



Barnfields Primary School
'Believe & Achieve'



Barnfields Primary School

Calculation Policy

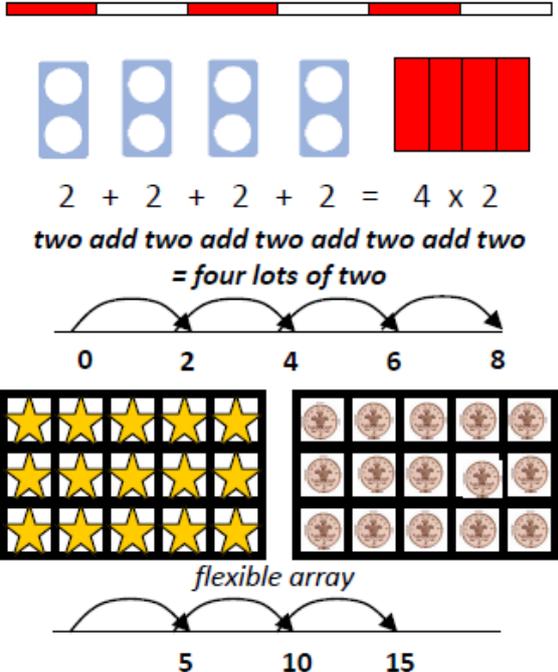
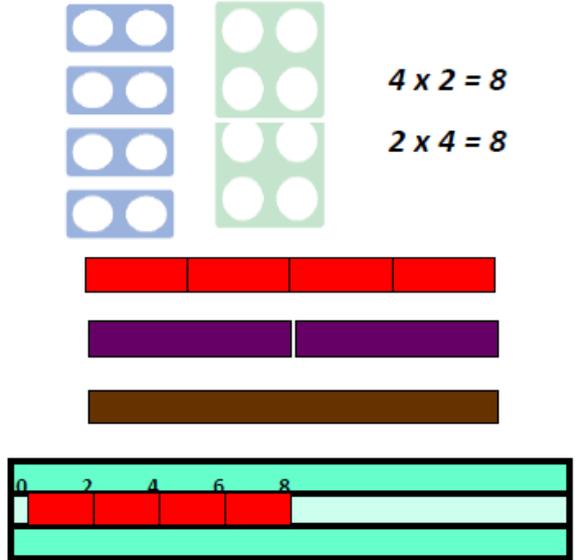
Year 2

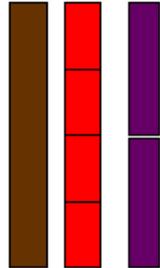


Addition Calculation: Year 2	
Mental Calculation	<ul style="list-style-type: none"> • Add numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> ➤ a two-digit number and ones ➤ a two-digit number and tens ➤ two two-digit numbers ➤ adding three one-digit numbers • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
Written Calculation	<ul style="list-style-type: none"> • Show that addition of two numbers can be done in any order (commutative). • Re-partition numbers • Use a hundred square • Check calculations using the inverse by adding numbers in a different order. • Begin to record addition in columns to begin to support place value and prepare for formal written methods with larger numbers.
Possible Concrete and Visual Representations	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Tens 10: </p> <p>Units/Ones 1s 1s: </p> <p>Cuisenaire</p> <p>Bar Model</p> <p>Numbered and partially numbered number lines</p> <p>Use Numicon, number grids, place value apparatus/Dienes, place value grids, place value cards, Encourage children to partition numbers rather than counting in ones.</p> </div> <div style="width: 45%;"> <p>Teacher Modelling/Children's Recordings</p> <p>Towards a Written Method Partitioning in different ways and recombine</p> <p>47+25</p> <p>47 25 = 60 + 12</p> <p>Leading to exchanging: 72</p> <p>Expanded written method</p> $40 + 7 + 20 + 5 =$ $40 + 20 + 7 + 5 =$ $60 + 12 = 72$ </div> </div>	
Fluency	<ul style="list-style-type: none"> ◆ Show increasing fluency in deriving pairs of numbers up to 10 and then up to 20 ◆ Use knowledge to derive and use number facts up to 100 ◆ Add numbers mentally including TO + O, TO + tens, TO + TO, O + O + O

Subtraction Calculation: Year 2	
Mental Calculation	<ul style="list-style-type: none"> Subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> a two-digit number and ones a two-digit number and tens two two-digit numbers Jottings to support informal methods
Written Calculation	<ul style="list-style-type: none"> Written recording using a column method.
Possible Concrete and Visual Representations	Teacher Modelling/Children's Recordings
<p>10 - 4</p> <p>Finding the difference</p> <p>Children should use concrete materials and pictorial representations, and use numbers in different contexts e.g, money and measures, Encourage children to partition numbers rather than counting in ones.</p> <p>20 2</p> <p>0 10 20 30 40 50 60 70 80 90 Numbered and partially numbered number lines</p> <p>Cuisenaire 10 Bar Model 7 ?</p>	<p>Children apply, develop and secure their understanding of place value and begin to record using jottings and number sentences</p> <p>16 - 3</p> <p><i>no exchanging</i></p> <p>26 - 8</p> <p><i>exchanging</i></p> <p>exchange ten for ten ones</p>
Fluency	<ul style="list-style-type: none"> Practise addition and subtraction facts to 20 Show increasing fluency in deriving subtraction facts for numbers up to 10 and then up to 20 Use known facts to 20 to derive new facts e.g. $3 + 7 = 30 + 70$ Use knowledge to derive and use subtraction number facts up to 100

Multiplication Calculation: Year 2

<p>Mental Calculation</p>	<ul style="list-style-type: none"> • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, connecting the 2, 5 and 10 multiplication tables to each other. • Connect the 10 multiplication table to place value. • Recognise odd and even numbers. • Show that multiplication of two numbers can be done in any order (commutative). • <i>Use a variety of language to describe multiplication and division.</i> • Apply doubling of numbers up to ten to doubling larger numbers.
<p>Written Calculation</p>	<ul style="list-style-type: none"> ◆ Calculate mathematical statements for multiplication and division within the multiplication tables and ◆ Write them using the multiplication (×), division (÷) and equals (=) signs ◆ <i>Begin to use other multiplication tables and recall facts to perform written calculations</i> ◆ <i>Use a range of materials and contexts ... including arrays and repeated addition</i>
<p>Possible Concrete and Visual Representations</p>	<p>Teacher Modelling/Children's Recordings</p>
 <p> $2 + 2 + 2 + 2 = 4 \times 2$ <i>two add two add two add two add two</i> <i>= four lots of two</i> </p> <p><i>flexible array</i></p>	<p>Record practical work as number sentences</p>  <p> $4 \times 2 = 8$ $2 \times 4 = 8$ </p> <p> $7 \times 2 = \square$ $7 \times \square = 14$ $\square \times 2 = 14$ $\triangle \times \square = 14$ </p>
<p>Fluency</p>	<ul style="list-style-type: none"> ◆ Count in twos, threes, fives from zero and tens from any number ◆ e.g. 6, 8, 10, 12 etc. ◆ Emphasise number patterns ◆ Introduction to multiplication tables. Practise to become fluent in multiplication facts for 2, 5 and 10 ◆ Solve multiplication problems mentally

Division Calculation: Year 2	
Mental Calculation	<ul style="list-style-type: none"> ❖ Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers . ❖ Calculate mathematical statements for multiplication and division within ❖ the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs .
Written Calculation	<ul style="list-style-type: none"> ◆ Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ◆ Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
Possible Concrete and Visual Representations	Teacher Modelling/Children's Recordings
<p><i>See possible representations used in Year 1</i></p>	<p>Record as number sentences using \div and $=$</p> <p style="text-align: center;">$8 \div 4$</p> <p>Eight divided into four equal groups = two in each group</p> <p style="text-align: center;">$8 \div 4 = 2$</p>   <p><i>Eight can be divided into four equal groups of two or two equal groups of four</i></p>
Fluency	<ul style="list-style-type: none"> ◆ Count back in twos, threes, fives from zero and tens from any number ◆ e.g. 12, 10, 8, 6 etc. ◆ Emphasise patterns ◆ Connect ten times table to place value and five times table to divisions on a clock face ◆ Introduction to multiplication tables. Practise to become fluent in division facts for 2, 5 and 10 ◆ Solve division problems involving grouping and sharing