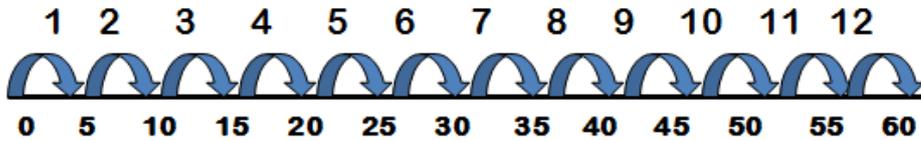


Multiplication by repeated addition:

Blank number lines are often used with Years 2 and 3 to practise multiplication. This is a good method to practise multiplication with your child, until they are more secure at understanding the place value of the numbers. The children can also begin to look at multiplying larger numbers using blank number lines and repeated addition such as 4×23 .



Multiplication with partitioning:

If the children are asked to solve 16×4 they can partition the number and many of the children will also be able to use this strategy to solve questions mentally.

$$\begin{aligned} 16 \times 4 \\ 10 \times 4 = 40 \\ 6 \times 4 = 24 \\ 40 + 24 = 64 \end{aligned}$$

Grid Method:

When you use the grid method, you break up the number into hundreds, tens and units. Multiply each separately and then add the answers together.

For example, 327×6

\times	300	20	7	
6	1800	120	42	
$1800 + 120 + 42 = 1962$				

For example, 248×58

\times	200	40	8	Totals
50	10000	2000	400	12400
8	1600	320	64	1984
				14384

Column Multiplication:

When using the column method, line up the units, tens and hundreds underneath each other and then multiply each digit, starting with the units. The children will begin using this method in lower KS2:

1)

H	T	U	
2	4	6	
		3	\times
<hr/>			
		8	
<hr/>			
	1		

2)

H	T	U	
2	4	6	
		3	\times
<hr/>			
	3	8	
<hr/>			
1	1		

3)

H	T	U	
2	4	6	
		3	\times
<hr/>			
7	3	8	
<hr/>			
	1		

$246 \times 3 =$

- 1) Start by multiplying the 3 by the 6 to give 18.
- 2) Then multiply the 3 by the 4 to give 12. Add the 1 carried over to give 13.
- 3) Then multiply the 3 by the 2 to give 6. Add the 1 carried over to give 7.

$$\begin{array}{r} 38 \\ 13 \times \\ \hline 114 \\ 380 + \\ \hline 494 \end{array}$$

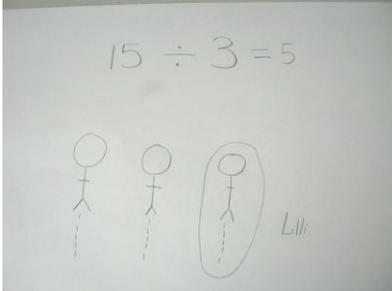
38×13

If you are multiplying by a number over 10, for example 38×13 , you use the same method as above but break it down into 2 parts, 38×3 and 38×10 , and then add the two answers together.

Division Methods:

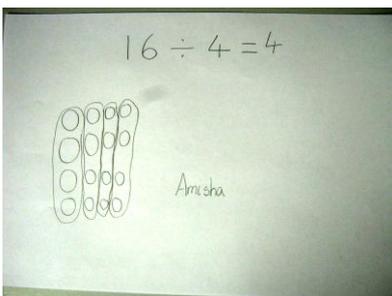
Sharing:

Within KS1 the children will begin to look at division by sharing concrete objects. Following this they move on to sharing using written methods. For example, they may draw people as shown in the diagram below and then share out $15 \div 3$ evenly.



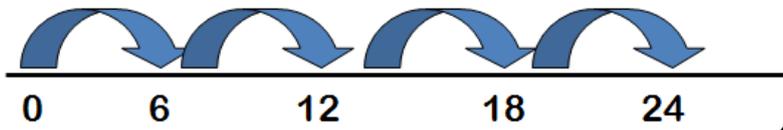
Grouping:

The children will be able to draw objects. For example the diagram below shows the child drawing objects in fours up to sixteen and then they can group the objects to establish how many groups of four there are as the diagram shows.



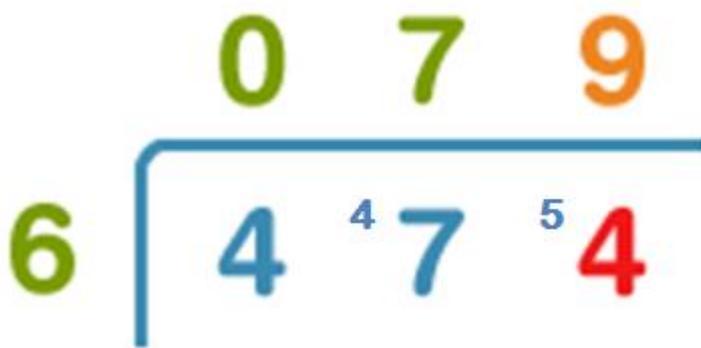
Division on a blank number line:

In Years 2 and 3 the children will begin to understand division by using a blank number line. The number line below shows the children dividing 24 by 6. The children count on using the blank number line in groups of 6 until they reach 24. The number jumps on the number line represents the answer to the question. The children can also use this process to show division with remainders.



$$474 \div 6 =$$

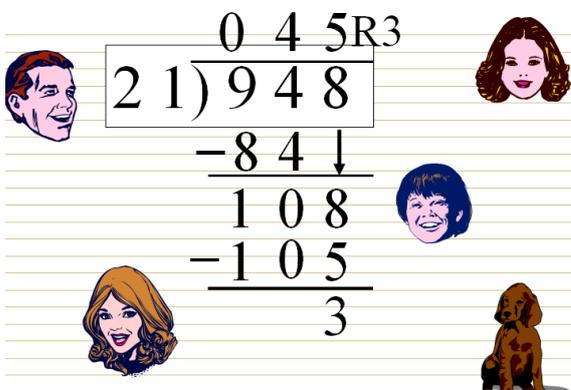
Short Division (Bus stop method)



- 1) To begin, you would calculate how many 6's there are in 4. 6 doesn't go into 4 so you carry over the 4. Place a zero above the line.
- 2) Then, you need to calculate how many 6's go into 47. 7 go into 47 so you put a 7 above the line. There are 5 left over so you carry the 5 over.
- 3) Finally, how many 6's are there in 54. There are 9 so place the 9 above the line above the line.
- 4) At this stage if there are remainders then write them down.

Long division:

We use this method when we are multiplying by a two digit number. This method is often introduced towards the end of Year 4.



To solve problems using long division we use the Daddy, Mummy, Sister, Brother, Rover method!

Daddy = divide

Mummy – Multiply

Sister – Subtract

Brother – Bring down

Rover – Repeat/remainder

- 1) **Daddy – Divide:** Divide 21 into 9. This won't go so divide 21 into 94.
- 2) **Mummy – Multiply:** To work out how many 21's go into 94, the children will use multiplication $21 \times \underline{\quad} = 94$. They may prefer to solve this by using repeated addition and writing their 21 times table down the side of the page. 2 lots of 21 go into 94 so place a 4 above the line in the correct place.

- 3) **Sister – Subtract:** As $4 \times 21 = 84$ you then need to write 84 below the 94 and complete a subtraction sum to calculate how many are left over. This subtraction sum can be completed as column subtraction. There would be 10 left over in this case so the 10 is placed below the line, like it would be in column subtraction.
- 4) **Brother – Bring down:** Then you need to bring down the final number from the sum, which in this case is an 8 so it turns into 108.
- 5) **Rover – repeat/remainder:** You then need to repeat the process and work out how many 21's go into 108. Go back to the **Daddy (divide), Mummy (multiply), Sister (subtract), Brother (bring down) and Rover (repeat/remainder)** to do this.

Multiplication Vocabulary:	Division Vocabulary:
<ul style="list-style-type: none"> • What is ___ times ___? • What is ___ multiplied by ___? • What is ___ lots of ___? • What is double...? • What is the product of...? • How many ___'s are in ___? • What is ___ squared? 	<ul style="list-style-type: none"> • How many _____ are there tin _____? • What is _____ divided by _____? • What is the quotient of _____? <p><i>Quotient: a result obtained by dividing one quantity by another.</i></p> <ul style="list-style-type: none"> • <i>What is the remainder if you divide _____ by _____?</i>