
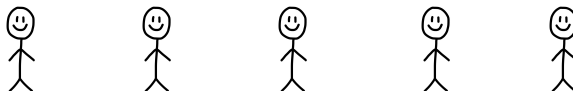



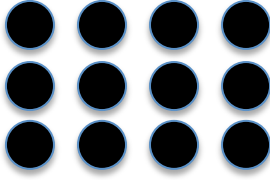


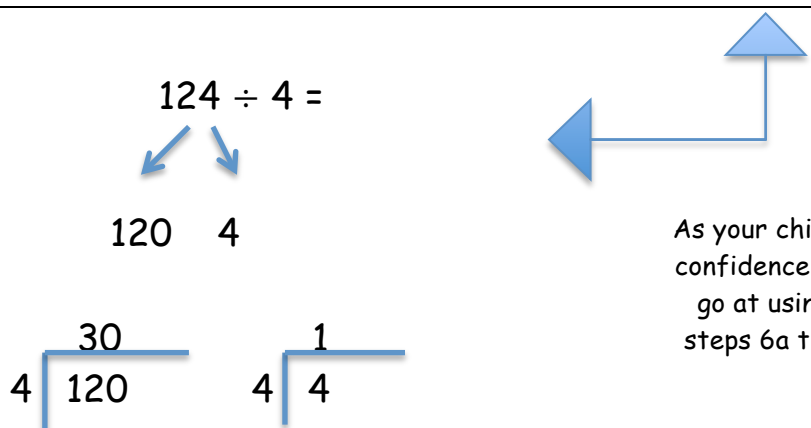
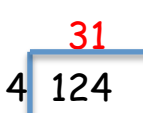
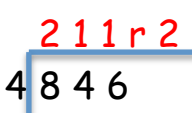
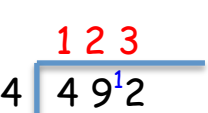
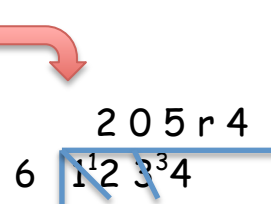
Division at Falconbrook Primary School


Handout for Parents

*Make practicing number work fun, when possible present it like a game...and always do it **together**.*

Steps	Examples
<p><u>Step 1</u></p> <p>Division as sharing into equal amounts (grouping).</p>	<p>Children physically share items into equal groups as practical activities.</p> <ul style="list-style-type: none"> • If we share 10 cherries between 5 children, how many will each child get? <div style="text-align: center; margin: 10px 0;">  </div> <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> • 50 fingers on 10 waving hands. How many people do they belong to? <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> • 100 wriggling toes. How many pairs of feet? <div style="text-align: center; margin: 10px 0;">  </div>
<p><u>Step 2</u></p> <p>Division as subtracting groups of the same quantity or multiple quantities.</p>	<p>Children recognise division as being the same as repeated subtraction; making links with counting in 2s, 5s and 10s in a practical way.</p> <ul style="list-style-type: none"> • 20 shared between 10: $20 \div 10 = 2$ <div style="margin: 10px 0;"> $\begin{array}{r} 20 \\ - 2 \\ \hline 18 \\ - 2 \\ \hline 16 \\ - 2 \\ \hline 14 \\ - 2 \\ \hline 12 \\ - 2 \\ \hline 10 \\ - 2 \\ \hline 8 \\ - 2 \\ \hline 6 \\ - 2 \\ \hline 4 \\ - 2 \\ \hline 2 \\ - 2 \\ \hline 0 \end{array}$ </div> <ul style="list-style-type: none"> • 50 fingers divided into groups of 10: $50 \div 10 = 5$ <div style="margin: 10px 0;"> $\begin{array}{r} 50 \\ - 10 \\ \hline 40 \\ - 10 \\ \hline 30 \\ - 10 \\ \hline 20 \\ - 10 \\ \hline 10 \\ - 10 \\ \hline 0 \end{array}$ </div> <div style="text-align: center; margin: 10px 0;">  </div>
<p><u>Step 3</u></p> <p>Multiplication and division as an Array</p>	<p>Children recognise the direct link between multiplication (arrays) and dividing into sets for example: arrays</p> <div style="margin: 10px 0;"> $4 \times 3 = 12$ $12 \div 4 = 3$ $12 \div 3 = 4$ </div> <div style="margin: 10px 0;">  </div> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> <p>Turn array around (3 x 4) see how the answer is the same!</p> </div> <div style="width: 30%; text-align: right;"> <p>Arrays can also be used to support related division facts: $12 \div 3 = 4$ and $12 \div 4 = 3$.</p> </div> </div>

<p><u>Step 4</u></p> <p>Division by 10, 100 and 1000</p>	<p>When dividing by 10, 100 (and 1000), the number moves down the column on the place value chart (getting smaller) becoming a decimal fraction. Dispel the misconception that all that is needed is to remove zeros. (See Multiplication Policy for inverse - multiplication).</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">TH</td> <td style="text-align: center;">H</td> <td style="text-align: center;">T</td> <td style="text-align: center;">Os.</td> <td style="text-align: center;">$\frac{1}{10}$</td> <td style="text-align: center;">$\frac{1}{100}$</td> <td style="text-align: center;">$\frac{1}{1000}$</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center; color: red;">4</td> <td style="text-align: center; color: red;">0</td> <td style="text-align: center; color: red;">0</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center; color: blue;">4</td> <td style="text-align: center; color: blue;">0</td> <td></td> <td></td> <td></td> <td style="text-align: right; color: blue;">(400 ÷ 10 = 40)</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center; color: blue;">4</td> <td></td> <td></td> <td></td> <td style="text-align: right; color: blue;">(400 ÷ 100 = 4)</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center; color: blue;">0 . 4</td> <td></td> <td></td> <td></td> <td style="text-align: right; color: blue;">(400 ÷ 1000 = 0.4)</td> </tr> </table>	TH	H	T	Os.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$			4	0	0							4	0				(400 ÷ 10 = 40)				4				(400 ÷ 100 = 4)				0 . 4				(400 ÷ 1000 = 0.4)
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<p><u>Step 5 a</u></p> <p>Partitioning and Looping Method</p> <p>Using understanding of multiplication by 10.</p>	<p>Encourage your child to use jotting when calculating mentally.</p> <div style="text-align: center;"> $24 \div 4 =$ </div>																																								
<p><u>Step 5 b</u></p> <p>Partitioning & use of jottings with 3 digits by 1 digit</p>	<p>At this stage your is ready to record each step, of the calculation.</p> <div style="text-align: center;"> $124 \div 4 =$ </div> <p style="text-align: right; color: red;">$25 + 5 + 1 = 31$</p> <p> $100 \div 4 = 25$ (4x25) $20 \div 4 = 5$ (4x5) $4 \div 4 = 1$ (4x1) </p>																																								
<p><u>Step 5 c</u></p> <p>Short division</p> <p>Partitioning and inverse</p>	<p style="text-align: center;">$124 \div 4 = 31$</p> <p style="text-align: right; color: red;">$25 + 5 + 1 = 31$</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> $4 \overline{) 100}$ 25 (25 x 4) </div> <div style="text-align: center;"> $4 \overline{) 20}$ 5 (5 x 4) </div> <div style="text-align: center;"> $4 \overline{) 4}$ 1 </div> </div>																																								

<p><u>Step 6 a</u></p> <p>Short division Moving towards formal method</p>	<div style="text-align: center;"> $124 \div 4 =$  </div> <div style="text-align: center; margin-top: 20px;"> $\begin{array}{r} 30 \\ + 1 \\ \hline 31 \end{array}$ </div> <p style="text-align: right;">As your child gains confidence, have a go at using the steps 6a then 6b</p>
<p><u>Step 6 b</u></p> <p>Short division</p>	<div style="text-align: center;"> $124 \div 4 =$  </div> <p style="text-align: right;">As your child gains confidence, use bigger numbers.</p>
<p><u>Step 7 a</u></p> <p>Short division with remainders</p>	<div style="text-align: center;"> $846 \div 4 =$  </div> <div style="border: 1px solid black; padding: 10px; margin-top: 20px; width: fit-content; margin-left: auto; margin-right: auto;"> $\begin{array}{ll} 8 \div 4 = 2 & 2 \times 4 = 8 \\ 4 \div 4 = 1 & 4 \times 1 = 4 \\ 6 \div 4 = 1 \text{ r } 2 & 4 \times 1 + 2 = 6 \end{array}$ </div> <p style="text-align: right;">As your child gains confidence, use bigger numbers.</p>
<p><u>Step 7 b</u></p> <p>Short division Remainders that shift and exchange</p>	<div style="text-align: center;"> $492 \div 4 =$  </div> <div style="border: 1px solid black; padding: 10px; margin-top: 20px; width: fit-content; margin-left: auto; margin-right: auto;"> $\begin{array}{l} 4 \div 4 = 1 \\ 9 \div 4 = 2 \text{ r } 1 \text{ ten} \\ 1 \text{ ten} \text{ \& } 2 = 12 \\ 12 \div 4 = 3 \end{array}$ </div>
<p><u>Step 8</u></p> <p>Short division recognising dividing by zeros.</p>	<div style="text-align: center;"> $1234 \div 6 =$  </div> <p style="color: red;">Note: A common mistake is for children to put answer to first part of the division in the wrong place value column.</p> <p style="color: red;">Remember, when numbers are too small to divide into the divisor, put a zero in the answer space and shift the number along on to the next, except at the start.</p>

<p><u>Step 9</u></p> <p>Short division with a decimal point.</p>	<p>$£4.68 \div 6 =$ $£0.78$ or 78p</p> $\begin{array}{r} 0.78 \\ 6 \overline{) 4.68} \end{array}$ <p>Children who are not at this stage by Autumn term of Year 5, will be supported to move swiftly through the previous stages in order to meet this standards as soon as possible.</p>
<p><u>Step 10</u></p> <p>Formal Long division with remainders using larger numbers</p> <p>The National curriculum states that children should be using this method in Year 6.</p>	<p>$86421 \div 6 =$</p> $\begin{array}{r} 14403 \text{ r } 3 \\ 6 \overline{) 86421} \\ \underline{- 6} \\ 26 \\ \underline{- 24} \\ 24 \\ \underline{- 24} \\ 02 \\ \underline{- 0} \\ 21 \\ \underline{- 18} \\ 3 \end{array}$ <p>1×6 4×6 4×6 0×6 3×6</p> <p>Note: Children may need to use jottings as they go.</p> 
<p><u>Step 11</u></p> <p>Formal Long division where remainders become decimal numbers</p> <p>The National curriculum states that children should be using this method in Year 6.</p>	<p>$86421 \div 16 = 5401.3125$ (4 decimal places could be rounded to 3 or 2 decimal places)</p> $\begin{array}{r} 5401.3125 \\ 16 \overline{) 86421.0000} \\ \underline{- 80} \\ 64 \\ \underline{- 64} \\ 02 \\ \underline{- 0} \\ 21 \\ \underline{- 16} \\ 50 \\ \underline{- 48} \\ 20 \\ \underline{- 16} \\ 40 \\ \underline{- 32} \\ 80 \\ \underline{- 80} \\ 0 \end{array}$ <p>5×16 4×16 0×16 1×16 3×16 1×16 2×16 5×16</p> <p>Note: For remainders to be shared equally, add a decimal point and zeros as place-holders to shift and exchange remainders, so that they can be divided equally.</p>

