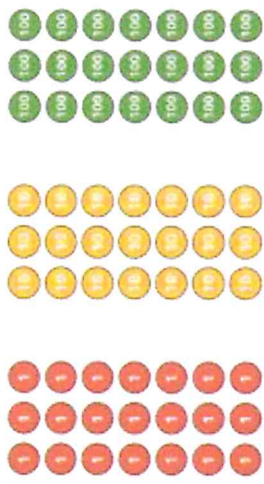
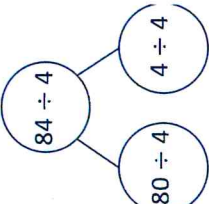
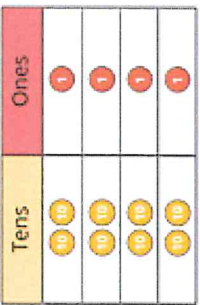
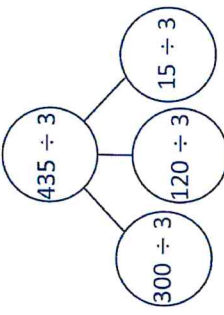
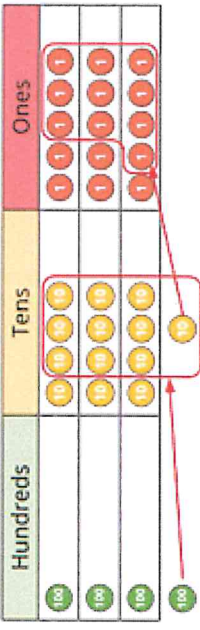
Progression of skills	Key representations
<p>Related facts</p> <p>Use knowledge of multiplying by 10 and 100 to scale times-table facts.</p>	<p>... X ... ones is equal to ... ones so ... X ... tens is equal to ... tens and ... X ... hundreds is equal to ... hundreds.</p>  <p> $3 \times 7 = 21$ $3 \times 70 = 210$ $3 \times 700 = 2,100$ </p> <p> $7 \times 3 = 21$ $7 \times 30 = 210$ $7 \times 300 = 2,100$ </p>
<p>Mental strategies</p> <p>Partition 2 or 3-digit numbers to multiply using informal methods.</p>	<p>... tens multiplied by ... is equal to ... tens. ...ones multiplied by ... is equal to ... ones.</p>  <p> $3 \times 26 = 60 + 18 = 78$ </p> <p> $26 \times 8 = 80 + 80 + 48 = 208$ </p>

Multiplication

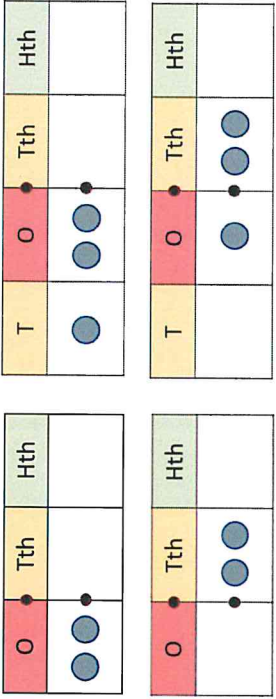
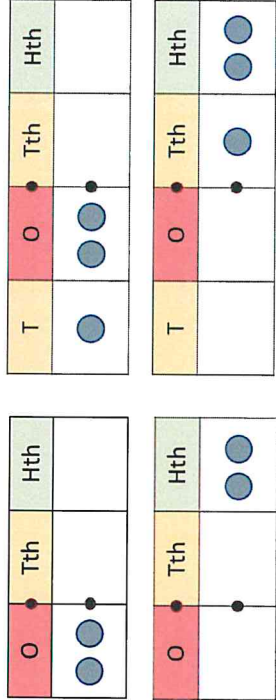
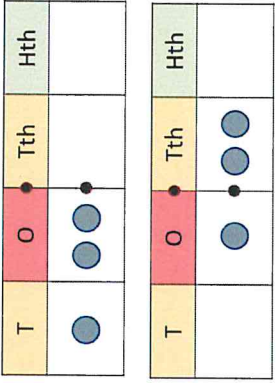
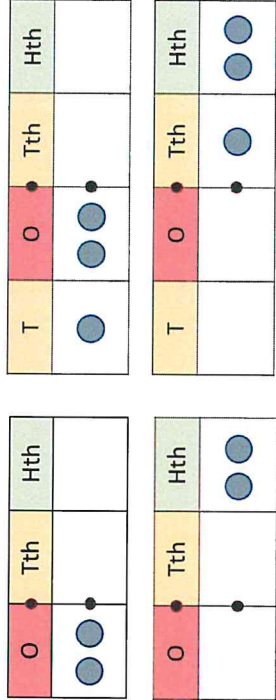
Progression of skills	Key representations																								
<p>Multiply a 2 or 3-digit number by a 1-digit number</p> <p>The short multiplication method is introduced for the first time, initially in an expanded form.</p>	<p>To multiply a 2-digit number by ..., I multiply the ones by ... and the tens by ...</p> <p>To multiply a 3-digit number by ..., I multiply the ones by ..., the tens by ... and the hundreds by ...</p> 																								
<p>Scaling</p> <p>Children focus on multiplication as scaling (... times the size).</p>	<p>... is ... times the size of ...</p>  <p>A computer mouse costs £7</p> <p>A keyboard costs 6 times as much.</p> <p>A red ribbon is 6 cm.</p> <p>A yellow ribbon is 7 times as long.</p>																								
<p>Correspondence problems</p> <p>Encourage children to use tables to show all the different possible combinations.</p>	<p>For every ... , there are ... possibilities.</p> <p>There are ... X ... possibilities altogether.</p> <p>A pizza company offers a choice of 5 toppings and 3 bases.</p> <p>$5 \times 3 = 15$</p> <table border="1"> <thead> <tr> <th></th> <th>Deep pan</th> <th>Italian</th> <th>Thin</th> </tr> </thead> <tbody> <tr> <td>Cheese</td> <td>C DP</td> <td>C I</td> <td>C Th</td> </tr> <tr> <td>Mushroom</td> <td>M DP</td> <td>M I</td> <td>M Th</td> </tr> <tr> <td>Vegetable</td> <td>V DP</td> <td>V I</td> <td>V Th</td> </tr> <tr> <td>Chicken</td> <td>C DP</td> <td>C I</td> <td>C Th</td> </tr> <tr> <td>Tuna</td> <td>T DP</td> <td>T I</td> <td>T Th</td> </tr> </tbody> </table>		Deep pan	Italian	Thin	Cheese	C DP	C I	C Th	Mushroom	M DP	M I	M Th	Vegetable	V DP	V I	V Th	Chicken	C DP	C I	C Th	Tuna	T DP	T I	T Th
	Deep pan	Italian	Thin																						
Cheese	C DP	C I	C Th																						
Mushroom	M DP	M I	M Th																						
Vegetable	V DP	V I	V Th																						
Chicken	C DP	C I	C Th																						
Tuna	T DP	T I	T Th																						

Division

<p>Year 4</p>	<ul style="list-style-type: none"> Recall division facts for multiplication tables up to 12×12 Use place value, known and derived facts to divide mentally, including: dividing by 1 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 and hundredths.
<p>Progression of skills</p>	
<p>Division facts to 12×12</p> <p>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.</p>	<p>There are ... groups of ... in ...</p> <p>... \div ... =</p>  <p>$2 \times 6 = 12$ $12 \div 6 = 2$</p> <p>... has been shared equally into ... equal groups.</p> <p>... \div ... =</p>  <p>$2 \times 6 = 12$ $12 \div 6 = 2$</p>
<p>Divide a number by 1 and itself</p> <p>Children may try to divide a number by zero and it should be highlighted that this is not possible.</p>	<p>When I divide a number by 1, the number remains the same.</p> <p>5 shared between 1 is 5</p>  <p>There are 5 groups of 1 in 5</p>  <p>When I divide a number by itself, the answer is 1</p> <p>5 shared between 5 is 1</p>  <p>There is 1 group of 5 in 5</p> 

Progression of skills	Key representations	
<p>Related facts</p> <p>Link to known times-table facts.</p>	<p>... ÷ ... is equal to ...</p> <p>so ... tens ÷ ... is equal to ... tens</p> <p>and ... hundreds ÷ ... is equal to ... hundreds.</p>  $21 \div 7 = 3$ $210 \div 7 = 30$ $2,100 \div 7 = 300$ $21 \div 3 = 7$ $210 \div 3 = 70$ $2,100 \div 3 = 700$	
<p>Divide a 2 or 3-digit number by a 1-digit number</p> <p>Progress from divisions with no exchange, to divisions with exchange and then divisions with remainders.</p>	<p>I can partition ... into ... tens and ... ones.</p>  $84 \div 4 = 20$ $4 \div 4 = 1$ $84 \div 4 = 21$ 	
		<p>I cannot share the hundreds/tens equally, so I need to exchange 1 ... for 10 ...</p>  $435 \div 3$ $300 \div 3 = 100$ $120 \div 3 = 40$ $15 \div 3 = 5$ $435 \div 3 = 145$ 

Division

Progression of skills	Key representations	
<p>Divide by 10 and 100</p> <p>Encourage children to notice that dividing by 100 is the same as dividing by 10 twice.</p>	<p>When I divide by 10, the digits move 1 place value column to the right. ... is one-tenth the size of ...</p>  <p>$2 \div 10 = 0.2$</p>	<p>When I divide by 100, the digits move 2 place value columns to the right. ... is one-hundredth the size of ...</p>  <p>$2 \div 100 = 0.02$</p>
	<p>When I divide by 10, the digits move 1 place value column to the right. ... is one-tenth the size of ...</p>  <p>$12 \div 10 = 1.2$</p>	<p>When I divide by 100, the digits move 2 place value columns to the right. ... is one-hundredth the size of ...</p>  <p>$12 \div 100 = 0.12$</p>