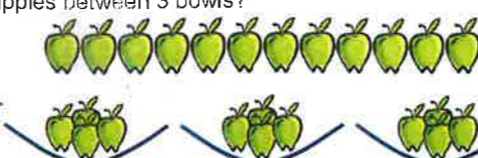
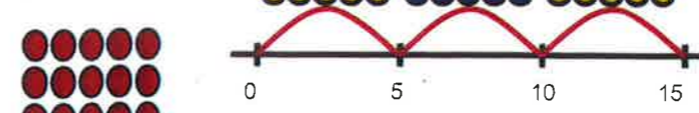
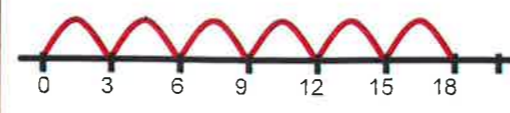
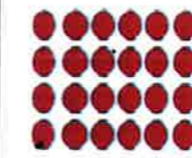
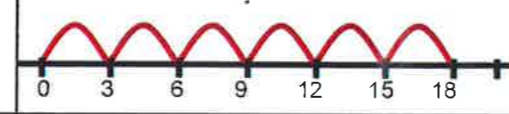
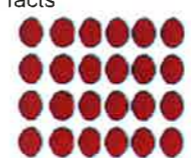


Calculation Policy - Brimpton C.E Primary School

Division

	Rapid Recall/Mental Calculations	Written	Problem solving			Non-statutory guidance		
Y1			Solve one-step problems by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	<p>Pictures/Symbolic</p> <p>How many apples in each bowl if I share 12 apples between 3 bowls?</p> 	<p>Visual (modelled using bead strings)</p> <p>$15 \div 5 = 3$</p> 	<p>Recognise/find/name $\frac{1}{2}$ as one of two equal parts of an object, shape or quantity.</p> <p>Recognise/find/name $\frac{1}{4}$ as one of four equal parts of an object, shape or quantity</p>	<p>Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.</p> <p>They make connections between arrays, number patterns, and counting in twos, fives and tens.</p>	
Y2	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	<p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs</p> <p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.</p>	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	<p>Visual</p> <p>Using number line or bead strings</p> <p>$18 \div 3 = 6$</p> 	<p>Arrays using tables facts</p> <p>$24 \div 4 = 6$</p> 	<p>Partitioning to divide by 2 - halving</p> <p>$32 \div 2 = 16$</p> <p>$30 \div 2 = 15$</p> <p>$2 \div 2 = 1$</p> <p>Repeat to divide by 4</p> <p>$32 \div 2 = 16$</p> <p>$32 \div 4 = 8$</p>	<p>Pupils are introduced to the multiplication tables. They practise to become fluent in the 2, 5 and 10 multiplication tables and connect them to each other.</p> <p>They begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.</p> <p>They use commutativity and inverse relations to develop multiplicative reasoning (for example, $4 \times 5 = 20$ and $20 \div 5 = 4$).</p>	
Y3	Recall and use division facts for the 3, 4 and 8 multiplication tables.	Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	<p>'Chunking' to be used as an informal method where appropriate e.g.</p> <p>$51 \div 3 = 17$ ($10 \times 3 = 30$) ($7 \times 3 = 21$)</p>	<p>Visual using tables facts</p> <p>Using number line or bead strings</p> <p>$18 \div 3 = 6$</p> 	<p>Arrays</p> <p>Using tables facts</p> <p>$24 \div 4 = 6$</p> 	<p>Use tables facts to solve division problems with remainders. Set out using 'bus stop'.</p> <p>$4 \overline{) 33} \begin{matrix} 8 \\ r1 \end{matrix}$</p>	<p>Pupils develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division.</p>
Y4	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.	Short division is in non-statutory guidance for year 4		<p>'Chunking' to be used as an informal method where appropriate</p>	<p>Use short division of numbers up to three digits, with carrying and remainders.</p> <p>$3 \overline{) 693} \begin{matrix} 231 \end{matrix}$</p> <p>$4 \overline{) 4512} \begin{matrix} 113 \end{matrix}$</p> <p>$3 \overline{) 4157} \begin{matrix} 1382 \\ r1 \end{matrix}$</p>		<p>Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example $600 \div 3 = 200$ can be derived from $2 \times 3 = 6$).</p> <p>Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers (see Mathematics Appendix 1).</p>	
Y5	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Multiply and divide numbers mentally drawing upon known facts. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.	<p>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p> <p>Solve problems involving addition, subtraction, multiplication and division. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p>	<p>'Chunking' to be used as an informal method where appropriate</p>	<p>Short division of numbers up to 3 digits including carrying and remainders (as year 4)</p> <p>$3 \overline{) 4157} \begin{matrix} 1382 \\ r1 \end{matrix}$</p>	<p>Short division of numbers up to four digits. Interpret remainders appropriately for the context:</p> <p>$4 \overline{) 45178} \begin{matrix} 1144 \\ r2 \end{matrix}$</p> <p>$(1144 \frac{2}{4})$</p> <p>$1144 \frac{1}{2}$</p>	<p>Pupils practise and extend their use of the formal written methods of short multiplication and short division (see Mathematics Appendix 1). They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.</p> <p>Pupils interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example, $98 \div 4 = 4$ $98 = 24 \times 4 = 96$ $1 = 24.5 \approx 25$).</p>	
Y6	Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and prime numbers.	Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Use their knowledge of the order of operations to carry out calculations involving the four operations.	<p>Short division of decimals</p> <p>$7 \overline{) 43.68} \begin{matrix} 6.24 \end{matrix}$</p>	<p>Short division of numbers up to four digits. Interpret remainders as whole number remainders, fractions, decimals or by rounding as appropriate for the context.</p> <p>$4 \overline{) 45178} \begin{matrix} 1144 \\ r2 \end{matrix}$</p> <p>$4 \overline{) 45178.20} \begin{matrix} 1144.5 \end{matrix}$</p> <p>$1144 \frac{1}{2}$</p>	<p>Long division. Interpret remainders appropriately.</p> <p>$1 \times 15 = 15$ $2 \times 15 = 30$ $3 \times 15 = 45$ $4 \times 15 = 60$ $5 \times 15 = 75$ $6 \times 15 = 90$ $7 \times 15 = 105$ $8 \times 15 = 120$</p> <p>$15 \overline{) 288} \begin{matrix} 19.2 \end{matrix}$</p>	<p>Pupils practise addition, subtraction, multiplication and division for larger numbers, using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division (see Mathematics Appendix 1).</p>	