

Help at Home!

What can you do with your child at home to help them with the Chunking Method?

We are not asking you to do page after page of division questions with your child at home!

The best answer we can give? **Times Tables, Times Tables, Times Tables!** The more your child knows their tables, the easier they will find the Chunking method. Any practice you can do will help, from just saying the tables, to listening to tables songs, to playing tables games—Don't forget to look in the Times Table Strategies Booklet that we have already sent home!

Multiplying numbers by multiples of 10—When children get into using chunking to divide larger numbers, multiplying by 10, 20, 30 etc allows them to do the calculation in less steps.

NOTE: Children are not taught to do this by 'just adding a zero'. They are taught that to multiply a number by ten, each digit moves over to the left and we fill the space with a zero. E.g.

For 12×10 :

	H	T	U	
		1	2	←
	1	2	0	

DIGITS MOVE TO THE LEFT

Tudhoe Colliery Primary School



Key Stage 2 Maths Calculation Strategies

Division



Calculation Strategies



Maths calculation strategies have changed quite a bit over the years and we often get asked by parents for information sheets to show the methods that the children are using in school.

We have created this booklet to demonstrate our Division strategies. We hope you find it useful!

+ Division + + Chunking +

The strategy we use for addition in school is the Chunking method, which is normally introduced in Year 4.

The Chunking method teaches children to divide by taking away 'groups'. Division is the trickiest of the four number operations in school and the one that children generally find the most difficult to master.

Dividing decimals:

$$\begin{array}{r}
 87.5 \\
 \underline{70.0} \quad (10 \times 7) \\
 17.5 \\
 \underline{14.0} \quad (2 \times 7) \\
 3.5 \\
 \underline{3.5} \quad (0.5 \times 7) \\
 0.0
 \end{array}$$

7
14
21
28
35
42
49
56
63
70
77
84



When multiplying with decimals, the children start to use their knowledge of **multiply-ing by decimals** to take off decimal 'chunks'.

$$87.5 \div 7 = 12.5$$

Progression through Key Stage 2:

Year 3 - children use a number line to divide $TU \div U$ by repeated subtraction

Year 4 - children use the Chunking method to divide $TU \div U$, first with whole number answers and then with remainders.

Year 5 - children use the Chunking method to divide $HTU \div U$ including answers with remainders

Year 6 - children move into dividing $HTU \div TU$ and then move into dividing with decimals.

The Next Steps

Once your child has mastered $TU \div U$, they will move onto...

Answers with remainders:

9 8	3
<u>3 0</u> (10 × 3)	6
6 8	9
<u>3 0</u> (10 × 3)	12
3 8	15
<u>3 0</u> (10 × 3)	18
0 8	21
<u>0 6</u> (2 × 3)	24
0 2	27
	30
	33
	36

$98 \div 3 = 32 \text{ r } 2$



Dividing a 3-digit number by a single digit:

1 9 6	6
<u>6 6</u> (11 × 6)	12
1 3 0	18
<u>3 0</u> (5 × 6)	24
1 0 0	30
<u>6 0</u> (10 × 6)	36
4 0	42
<u>3 6</u> (6 × 6)	48
0 4	54
	60
	66
	72

$196 \div 6 = 32 \text{ r } 4$



Dividing by 2-digit numbers:

9 7 2
<u>7 2 0</u> (20 × 36)
2 5 2
<u>2 5 2</u> (7 × 36)
0 0 0

$972 \div 36 = 27$



- 36
- 72
- 108
- 144
- 180
- 216
- 252

Children are still encouraged to use 'working out multiples' to help them with their calculation.

They also start to use their knowledge of multiplying by multiples of ten to take off larger 'chunks'.

Prior Learning

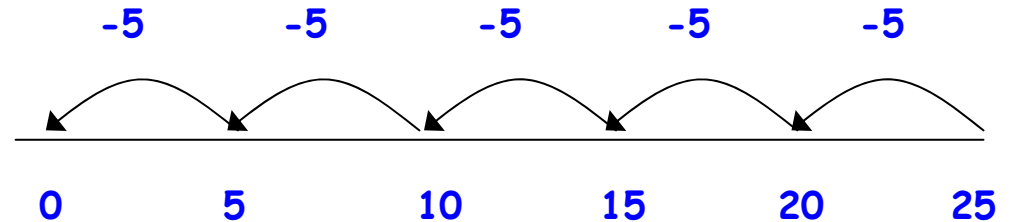
Teaching of the Chunking method begins in Year 4. In **Year 3**, children are taught an 'informal method' of dividing numbers. This helps prepare them for moving into formal methods.

They are taught to:



- Divide by **Repeated Subtraction**, using a number line.

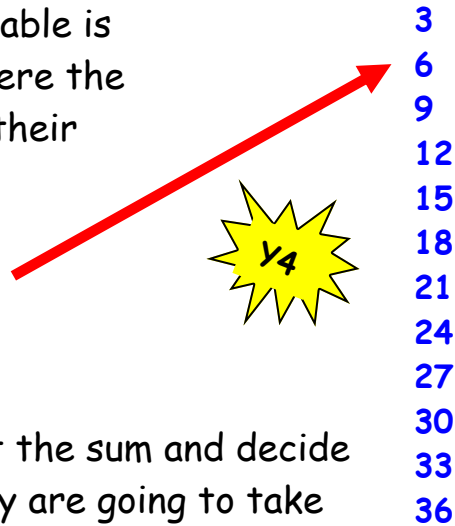
E.g. $25 \div 5 =$



Using the Method

First the relevant times table is written by the side of where the children are to complete their calculation.

E.g. For the sum $96 \div 3$



Next, the children look at the sum and decide how many groups of 3 they are going to take away first. This is where the **chunking** part comes in, because the children are taking away a 'chunk' of groups of 3.

The easiest way to start is to either:

- Take away a **multiple of ten** (in this case 30)
- Take away a number with the **same units number** as the number being divided (in

For this example, we will take away 36.

3
6
9
12
15
18
21
24
27
30
33
36

96

36 (12 x 3)

The **number being taken away** is written directly beneath the **number being divided**. The number of groups being taken away is written in brackets at the side of the sum. The number of groups is also underlined or circled to help with finding the answer at the end of the calculation.

The **new total** is written underneath.

96
36 (12 x 3)
60

The process now begins again with the new total. A new chunk is taken away. Because we have a multiple of ten left, it will be easier to take **30 away**.

96
36 (12 x 3)
60
30 (10 x 3)
30
30 (10 x 3)
00

Like before, we record the new total underneath and then continue to take 'chunks' off until we reach zero.

The answer is found by adding up the number of groups of 3 that we have taken away. In this case $6 + 10 + 10$, so the answer is 26.