





Glen Hills Primary School Calculation Policy

Division




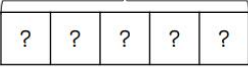
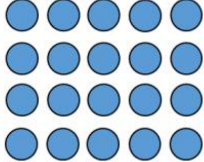
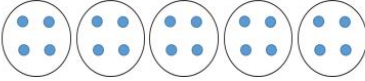
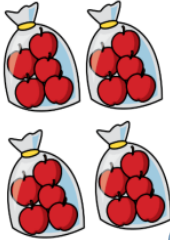
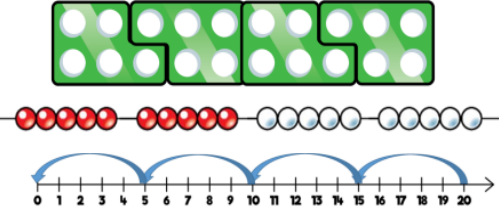
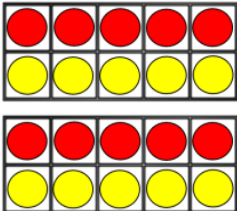
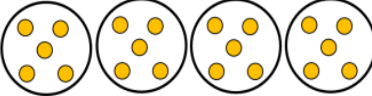
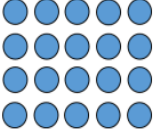
All children will develop skills in mental calculation alongside the development of written methods. Children by the end of Year 6 need to be confident and competent in choosing the most efficient method appropriate to the numbers given.

Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
4+			<p>The children practically explore patterns in numbers up to 10 including how quantities can be shared equally.</p> <p>Fingers  Numicon </p> <p>cubes </p> <p><u>everyday</u> objects (anything and everything!) </p>	<p>equal equal groups equally same share sort fair</p>
Year 1	Counting in 2, 5 and 10 in different ways linked to actions, practical activities, rhymes and songs.	Children record written division pictorially and then formally ($20 \div 2 = 10$).	The children solve simple one-step division questions, by calculating the answer using concrete objects (see 4+), pictorial representations, bar modelling and arrays with the support of the teacher. They do this by grouping and counting the number of groups encouraging them to link it to counting in multiples.	<p><i>Vocabulary from previous years and also:</i></p> <p>lots of groups of, left, left over divide tens ones</p>



Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
			<p>There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag?</p> <p>$20 \div 5 = 4$</p>	
<p>Year 2</p>	<p>Recall and use division facts for the 2, 5 and 10 multiplication tables using songs, games and practice (linked to x table facts).</p>	<p>They write and calculate mathematical statements for division within the 2, 5 and 10 x tables and write them using the division (\div) and equals (=) signs:</p> <p>$15 \div 3 = 5$</p> <p>They explore the links between multiplication and division practically and begin to use these facts: e.g.</p>	<p>The children continue to use practical materials (see 4+/Year 1), arrays, repeated addition, and knowledge of their times table and division facts to divide. Children draw pictures and bar models to support their division more independently:</p>	<p><i>Vocabulary from previous years and also:</i></p> <p>Part-whole model partition partitioning</p>



Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
		$3 \times 5 = 15$ $5 \times 3 = 15$ $15 \div 3 = 5$ $15 \div 5 = 3$	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; align-items: center; margin-bottom: 20px;">  <div style="margin-left: 20px;"> 20  </div> </div> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px; text-align: center; margin-bottom: 20px;"> <p>There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag?</p> </div> <div style="display: flex; align-items: center; margin-bottom: 20px;">  <div style="margin-left: 20px;">  <p style="margin-top: 10px;">$20 \div 5 = 4$</p> </div> </div> <hr style="width: 100%;"/> <div style="display: flex; align-items: center; margin-bottom: 20px;">  <div style="margin-left: 20px;">  </div> </div> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px; text-align: center; margin-bottom: 20px;"> <p>There are 20 apples altogether. They are put in bags of 5. How many bags are there?</p> </div> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;">   <p style="margin-top: 10px;">$20 \div 5 = 4$</p> </div> </div> </div>	


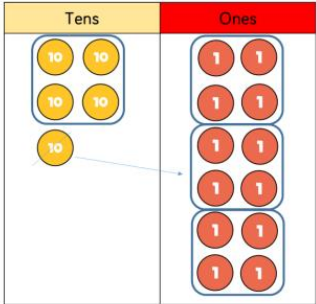
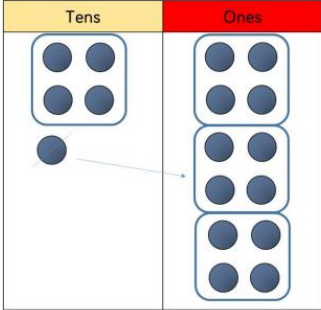
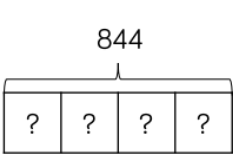
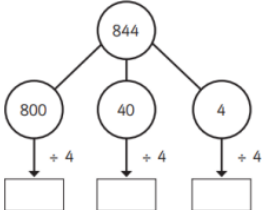


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<p>Year 3</p>	<p>Recall and use division facts for the 3, 4 and 8 multiplication tables (linked to x table facts) using songs, games and practice.</p> <p>Dividing by 2 – Partition the number and divide the 10's then the 1's.</p> <p>When dividing an odd number, partition using an even number of tens first (e.g. $32 \div 2$. Instead of partitioning into 30 and 2. Partition into 20 and 12 then divide).</p>	<p>Children continue to record division as a number sentence:</p> $15 \div 3 = 5$	<p>Children continue to use their known x table facts, concrete objects (see 4+) and pictorial representations to divide. They begin to explore remainders and they begin to see division where things cannot be shared equally.</p> <p>Children use the part-whole model to divide larger numbers:</p> <div style="text-align: center;"> </div> <p>They partition odd numbers to give an even number of tens to divide if helpful:</p> <div style="text-align: center;"> </div>	<p><i>Vocabulary from previous years and also:</i></p> <p>left, left over remainder</p>



Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
			<p style="text-align: center;">$53 \div 4 = 13 \text{ r}1$</p> <p>(4 rows in the grids as $\div 4$. If $\div 3$, 3 rows needed etc.)</p>	
<p>Year 4</p>	<p>Recall and use division facts for all x tables up to 12 x 12 (linked to x facts).</p>	<p>Children begin to use the short method to divide numbers of up to 3 digits. Language is important (see example below) – How many groups of 4 tens can we make? How many groups of 4 ones can we make?). It is essential this is supported by modelling.</p>	<p>Children continue to use and see place value grids, the part-whole model and bar model alongside the short method to divide. It is essential that they do this so they fully understand what they are calculating.</p>	<p><i>Vocabulary from previous years and also:</i></p> <p>short division</p> <p>divisor</p>



Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary															
		<p><u>Short division:</u></p> 	  <p>$52 \div 4 = 13$</p> <p>$844 \div 4 = 122$</p>  <table border="1" data-bbox="1330 975 1541 1142"> <thead> <tr> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td>100 100</td> <td>10</td> <td>1</td> </tr> <tr> <td>100 100</td> <td>10</td> <td>1</td> </tr> <tr> <td>100 100</td> <td>10</td> <td>1</td> </tr> <tr> <td>100 100</td> <td>10</td> <td>1</td> </tr> </tbody> </table> 	H	T	O	100 100	10	1	100 100	10	1	100 100	10	1	100 100	10	1	
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<p>Year 5</p>	<p>Divide whole numbers by 10, 100 and 1000 using place value (moving the digits 1, 2 or 3 spaces to the right).</p> <p>Dividing a number when the dividend is a multiple in the same times table as the divisor: e.g. $448 \div 4 = 112$ $393 \div 3 = 121$</p> <p>Children divide mentally when a calculation is based on a multiple of times tables facts. e.g. $300 \div 6 = 50$ $1000 \div 5 = 200$</p>	<p>Children continue to use short division (see Year 4) with numbers up to 4 digits.</p> <p><u>Short division:</u></p> <table border="1" data-bbox="656 512 925 624"> <tr> <td></td> <td>4</td> <td>2</td> <td>6</td> <td>6</td> </tr> <tr> <td>2</td> <td>8</td> <td>5</td> <td>13</td> <td>12</td> </tr> </table> <p>They begin to use long division when dividing by 2 digit numbers. These calculations do not involve remainders in Year 5.</p> <p><u>Long division:</u> They begin by making a list of multiples for the divisor (a 'lovely list').</p> <p>They then: Divide Multiply Subtract Bring down</p> <p>And repeat until they complete the division.</p>		4	2	6	6	2	8	5	13	12	<p>Children continue to see place value counters and group them to divide. As questions involve more exchanges, the use of counters is less helpful and the children are increasingly using the formal written method.</p> <div data-bbox="1077 491 1509 735"> </div> <table border="1" data-bbox="1543 580 1760 671"> <tr> <td></td> <td></td> <td>2</td> <td>1</td> <td>4</td> </tr> <tr> <td>4</td> <td>8</td> <td>5</td> <td>1</td> <td>6</td> </tr> </table> <div data-bbox="1055 954 1317 1018"> <p>$856 \div 4 = 214$</p> </div> <div data-bbox="1339 762 1776 1007"> </div>			2	1	4	4	8	5	1	6	<p><i>Vocabulary from previous years and also:</i></p> <p>long division</p> <p>multiple</p>
	4	2	6	6																				
2	8	5	13	12																				
		2	1	4																				
4	8	5	1	6																				



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Year 6	Divide decimal numbers by 10, 100 and 1000 using place value (moving the digits 1, 2 or 3 spaces to the right).	<p>The children continue to use both long and short division (see Year 5). They encounter remainders with both long and short division and can show their remainder as a remainder, fraction, decimal or round up or down as appropriate to the contexts.</p>		<i>Vocabulary from previous years and also:</i>

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		<p><u>Remainder as a fraction</u></p> $7042 \div 16 = 440 \frac{2}{16} = 440 \frac{1}{8}$		