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

For sole use within Toner Avenue Primary School.

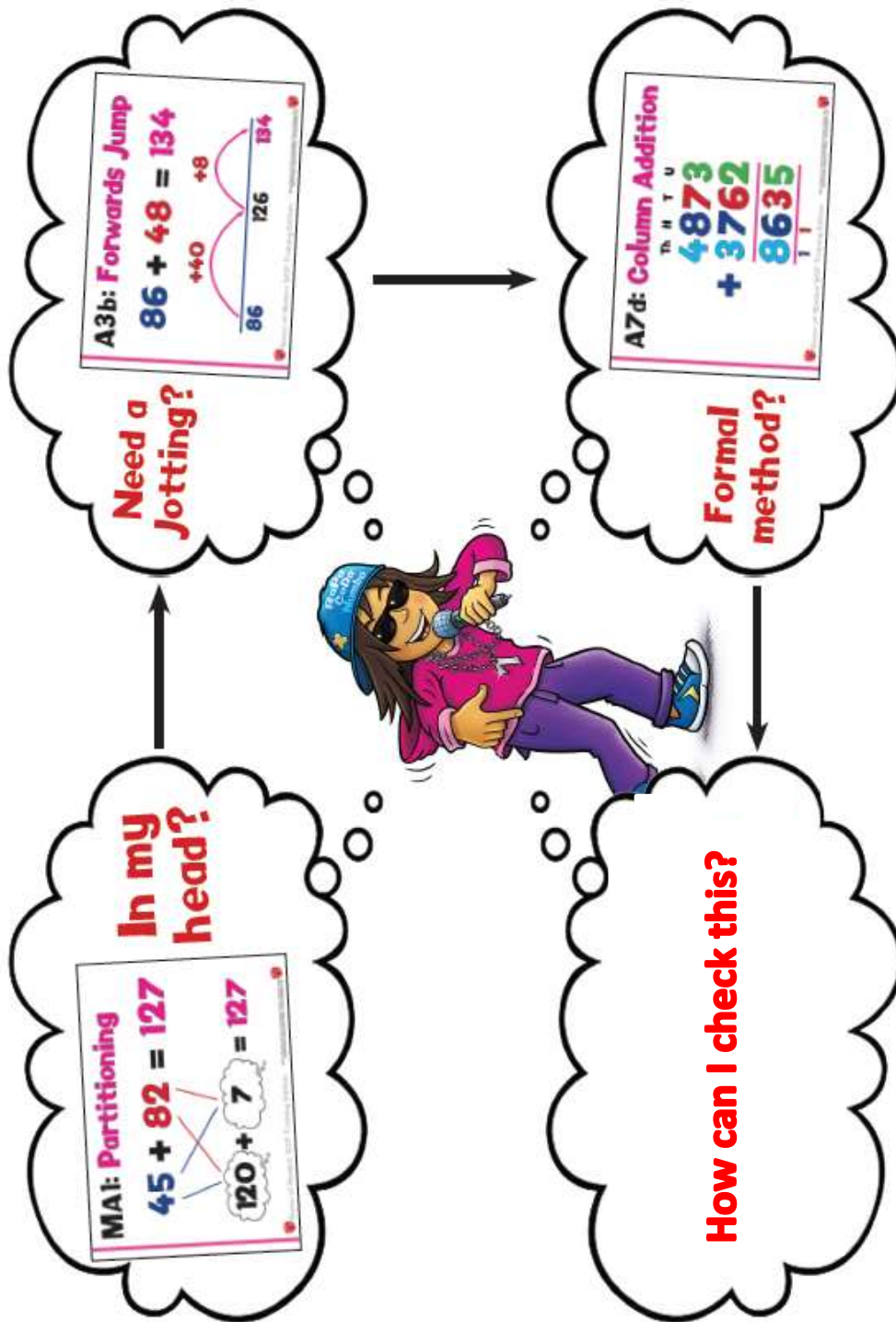**'A picture is worth 1000 words!'**

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

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"

KC2: Key Concepts!

Multiplication

X

$$8 \times 2 = 16$$

"8 multiplied by 2" means "8, 2 times" or "2 groups of 8"

Division

÷

$$8 ÷ 2 = 4$$

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

("8 shared into 2 sets is 4")

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

increase

add

total

plus

addition

more

count on

sum

altogether

+

Subtraction Vocabulary

count back

decrease

minus

less

subtract

fewer

count on

take away

difference between

-

Multiplication Vocabulary

groups of

product

times

multiple

double

x

lots of

multiply

x

repeated addition

Division Vocabulary

remainder

group

share

÷

halve

divisor

÷

factor

quotient

equal groups of

divide
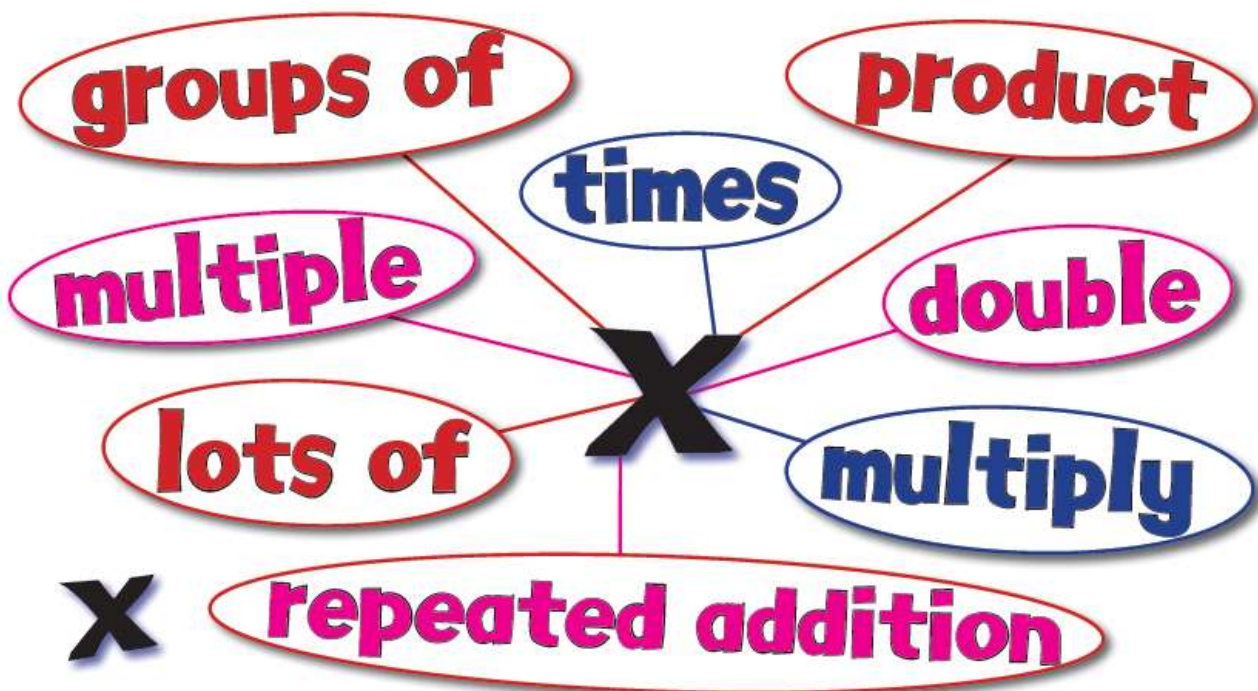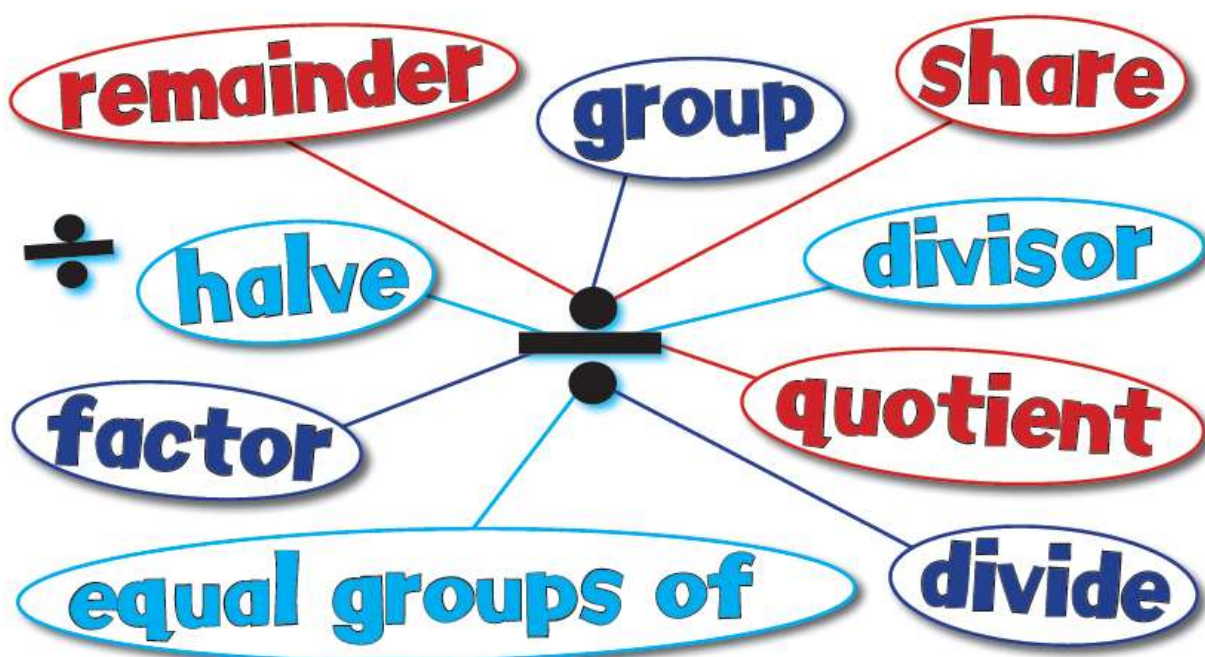
Calculation Vocabulary

equivalent to

equals

same value as

balance

=

+ Addition

X Multiplication

Operations

- Subtraction

÷ Division

Addition Calculation

$$4 + 2 = 6$$

(add) (equals)

addend   addend   total   sum

+
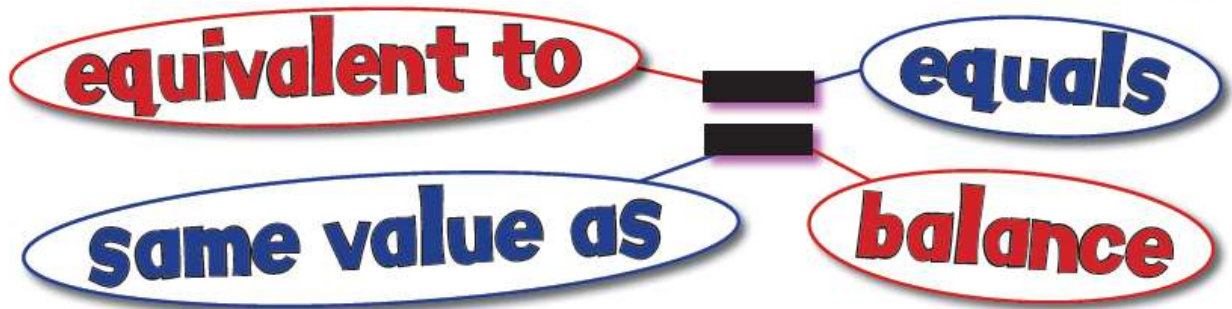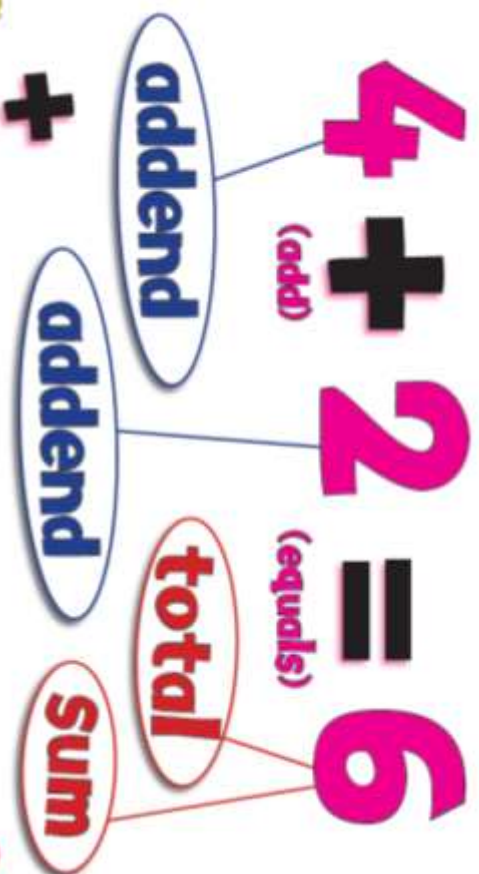
Subtraction Calculation

$$6 - 2 = 4$$

(subtract) (equals)

minuend   subtrahend   difference

−
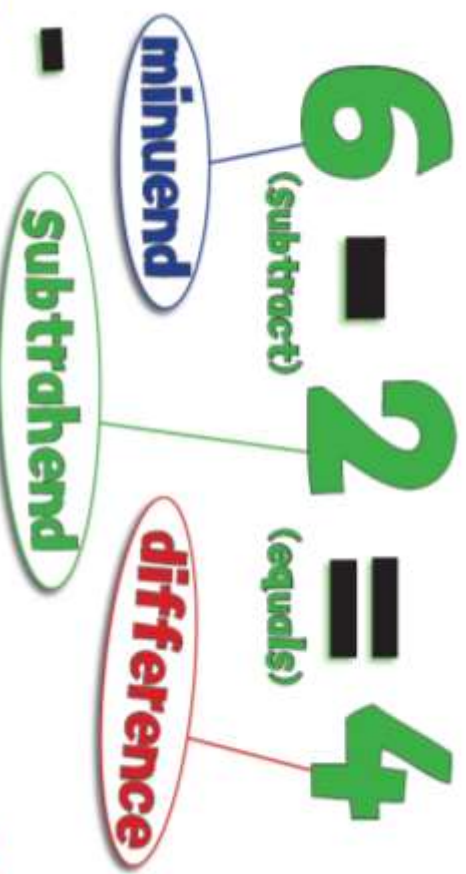
Multiplication Calculation

$$4 \times 2 = 8$$

(multiplied by) (equals)

multiplicand   multiplier   product

×
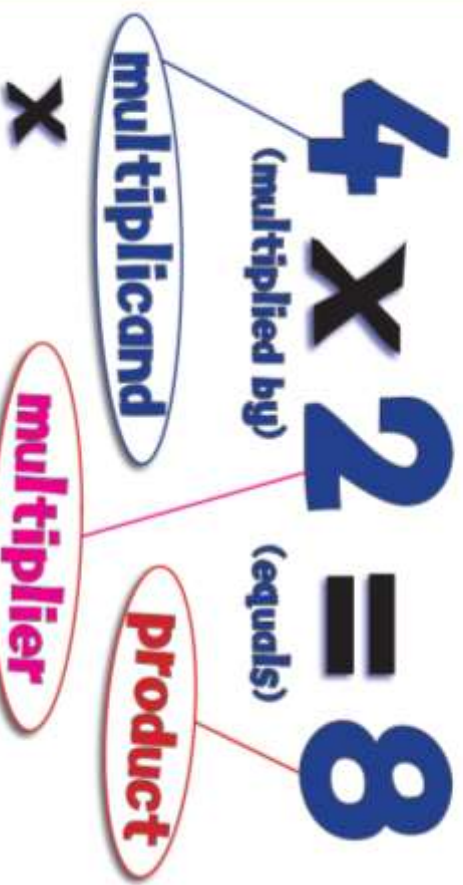
Division Calculation

$$8 \div 2 = 4$$

(divided by) (equals)

dividend   divisor   quotient

÷
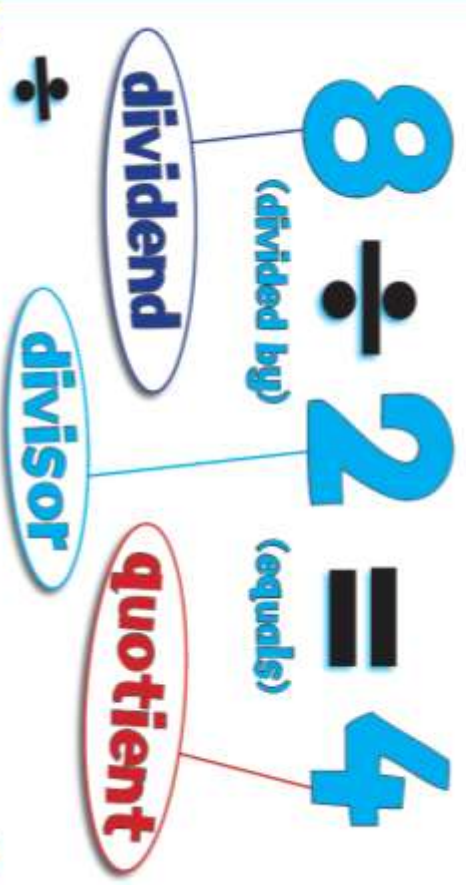
Counting

A3f: Decimal Jump

$4.8 + 3.8 = 8.6$

+3   +0.8

4.8   7.8   8.6
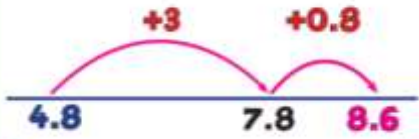
A4f: Partitioning

$4.8 + 3.8 = 8.6$

$4 + 3 = 7$
$0.8 + 0.8 = 1.6$
8.6

A5f: Partition Jot

$4.8 + 3.8 = 8.6$

$7 + 1.6$

A3g: Decimal Jump

$5.65 + 3.29 = 8.94$

+3   +0.2   +0.09

5.65   8.65   8.85   8.94
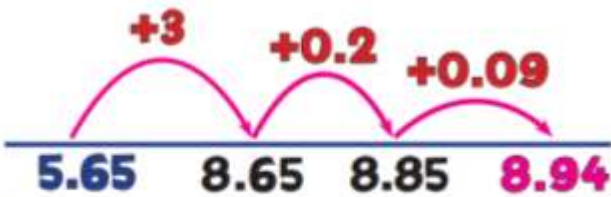
A5g: Partition Jot

$5.65 + 3.29 = 8.94$

$8 + 0.8 + 0.14$

A5h: Partition Jot

$76.7 + 58.5 = 135.2$

$120 + 14 + 1.2$

A5i: Partition Jot

$£38.25 + £27.46 = £65.71$

$£65.00 + £0.71$

MA1: Partitioning

$4.73 + 2.21 = 6.94$

$6 + 0.9 + 0.04 = 6.94$

Year 5 and 6 – Counting and Equipment

MA2a: Counting On
Ten Thousands

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

$+30,000$

43,826   73,826

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MA2b: Counting On
Millions

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

$+4,000,000$

5,763,947   9,763,947

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MA3: Number Bonds

$£4.56 + £3.27 + £1.44 = £9.27$

£6.00   £3.27

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MA4: Double & Adjust

$45 + 46 = 91$

$45 + 45 + 1$

$90 + 1 = 91$

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MA5: Round & Adjust

$4645 + 1996 = 6641$

$4645 + 2000 - 4$

$6645 - 4 = 6641$

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Addition

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Year 5 – Addition

A7e: Column Addition

HTh	TTh	Th	H	T	U
7	8	7	5	6	7
+ 4	4	6	2	7	8
1 2	3	3	8	4	5
1	1	1		1	1

A7i: Column Addition
Money

T U . Tth Hth

£38.25
+ £27.46
£65.71
1   1

A7j: Column Addition
With Decimals

73.4 + 5.67 = 79.07

T U . Tth Hth

73.40
+05.67
79.07
1

Subtraction

Year 5 – Subtraction

S11e: Column Subtraction

$$742831 - 427358 = 315473$$

S11g: Column Subtraction

T U . Tth Hth

$$72.43 - 47.85 = 24.58$$

S11h: Column Subtraction
With Decimals

$$12.4 - 5.97 = 6.43$$

T U . Tth Hth

$$12.40 - 05.97 = 06.43$$

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S8f: Decimal T-J!

+0.3   +4   +0.4

Hop   Skip   Jump

8.7   9   13   13.4
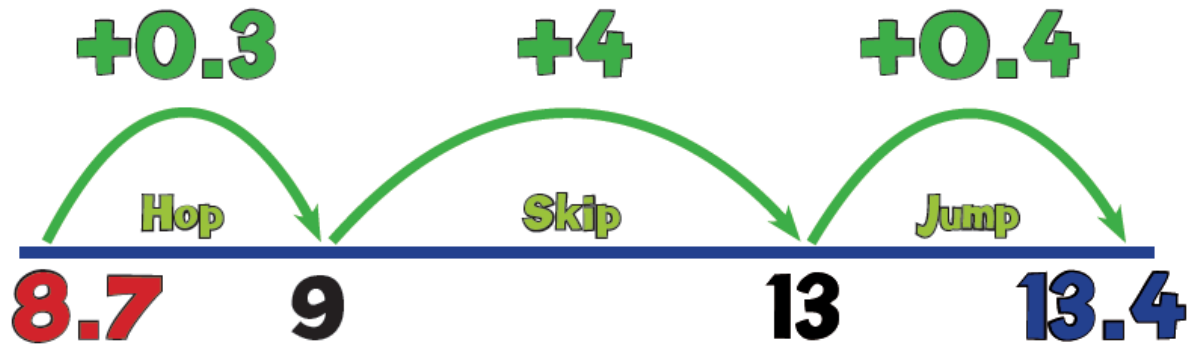
13.4 - 8.7 = 4.7

S9f: 1s Jump, Tenths Jump!

+4   +0.7

8.7   12.7   13.4
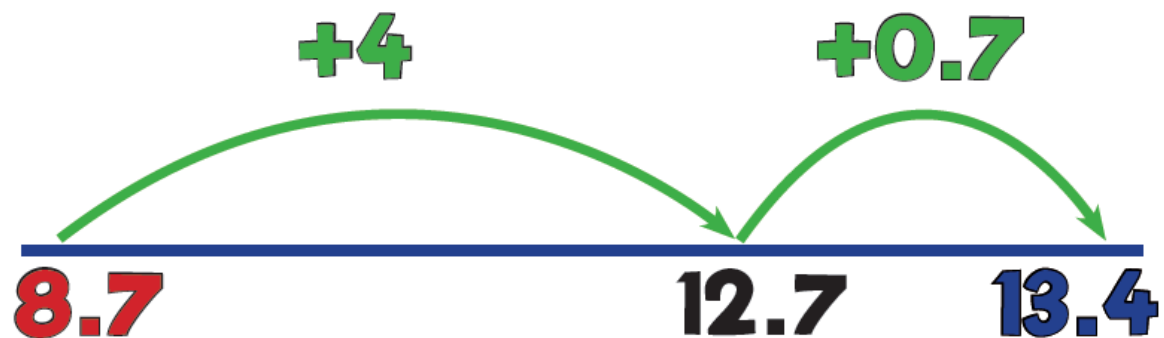
13.4 - 8.7 = 4.7

Multiplication

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Year 5 – Multiplication

M7: Column Multiplication

100	10	1
1	4	7

$$\times \quad 4$$

$$5\,8\,8$$

$$\underset{1}{}\underset{2}{}$$

M9: Long Multiplication — Column

$$\begin{array}{r} 4\,3 \\ \times \quad 6\,5 \\ \hline 2\,1\,5 \quad (5 \times 43) \\ + \quad 2\,5\,8\,0 \quad (60 \times 43) \\ \hline 2\,7\,9\,5 \end{array}$$

M9a: Long Multiplication — Column

$$\begin{array}{r} 2\,4\,3 \\ \times \quad 6\,8 \\ \hline 1\,9\,4\,4 \quad (8 \times 243) \\ + \quad 1\,4\,5\,8\,0 \quad (60 \times 243) \\ \hline 1\,6\,5\,2\,4 \end{array}$$

M9c: Column Multiplication

10	1	.	$\frac{1}{10}$
	3	.	6

$$\times \quad 4$$

$$1\,4\,.\,4$$

$$\underset{2}{}$$

MM5g: Doubling

Double 3.7 = 7.4

6 + 1.4 = 7.4

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MM1a: Jump!

x1000	63400
x100	6340
x10	634
	63.4
÷10	6.34
÷100	0.634
÷1000	0.0634

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Mx2: Table Facts ❷

2x table

Mx5: Table Facts ❺

5x table

Mx10: Table Facts ❿

10x table

Mx3: Table Facts ❸

3x table

Mx4: Table Facts ❹

4x table

Mx8: Table Facts ❽

8x table

Mx6: Table Facts ❻

6x table

Mx7: Table Facts ❼

7x table

Mx9: Table Facts ❾

9x table

Mx11: Table Facts ⓫

11x table

Mx12: Table Facts ⓬

12x table

Division

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D10e: Short Division

$$5978 \div 7 = 854$$

$$7 \overline{\smash{)}5^{5}9^{3}7^{2}8} = 854$$

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D10f: Short Division
Different Remainders

$$5 \overline{\smash{)}8^{3}4^{4}6.^{1}0} = 169.2$$

$$846 \div 5$$

$$5 \overline{\smash{)}8^{3}4^{4}6} = 169\,r1$$

$$5 \overline{\smash{)}8^{3}4^{4}6} = 169\tfrac{1}{5}$$

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D10i: Short Division

$$87.5 \div 7 = 12.5$$

$$7 \overline{\smash{)}8^{1}7.^{3}5} = 12.5$$

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