



Parents' Guide

Supporting Your Child with

Numeracy

KS1

Visual Calculation Policy

This booklet is designed to support you supporting your child at home with their Numeracy learning. It is often the case that many methods and strategies taught today are different from those previously used. It is vital that the methods taught in school are reinforced at home avoiding confusion.

The booklet contains the teaching stages of each of the 4 operations: addition, subtraction, multiplication and division. It also includes key vocabulary to support each method. Being able to talk about their methods and strategy is critical in developing mathematical thinking and an important stepping stone to written methods.

In school, children will experience these operations through practical, oral and mental work.

Calculation Vocabulary



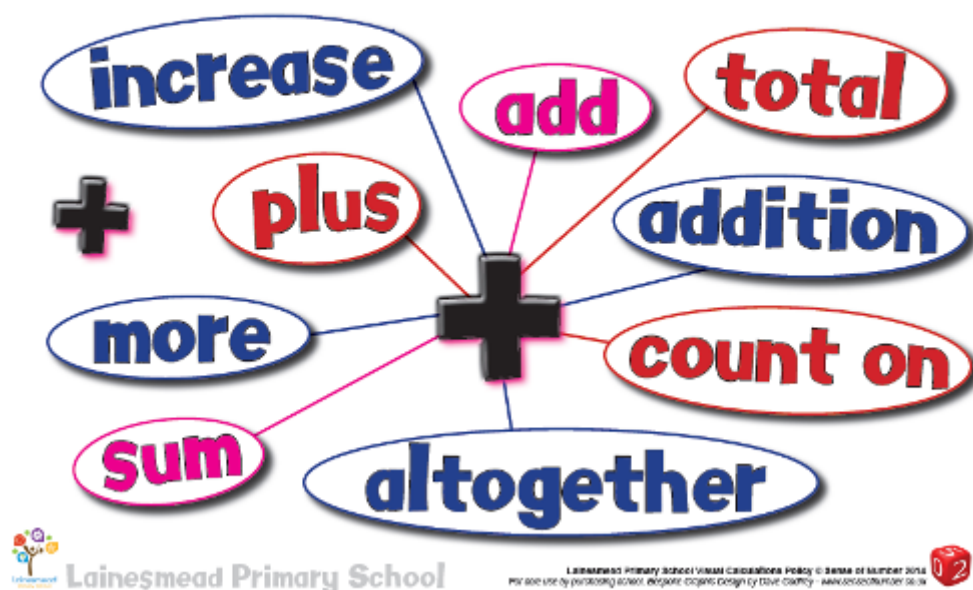
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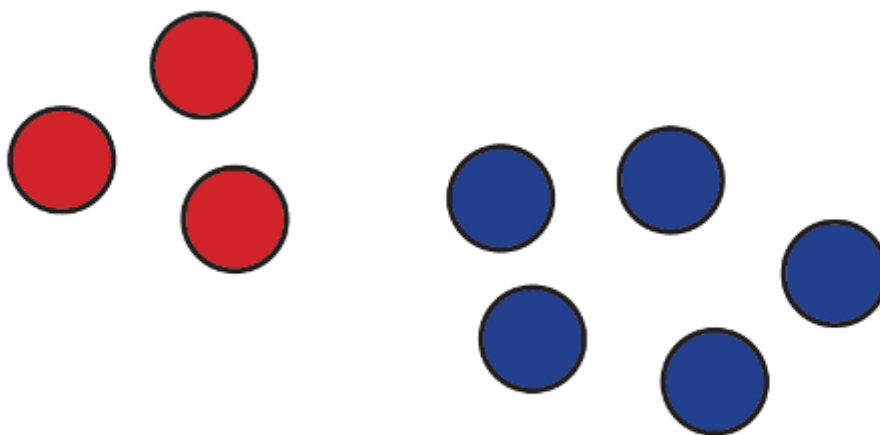
Addition

Addition Vocabulary



Children should be encouraged to use practical items to support their early development and be able to represent their ideas in their own individual way. They should talk about their methods and representations before being introduced to the symbols. This way will allow them to understand the operation of addition without being confused by the symbols.

A1: Objects & Pictures

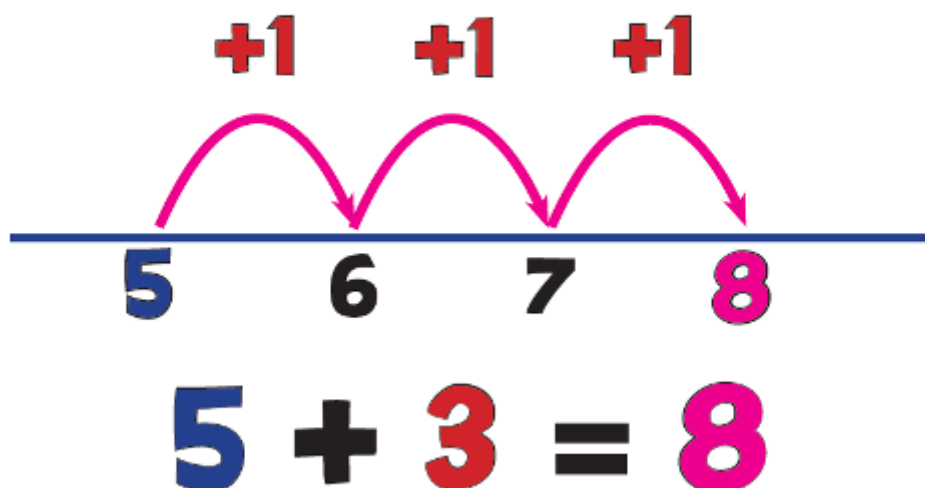


"If I have 3 and then 5 more, how many altogether? Answer: 8"

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Children will develop their own representations into informal jottings to support their mental strategies. This example shows how we would model counting on using a number line.

A2: Counting On



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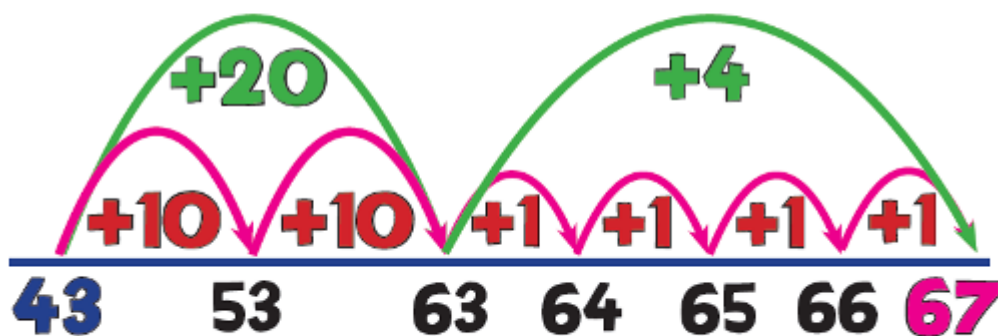
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This would then develop further by the end of Year 2 into adding 2 2-digit numbers. Children will use their knowledge of partitioning to record their addition on a number line. As the children progress, so do their 'jumps', moving from jumping in 10s and 1s to adding 20 then 4.

A3: Forwards Jump

$$43 + 24 = 67$$



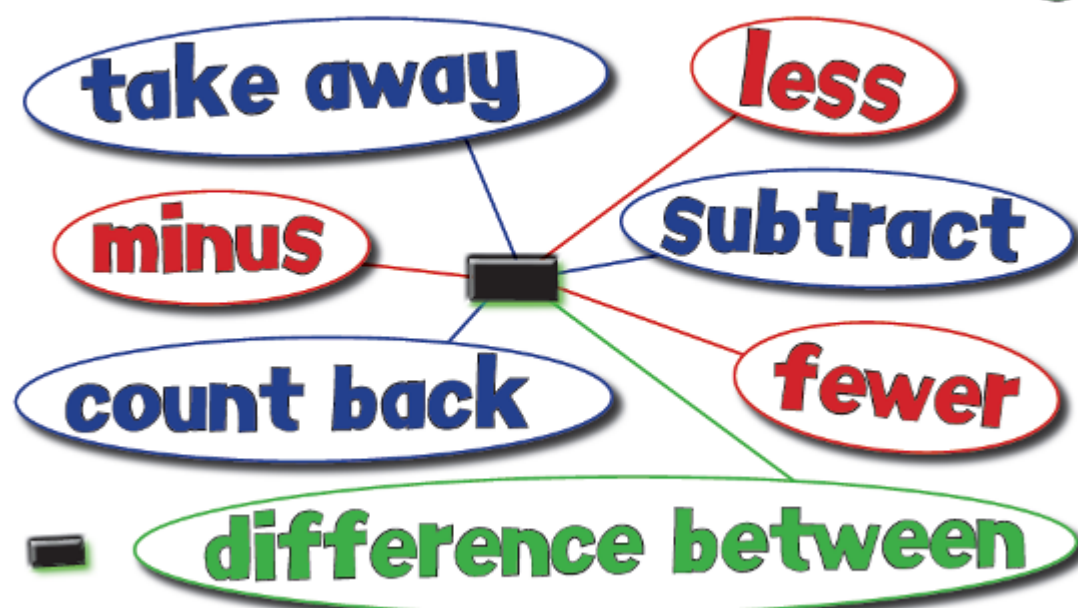
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Subtraction

Subtraction Vocabulary



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Subtraction can be seen as taking away and finding the difference. We have included progression of each method. Again, begin with using practical objects and physically taking objects away.

S1: Objects



$$7 - 3 = 4$$

"What do I get if I take 3 away from 7? Answer: 4"



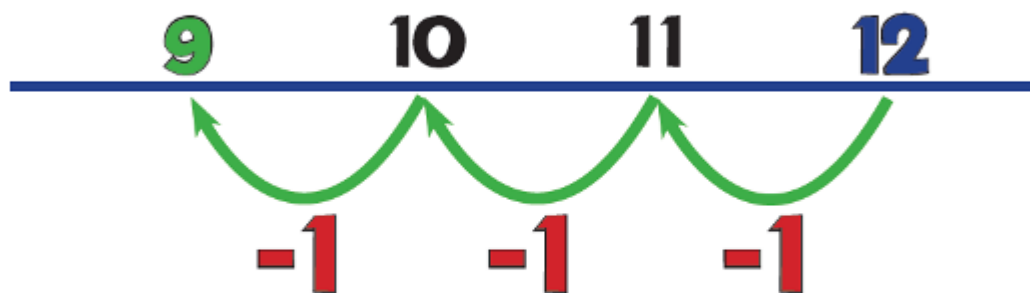
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This will then be extended to using a number line to represent their mental strategies - taking away by counting back. Put the largest number at the end of the number line and then count back in 1s. The children can then see the number that they land on.

S3: Counting Back



$$12 - 3 = 9$$

"What do I get if I take 3 away from 12? Answer: 9"



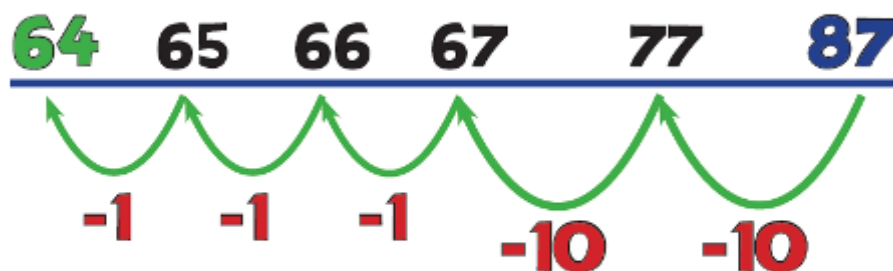
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To progress further, children will begin to use 2 digit numbers and use partitioning into tens and units. Again, put the largest number at the end and then count back in step of 10 and then 1s.

S6: Backwards Bounce



$$87 - 23 = 64$$



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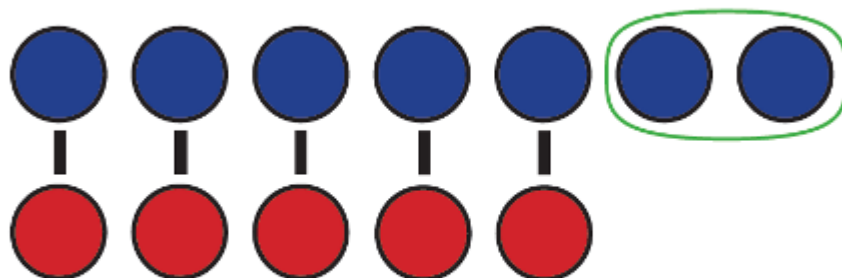
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To find the difference, line up counters and compare. It is easy to see how many more there are. Children struggle with the term difference as they often associated it with what is 'different' between the 2 things, not how many more or how many less there are.

S2: What's the Difference?



$$7 - 5 = 2$$



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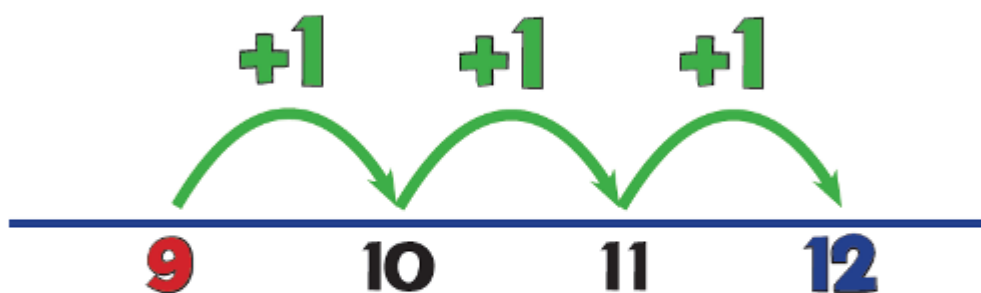
"How many more is 7 than 5? What is the difference?"

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This can then be represented using a number line by counting on from the smallest number to the largest number.

S4: Counting On



$$12 - 9 = 3$$



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"How many more is 12 than 9? What is the difference?"

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By the end of Year 2, children should have developed an informal method to record their mental strategies. This method involves using a number line to count on from the smallest number to the largest number. Children will find the difference by jumping to the next 10, then counting on in tens and then a final jump again to reach the number.

S8: Triple Jump!



$$75 - 37 = 38$$



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It is important for children to understand these operations in terms of every day problems. Encourage them to talk about adding and subtracting in your everyday life. Talk through word problems.

For example:

"I have 12 books and I buy another 6. How many do I have now?"

"There are 24 flowers in the garden and I plant another 12. How many flowers are there altogether?"

"I had 15 potatoes and I used 8. How many do I have left?"

"I have 34 stickers and my friend has 23. How many more do I have?"

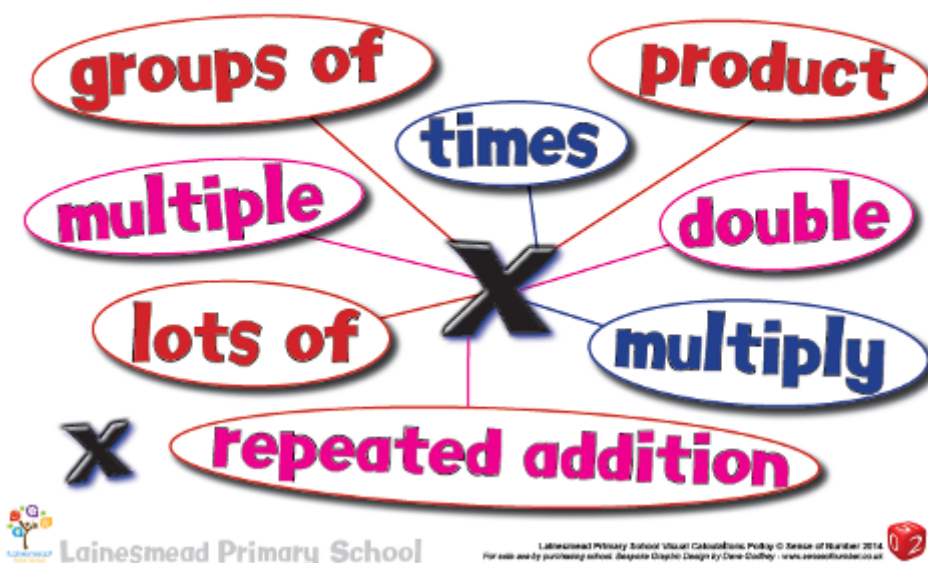
Multiplication & Division

In Key Stage 1, the concepts of multiplication and division are based on developing the children's knowledge of number patterns, as well as grouping and sharing. They will use phrases like 'lots of', 'groups of' and 'shared between'. By Year 2, children will have been introduced to the symbols \times and \div and extended the vocabulary that they use.

To support your child, use rhymes and songs to help develop their knowledge of number patterns. Focus on counting in steps of 2, 5 and 10, forwards and backwards from different starting numbers.

Multiplication

Multiplication Vocabulary



Encourage the children to talk about their learning using the correct vocabulary. Use practical situations to help.

For example:

"We each have 2 sweets. How many are there in total?"

"How many pencils do we need if everyone needs 2?"

M1: Repeated Addition

(Groups)



$$5 \times 3 = 5 + 5 + 5 = 15$$



"5 multiplied by 3" means "5, 3 times", which gives "3 lots of 5"!

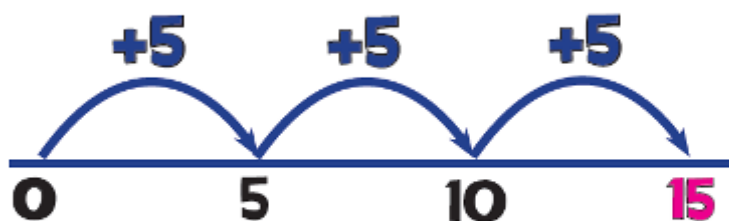
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We can represent multiplication as represented jumps on a number line.

M2: Repeated Addition

(Number Line)



$$5 \times 3 = 5 + 5 + 5 = 15$$



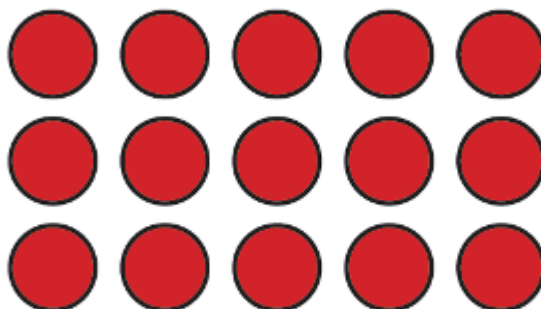
"5 times 3" means "5, 3 times!"

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In school, we also develop their understanding of multiplication using an array, which counting the rows and columns. This helps children understand that multiplication can be done in any order 3x5 is the same as 5x3.

M3: Arrays



$$3 \times 5 = 15 \text{ or } 5 \times 3 = 15$$



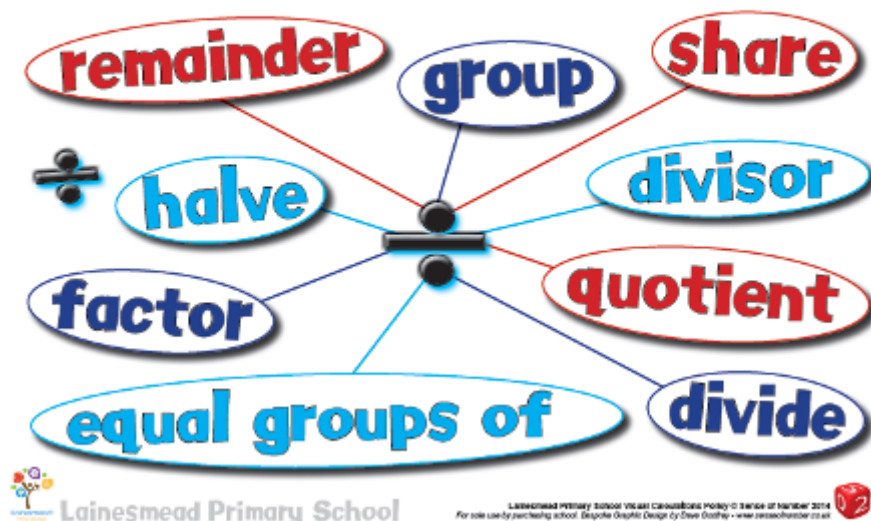
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Division

Children will be encouraged to discuss their mathematical learning and will begin by using the vocabulary of 'equal groups' and 'sharing'.

Division Vocabulary

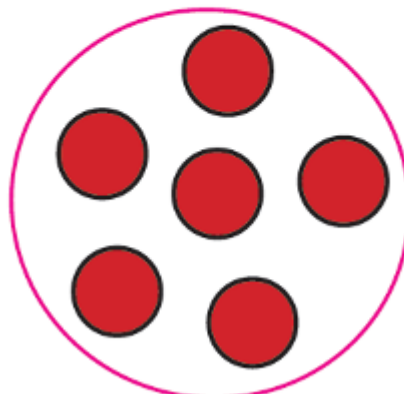
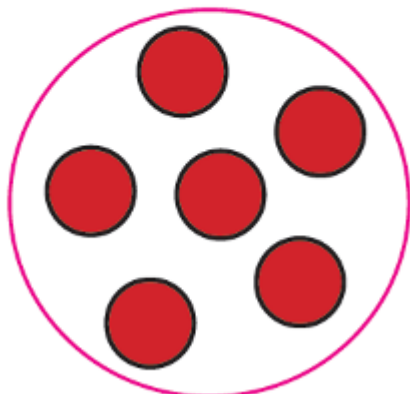


Firstly, we introduce division as sharing. Using practical resources, share the objects between 2 groups. Use even numbers: 2, 4, 6, 8 etc to avoid having any left over. Pick one object up at a time and share equally. Remind the children of the maths. For example, 6 shared by 2 is 3.

D3: Division as Sharing

$$12 \div 2 = 6$$

"If I share 12 into 2 equal amounts, how many in each group?" Answer: 6

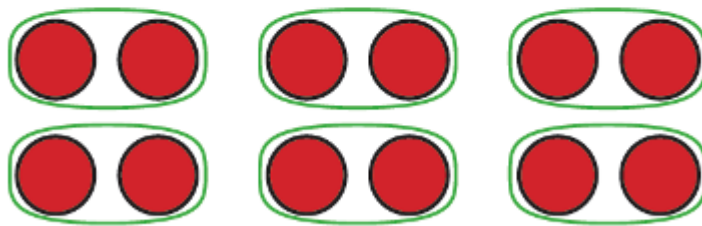


Children will also develop their understanding of division as grouping. This will be the foundation for the strategies and written methods that are used in Key Stage 2. Also, this is based on their knowledge of number patterns, which is essential for learning their time tables.

D4: Division as Grouping

$$12 \div 2 = 6$$

"How many groups of 2
can I fit in 12?"
Answer: 6

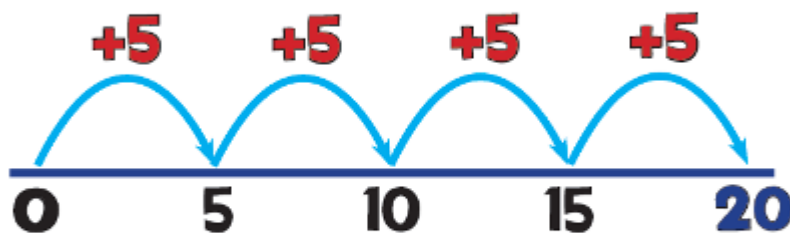


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As children develop further, they will record their method using an informal jotting on a number line.

D5: Grouping on a Number Line



$$20 \div 5 = 4$$

"How many 5s in 20?"
Answer: 4



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It is important that all the operations are introduced to the children using practical objects and everyday situations to ensure they understand the process.

Use the 100 square to practise counting in steps of different size and counting on and back to support the 4 operations.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

These are the key time table facts that children learn in Key Stage 1.

$1 \times 1 = 1$	$1 \times 2 = 2$	$1 \times 5 = 5$	$1 \times 10 = 10$
$2 \times 1 = 2$	$2 \times 2 = 4$	$2 \times 5 = 10$	$2 \times 10 = 20$
$3 \times 1 = 3$	$3 \times 2 = 6$	$3 \times 5 = 15$	$3 \times 10 = 30$
$4 \times 1 = 4$	$4 \times 2 = 8$	$4 \times 5 = 20$	$4 \times 10 = 40$
$5 \times 1 = 5$	$5 \times 2 = 10$	$5 \times 5 = 25$	$5 \times 10 = 50$
$6 \times 1 = 6$	$6 \times 2 = 12$	$6 \times 5 = 30$	$6 \times 10 = 60$
$7 \times 1 = 7$	$7 \times 2 = 14$	$7 \times 5 = 35$	$7 \times 10 = 70$
$8 \times 1 = 8$	$8 \times 2 = 16$	$8 \times 5 = 40$	$8 \times 10 = 80$
$9 \times 1 = 9$	$9 \times 2 = 18$	$9 \times 5 = 45$	$9 \times 10 = 90$
$10 \times 1 = 10$	$10 \times 2 = 20$	$10 \times 5 = 50$	$10 \times 10 = 100$
$11 \times 1 = 11$	$11 \times 2 = 22$	$11 \times 5 = 55$	$11 \times 10 = 110$
$12 \times 1 = 12$	$12 \times 2 = 24$	$12 \times 5 = 60$	$12 \times 10 = 120$

