

Sense of Number Visual Calculation Policy

Expanded Edition for
Toner Avenue Primary School
March 2015



Graphic Design by Dave Godfrey
Compiled by the Sense of Number Maths Team

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‘A picture is worth 1000 words!’
www.senseofnumber.co.uk

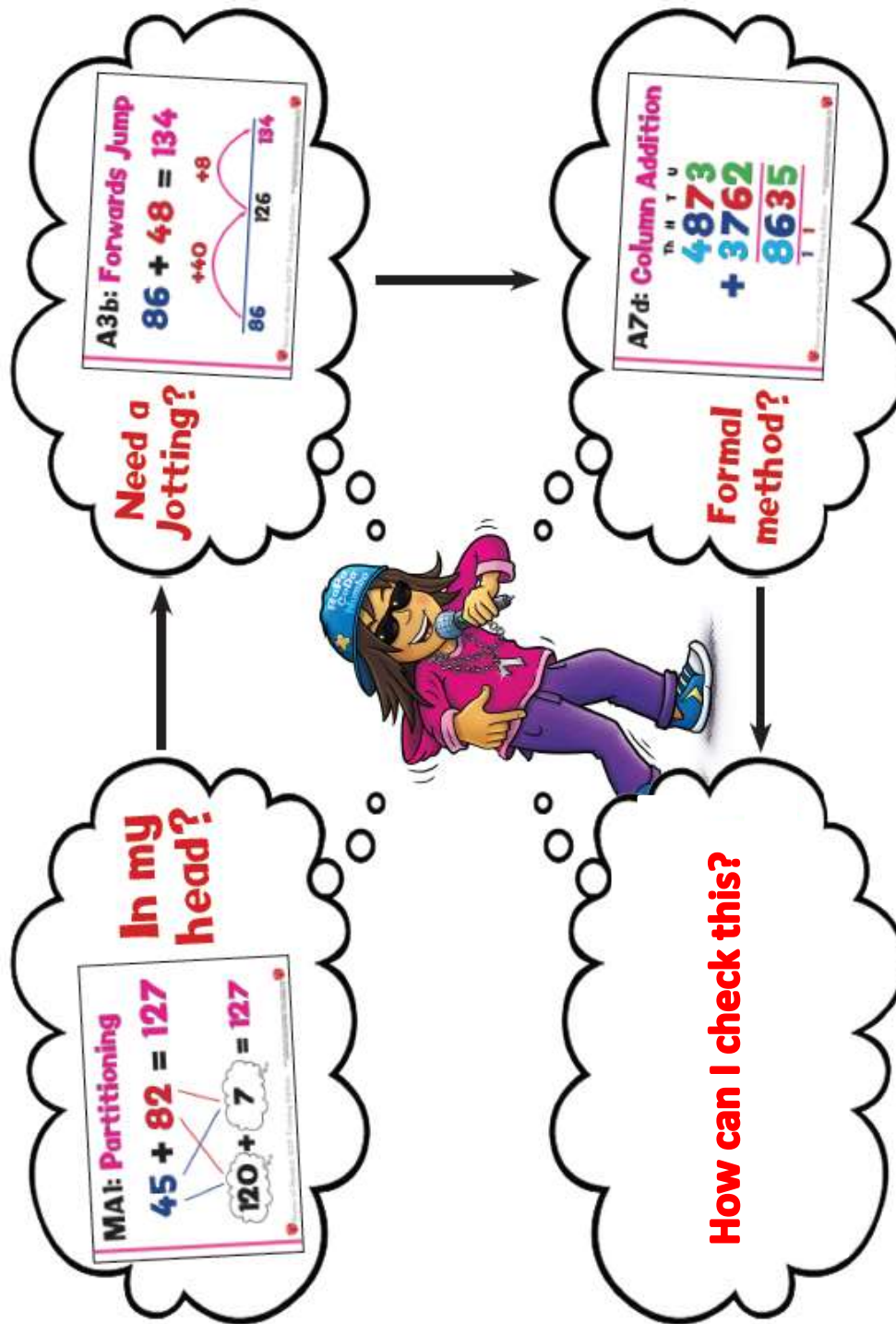


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We want our pupils to make decisions. We help our pupils make choices to be fast and efficient at maths.



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This is how we can ask and answer our questions.

KC1: Key Concepts!

Addition

+

$$8 + 2 = 10$$

“What is 8 add 2?”
Answer: 10

Subtraction

−

$$8 - 2 = 6$$

“What is 8 subtract 2?”
Answer: 6
“The difference between 8
and 2 is 6”



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KC2: Key Concepts!

Multiplication

x

$$8 \times 2 = 16$$

“8 multiplied by 2” means
“8, 2 times” or
“2 groups of 8”

Division

÷

$$8 \div 2 = 4$$

“8 divided by 2” means “How
many groups of 2 are there in
8?” Answer: 4

(“8 shared into 2 sets is 4”)



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Before we answer questions, this is what we consider.

1

**Can I do this
in my head?**



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2

**Do I need to
use a drawing
or a jotting?**



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3

**Do I need an
expanded or a
standard method?**

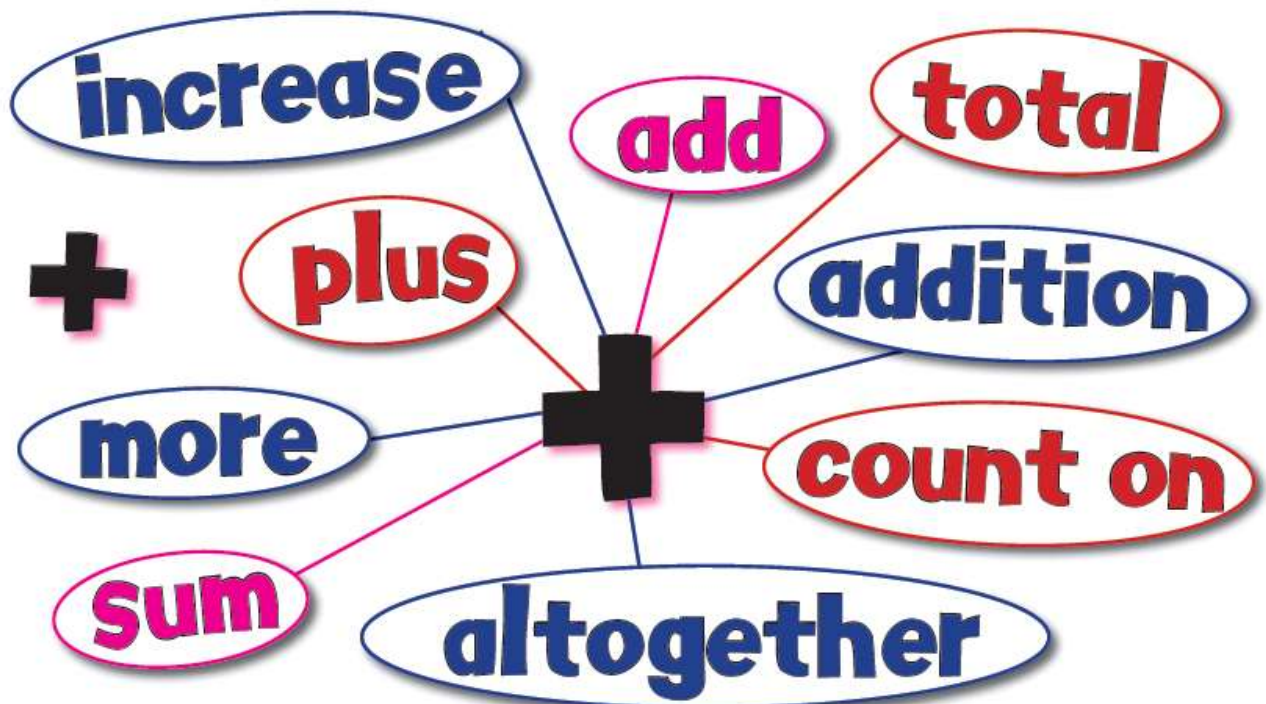


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Addition Vocabulary

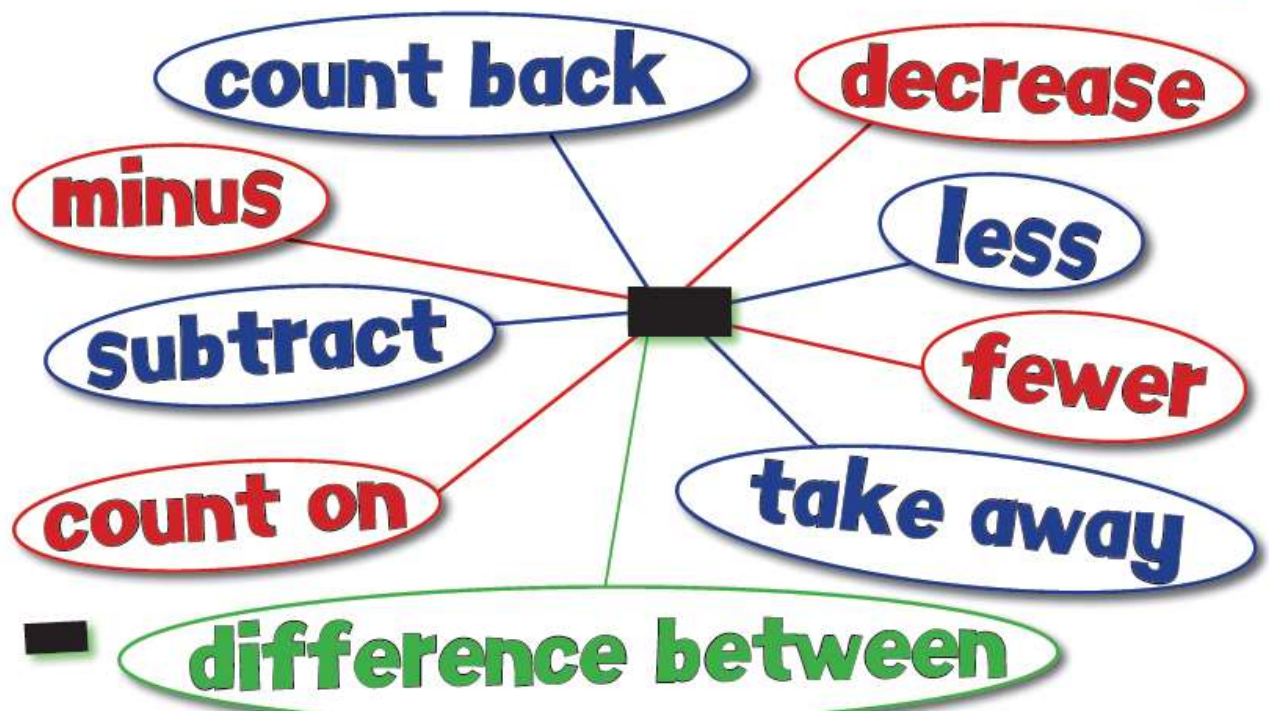


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Subtraction Vocabulary

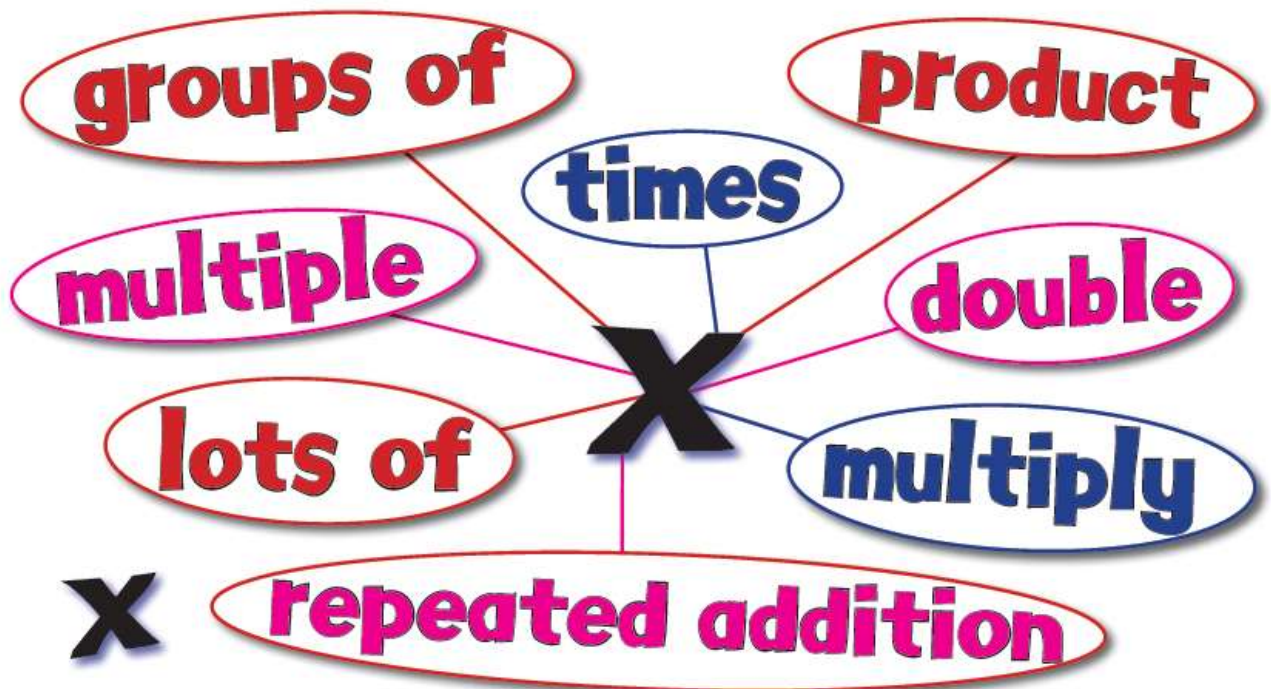


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Multiplication Vocabulary

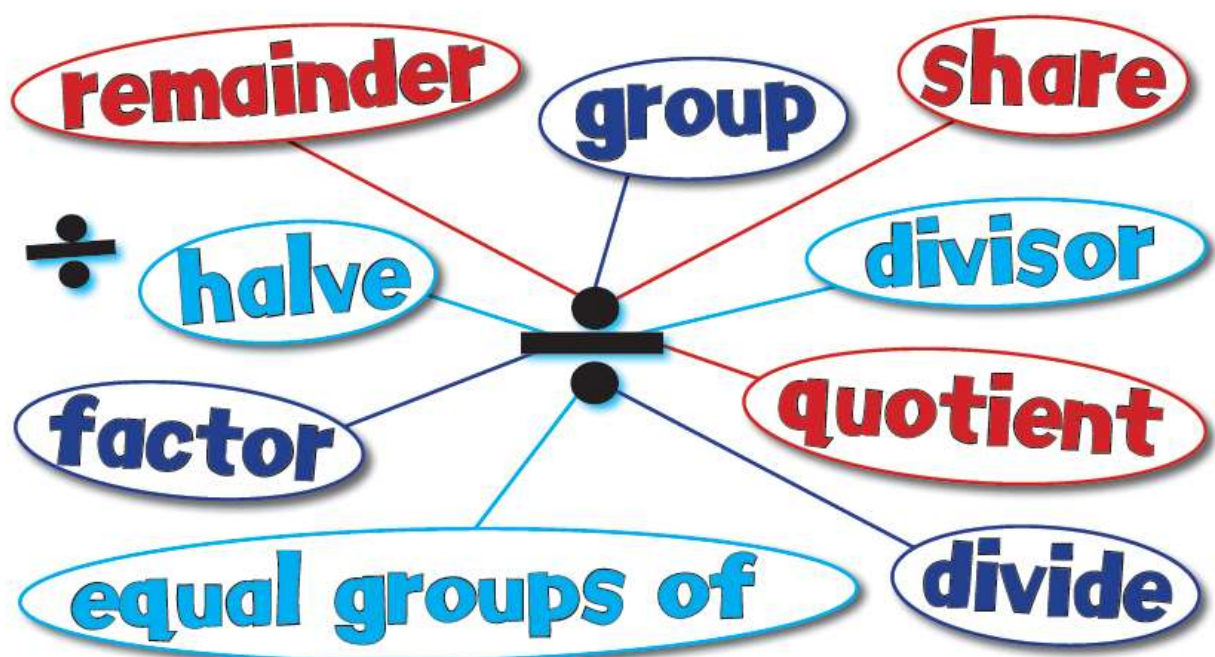


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Division Vocabulary

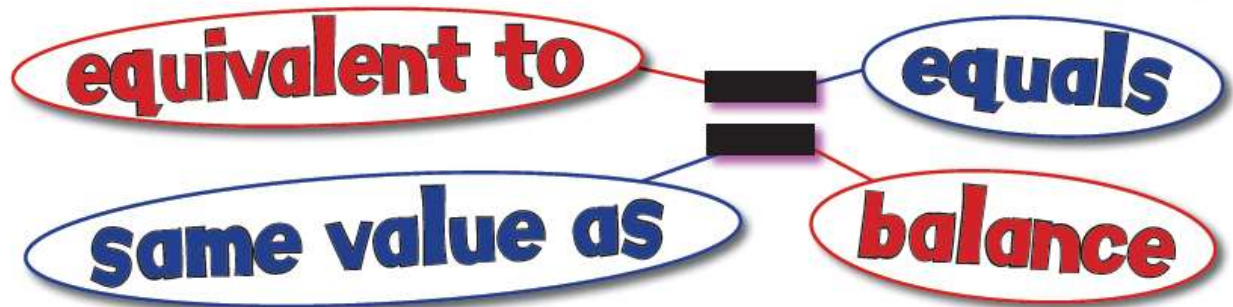


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Calculation Vocabulary



+ Addition

X Multiplication

Operations

- Subtraction

÷ Division

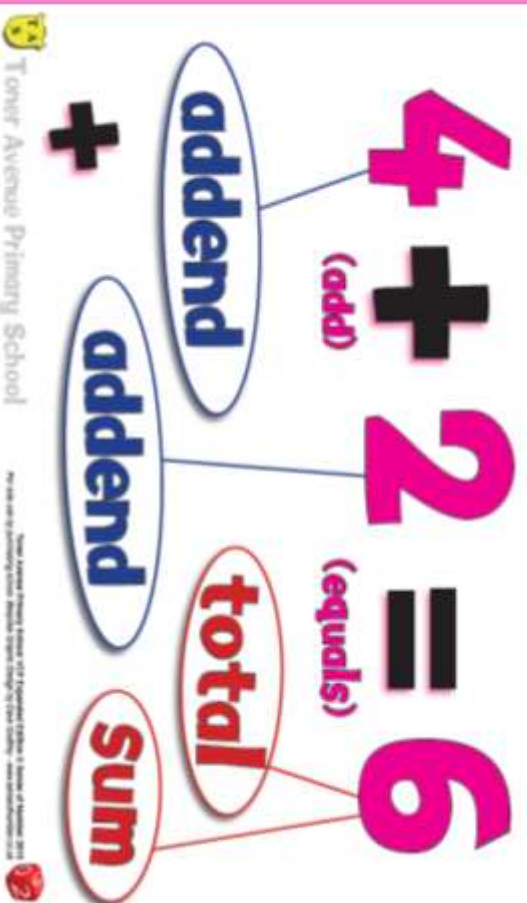


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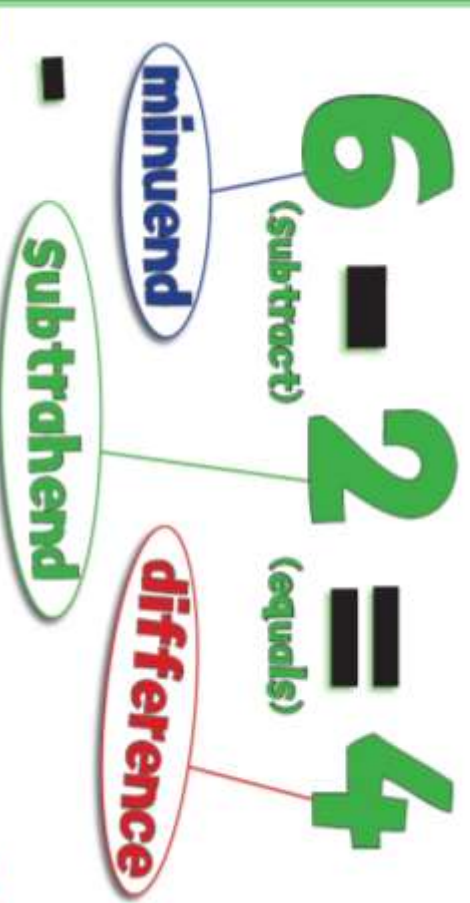
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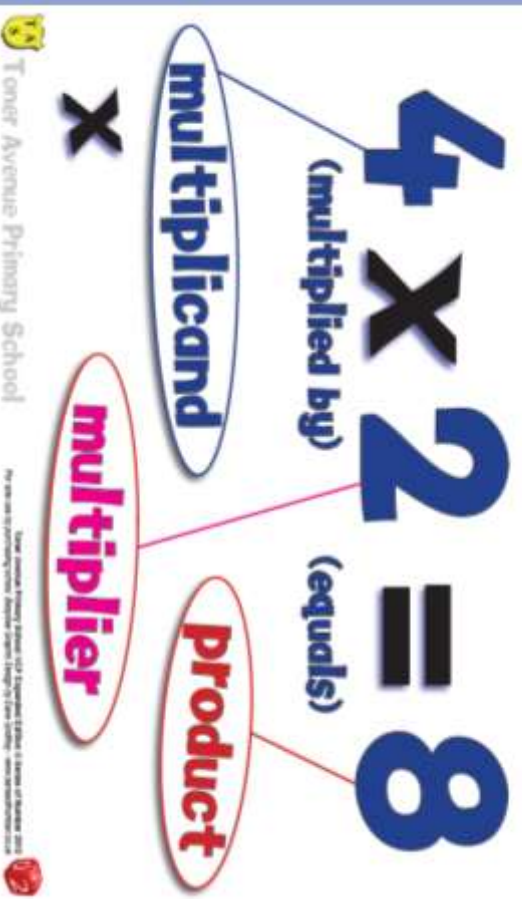
Addition Calculation



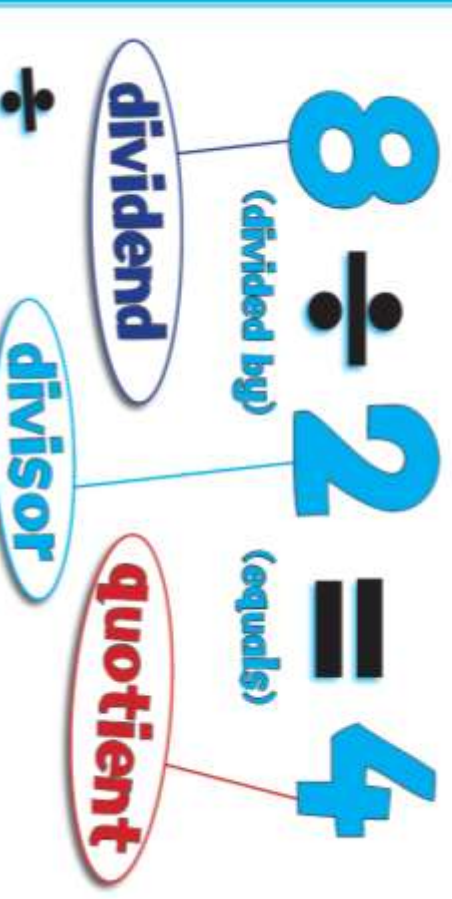
Subtraction Calculation



Multiplication Calculation



Division Calculation



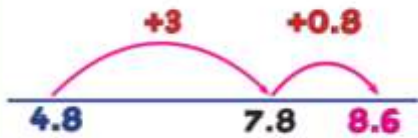
Counting



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A3f: Decimal Jump

$$4.8 + 3.8 = 8.6$$



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A4f: Partitioning

$$4.8 + 3.8 = 8.6$$

$$\begin{array}{r} 4 + 3 = 7 \\ 0.8 + 0.8 = 1.6 \\ \hline 8.6 \end{array}$$

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A5f: Partition Jot

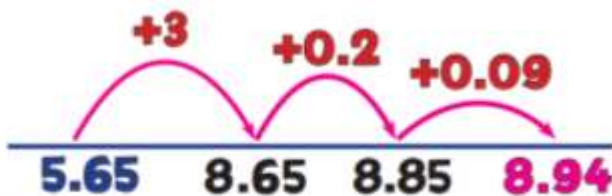
$$4.8 + 3.8 = 8.6$$

$$7 + 1.6$$

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A3g: Decimal Jump

$$5.65 + 3.29 = 8.94$$



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A5g: Partition Jot

$$5.65 + 3.29 = 8.94$$

$$8 + 0.8 + 0.14$$

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A5h: Partition Jot

$$76.7 + 58.5 = 135.2$$

$$120 + 14 + 1.2$$

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A5i: Partition Jot

$$£38.25 + £27.46 = £65.71$$

$$£65.00 + £0.71$$

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MA1: Partitioning

$$4.73 + 2.21 = 6.94$$

$$6 + 0.9 + 0.04 = 6.94$$

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MA2a: Counting On 6 Ten Thousands

$$43,826 + 30,000 = 73,826$$



MA2b: Counting On 6 Millions

$$5,763,947 + 4,000,000 = 9,763,947$$



MA3: Number Bonds 5

$$£4.56 + £3.27 + £1.44 = £9.27$$

£6.00 + £3.27 = £9.27

MA4: Double & Adjust

$$45 + 46 = 91$$

$$45 + 45 + 1$$

$$90 + 1 = 91$$

MA5: Round & Adjust 5

$$4645 + 1996 = 6641$$

$$4645 + 2000 - 4$$

$$6645 - 4 = 6641$$

Addition



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A7e: Column Addition

	HTh	TTh	Th	H	T	U
	7	8	7	5	6	7
+	4	4	6	2	7	8
<hr/>						
	1	2	3	3	8	4
	1	1	1		1	1



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A7i: Column Addition

	TU	.	Tth	Hth	Money
	£	3	8	.	25
+	£	2	7	.	46
<hr/>					
	£	6	5	.	71
		1			1



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A7j: Column Addition

With Decimals

$$73.4 + 5.67 = 79.07$$

	TU	.	Tth	Hth
	7	3	.	40
+	0	5	.	67
<hr/>				
	7	9	.	07

1



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Subtraction



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S11e: Column Subtraction

$$\begin{array}{r}
 \overset{3}{7} \overset{1}{4} \overset{7}{2} \overset{12}{8} \overset{1}{3} \overset{1}{1} \\
 - 427358 \\
 \hline
 315473
 \end{array}$$



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S11g: Column Subtraction

$$\begin{array}{r}
 \text{T U. Tth Hth} \\
 \overset{6}{7} \overset{11}{2} \overset{13}{4} \overset{1}{3} \\
 - 47.85 \\
 \hline
 24.58
 \end{array}$$



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S11h: Column Subtraction

With Decimals

$$12.4 - 5.97 = 6.43$$

$$\begin{array}{r}
 \text{T U. Tth Hth} \\
 \overset{0}{1} \overset{11}{2} \overset{13}{4} \overset{1}{0} \\
 - 05.97 \\
 \hline
 06.43
 \end{array}$$

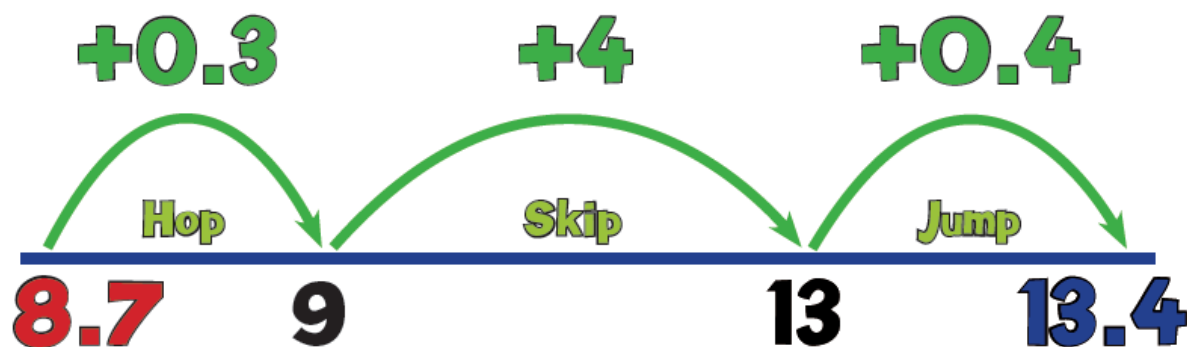


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S8f: Decimal T-J!



$$13.4 - 8.7 = 4.7$$

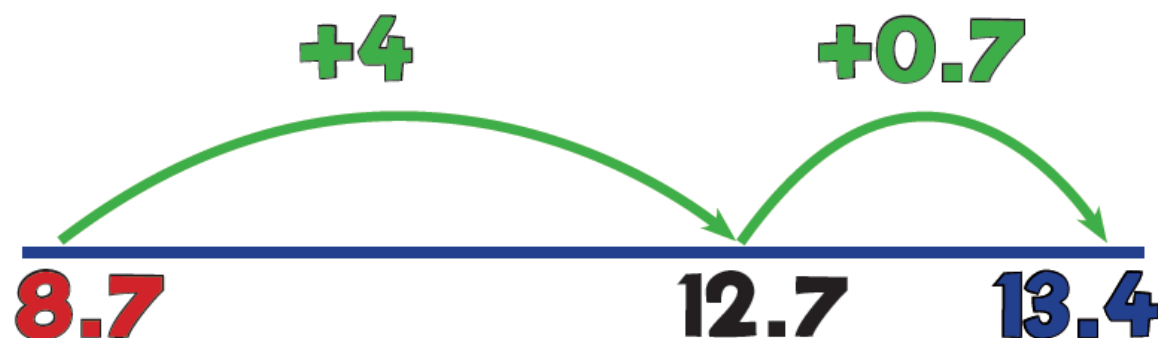


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S9f: 1s Jump, Tenths Jump!



$$13.4 - 8.7 = 4.7$$



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Multiplication



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M7: Column Multiplication

$$\begin{array}{r} 100 \quad 10 \quad 1 \\ 147 \\ \times 4 \\ \hline 588 \\ \hline 12 \end{array}$$



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M9a: Long Multiplication

Column

$$\begin{array}{r} 243 \\ \times 68 \\ \hline 1944 \quad (8 \times 243) \\ + 14580 \quad (60 \times 243) \\ \hline 16524 \end{array}$$



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M9: Long Multiplication

Column

$$\begin{array}{r} 43 \\ \times 65 \\ \hline 215 \quad (5 \times 43) \\ + 2580 \quad (60 \times 43) \\ \hline 2795 \end{array}$$



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M9c: Column Multiplication

$$\begin{array}{r} 10 \quad 1 \quad \frac{1}{10} \\ 3.6 \\ \times 4 \\ \hline 14.4 \end{array}$$



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MM5g: Doubling

$$\text{Double } 3.7 = 7.4$$

$$6 + 1.4 = 7.4$$



MM1a: Jump!

x1000

63400

x100

6340

x10

634

63.4

÷10

6.34

÷100

0.634

÷1000

0.0634



M9c: Column Multiplication

$$\begin{array}{r} 10 \quad 1 \quad \frac{1}{10} \\ 3.6 \\ \times 4 \\ \hline 14.4 \\ 2 \end{array}$$

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M9e: Column Multiplication

$$\begin{array}{r} 10 \quad 1 \quad \frac{1}{10} \quad \frac{1}{100} \\ 7.38 \\ \times 6 \\ \hline 44.28 \\ 424 \end{array}$$

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M9f: Long Multiplication

Column Decimals

$$\begin{array}{r} 10 \quad 1 \quad \frac{1}{10} \quad \frac{1}{100} \\ 24.3 \\ \times 2.5 \\ \hline 12.15 \quad (0.5 \times 24.3) \\ + 48.60 \quad (2 \times 24.3) \\ \hline 60.75 \end{array}$$

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M9g: Long Multiplication

Column

$$\begin{array}{r} 3786 \\ \times 48 \\ \hline 30288 \quad (8 \times 3786) \\ + 151440 \quad (40 \times 3786) \\ \hline 181728 \end{array}$$


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Year 5 - Multiplication

Mx2: Table Facts

2x table






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Mx5: Table Facts

5x table



5x1=5
5x2=10
5x3=15
5x4=20
5x5=25
5x6=30
5x7=35
5x8=40
5x9=45
5x10=50
5x11=55
5x12=60

 Your Name Primary School

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Mx10: Table Facts

10x table

10x1=10
10x2=20
10x3=30
10x4=40
10x5=50
10x6=60
10x7=70
10x8=80
10x9=90
10x10=100

Mx3: Table Facts

3x table

Mx4: Table Facts

4x table

Mx8: Table Facts

8x table

Mx6: Table Facts

6x table

Mx7: Table Facts

7x table

Mx9: Table Facts

9x table

Mx11: Table Facts

11x table

11 x 1 = 11
11 x 2 = 22
11 x 3 = 33
11 x 4 = 44
11 x 5 = 55
11 x 6 = 66
11 x 7 = 77
11 x 8 = 88
11 x 9 = 99
11 x 10 = 110
11 x 11 = 121
11 x 12 = 132
11 x 13 = 143
11 x 14 = 154
11 x 15 = 165
11 x 16 = 176
11 x 17 = 187
11 x 18 = 198
11 x 19 = 209
11 x 20 = 220

Mx12: Table Facts

12x table

12

12 x 1 = 12

12 x 2 = 24

12 x 3 = 36

12 x 4 = 48

12 x 5 = 60

12 x 6 = 72

12 x 7 = 84

12 x 8 = 96

12 x 9 = 108

12 x 10 = 120

12 x 11 = 132

12 x 12 = 144

Division



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D10e: Short Division

$$5978 \div 7 = 854$$

$$\begin{array}{r} 854 \\ 7 \overline{) 5978} \end{array}$$



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D10f: Short Division

Different Remainders

$$\begin{array}{r} 169.2 \\ 5 \overline{) 846.0} \end{array}$$

$$846 \div 5$$

$$\begin{array}{r} 169r1 \\ 5 \overline{) 846} \end{array}$$

$$\begin{array}{r} 169\frac{1}{5} \\ 5 \overline{) 846} \end{array}$$



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D10i: Short Division

$$87.5 \div 7 = 12.5$$

$$\begin{array}{r} 12.5 \\ 7 \overline{) 87.5} \end{array}$$



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D12: Long Division

Short Division Method

$$\begin{array}{r} 26 \text{ r} 21 \\ 37 \overline{) 983} \end{array}$$

The diagram illustrates the short division method for 983 divided by 37. The divisor 37 is on the left. The dividend 983 is on the right, with the 9 in blue, the 8 in red, and the 3 in green. Above the 9 is a blue 9, and above the 8 is a red 24. A pink horizontal line is drawn above the 983, and a pink vertical line is drawn to the left of the 983, forming a bracket.

