

Concrete - Children should have the opportunity to use objects and manipulatives to help them understand what they are doing.

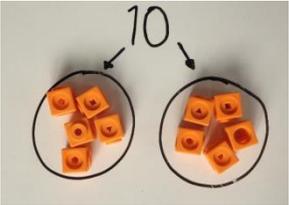
Pictorial - Children should then build on this concrete approach by using pictures.

This can then be used to reason and solve problems.

Abstract - Children should be able to use numbers and key concepts with confidence.



Progression in Calculation - Division

\div	Year 1 - Not taught the \div symbol, introduced in Year 2 Objective and Strategies Sharing objects into groups	EYFS/ Year One
Fluency - Learning in stages		
Concrete	Pictorial	Abstract
   <p>I have 10 cubes, can you share them equally in 2 groups?</p>	<p>Children use pictures or shapes to share quantities.</p>  $8 \div 2 = 4$	<p>Share 9 buns between three people.</p> $9 \div 3 = 3$

÷

Objective and Strategies *Sharing objects into groups*

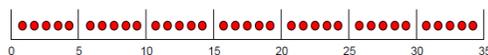
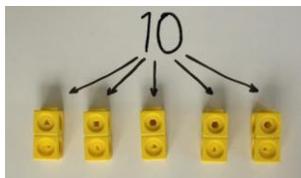
Year 1/
Year 2

Fluency - Learning in stages

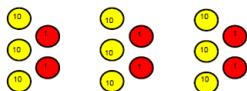
Concrete

Divide quantities into equal groups.

Use cubes, counters, objects or place value counters to aid understanding.

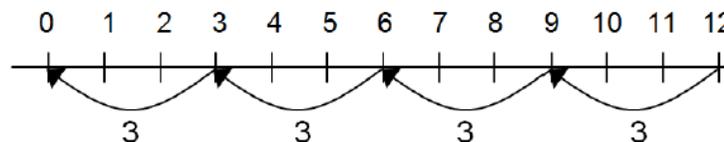


$$96 \div 3 = 32$$

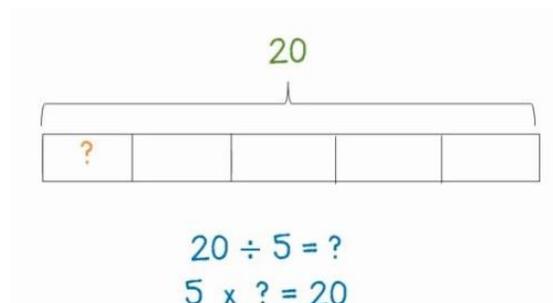


Pictorial

Use a number line to show jumps in groups. The number of jumps equals the number of groups.



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.



Abstract

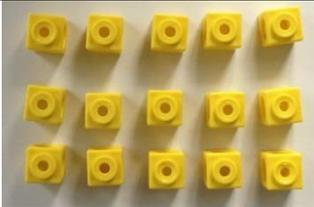
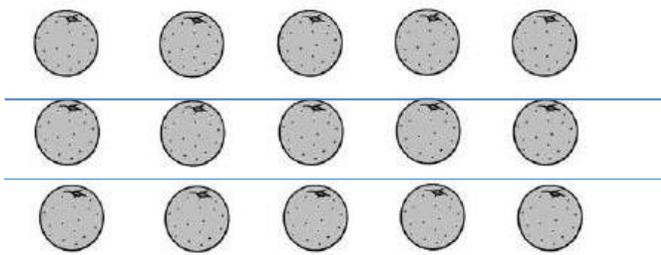
$$28 \div 7 = 4$$

Divide 28 into 7 groups. How many are in each group?

Sally and Katie want to share sweets out equally between them. They can buy bags of 17, 18 or 21 sweets. Which bag should they buy? What other packs of sweets could they buy?

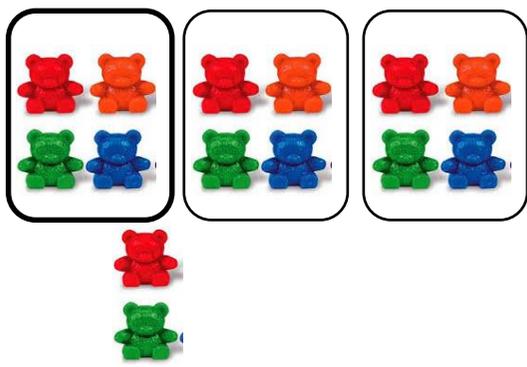
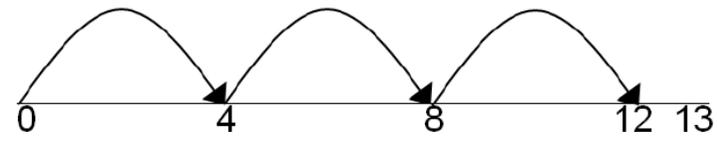
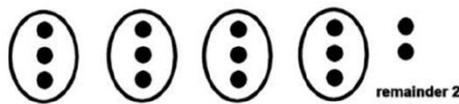
÷	Objective and Strategies Division within arrays	Year 1/ Year 2
---	--	-------------------

Fluency - Learning in stages

Concrete	Pictorial	Abstract
 <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>	<p>Find the inverse of multiplication and division sentences by creating four linking number sentences.</p> <p>$7 \times 4 = 28$ $4 \times 7 = 28$ $28 \div 7 = 4$ $28 \div 4 = 7$</p>

÷	Objective and Strategies Division with a remainder	Year 2
---	---	--------

Fluency - Learning in stages

Concrete	Pictorial	Abstract
<p>$14 \div 3 =$ Divide objects between groups and see how much is left over</p> 	<p>Jump forward in equal jumps on a number line</p>  <p>then see how many more you need to jump to find a remainder.</p> <p>Draw dots and group them to divide an amount and clearly show a remainder.</p> 	<p>Complete written divisions and show the remainder using r.</p> <p style="text-align: center;">$29 \div 8 = 3 \text{ REMAINDER } 5$</p> <p style="text-align: center;"> ↑ ↑ ↑ ↑ </p> <p style="text-align: center;">dividend divisor quotient remainder</p>

÷

Objective and Strategies Short division

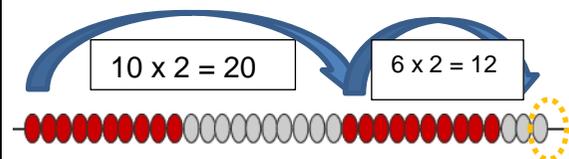
Year 3-
Year 6

Fluency - Learning in stages

Concrete

Use a bead string, first find ten lots of the total, then work out how many more 'lots' can be made. Then work out if there are any remainders.

$32 \div 2 = 16 \text{ r } 1$ (10 lots + 6 lots with one remainder)



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

$32 \div 3 =$

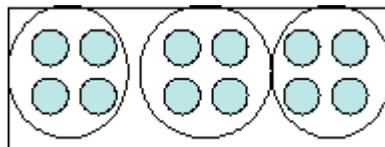
	Tens	Units
3	3	2
3	<div style="display: flex; justify-content: space-around; align-items: center;"> 10 10 10 </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> ● ● </div>
	<div style="display: flex; justify-content: space-around; align-items: center;"> 10 10 10 </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> ● ● </div>
	<div style="display: flex; justify-content: space-around; align-items: center;"> 10 10 10 </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> ● ● </div>

Start with the biggest place value, we are sharing 30 into three groups. We can put 1 ten in each group.

We are sharing 2 into three groups. We cannot do this so it becomes a remainder.

Pictorial

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.

Abstract

Begin with divisions that divide equally with no remainder.

	0	6	0
4	2	²4	0

Move onto divisions with a remainder.

	0	6	1 r1
4	2	²4	5

(Can they predict, using knowledge of multiplication facts, will there be a remainder?)

Finally move into decimal places and two digit division as a challenge to divide the total accurately.

		0	3	7 r5
2	5	9	3	0
	-	7	5	
		1	8	0
	-	1	7	5