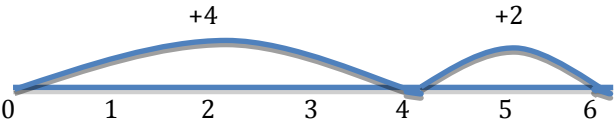
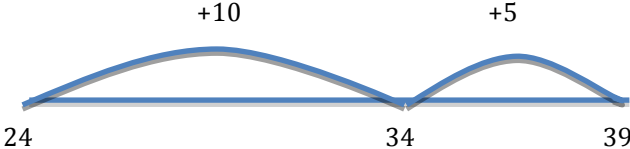
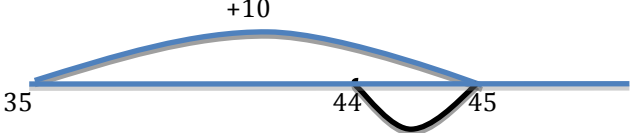




## Progression of the Four Rules

Year 1	ADDITION	
Year 1	Year 2	Year 3
<p><b><u>Record number sentences with + = signs and missing numbers within 20</u></b>  <math>2+4 = \square</math>    <math>\square = 11 + 6</math>  <math>12 + \square = 14</math>    <math>15 = \square + 8</math>  <math>\square + 8 = 13</math>    <math>12 = 7 + \square</math>  <math>\square + \Delta = 6</math>    <math>19 = \square + \Delta</math></p>  <p><b><u>Represent and use number bonds and related subtraction facts within 20</u></b></p> <p><math>14+6 = 20</math>    <math>20 - 6 = 14</math>  <math>6+14 = 20</math>    <math>20 - 14 = 6</math></p> <p><math>15+3 = 18</math>    <math>18 - 3 = 15</math>  <math>3+15 = 18</math>    <math>18 - 15 = 3</math></p> <p><b><u>Add 1 digit and 2 digit numbers to 20 including 0</u></b>  As above</p> <p><b><u>Resources/ tips to support addition/ number recognition</u></b></p> <ul style="list-style-type: none"> <li>Put the biggest number at the beginning</li> <li>Numberline as shown above</li> <li>Use of 100 square <ul style="list-style-type: none"> <li>Children count from 1 to 100, with children pointing to the numbers to familiarise themselves with the format</li> <li>Children find numbers</li> <li>Children solve addition questions to 20 by counting in using the 100 square.</li> </ul> </li> <li>Use of Tens frame <ul style="list-style-type: none"> <li>Children recognise number and gain 'number sense'</li> <li>Children become confident in number bonds</li> </ul> </li> </ul>	<p><b><u>Record number sentences with + = signs and missing numbers</u></b>  Continue using a range of equations as in Year 1 but with larger numbers to 100</p> <p><b><u>Adding a tens number to a 2 digit number</u></b>  <math>35 + 10 = 45</math>  <math>25 + 30 = 56</math></p> <p><b><u>Adding two 2 digit numbers (partition the smallest number)</u></b>  <math>24 + 15 = 24 + 10 + 5</math>  <math>= 34 + 5</math>  <math>= 39</math></p>  <p><b><u>Add 9 or 11 by adding 10 and adjusting by 1</u></b>  <math>35 + 9 = 44</math></p>  <p><b><u>Recognise addition is commutative</u></b>  <math>16+3 = 3 + 16</math></p> <p><b><u>Add single digit numbers</u></b>  <math>6+9+4 = 6 + 4 + 9 = 9 + 6 + 4</math></p> <p><b><u>Introduce column addition (not bridging)</u></b></p> $\begin{array}{r} 43 \\ +32 \\ \hline 5 \\ \hline 70 \\ \hline 75 \end{array}$	<p><b><u>Record number sentences with + = signs and numbers</u></b>  Continue to provide children with a range of questions from Y1/2 but with appropriate numbers and 'missing numbers to find' in different places.  E.g.  <math>426 + 218 = \square</math>    <math>\square - 312 = 429</math>  <math>628 + \square = 841</math>    <math>\square - \Delta = 485</math></p> <p><b><u>Add a near multiple of 10 to a 2-digit number</u></b>  Continue as in Y2 but with appropriate numbers e.g. <math>35 + 19</math> is the same as <math>35 + 20 - 1</math></p> <p><b><u>Column addition up to 3 digit + 3 digit</u></b>  <math>83 + 42 = 125</math>    <math>353 + 164 = 517</math></p> $\begin{array}{r} 83 \\ +42 \\ \hline 125 \end{array}$ $\begin{array}{r} 353 \\ +164 \\ \hline 517 \end{array}$ <p>Before moving to the 'doorstep' method use base ten materials such as 'dienes' to model the carrying over.</p> <p><b><u>Column addition (doorstep) up to 2 digit numbers</u></b>  <math>83 + 49 = 132</math>    <math>353 + 164 =</math></p> $\begin{array}{r} \text{T} \quad 0 \\ 8 \quad 3 \\ + \quad 4 \quad 9 \\ \hline 1 \quad 3 \quad 2 \\ 1 \end{array}$ $\begin{array}{r} \text{H} \quad \text{T} \quad 0 \\ 3 \quad 5 \quad 3 \\ + \quad 1 \quad 6 \quad 4 \\ \hline 4 \quad 1 \quad 7 \\ 1 \end{array}$ <p><b><u>Include 3 digit and 2 digit numbers to ensure the children have a good understanding of the place value of digits.</u></b></p> <p><b><u>Additional Requirement</u></b>  Children should begin to estimate answers (using rounding and known facts) before attempting to solve a problem to ensure solutions are realistic</p>



## Progression of the Four Rules

		ADDITION		
Year 4		Year 5		Year 6
<p><b><u>Record number sentence with + = signs and missing numbers</u></b> Continue to provide children with a range of equations as in Year 1-3 with appropriate numbers. Ensure the 'missing number to find' is not always after the equal sign. E.g.  <math>4256 + 2189 = \square</math>      <math>\square + 1422 = 5324</math>  <math>6142 + \square = 7068</math>      <math>\square - \Delta = 1496</math></p> <p><b><u>Partition into hundreds, tens and ones and recombine</u></b> Either partition both numbers and recombine or partition the second number only E.g. <math>358 + 73 = 358 + 70 + 3</math>  <math>= 428 + 3</math>  <math>= 431</math></p> <p><b><u>Column addition (doorstep) upto 4 digit + 4 digit ensure children are also to solve 4 digit + 3 digit etc</u></b></p> $\begin{array}{r} 1468 + 1386 = 2854 \\ \text{TH H T O} \\ 1 \ 4 \ 6 \ 8 \\ + 1 \ 3 \ 8 \ 6 \\ \hline 2 \ 8 \ 5 \ 4 \\ 1 \ 1 \end{array}$ <p><b><u>Use column addition to add decimals in the context of money</u></b></p> $\begin{array}{r} £23.56 + £42.76 = £66.32 \\ 2 \ 3 \ . \ 5 \ 6 \\ + 4 \ 2 \ . \ 7 \ 6 \\ \hline £6 \ 6 \ . \ 3 \ 2 \\ 1 \ 1 \end{array}$		<p><b><u>Record number sentences with + = and missing numbers</u></b> Continue to provide children with a range of equations as in Years 1-4 but with appropriate numbers. Ensure the 'missing number to find' is not always after the equal sign. E.g.  <math>4256 + 2189 = \square</math>      <math>\square + 1422 = 5324</math>  <math>6142 + \square = 8768</math>      <math>\square + \Delta = 1496</math></p> $\begin{array}{r} 3 \ \square \ 4 \ 2 \ \square \\ + 4 \ 3 \ 7 \ 3 \ 4 \\ \hline \square \ 0 \ 1 \ \square \ 1 \end{array}$ <p><b><u>Use column addition to add decimals with mixed number digits</u></b></p> $\begin{array}{r} 321.4 + 73.9 = 395.3 \qquad 142.42 + 87.3 = 229.72 \\ 3 \ 2 \ 1 \ . \ 4 \qquad 1 \ 4 \ 2 \ . \ 4 \ 2 \\ + 7 \ 3 \ . \ 9 \qquad + \ 8 \ 7 \ . \ 3 \\ \hline 3 \ 9 \ 5 \ . \ 3 \qquad 2 \ 2 \ 9 \ . \ 7 \ 2 \\ 1 \qquad 1 \end{array}$ <p><b><u>Use known number facts and place value to derive decimal bonds to 1</u></b></p> $\begin{array}{l} 0.7 + 0.3 = 1 \\ 0.14 + 0.86 = 1 \end{array}$ <p><b><u>Children should have secure understanding of place value and be able to mentally solve calculations like those below</u></b></p> $12,462 + 1,200 = 13,662$		<p><b><u>Continue to practice column addition as in Y5</u></b></p> <p><b><u>Partition into hundreds, tens, ones and decimal fractions and recombine</u></b> Either partition both numbers and recombine or partition the second number only e.g.  <math>35.8 + 7.3 = 35.8 + 7 + 0.3</math>  <math>= 42.8 + 0.3</math>  <math>= 43.1</math></p> <p><b><u>Use known number facts and place value to add whole numbers and decimals</u></b></p> $0.39 + 0.1 = 0.49 \text{ (Use knowledge of } 39 + 10 = 49)$ <p>Understanding of brackets and order of operation E.g.  <math>32 + 4 \times 5 = 52</math>  <math>(32 + 4) \times 5 = 180</math></p> <p>Express missing number problems algebraically E.g.  <math>a + b = b + a</math></p> <p><b><u>Use of a calculator (Level 6 only)</u></b> Know the correct key sequence for calculations with more than one operation  <math>32 + 4 \times 5 = 52</math>  <math>(32 + 4) \times 5 = 180</math></p> <p>To understand when using a calculator to solve questions involving decimals, <math>0.3 = 0.30</math></p>



# Progression of the Four Rules

## SUBTRACTION

### Year 1

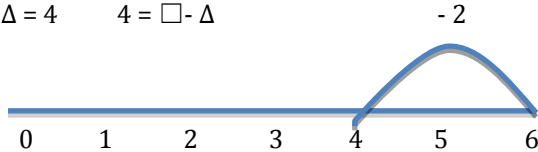
#### Record number sentences with - = signs and missing numbers within 20

$$6 - 2 = \square \quad \square = 18 - 12$$

$$6 - \square = 4 \quad 6 = \square - 8$$

$$\square - 2 = 4 \quad 8 = 19 - \square$$

$$\square - \Delta = 4 \quad 4 = \square - \Delta$$



#### Represent and use number bonds and related addition facts within 20

$$20 - 6 = 14 \quad 14 + 6 = 20$$

$$20 - 14 = 6 \quad 6 + 14 = 20$$

$$18 - 3 = 15 \quad 15 + 3 = 18$$

$$18 - 15 = 3 \quad 3 + 15 = 18$$

#### Subtract 1 digit and 2 digit numbers to 20 including 0

As above

#### Resources/ tips to support subtraction/ number recognition

- Put the biggest number at the beginning
- Numberline as shown above
- Use of 100 square
  - Children count backwards from 100 to 1, with children pointing to the numbers to familiarise themselves with the format
  - Children find numbers
  - Children solve subtraction questions to 20 by counting on using 100 square
- Use of Tens frame
  - Children recognise number and gain 'number sense'
  - Children become confident in number bonds

### Year 2

#### Record number sentences with - = signs and missing numbers

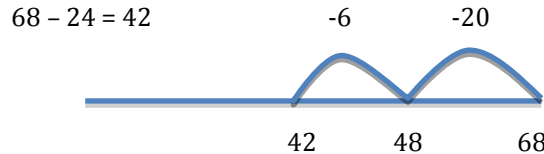
Continue using a range of equations as in Y1 but with larger numbers to 100

#### Subtract a tens number from a 2 digit number

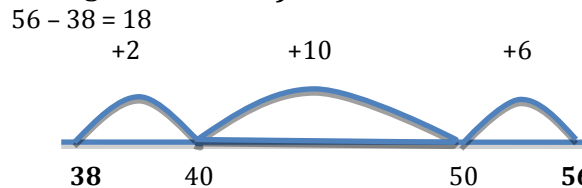
$$47 - 10 = 37 \quad 89 - 30 = 59$$

#### Subtract two 2 digit numbers (by partitioning the second number and taking away)

Tip: Use known fact  $6 - 2 = 4$  to derive  $60 - 20 = 40$



#### Subtraction two 2 digit numbers (by counting on and finding the difference)



#### Subtract 9 or 11 by subtracting 10 and adjusting

$35 - 9 =$  is the same as  $35 - 10 + 1$

#### Recognise subtraction is NOT commutative

$$16 - 3 \neq 3 - 16$$

#### Introduce column subtraction (not bridging)

$$\begin{array}{r} \text{T} \quad 0 \\ 5 \quad 7 \\ - 3 \quad 2 \\ \hline 2 \quad 5 \end{array} \quad (7 - 2 \text{ and } 50 - 30)$$

### Year 3

#### Record number sentences with - = signs and missing numbers

Continue to provide children with a range of equations as in Y1/2 but with appropriate numbers. Ensure the 'missing number to find' is not always after the equal sign

$$\text{E.g.} \quad 426 - 218 = \square \quad \square - 312 = 329$$

$$628 - \square = 341 \quad \square - \Delta = 485$$

#### Subtract a near multiple of 10 from a two-digit number

Continue as in Year 2 but with appropriate numbers

$35 - 19$  is the same as  $35 - 20 + 1$

$78 - 49$  is the same as  $78 - 50 + 1$

#### Column subtraction up to 3 digit - 3 digit

$$\begin{array}{r} 2 \quad 7 \quad 6 \\ - 1 \quad 2 \quad 3 \\ \hline 1 \quad 5 \quad 3 \end{array} \quad \begin{array}{r} 2 \quad 1 \\ 5 \quad 3 \quad 2 \\ - 2 \quad 1 \quad 7 \\ \hline 3 \quad 1 \quad 5 \end{array}$$

$$\begin{array}{r} 5 \quad 11 \quad 1 \\ 6 \quad 2 \quad 1 \\ - 2 \quad 5 \quad 3 \\ \hline 3 \quad 6 \quad 8 \end{array} \quad \begin{array}{r} 6 \quad 10 \quad 1 \\ 7 \quad 1 \quad 3 \\ - 8 \quad 7 \\ \hline 6 \quad 2 \quad 6 \end{array}$$

#### Include 3 digit - 2 digit numbers to ensure children have a good understanding of place value and position of digits

#### Additional requirements

Children should begin to estimate answers (using rounding and known facts) before attempting to solve a problem to ensure solutions are realistic



## Progression of the Four Rules

### SUBTRACTION

#### Year 4

##### Record number sentences with - = signs and missing

Continue to provide children with a range of equations as in Years 1-3 but with appropriate numbers. Ensure the 'missing number to find' is not always after the equal sign  
E.g.

$$4256 - 2189 = \square \quad \square - 1422 = 5324$$
$$6142 - \square = 3768 \quad \square - \Delta = 1496$$

##### Column subtraction up to 4 digit - 4 digit ensure the children are also able to solve 4 digit - 3 digit

$$3590 - 1784 = 1806$$

$$\begin{array}{r} 2 \quad 1 \quad 8 \quad 1 \\ 3 \quad 5 \quad 9 \quad 0 \\ - 1 \quad 7 \quad 8 \quad 4 \\ \hline 1 \quad 8 \quad 0 \quad 6 \end{array}$$

##### Use column subtraction to subtract decimals in the context of measure and money

$$£65.32 - £37.96 = £27.36$$

$$\begin{array}{r} 5 \quad 14 \quad 12 \quad 1 \\ 6 \quad 5 \quad 3 \quad 2 \\ - 3 \quad 7 \quad 9 \quad 6 \\ \hline £ 2 \quad 7 \quad 3 \quad 6 \end{array}$$

$$86.63\text{m} - 29.74\text{m} - 56.89\text{m}$$

$$\begin{array}{r} 7 \quad 15 \quad 15 \quad 1 \\ 8 \quad 6 \quad 6 \quad 3 \\ - 2 \quad 9 \quad 7 \quad 4 \\ \hline 5 \quad 6 \quad 8 \quad 9\text{m} \end{array}$$

##### Additional requirements

Children should continue to estimate answers using rounding and known facts before attempting a problem to ensure solutions are realistic

#### Year 5

##### Record number sentences with - = signs and missing numbers

Continue to provide children with a range of equations as in Years 1-4 but with appropriate numbers. Ensure the 'missing number to find' is not always after the equal sign.  
E.g.

$$4256 - 2189 = \square \quad \square - 1422 = 5324$$
$$6142 - \square = 3768 \quad \square - \Delta = 1496$$

$$\begin{array}{r} 1 \quad \square \quad 6 \quad 8 \quad 2 \\ - 1 \quad 2 \quad \square \quad 6 \quad \square \\ \hline 2 \quad 3 \quad \square \quad 5 \end{array}$$

##### Column subtraction of numbers more than 4 digit s

$$17038 - 3463 = 14575$$

$$\begin{array}{r} 6 \quad 1 \quad 1 \\ 1 \quad 7 \quad 0 \quad 3 \quad 8 \\ - 3 \quad 4 \quad 6 \quad 3 \\ \hline 1 \quad 4 \quad 5 \quad 7 \quad 5 \end{array}$$

##### Use column subtraction to subtract decimals with up to 3 decimal places

$$163.134 - 29.19 = 133.944$$

$$\begin{array}{r} 5 \quad 12 \quad 10 \quad 1 \\ 1 \quad 6 \quad 3 \quad 1 \quad 3 \quad 4 \\ - 2 \quad 9 \quad 1 \quad 9 \\ \hline 1 \quad 3 \quad 3 \quad 9 \quad 4 \quad 4 \end{array}$$

##### Use known number facts and place value to derive decimal bonds to 1

$$1 - 0.7 = 0.3$$

$$1 - 0.14 = 0.86$$

##### Children should have secure understanding of place value and be able to mentally solve calculations like those below

$$12,462 - 1,200 = 11,262$$

#### Year 6

##### Continue to practice column subtraction as Y5

##### Use known number facts and place value to subtract whole numbers and decimals

$$0.5 - 0.31 = 0.19 \text{ (Use knowledge of } 50 - 31 = 19)$$

##### Understanding of brackets and order of operation

E.g.

$$32 - 4 \times 5 = 12$$

$$(32 - 4) \times 5 = 140$$

##### Express missing number problems algebraically

E.g.

$$2a - a - b = a - b$$

##### Use of calculator (Level 6 only)

Know the correct key sequence for calculations with more than one operation

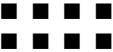
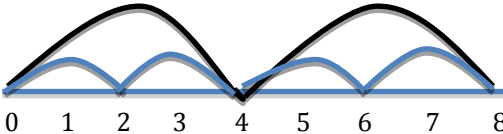
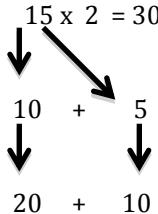
$$32 - 4 \times 5 = 12$$

$$(32 - 4) \times 5 = 140$$

To understand when using a calculator to solve questions involving decimals,  $0.3 = 0.30$



### Progression of the Four Rules

		MULTIPLICATION																															
Year 1	Year 2	Year 3																															
<p><b><u>Mental Maths Multiplication Links</u></b></p> <p>Mental – Count forward in multiples of 2, 5 and 10 from different multiples</p> <p>Make connections between arrays, number patterns and counting in 2’s, 5’s and 10’s (use of tens frame)</p> <p>Grouping objects to count</p>	<p><b><u>Record number sentences with x = signs and missing numbers</u></b></p> <p><math>7 \times 2 = \square</math>      <math>\square = 2 \times 7</math>  <math>7 \times \square = 14</math>      <math>14 = \square \times 7</math>  <math>\square \times 2 = 14</math>      <math>14 = 2 \times \square</math>  <math>\square \times \Delta = 14</math>      <math>14 = \square \times \Delta</math></p> <p><b><u>Arrays (link to commutativity)</u></b>            (Arrays can be linked to use of ten frames)</p> <p style="text-align: center;">   <math>2 \times 4</math> or <math>4 + 4</math> (linked to <math>4 \times 2</math> or <math>2 + 2 + 2 + 2</math>)         </p> <p><b><u>Repeated Addition</u></b></p> <p><math>2 \times 4</math> or <math>4 \times 2</math> or <math>4 + 4</math> or <math>2 + 2 + 2 + 2</math></p> <p style="text-align: center;">  </p> <p><b><u>Doubling using partitioning</u></b></p> <p style="text-align: center;"> <math>15 \times 2 = 30</math>    <u>Partition</u>  <math>10 + 5</math>  <math>20 + 10</math> </p> <p><b><u>Additional multiplication links</u></b></p> <p>Count forward in steps of 2, 3 and 5 from 0</p> <p>Connect multiplying by 10 to place value</p>	<p><b><u>Record number sentences with x = signs and missing numbers</u></b></p> <p>Continue using a range of equations as in Year 2 but with appropriate numbers</p> <p><b><u>Partition using distributive law</u></b></p> <p><math>26 \times 4 = 104</math></p> <p><math>26 \times 4 = (20 \times 4) + (6 \times 4) =</math>  <math>= 80 + 24 = 104</math></p> <p>Progressing to ...</p> <p><b><u>Long Multiplication ( 2 digit x 1 digit)</u></b></p> <p><math>26 \times 4 = 104</math></p> <p style="text-align: right;"> <table style="margin-left: auto; margin-right: auto;"> <tr><td></td><td>H</td><td>T</td><td>O</td><td></td></tr> <tr><td>X</td><td></td><td>2</td><td>6</td><td></td></tr> <tr><td colspan="4"><hr/></td><td>4</td></tr> <tr><td></td><td></td><td>2</td><td>4</td><td>( 6 x 4)</td></tr> <tr><td colspan="4"><hr/></td><td>8 0 (20 x 4)</td></tr> <tr><td></td><td>1</td><td>0</td><td>4</td><td></td></tr> </table> </p> <p><b><u>Doubling using partitioning</u></b>            As Year 2 with relevant numbers</p> <p><b><u>Additional multiplication links</u></b></p> <p>Count forward in steps of 4, 8, 50 and 100 from 0</p> <p>Recognise the link between 2, 4 and 8 times tables using doubling</p>			H	T	O		X		2	6		<hr/>				4			2	4	( 6 x 4)	<hr/>				8 0 (20 x 4)		1	0	4	
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## Progression of the Four Rules

### MULTIPLICATION

#### Year 4

##### Record number sentences with x = signs and numbers

Continue using a range of equations as in Years 2 and 3 with appropriate numbers

##### Short multiplication (2 digit x 1 digit)

$$26 \times 4 = 104$$

(Children understand the distributive law)

$$26 \times 4 = 20 \times 4 + 6 \times 4$$

	H	T	O
		2	6
x	2	4	
	1	0	4

##### Short multiplication (3 digit x 1 digit)

$$342 \times 7 = 2394$$

(Children understand the distributive law)

$$342 \times 7 = 300 \times 7 + 40 \times 7 + 2 \times 7$$

	Th	H	T	O
		3	4	2
x	2	1	7	
	2	3	9	4

##### Additional multiplication links

Count forward in steps of 6, 7, 9, 25 and 1000 from 0

#### Year 5

##### Record number sentences with x = signs and missing numbers

Continue using a range of equations as in Y2 – 4 but with appropriate numbers

##### Short multiplication (4 digit x 1 digit)

$$2741 \times 6 = 16446$$

(Children understand the distributive law)

$$2741 \times 6 = 2000 \times 6 + 700 \times 6 + 40 \times 6 + 1 \times 6$$

	Th	H	T	O
	2	7	4	1
x	4	2	6	
	1	6	4	4
				6

##### Long multiplication (2 digit/ 3 digit/ 4 digit x 2 digit)

$$24 \times 16 = 384$$

(Understanding of distributive law  $24 \times 16 = x6 + 24 \times 10$ )

	H	T	U
		2	4
x	12	6	
	1	4	4
	2	4	0
	3	8	4

$$1675 \times 17 = 384$$

	Th	H	T	U
	1	6	7	5
x	4	5	13	7
				1
	1	1	7	2
	1	6	7	5
	2	8	4	7
				5

##### Multiply whole numbers and decimals by 10, 100, 1000

#### Year 6

##### Record number sentences with x = signs and missing numbers

Continue using a range of equations as in Y2 – 5 but with appropriate numbers

##### Long multiplication (up to 4 digit x 2 digit)

$$1675 \times 17 = 384$$

	Th	H	T	O
	1	6	7	5
x	4	5	13	7
				1
	1	1	7	2
	1	6	7	5
	2	8	4	7
				5

##### Multiplying by decimals

Multiply one digit numbers with up to 2 decimal places by one and two digit numbers (initially using money and measures practically)

$$0.4 \times 2 = 0.8$$

Progressing to ...

Use of distributive law and knowledge of  $\times 10$

$$24 \times 0.8 = 20 \times 0.8 + 4 \times 0.8 =$$

$$= 16 + 3.2 = 19.2$$

##### Multiply simple pairs of proper fractions, writing the answer in simplest form

E.g.

$$\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$$

##### Multiply whole numbers and decimals by 10, 100, 1000 giving answers up to 3 decimal places

##### Record number sentences with symbols and letters to represent variables and unknowns (algebra)

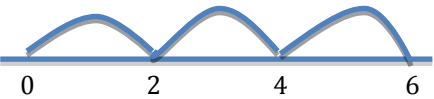
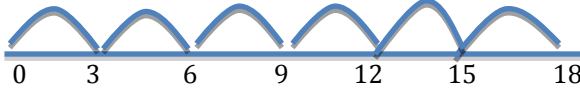
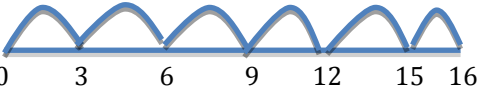
##### Use of a calculator (Only allowed in Level 6 tests)

Know the correct key sentences for calculations

$$56 \times (50 \times 32)$$



## Progression of the Four Rules

		DIVISION	
Year 1	Year 2	Year 2	Year 3
<p><b><u>Informal introduction to division</u></b> Use of concrete objects, pictorial representations and arrays (including tens frames) to share small quantities</p> <p>Concrete objects, pictorial representations and arrays (using tens frames) to find a half or a quarter of a quantity</p>	<p><b><u>Record number sentences with + = signs and missing numbers</u></b></p> $6 \div 2 = \square \quad \square = 6 + 2$ $6 \div \square = 3 \quad 3 = 6 + \square$ $\square \div 2 = 3 \quad 3 = \square + 2$ $\square \div \Delta = 3 \quad 3 = \square \div \Delta$ <p><b><u>Understand division as sharing and grouping</u></b> 6 ÷ 2 can be modelled</p> <p><b><u>Sharing</u></b> – 6 apples are shared between 2 people. How many do they have each? (Tens frame could be used)</p> <p style="text-align: center;">□□□    □□□</p> <p>3 apples each so <math>6 \div 2 = 3</math></p> <p><b><u>Grouping</u></b> – There are 6 apples. How many people can have 2 each? (How many 2's make 6? Count in 2's until you reach 6)</p>  <p>3 groups of 2 makes 6 so <math>6 \div 2 = 3</math></p> <p><b><u>Recognising commutativity</u></b></p> <p>Use inverse facts to develop reasoning e.g. <math>4 \times 5 = 20</math> and so <math>20 \div 5 = 4</math> or <math>20 \div 4 = 5</math></p> <p><b><u>Additional division facts</u></b> Find fractions of quantities including</p> $\frac{1}{2} \quad \frac{1}{3} \quad \frac{1}{4} \quad \frac{2}{4} \quad \frac{3}{4}$	<p><b><u>Record number sentences with ÷ = signs and missing numbers</u></b> Continue using a range of equations as in Y2 but with appropriate numbers</p> <p><b><u>Understand division as sharing and grouping (including 2 digit numbers)</u></b> 18 ÷ 3 can be modelled as: Sharing – 18 shared between 3 (see Y2 diagram) OR Grouping – How many 3's make 18?</p>  <p><b><u>Division with remainders</u></b> <math>16 \div 3 = 5 \text{ r}1</math></p> <p>Sharing – 16 shared between 3, how many left over?</p> <p>Grouping – How many 3's make 16, how many left over? e.g. 1 2 3 4 5 r1</p>  <p><b><u>Short Division (2 digit + 1 digit number)</u></b> <math>96 \div 7 = 14</math></p> $\begin{array}{r} 14 \\ 7 \overline{) 96} \\ \underline{7} \phantom{6} \\ 26 \\ \underline{21} \\ 56 \\ \underline{56} \\ 0 \end{array}$ <p><b><u>Connect tenths to division by 10 and place value</u></b></p>	



### Progression of the Four Rules

		DIVISION	
Year 4	Year 5	Year 5	Year 6
<p><b><u>Record number sentences with ÷ = signs and missing numbers</u></b> Continue using a range of equations as in Y2 &amp; 3 but with appropriate numbers</p> <p><b><u>Short division including remainders (up to 3 digit + 1 digit numbers)</u></b></p> <p>432 ÷ 5 = 86 remainder 2</p> $  \begin{array}{r}  86 \text{ r}2 \\  5 \overline{) 432} \\  \underline{40} \phantom{0} \\  32 \\  \underline{30} \\  2  \end{array}  $	<p><b><u>Record number sentences with ÷ = signs and missing numbers</u></b> Continue using a range of equations as in Y2 but with appropriate numbers</p> <p><b><u>Short Division including remainders (up to 4 digit ÷ 1 digit number)</u></b></p> <p>9138 ÷ 4 = 2284 remainder 2</p> $  \begin{array}{r}  2284 \text{ r}2 \\  4 \overline{) 9138} \\  \underline{8} \phantom{000} \\  13 \phantom{0} \\  \underline{12} \phantom{0} \\  13 \phantom{0} \\  \underline{12} \phantom{0} \\  18 \\  \underline{16} \\  2  \end{array}  $	<p><b><u>Record number sentences with ÷ = signs and missing numbers</u></b> Continue using a range of equations with appropriate numbers</p> <p><b><u>Long Division including interpreting remainders as fractions, decimals (up to 2 decimal places), whole numbers or rounding (up to 4 digit ÷ 2 digit numbers)</u></b></p> <p>432 ÷ 15 = 28 remainder 12 or 28 <math>\frac{4}{5}</math> or 28.8</p> $  \begin{array}{r}  28 \\  15 \overline{) 432} \\  \underline{30} \phantom{0} \\  132 \\  \underline{135} \\  -3  \end{array}  $ <p>(15 x 20) Groups of 15 in 432 – multiples of 10</p> <p>(15 x 8) Group of 15 in 132</p> <p>Group of 15 in 12 (left with remainder/fraction/decimal)</p>	
<p><b><u>Divide one and two digit numbers by 10 and 100</u></b></p> <p><b><u>Divide decimals by 10</u></b></p>	<p><b><u>Showing remainders as a decimal</u></b></p> <p>9138 ÷ 4 = 2284.5</p> $  \begin{array}{r}  2284.5 \\  4 \overline{) 9138.0} \\  \underline{8} \phantom{0000} \\  13 \phantom{000} \\  \underline{12} \phantom{000} \\  13 \phantom{000} \\  \underline{12} \phantom{000} \\  18 \phantom{00} \\  \underline{16} \phantom{00} \\  20 \\  \underline{20} \\  0  \end{array}  $	<p><b><u>Short Division including interpreting remainders according to context (up to 4 digit ÷ 2 digit number)</u></b></p> <p>45 r1 or 45 <math>\frac{1}{11}</math></p> $  \begin{array}{r}  45 \\  11 \overline{) 456} \\  \underline{44} \phantom{0} \\  16 \\  \underline{15} \\  11  \end{array}  $	
	<p><b><u>Divide whole numbers and decimals by 10, 100, 1000</u></b></p>	<p><b><u>Divide whole numbers and decimals by 10, 100, 1000 giving answers up to 3 decimal places</u></b></p> <p><b><u>Divide numbers with up to 2 decimal places by one and two digit numbers</u></b></p> <p><b><u>Divide proper fractions by whole numbers</u></b> E.g. <math>\frac{1}{3} \div 2 = \frac{1}{6}</math></p> <p><b><u>Associate a fraction with division and calculate decimal fraction equivalences</u></b> E.g. <math>\frac{3}{8} = 0.375</math></p> <p><b><u>Use of calculator (only allowed in Level 6 tests)</u></b> Know the correct key sequence for calculations <math>56 \div (9-2) = 8</math></p>	





## Progression of the Four Rules