The 4 Operations in Key Stage 2

Year 3

Addition

Partitioning
Splitting up the tens and ones.
Adding the tens then the ones.
Then recombine.

58 + 43 = 101
50 + 40 = 90
8 + 3 = 11
90 + 11 = 101

Partitioning in a column.
Similar to above but each number is partitioned into their parts underneath each other.
Then the columns are added together Then recombine.

246 + 132 = 378

200 + 40 + 6
100 + 30 + 2
300 + 70 + 8 = 378

Column Method
Children no longer partition the numbers but use their place value knowledge to help add the columns.

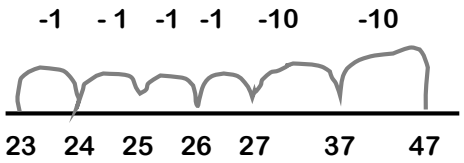
245 + 84 = 329

```
  245
+  84
  329
  1
```

Subtraction

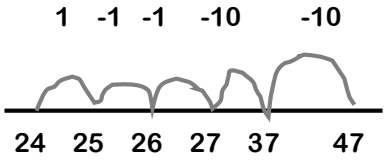
Counting Back on a Number Line
Starting at the first number count back to take away the tens.
Count back in ones.
The answer is where you land.

47 - 24 = 23



Finding the Difference
Mark the two numbers at opposite ends of the number line.
Start at the last number.
Count back in tens till you can't count back in tens.
Count back in ones until you reach the other number.
Total up the jumps.

47 - 24 = 23



Column Method
Partition the first number into tens and ones.
Underneath partition the second number into tens and ones.
Complete the subtraction subtracting the ones first.
Move onto the tens and write the answers underneath.
Recombine the tens and ones.

238 – 146 = 92

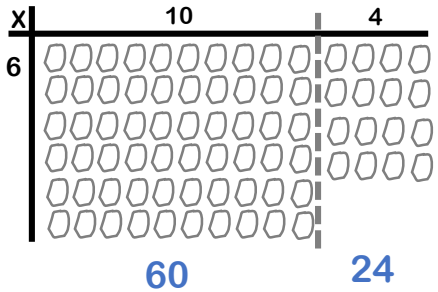
200 + 30 + 8
- 100 + 40 + 6
0 + 90 + 2

Multiplication

Children need to be secure in:
- Place value knowledge
- Multiplying by 10.
- Quick recall of timetables facts.

Array in a Grid
Draw the grid.
Partition the numbers with the 2 digit number across the top.
Draw the array for each section.
Total up the dots for each area.
Recombine to find the total.

14 x 6 = 84



60 + 24 = 84

Grid Method
Draw the grid.
Partition the numbers with the 2 digit number across the top.
The other number down the side.
Use times table facts to complete the gaps.
Recombine to find the total.

35 x 7 = 245

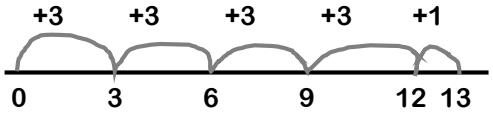
X	30	5
7	210	35

210 + 35 = 245

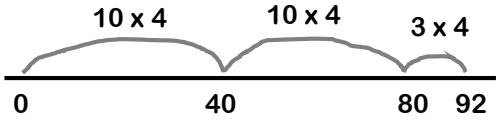
Division

Number lines with Remainders
Start at 0.
Jump in amounts of the divisor.
Keep jumping in jumps of the divisor until you can't make any more full jumps.
Make a jump to the first number.
Count the number of full jumps
Check the remainders.

13 ÷ 3 = 4r1



Chunking on a Number Line
Start at 0.
Use timetable facts to make the jumps.
Begin with x10.
Then use smaller times table facts.
Make a jumps until you can't make any more jumps.
Count the amount of jumps needed.
Check if there are any remainders.



Short Division without Exchanging
(Known as the Bus Stop)
Also known as the bus stop method.
Divisor on the outside of the bus stop.
Bus stop surrounds the dividend.
Work from the tens first.
How many times does the divisor go into the digits.
Write the number above the bus stop.

```
  3 2
3 9 6
```

Children will begin with those where each digit is a multiple of the divisor.

	Addition	Subtraction	Multiplication	Division
Year 4	Column Method Children will consolidate the column method with 4 digit numbers. 4267 + 1584 = 5851 4267 + 1584 5851 1 1 **Remember!** 1. Ones must be added first. 2. Carry numbers underneath the bottom line. 3. Reinforce the place value. It is not 6 add 8 it is 6 tens add 8 tens!	Partitioning Colum Method Partition the numbers and lay them underneath. Complete the subtraction subtracting the ones first. If any carrying or exchanging is needed do so. Recombine the numbers together. **2754 – 1562 = 1192** **2000 + 700 + 50 + 4** **- 1000 + 500 + 60 + 2** **1000 + 100 + 90 + 2** Compact Column Method Lay the numbers one above the other. Begin with the ones and work along the digits. Carry or exchange if necessary. 6 1 **2754** **- 1562** **1192**	Grid Method Draw the grid. Partition the numbers with the 2 digit number across the top. The other number down the side. Use times table facts to complete the gaps. Recombine to find the total. **613 x 5 = 3065** **X** | **600** | **10** | **3** **5** | **3000** | **50** | **15** **3000 + 50 + 15 = 3065** Column Method This method is tricky. Use grid method and transfer to column method to see the links. Work through them slowly to understand each step. Lay the numbers into columns. Work along beginning with the ones. Carry any tens to the next column. Write them underneath to remember Recombine to find the total. **613** **X 5** **3065** 1	Short Division with Exchanging Also known as the bus stop method. Divisor on the outside of the bus stop. Bus stop surrounds the dividend. Work from the tens first. How many times does the divisor go into the digits. Write the number above the bus stop. **1 2** **8 | 9 6** Moving on to where the first digit of the dividend is not a multiple of the divisor and so a remainder will need to be carried. There will be no remainder as a final answer. **2 1 8** **4 | 8 7 2** **0 3 5** **5 | 1 7 5**