



Stage 0 Calculation Methods – By the end of reception your child should be able to...


**Addition – Through counting and through practical.**

Counting all   $3 + 2 = 5$

Counting on   $3 + 2 = 5$

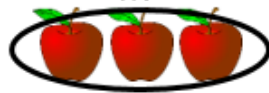
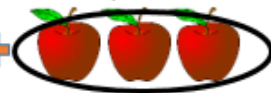
**Subtraction - Through counting and through practical.**

$6 - 2 = 4$



**Multiplication – Through counting, practical and songs**

*'Three apples for you and three apples for me. How many apples altogether?'*

Me  + You  = 6

**Division – Through practically sharing and sorting.**

Share the apples between two people.

*'Half of the apples for you and half of the apples for me.'*

You  Me 

# Stage 1 Calculation Methods - By the end of Year 1 your child should be able to...

**Addition – Through counting, practical, pictures and resources.**

$$15 + 4 = 19$$



**Subtraction – Through counting, practical, pictures and resources.**

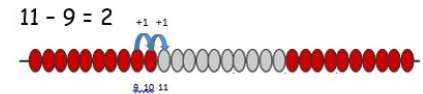
$$5 - 4 = 1$$



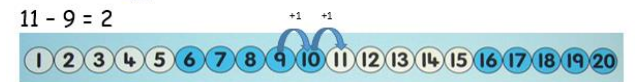
*'Put your finger on number nineteen. Count back five.'*



**And finding the difference:**



$$11 - 9 = 2$$



**Multiplication – Through Practical and Pictures.**

*'Six pairs of socks. How many socks altogether?'*



*'Three pots of ten crayons. How many crayons altogether?'*



*'Five groups of two faces. How many faces altogether?'*

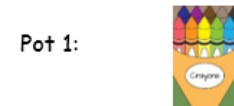


*'Two groups of five faces. How many faces altogether?'*



**Division – Through Practical and Pictures.**

*'Share 20 crayons between 2 pots. How many crayons are in each pot?'*



*'Put 20 crayons into groups of 10. How many pots do we need?'*

1 group of 10



2 groups of 10



Use arrays to support early division

*'How many faces altogether? How many groups of two?'*




# Stage 2 Calculation Methods - By the end of Year 2 your child should be able to...

## Addition

$$28 + 6 = 34$$


+1 +1 +1 +1 +1 +1



28 29 30 31 32 33 34

$$28 + 30 = 58$$


+10 +10 +10



28 38 48 58

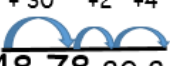
48 + 36 = 84  
 'Put the biggest number first (48), and then partition the smaller number (36 = 30 + 6) 48 + 30 + 6.'

+10 +10 +10 +1 +1 +1 +1 +1 +1



48 58 68 78 79 80 81 82 83 84

+30 +2 +4



48 78 80 84

'Partition the numbers into tens and ones/units. Add the tens together and then add the ones/units together. Recombine to give the answer.'

$$43 + 25 = 68$$


40 + 3    20 + 5

40 + 20 = 60  
 3 + 5 = 8  
 60 + 8 = 68

## Subtraction

$$34 - 6 = 28$$


-1 -1 -1 -1 -1 -1



28 29 30 31 32 33 34

$$58 - 30 = 28$$

-10 -10 -10




28 38 48 58

## And finding the difference:

$$32 - 28 = 4$$

'The difference between 28 and 32 is 4.'


+1 +1 +1 +1



28 29 30 31 32

## Multiplication – Children use counting in 2s 5s and 10s to help.

Using arrays to support multiplication:

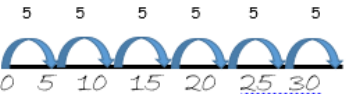
$$5 \times 6 = 30$$


30

'6 groups of 5'  
 '5 groups of 6'  
 '5 x 6 = 30'  
 '6 x 5 = 30'

$$6 \times 5 = 30$$

5 5 5 5 5 5




0 5 10 15 20 25 30

'5 | 5 + 5 + 5 + 5 + 5 + 5 = 30'

## Division - Children use counting in 2s 5s and 10s to help.


Using arrays to support division  
 '15 shared equally between 3 people is...?'

'15 divided by 3 equals 5'



15

15 ÷ 3 = 5  
 '15 divided by 5 equals 3'



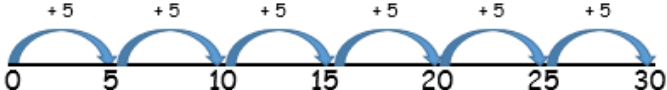
15

15 ÷ 3 = 5

$$30 \div 5 = 6$$

'How many jumps of five make thirty?'

+5 +5 +5 +5 +5 +5



0 5 10 15 20 25 30

## Stage 3 Calculation Methods - By the end of Year 3 your child should be able to...

### Addition

$63 + 32 = 95$

$$\begin{array}{r} 60 + 3 \\ + 30 + 2 \\ \hline 90 + 5 = 95 \end{array}$$

$59 + 23 = 82$

$$\begin{array}{r} 59 \\ + 23 \\ \hline 12 \\ \hline 70 \\ \hline 82 \end{array}$$

$178 + 43 = 221$

$$\begin{array}{r} 178 \\ + 43 \\ \hline 11 \\ \hline 110 \\ \hline 100 \\ \hline 221 \end{array}$$

$178 + 43 = 231$

$$\begin{array}{r} 178 \\ + 43 \\ \hline 221 \\ \hline 11 \\ \hline 221 \end{array}$$

If ready.

### Subtraction

$78 - 23 = 55$

$$\begin{array}{r} 70 + 8 \\ - 20 + 3 \\ \hline 50 + 5 = 55 \end{array}$$

$231 - 198 = 33$ 

*'The difference between 198 and 231 is 33.'*

198 200 230 231

### Multiplication - Children use counting in 2s, 3s, 4s, 5s, 10s to help.

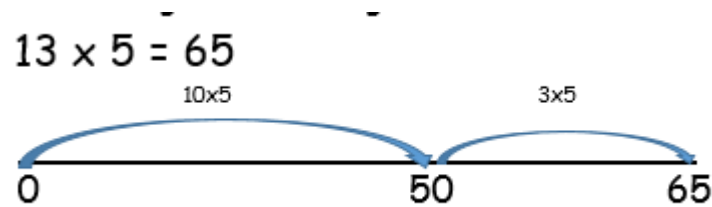
$13 \times 5 = 65$

(Partition 13 into 10 + 3)

$10 \times 5 = 50$

$3 \times 5 = 15$

$50 + 15 = 65$



Grid Method (teen number multiplied by a one-digit number):

$13 \times 8 = 104$

x	10	3
8	80	24

'Partition 13 into 10 + 3 then multiply each number by 8. Add the answers (80 and 24) together.'

### Division – Children use counting in 2s, 3s, 4s, 5s, 10s to help.

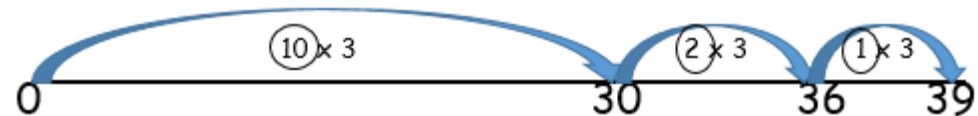
Using an empty number line to count forward using a menu...

$39 \div 3 = 13$

'How many threes in 39?'

$1 \times 3 = 3$   
 $2 \times 3 = 6$   
 $5 \times 3 = 15$   
 $10 \times 3 = 30$

'The menu is based on children using their 1x, 2x, 5x and 10x tables to add groups more efficiently.'



# Stage 4 Calculation Methods - By the end of Year 4 your child should be able to...

## Addition

$$\begin{array}{r}
 1845 + 526 = 2371 \\
 1845 \\
 526 \\
 \hline
 2371 \\
 \hline
 \end{array}$$

## Subtraction

$$\begin{array}{r}
 11 \\
 258 \\
 - 73 \\
 \hline
 185 \\
 \hline
 \end{array}$$

## Multiplication

$$\begin{array}{r|l|l}
 36 \times 4 = 144 \\
 \times & 30 & 6 \\
 \hline
 4 & 120 & 24 \\
 \hline
 \end{array}$$

$$120 + 24 = 144$$

$$\begin{array}{r}
 36 \times 4 = 144 \\
 36 \\
 \times 4 \\
 \hline
 24 \quad (4 \times 6 = 24) \\
 + 120 \quad (4 \times 30 = 120) \\
 \hline
 144
 \end{array}$$

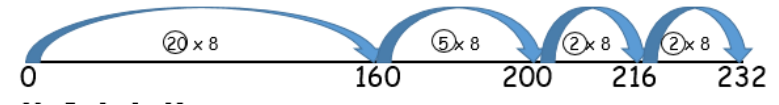
$$\begin{array}{r}
 36 \times 4 = 144 \\
 36 \\
 \times 4 \\
 \hline
 144 \\
 \hline
 2
 \end{array}$$

## Division

$$232 \div 8 = 29$$

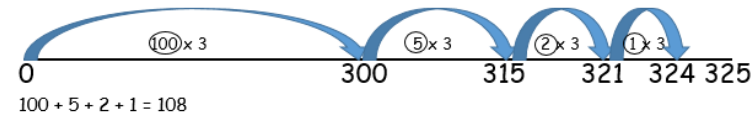
$$\begin{array}{l}
 1 \times 8 = 8 \\
 2 \times 8 = 16 \\
 5 \times 8 = 40 \\
 10 \times 8 = 80 \\
 20 \times 8 = 160
 \end{array}$$

'The menu is based on 1x, 2x, 5x and 10x tables. For larger calculations children should be encouraged to also include 20x, 50x and if needed 100x to their menu.'



$$325 \div 3 = 108 \text{ r}1$$

$$\begin{array}{l}
 1 \times 3 = 3 \\
 2 \times 3 = 6 \\
 5 \times 3 = 15 \\
 10 \times 3 = 30 \\
 20 \times 3 = 60 \\
 50 \times 3 = 150 \\
 100 \times 3 = 300
 \end{array}$$



$$100 + 5 + 2 + 1 = 108$$

## Stage 5 Calculation Methods - By the end of Year 5 your child should be able to...

### Addition

$$£154.75 + £233.82 = £388.57$$

$$\begin{array}{r} 154.75 \\ + 233.82 \\ \hline 388.57 \\ 1 \end{array}$$

### Subtraction

$$12731 - 1367 = 11364$$

$$\begin{array}{r} 1 \\ 6 \ 2 \ 1 \\ 12\cancel{7}\cancel{3}1 \\ - 1367 \\ \hline 11364 \end{array}$$

$$£166.25 - £83.72 = £82.53$$

$$\begin{array}{r} 1 \ 5 \ 1 \\ \cancel{1}6\cancel{6}.25 \\ - 83.72 \\ \hline 82.53 \end{array}$$

### Multiplication

$$23 \times 13 = 299$$

x	20	3
10	200	30
3	60	9

$$200 + 30 + 60 + 9 = 299$$

$$56 \times 27 = 1512$$

$$\begin{array}{r} 56 \\ \times 27 \\ \hline 162 \quad (27 \times 6) \\ +1350 \quad (27 \times 50) \\ \hline 1512 \\ 1 \end{array}$$

$$56 \times 27 = 1512$$

$$\begin{array}{r} 56 \\ \times 27 \\ \hline 42 \quad (7 \times 6) \\ + 350 \quad (7 \times 50) \\ + 120 \quad (20 \times 6) \\ + 1000 \quad (20 \times 50) \\ \hline 1512 \end{array}$$

$$124 \times 26 = 3224$$

$$\begin{array}{r} 124 \\ \times 26 \\ \hline 744 \quad (6 \times 124) \\ +2480 \quad (20 \times 124) \\ \hline 3224 \\ 1 \ 1 \end{array}$$

### Division

$$184 \div 8 = 23$$

$$\begin{array}{r} 20 + 3 \\ 8 \overline{) 160 + 24} \end{array}$$

'Explain that this method is for multiple digit numbers divided by a 1 digit number.'

$$\begin{array}{r} 23 \\ 8 \overline{) 18^2 4} \end{array}$$

$$432 \div 5 = 86 \frac{2}{3}$$

$$\begin{array}{r} 86r2 \\ 5 \overline{) 43^3 2} \end{array}$$

## Stage 6 Calculation Methods - By the end of Year 6 your child should be able to...

### Addition

$$£154.75 + £233.82 = £388.57$$

$$\begin{array}{r} 154.75 \\ + 233.82 \\ \hline 388.57 \\ \hline \end{array}$$

### Subtraction

$$12731 - 1367 = 11364$$

$$\begin{array}{r} \phantom{1} \phantom{2} \phantom{7} \phantom{3} \phantom{1} \\ \phantom{1} \phantom{2} \phantom{7} \phantom{3} \phantom{1} \\ \phantom{1} \phantom{2} \phantom{7} \phantom{3} \phantom{1} \\ \phantom{1} \phantom{2} \phantom{7} \phantom{3} \phantom{1} \\ \phantom{1} \phantom{2} \phantom{7} \phantom{3} \phantom{1} \\ \phantom{1} \phantom{2} \phantom{7} \phantom{3} \phantom{1} \\ \hline 12731 \\ - 1367 \\ \hline 11364 \end{array}$$

$$£166.25 - £83.72 = £82.53$$

$$\begin{array}{r} \phantom{1} \phantom{6} \phantom{2} \phantom{5} \\ \phantom{1} \phantom{6} \phantom{2} \phantom{5} \\ \phantom{1} \phantom{6} \phantom{2} \phantom{5} \\ \phantom{1} \phantom{6} \phantom{2} \phantom{5} \\ \phantom{1} \phantom{6} \phantom{2} \phantom{5} \\ \phantom{1} \phantom{6} \phantom{2} \phantom{5} \\ \hline 166.25 \\ - 83.72 \\ \hline 82.53 \end{array}$$

### Multiplication

$$124 \times 26 = 3224$$

$$\begin{array}{r} 124 \\ \times 26 \\ \hline 744 \\ + 2480 \\ \hline 3224 \\ \hline \end{array}$$

(6 × 124)  
(20 × 124)

$$53.2 \times 24 = 1276.8$$

$$\begin{array}{r} 53.2 \\ \times 24.0 \\ \hline 212.8 \\ + 1064.0 \\ \hline 1276.8 \end{array}$$

(4 × 53.2)  
(20 × 53.2)

$$53.2 \times 24 = 1276.8$$

X	50	3	0.2
20	1000	60	4
4	200	12	0.8

### Division

$$496 \div 9 = 55 \text{ r}1$$

$$\begin{array}{r} 55 \text{ r}1 \\ 9 \overline{) 496} \\ \underline{45} \phantom{0} \\ 46 \phantom{0} \\ \underline{45} \phantom{0} \\ 10 \phantom{0} \\ \underline{9} \phantom{0} \\ 1 \phantom{0} \end{array}$$

$$432 \div 15 = 28 \text{ r}12$$

$$\begin{array}{r} 28 \text{ r}12 \\ 15 \overline{) 432} \\ \underline{300} \\ 132 \\ \underline{120} \\ 12 \end{array}$$

(20 × 15)  
(8 × 15)  
20 + 8 = 28

$$432 \div 15 = 28 \text{ r}12$$

$$\begin{array}{r} 28 \text{ r}12 \\ 15 \overline{) 432} \\ \underline{30} \phantom{0} \\ 132 \\ \underline{120} \\ 12 \end{array}$$