Stage 4 – Division

Short Division including Decimals

543 ÷ 4
Step 1: Lay out the question using formal short method.
Step 2: Group the largest column according to the divisor.
Step 3: Record any remainders in the column to the right.
Continue grouping through to the ones column.
Step 4: Write how many remainders.

4	5	4	3		
	1	3	5		
4	5	14	23		

	1	3	5	r3	
4	5	14	23		

You may find you are faced with a question which requires an accurate answer where a remainder isn't appropriate. When this happens you will need to know how to change a remainder into a decimal.

A group of four friends split the cost of a short holiday. The total cost of the holiday was £543. How much did they each have to pay?

	1	3	5		
4	5	14	23		

Step 1: Lay out the question using formal short method.
Step 2: Group the largest column according to the divisor.
Step 3: Record any remainders in the column to the right.
Continue grouping through to the ones column.
Step 4: Decide whether remainders will work for the question – can you have £135 pounds remainder 3? No, so we need to go into decimals. To do this, add a decimal point and a place holder to the dividend.
Step 5: The remainders from the ones need to move into the tenths column.
Step 6: Continue adding place holders and grouping until the decimal either ends or recurs. Here it has ended, we have managed to group without remainders. They each payed £135.75.

	1	3	5	7	5	
4	5	14	23	30	20	

Chunking Method

Children should be introduced to long division during this stage. They will initially start using chunking before moving onto a quicker, more efficient method by year 6. It is essential that children understand short division before moving onto long division and they must have a firm understanding of place value.

7895 ÷ 14 =

H T O

14)7 8 9

10 x 14 = 140

5 x 14 = 70

2 x 14 = 28

20 x 14 = 280

7895 ÷ 14 =

HTO

14)789
-280 (x20)
509
-280 (x20)
229
-140 (x10)
89
-70 (x5)
19
14 (x1)
5

10 x 14 = 140

5 x 14 = 70

2 x 14 = 28

20 x 14 = 280

Step 1: Lay out the question using bus stop method, include place value headers.

Step 2: Create a fact box using the divisor made up of 10 x, 5x, 2x, 20x. Children can add facts to this box later should they need to.

Step 3: Decide which group in their fact box is the largest that they can take away from the dividend. Subtract the group away from the dividend. Don't forget to write the size of the group in brackets!

Step 4: Continue to subtract groups from the running total until you can no longer subtract a single group. Don't forget to write the group size in brackets every time you subtract a new group.

Step 5: Your answer is the total amount of groups, to find this, add the numbers in the brackets. Don't forget to check if you have remainders.

The answer is 56 r5.

Vocabulary

Number
Numeral
Division
Divided by
Sharing
Grouping
Halving
Number pattern
Divided into
Share equally
Left over
Equal groups of
Division fact
Remainder
Inverse
Dividend
Divisor
Quotient
Recurring
Decimal

Long Division

When children are confident with the chunking method they can move onto the shorter method of long division. This is considered an easier method but should not be the first method taught as the longer method allows a deeper understanding and consolidation of previously taught division skills.

789 ÷ 14
=

2 x 14 = 28

3 x 14 = 42

4 x 14 = 56

5 x 14 = 70

6 x 14 = 84

056 r5
14) 789
70 ↓
89
84
5

Step 1: Lay out the question. Prepare a fact box using 2, 3, 4, 5, 6 groups and then move further through the tables as they require it.

Step 2: How many 14's in 7? Record 0 above H column. How many 14's in 78? 5 x 14 = 70 so the 70 goes beneath the 78 and is subtracted leaving 8. The 5 groups goes in the tens column above the dividend.

Step 3: The 9 is then brought down to join the 8 tens that were left. The process is exactly the same. How many 14's are in 89? 6 x 14 = 84 so this is subtracted from 89 and there is 5 left over. The 6 goes to the top above the dividend creating the quotient. Don't forget any remainders.

The answer is 56r5.