Weston Favell CE Primary School
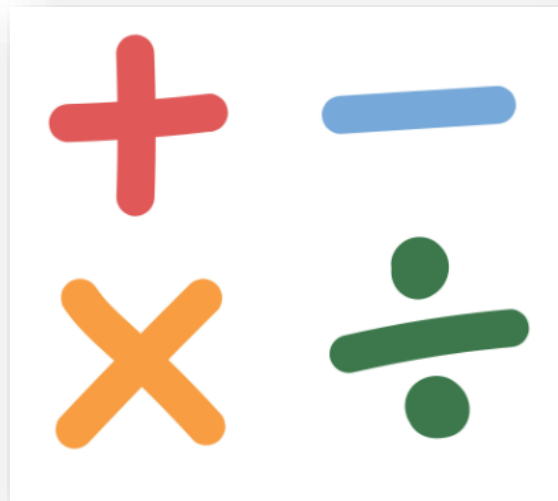
Calculation Guide

Year 3

This calculation guide will demonstrate the written calculation strategies that are covered for addition, subtraction, multiplication and division.

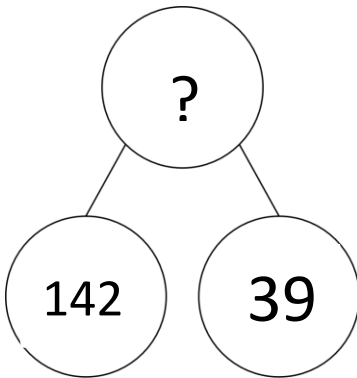Practising these will help in preparation for Year 4 and beyond!

If you have any questions or need any further support, please ask your class teacher and they will be happy to help you.
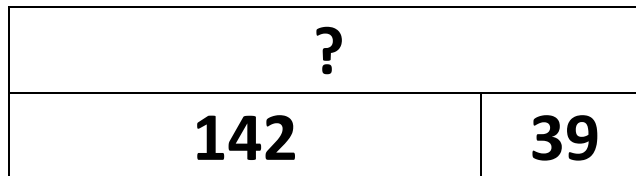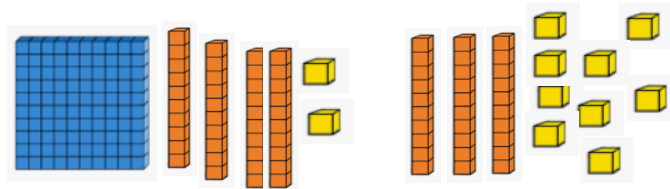
Addition

$$8 + 9 = 17$$

addend + addend = sum

Example question: 142 + 39

?

142   39

A part/part whole model

?	
142	**39**

A bar model

Exploring using Base 10 Equipment

Expanded Method

```
  100    40    2
+         30    9
  100 +  70 +  11
```

Adjustment Method

We can add one to 39 to make 40 and then take this one back off again.

142 + 40 = 182
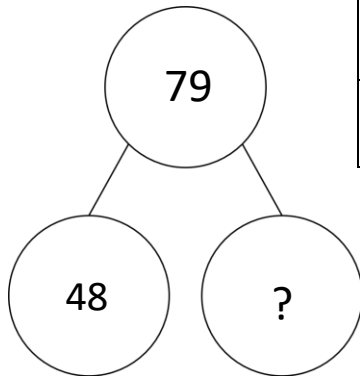
182 − 1 = 181

Subtraction
(Finding the Difference)
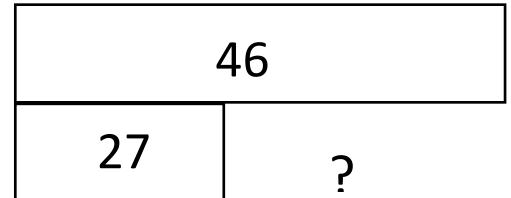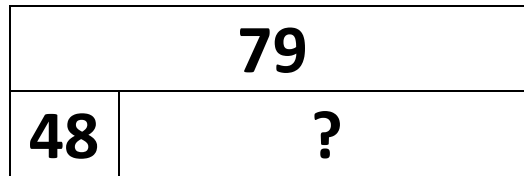
$$17 - 9 = 8$$
minuend - subtrahend = difference

Example questions:

79 – 48 and 349 – 27 (no exchange)

357 – 64 (exchange required)

79	
48	**?**

46	
27	?

Bar models

79
48   ?

A part/part whole model

Expanded Method:

No Exchange

349 – 27 =

300   40   9

\-   20   7
_____

300 + 20 + 2
_____

= 322

With Exchange

357 – 64 =

200
~~300~~ 150   7

\-   60   4
_____

200 + 90 + 3
_____

= 293

Vocabulary used at school to show this strategy is: 'exchange'. We cannot take 60 from 50 in this method. To solve this, we have altered how we partition the 300 and the 50. Instead of 300 and 50, we exchange one ten so we have 200 and 150. We now have 150 so we are able to take our 60 away.

In class, this will be explored practically with equipment first and then completed in the abstract way so children can understand where the numbers come from.

Multiplication

Example question: 37 x 8

?							
37	37	37	37	37	37	37	37

A bar model

The Grid Method

x	30	7
8	(30 x 8) 240	(7 x 8) 56

240 + 56 = 296

Partition the tens and ones and then multiply each by the factor.

These need adding back together to find your product.

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Division

Example question: 52 ÷ 4 = 13

52			
?	?	?	?

A bar model

Using Known Facts

$$4 \times 0 = 0$$
$$4 \times 1 = 4$$
$$4 \times 2 = 8$$
$$4 \times 3 = 12$$
$$4 \times 4 = 16$$
$$4 \times 5 = 20$$
$$4 \times 6 = 24$$
$$4 \times 7 = 28$$
$$4 \times 8 = 32$$
$$4 \times 9 = 36$$
$$4 \times 10 = 40$$
$$4 \times 11 = 44$$
$$4 \times 12 = 48$$

We can partition our dividend with facts we know regarding the 4 times table.

52
40 12

$40 ÷ 4 = 10$

$12 ÷ 4 = 3$

So $52 ÷ 4 = 13$

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PRIMARY ACADEMY TRUST

WFPS
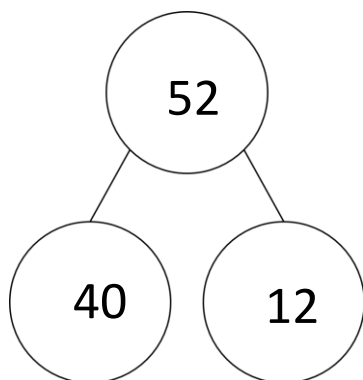
Times Tables

In Year Three, children continue to learn their time tables facts alongside their corresponding division facts e.g. 3 x 2 = 6 so 6 ÷ 2 = 3.

The facts the children should focus on learning are the 3, 6, 4 and 8 times tables. It helps children to apply this information fluently and with pace by the end of the year.

Children need to learn the times tables highlighted in the table below in order:

- 0 x 2 = 0
- 1 x 2 = 2
- 2 x 2 = 4 etc.

Then they need to be able to answer in any order e.g. 4 x 2 = 8, 12 x 2 = 24, 2 x 2 = 4

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1x1								Year	2 Facts		
2	2x1	2x2							Year	3 Facts		
3	3x1	3x2	3x3									
4	4x1	4x2	4x3	4x4								
5	5x1	5x2	5x3	5x4	5x5							
6	6x1	6x2	6x3	6x4	6x5	6x6						
7	7x1	7x2	7x3	7x4	7x5	7x6						
8	8x1	8x2	8x3	8x4	8x5	8x6	8x7	8x8				
9	9x1	9x2	9x3	9x4	9x5	9x6		9x8				
10	10x1	10x2	10x3	10x4	10x5	10x6	10x7	10x8	10x9	10x10		
11	11x1	11x2	11x3	11x4	11x5	11x6		11x8		11x10		
12	12x1	12x2	12x3	12x4	12x5	12x6		12x8		12x10		

Focus on the commutativity of the times table when practising at home. If I know 3 x 5 = 15, I also know 5 x 3 is 15! This is represented in the table above.