
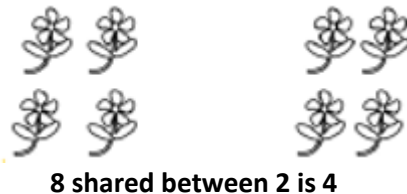
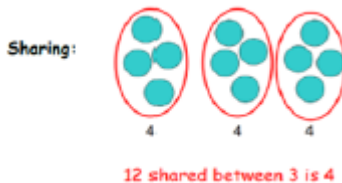

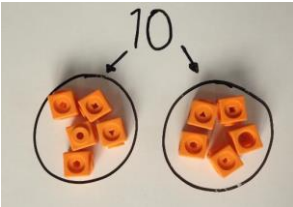


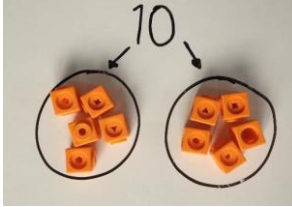
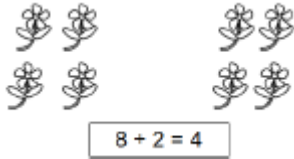




Division Calculation Policy (CPA Approach)

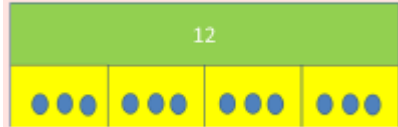


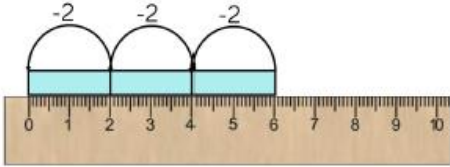
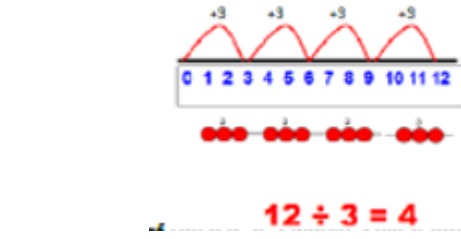
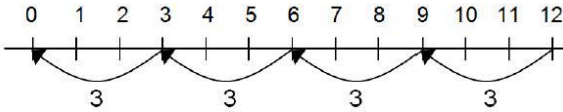

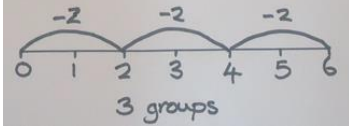
<u>Year 1</u> <u>Objective</u> <u>and</u> <u>Strategies</u>	<u>Concrete</u>	<u>Pictorial</u>	<u>Abstract</u>		
Division as sharing	<p>I have 10 cubes, can you share them equally in 2 groups? Also use counters, bead strings, dienes, actual objects.</p> 	<p>Children use pictures or shapes to share quantities.</p>  <p><u>8 shared between 2 is 4</u></p>  <p>Sharing:  4 4 4 12 shared between 3 is 4</p>	<p>12 shared between 3 is 4</p> <p>$6 + 2 = 3$</p> <table border="1"><tr><td>3</td><td>3</td></tr></table> <p>Children should also be encouraged to use their 2 times tables facts.</p>	3	3
3	3				



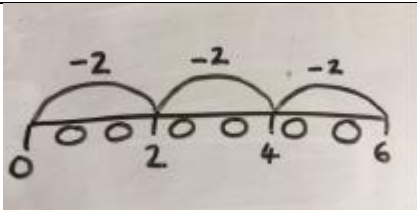


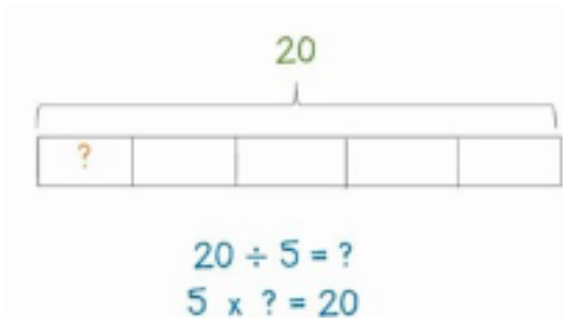
	 <p>Sharing using a range of objects. $6 \div 2$</p>  		
<u>Year 2</u> <u>Objective</u> <u>and</u> <u>Strategies</u>	<u>Concrete</u>	<u>Pictorial</u>	<u>Abstract</u>
Division as sharing	<p>I have 10 cubes, can you share them equally in 2 groups? Also use dienes, counters, objects.</p> 		<p>$28 \div 7 = 4$</p> <p>Divide 28 into 7 groups. How many are in each group?</p>



Division Calculation Policy (CPA Approach)

		<p>Children use bar modelling to show and support understanding.</p>  <p>$12 \div 4 = 3$</p>	
Division as grouping	<p>Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.</p>   <p>Repeated subtraction using Cuisenaire rods above a ruler. $6 \div 2$</p>  <p>3 groups of 2</p>	<p>Use number lines for grouping</p>  <p>$12 \div 3 = 4$</p>  <p>Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group.</p>  <p>$20 \div 5 = ?$ $5 \times ? = 20$</p>	<p>$28 \div 7 = 4$</p> <p>Divide 28 into 7 groups. How many are in each group?</p>  <p>3 groups</p>



			
<u>Year 3 Objective and Strategies</u>	<u>Concrete</u>	<u>Pictorial</u>	<u>Abstract</u>
Division as grouping	<p>Use cubes, counters, objects or place value counters to aid understanding.</p>  <p>24 divided into groups of 6 = 4</p> $96 \div 3 = 32$ 	<p>Continue to use bar modelling to aid solving division problems.</p> 	<p>How many groups of 6 in 24?</p> $24 \div 6 = 4$

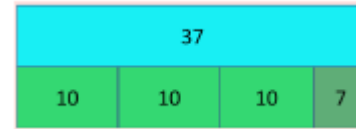


Division Calculation Policy (CPA Approach)

<p>Division with arrays</p>	<div data-bbox="497 263 828 478" data-label="Image"> </div> <p>Link division to multiplication by creating an array and thinking about the number sentences that can be created.</p> <p>Eg $15 \div 3 = 5$ $5 \times 3 = 15$ $15 \div 5 = 3$ $3 \times 5 = 15$</p>	<p>Draw an array and use lines to split the array into groups to make multiplication and division sentences</p> <div data-bbox="1003 406 1534 646" data-label="Image"> </div>	<p>Find the inverse of multiplication and division sentences by creating eight linking number sentences.</p> <p>$7 \times 4 = 28$ $4 \times 7 = 28$ $28 \div 7 = 4$ $28 \div 4 = 7$ $28 = 7 \times 4$ $28 = 4 \times 7$ $4 = 28 \div 7$ $7 = 28 \div 4$</p>
<p>Division with remainders</p>	<p>$14 \div 3 =$</p> <p>Divide objects between groups and see how much is left over</p> <div data-bbox="452 938 828 1157" data-label="Image"> </div>	<p>Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder.</p> <div data-bbox="963 917 1556 1037" data-label="Figure"> </div> <p>Draw dots and group them to divide an amount and clearly show a remainder.</p> <div data-bbox="985 1189 1534 1316" data-label="Image"> </div> <p>Use bar models to show division with remainders.</p>	<p>Complete written divisions and show the remainder using r.</p> <p>$29 \div 8 = 3 \text{ REMAINDER } 5$</p> <div data-bbox="1646 917 2004 997" data-label="Diagram"> </div>



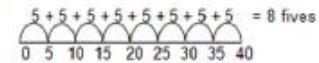
Division Calculation Policy (CPA Approach)



Example without remainder:

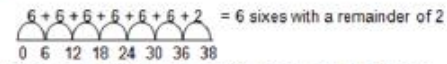
$$40 \div 5$$

Ask "How many 5s in 40?"



Example with remainder:

$$38 \div 6$$



For larger numbers, when it becomes inefficient to count in single multiples, bigger jumps can be recorded using known facts.



St. John's
CE Primary School

Division Calculation Policy (CPA Approach)

<u>Year 4,5 and 6 Objective and Strategies</u>	<u>Concrete</u>	<u>Pictorial</u>	<u>Abstract</u>



Division Calculation Policy (CPA Approach)

Divide at least 3 digit numbers by 1 digit. Short Division

$96 \div 3$

	Tens	Units
3	3	2

Use place value counters to divide using the bus stop method alongside

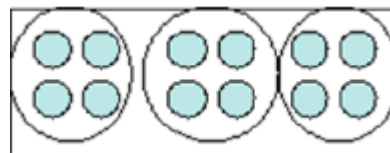
42 \div 3 =

Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over.

We exchange this ten for ten ones and then share the ones equally among the groups.

We look how much in 1 group so the answer is 14.

Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.



Encourage them to move towards counting in multiples to divide more efficiently.

Begin with divisions that divide equally with no remainder.

$$\begin{array}{r} 218 \\ 4 \overline{) 872} \\ \underline{8} \\ 0 \end{array}$$

Move onto divisions with a remainder.

$$\begin{array}{r} 86 \text{ r } 2 \\ 5 \overline{) 432} \\ \underline{40} \\ 32 \\ \underline{30} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

Finally move into decimal places to divide the total accurately.

$$\begin{array}{r} 14.6 \\ 35 \overline{) 511.0} \\ \underline{35} \\ 16 \\ \underline{14} \\ 21 \\ \underline{21} \\ 0 \end{array}$$

$$\begin{array}{r} 0.663 \text{ r } 5 \\ 8 \overline{) 5.309} \\ \underline{40} \\ 13 \\ \underline{8} \\ 50 \\ \underline{48} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array}$$



Division Calculation Policy (CPA Approach)

This calculation policy shows some of the methods used in school. The children and teachers will also use other CPA (Concrete, Pictorial and Abstract) approaches in their lessons.