

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!’
www.senseofnumber.co.uk

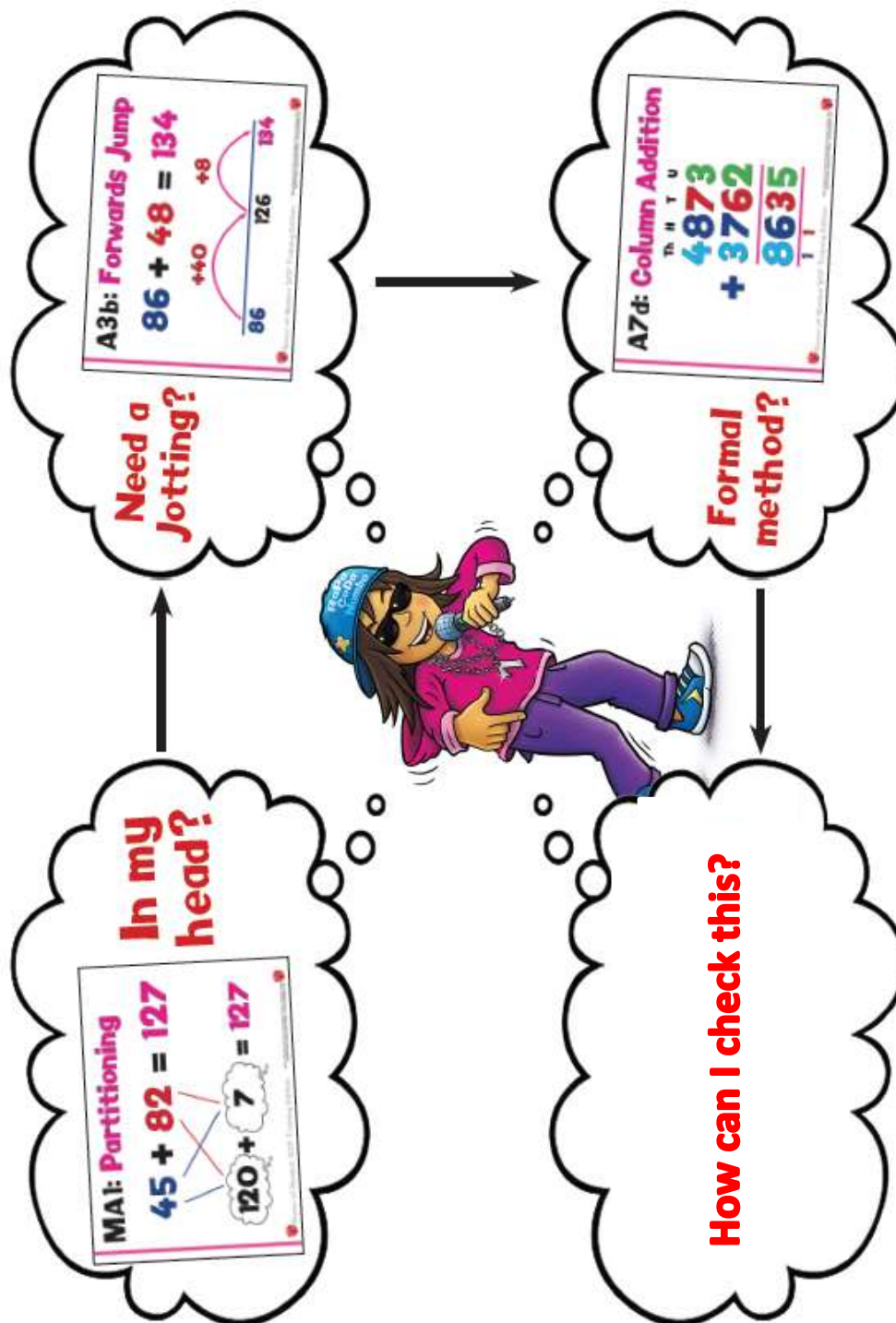


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



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



Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



Toner Avenue Primary School

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”



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



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”)



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



Before we answer questions, this is what we consider.

1

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



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition 6 Series of November 2015
For use only by participating school. All rights reserved. Design by Lark Studios - www.larkstudios.co.uk



2

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



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition 6 Series of November 2015
For use only by participating school. All rights reserved. Design by Lark Studios - www.larkstudios.co.uk



3

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

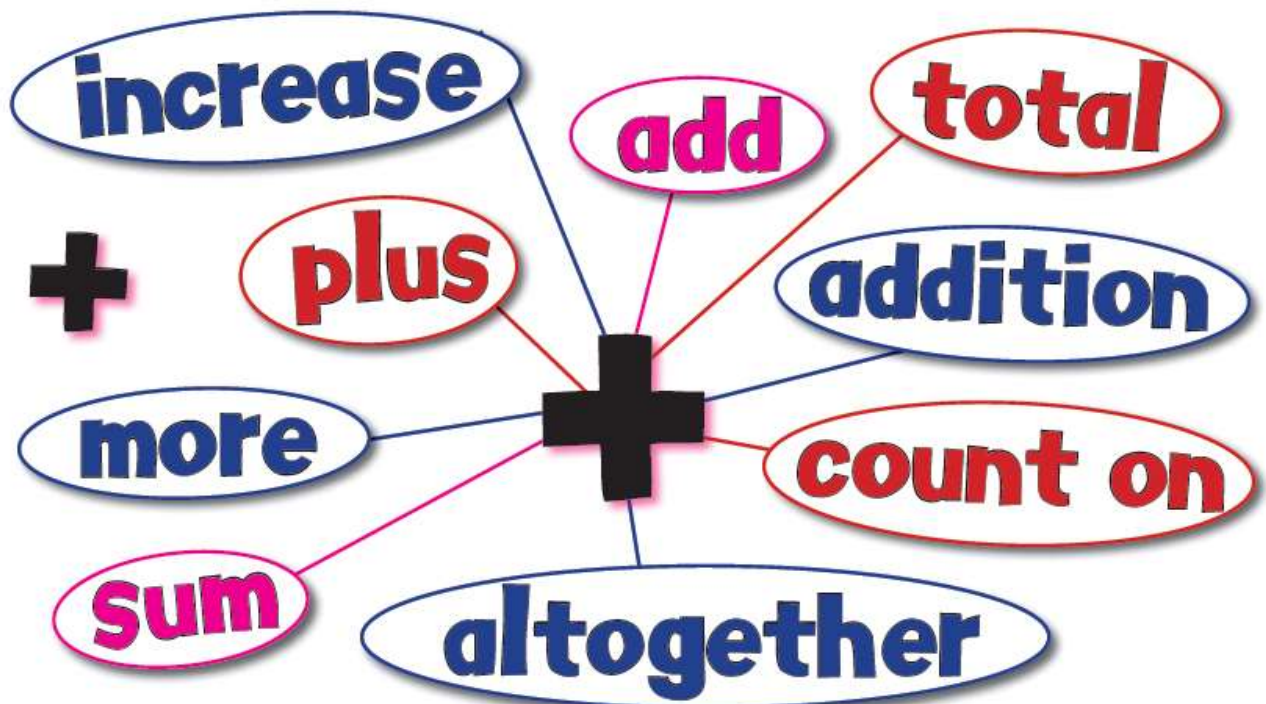


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition 6 Series of November 2015
For use only by participating school. All rights reserved. Design by Lark Studios - www.larkstudios.co.uk



Addition Vocabulary

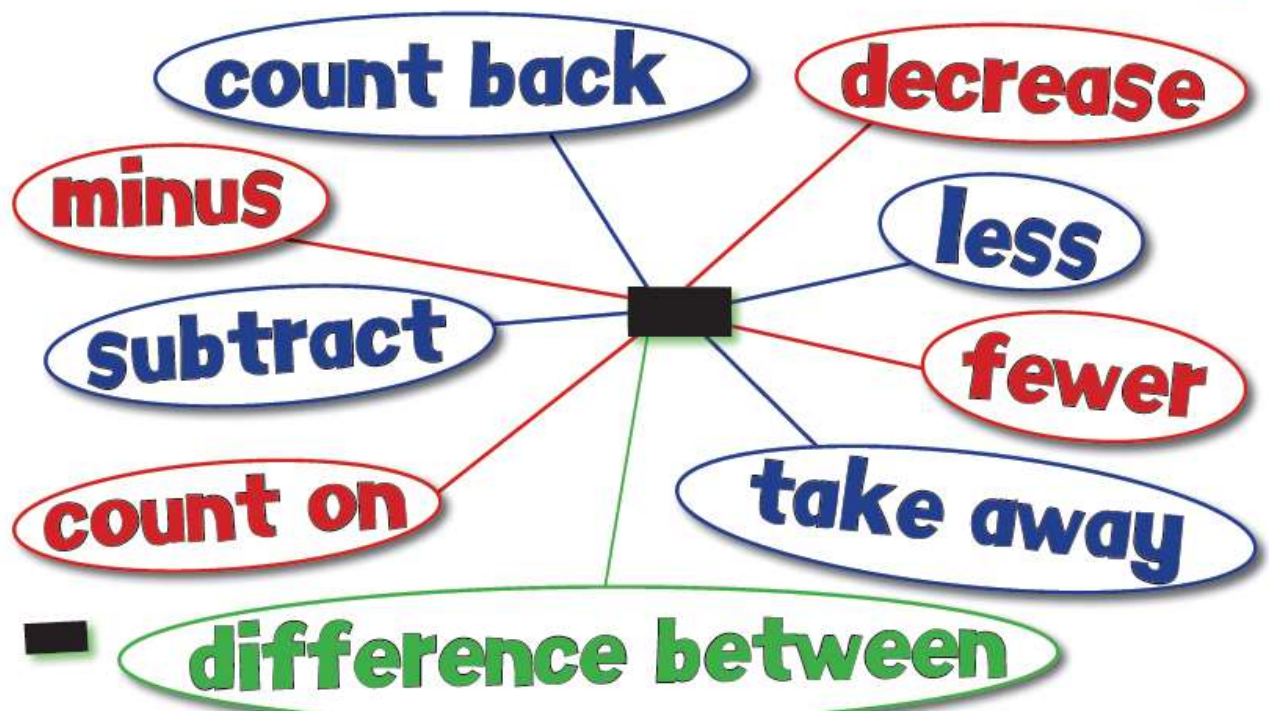


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



Subtraction Vocabulary

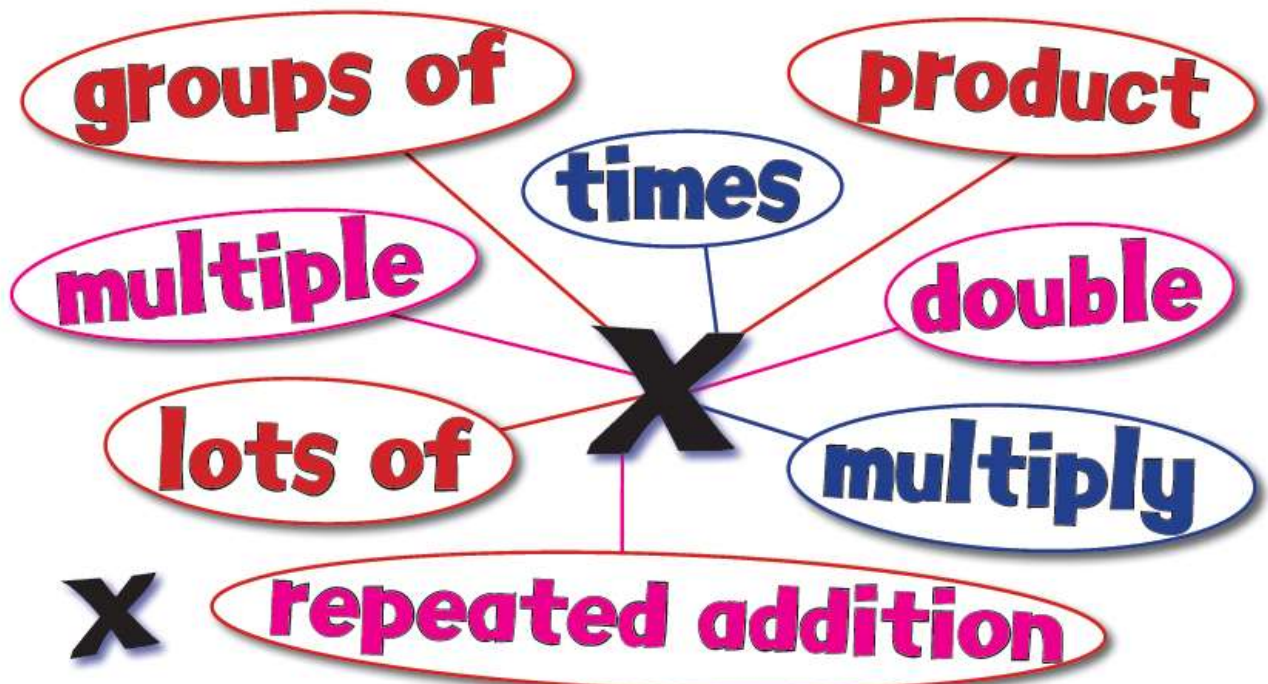


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



Multiplication Vocabulary

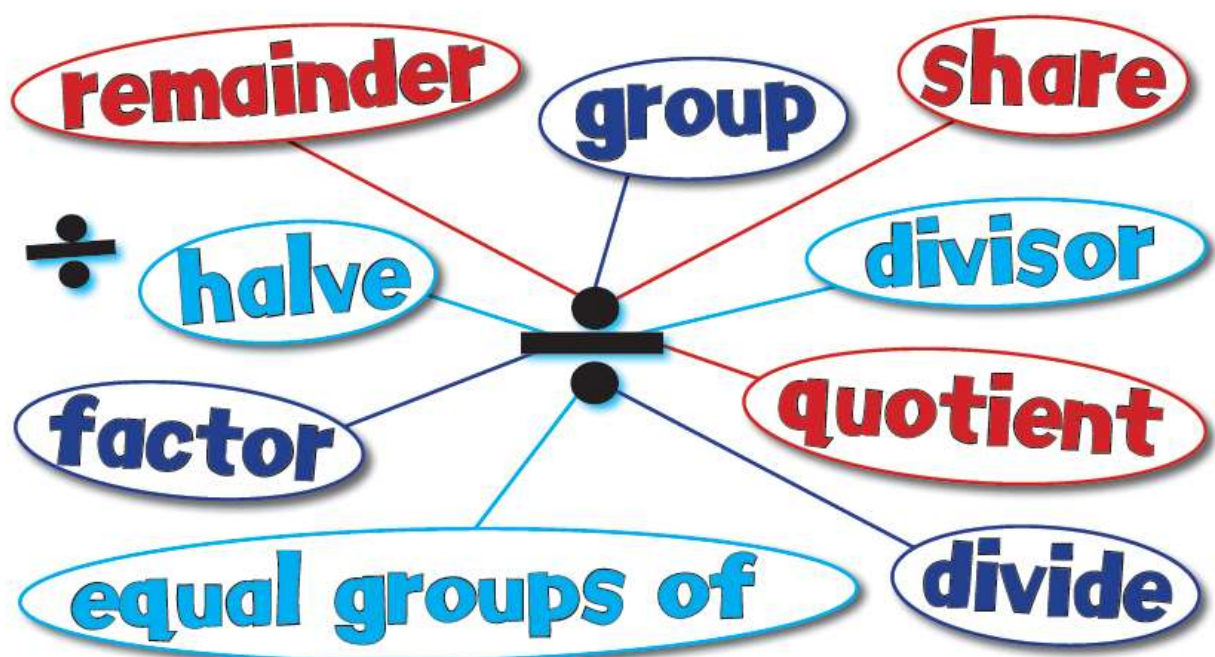


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



Division Vocabulary

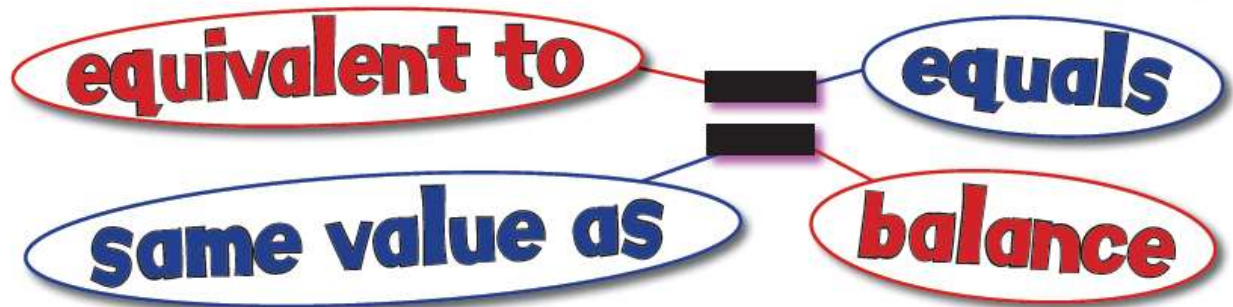


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



Calculation Vocabulary



+ Addition

X Multiplication

Operations

- Subtraction

÷ Division

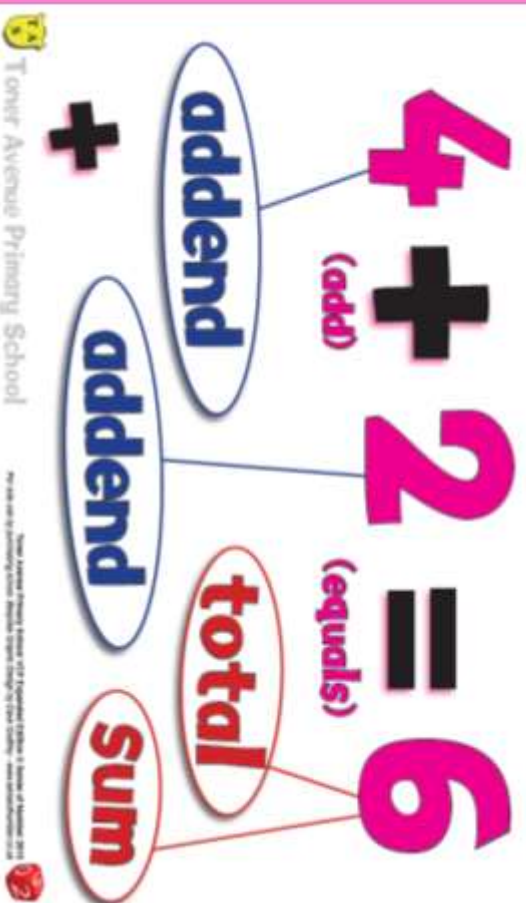


Toner Avenue Primary School

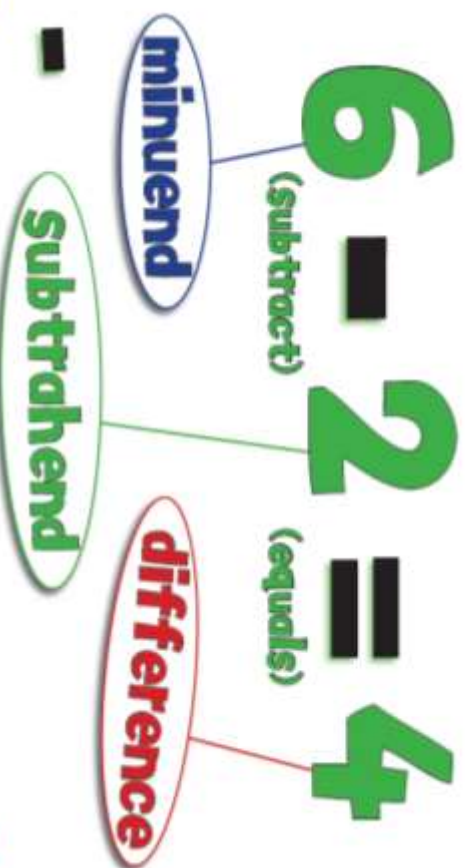
Toner Avenue Primary School VCP Expanded Edition © Series of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



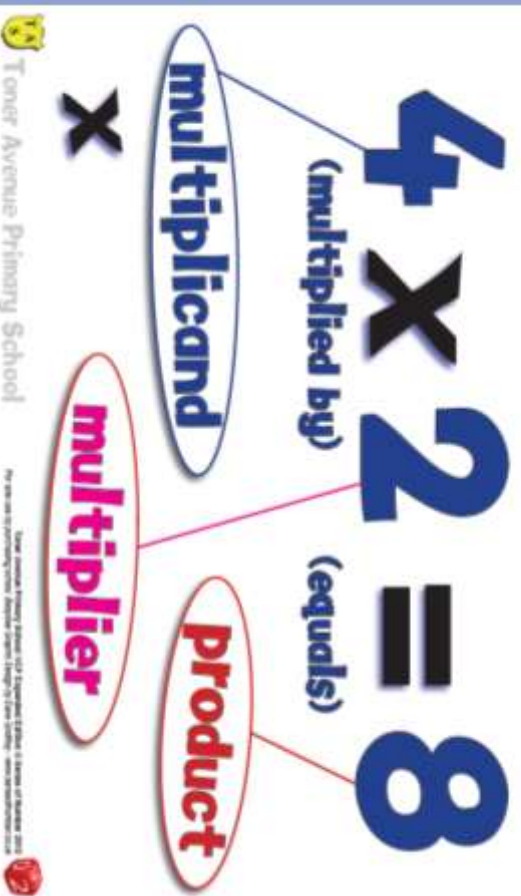
Addition Calculation



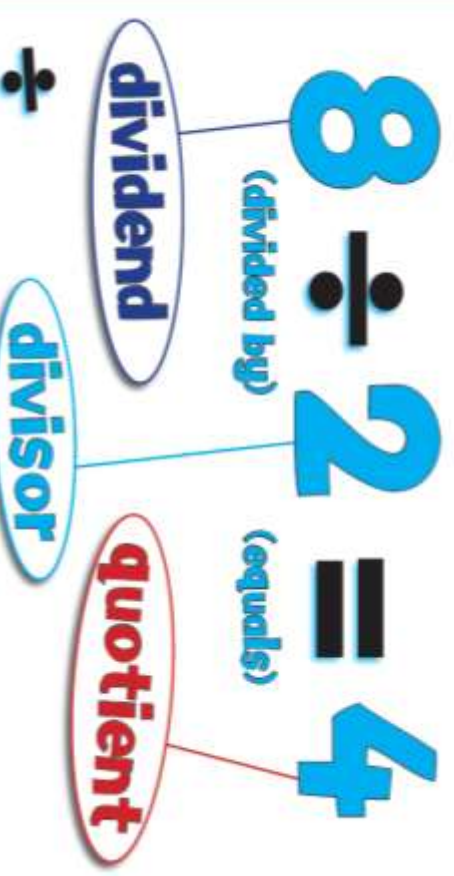
Subtraction Calculation



Multiplication Calculation



Division Calculation

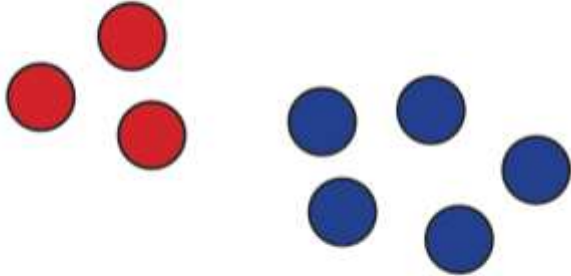


Counting



Toner Avenue Primary School

A1: Objects & Pictures



"If I have 3 and then 5 more, how many altogether? Answer: 8"

C5: Counting Forwards



C6: Counting On

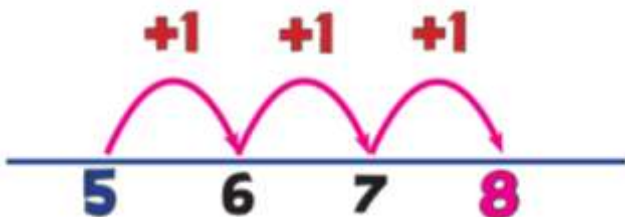


A1a: Largest Number 1st



$$5 + 3 = 8$$

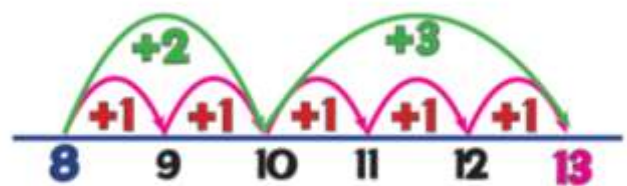
A2: Counting On



$$5 + 3 = 8$$

A2a: Counting On

Bridging 10



$$8 + 5 = 13$$

MA3: Number Bonds

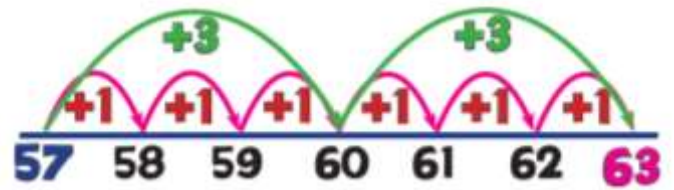
2

$$3 + 4 + 7 = 14$$

Diagram showing the addition of 3, 4, and 7 to get 14. A red line connects 3 and 7 to 10, and a black line connects 4 and 10 to 14.

A2b: Counting On

Bridging 10s Number



$$57 + 6 = 63$$

MA3: Number Bonds

1

Learn Bonds

0 + ●●●●●●●●●● = 10	0 + 10 = 10
1 ● + ●●●●●●●●● = 10	1 + 9 = 10
2 ●● + ●●●●●●●● = 10	2 + 8 = 10
3 ●●● + ●●●●●●● = 10	3 + 7 = 10
4 ●●●● + ●●●●●● = 10	4 + 6 = 10
5 ●●●●● + ●●●●● = 10	5 + 5 = 10
6 ●●●●●● + ●●●● = 10	6 + 4 = 10
7 ●●●●●●● + ●●● = 10	7 + 3 = 10
8 ●●●●●●●● + ●● = 10	8 + 2 = 10
9 ●●●●●●●●● + ● = 10	9 + 1 = 10
10 ●●●●●●●●●● + 0 = 10	10 + 0 = 10

MA3: Number Bonds

1

Learn Bonds

Number
bonds
to 20

C7: Counting Back

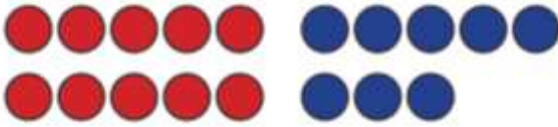


C8: Counting in Steps



Year 1 - Counting and Equipment
(2 digit and 1 digit numbers to 20)

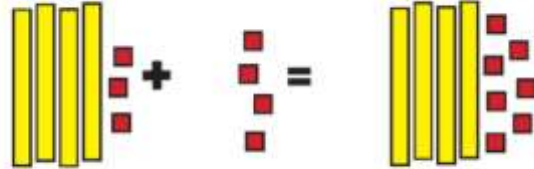
C4b: Arranging Sets of 5 (Non Linear)



18

A: Base 10

$$43 + 4 = 47$$



B: Arrow Cards

$$43 + 4 = 64$$



C: Hundred Square

$$43 + 24 = 67$$

41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70

E: Place Value Counters

$$43 + 4 = 47$$

10s	1s
10 10 10 10	1 1 1 1
	1 1 1 1

40

7

67

F: Money

$$43 + 4 = 47$$



Subtraction



Toner Avenue Primary School

S1: Objects



$$7 - 3 = 4$$

"What do I get if I take 3 away from 7? Answer: 4"

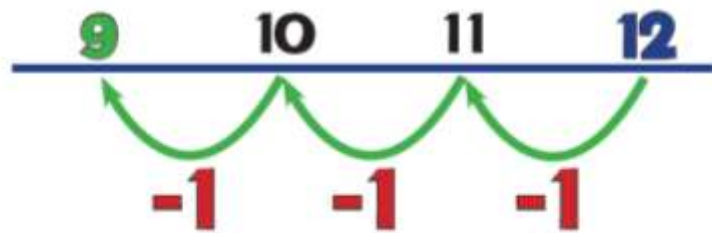


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Series of Number 2015
For use only by purchasing school. Reproduction Design by Jane Gifford - www.toneravenueprimary.co.uk



S3: Counting Back



$$12 - 3 = 9$$

"What do I get if I take 3 away from 12? Answer: 9"

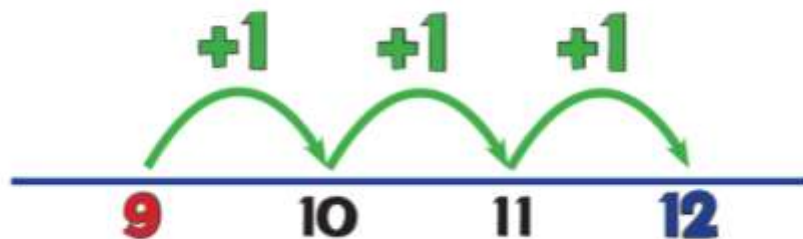


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Series of Number 2015
For use only by purchasing school. Reproduction Design by Jane Gifford - www.toneravenueprimary.co.uk



S4: Counting On



$$12 - 9 = 3$$

"How many more is 12 than 9? What is the difference?"



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Series of Number 2015
For use only by purchasing school. Reproduction Design by Jane Gifford - www.toneravenueprimary.co.uk

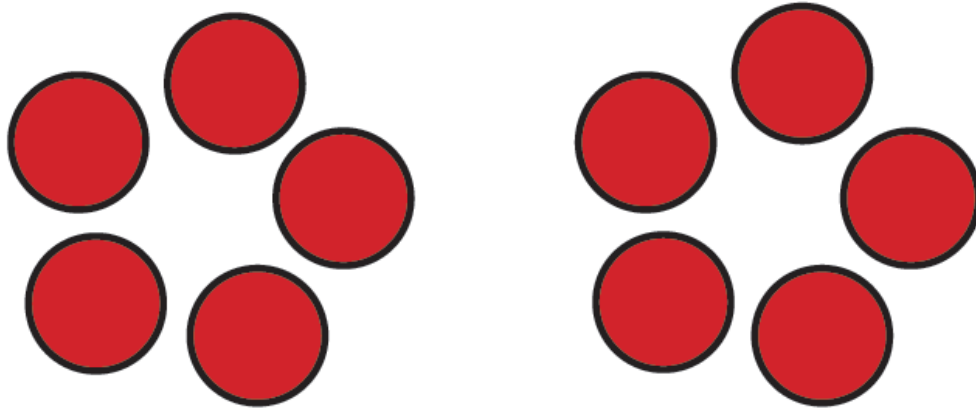


Multiplication



Toner Avenue Primary School

(M1: Groups)



"2 groups of 5 counters makes 10 counters altogether"

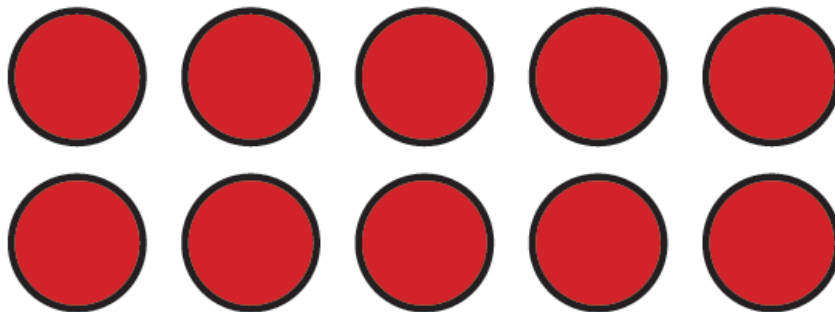


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sale use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



(M3: Arrays)



"2 groups of 5 counters" or "5 groups of 2 counters" - "10 counters altogether"



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sale use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



Mx2: Table Facts

2x table

2
$2 \times 1 = 2$
$2 \times 2 = 4$
$2 \times 3 = 6$
$2 \times 4 = 8$
$2 \times 5 = 10$
$2 \times 6 = 12$
$2 \times 7 = 14$
$2 \times 8 = 16$
$2 \times 9 = 18$
$2 \times 10 = 20$
$2 \times 11 = 22$
$2 \times 12 = 24$
$2 \times 7 = 14$
$2 \times 2 = 4$
$2 \times 12 = 24$
$2 \times 5 = 10$
$2 \times 9 = 18$
$2 \times 10 = 20$
$2 \times 1 = 2$
$2 \times 11 = 22$
$2 \times 4 = 8$
$2 \times 3 = 6$
$2 \times 8 = 16$
$2 \times 6 = 12$



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Series of November 2015
For use only by purchasing school. Reproduction Design by Clare Griffin - www.toneravenueprimary.co.uk

Mx5: Table Facts

5x table

5
$5 \times 1 = 5$
$5 \times 2 = 10$
$5 \times 3 = 15$
$5 \times 4 = 20$
$5 \times 5 = 25$
$5 \times 6 = 30$
$5 \times 7 = 35$
$5 \times 8 = 40$
$5 \times 9 = 45$
$5 \times 10 = 50$
$5 \times 11 = 55$
$5 \times 12 = 60$
$5 \times 5 = 25$
$5 \times 11 = 55$
$5 \times 3 = 15$
$5 \times 6 = 30$
$5 \times 7 = 35$
$5 \times 10 = 50$
$5 \times 2 = 10$
$5 \times 12 = 60$
$5 \times 4 = 20$
$5 \times 1 = 5$
$5 \times 8 = 40$
$5 \times 9 = 45$



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Series of November 2015
For use only by purchasing school. Reproduction Design by Clare Griffin - www.toneravenueprimary.co.uk

Mx10: Table Facts

10x table

10
$10 \times 1 = 10$
$10 \times 2 = 20$
$10 \times 3 = 30$
$10 \times 4 = 40$
$10 \times 5 = 50$
$10 \times 6 = 60$
$10 \times 7 = 70$
$10 \times 8 = 80$
$10 \times 9 = 90$
$10 \times 10 = 100$
$10 \times 11 = 110$
$10 \times 12 = 120$
$10 \times 9 = 90$
$10 \times 12 = 120$
$10 \times 4 = 40$
$10 \times 5 = 50$
$10 \times 7 = 70$
$10 \times 10 = 100$
$10 \times 1 = 10$
$10 \times 6 = 60$
$10 \times 2 = 20$
$10 \times 11 = 110$
$10 \times 8 = 80$
$10 \times 3 = 30$



Toner Avenue Primary School

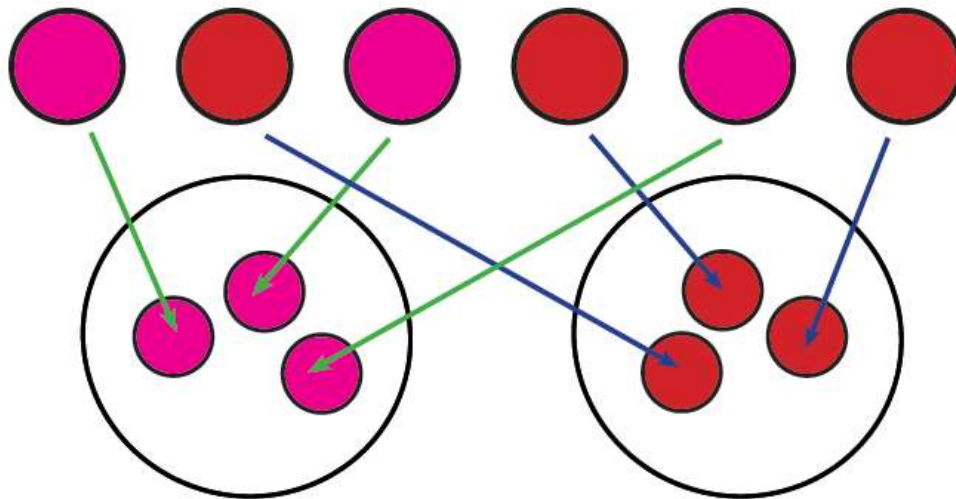
Toner Avenue Primary School VCP Expanded Edition © Series of November 2015
For use only by purchasing school. Reproduction Design by Clare Griffin - www.toneravenueprimary.co.uk

Division



Toner Avenue Primary School

D1: Sharing (Concept)



"If I share 6 into 2 equal amounts, how many in each group?" Answer: 3



Toner Avenue Primary School

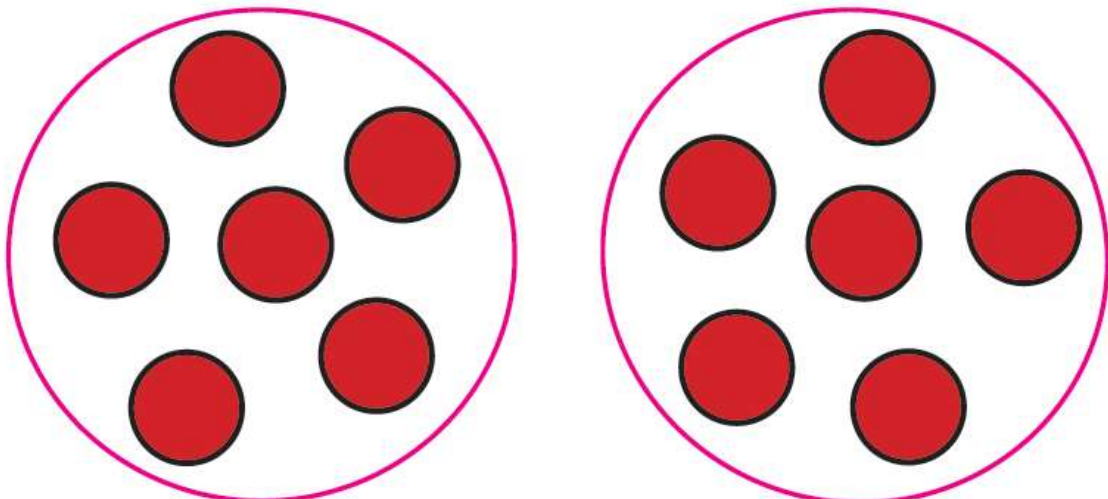
Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sale use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



D3: Division as Sharing

$$12 \div 2 = 6$$

"If I share 12 into 2 equal amounts, how many in each group?" Answer: 6

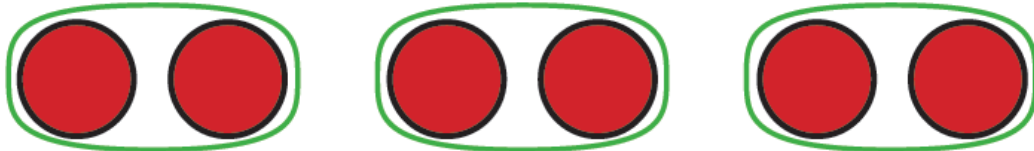


Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sale use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk



D2: Grouping (Concept)



“How many groups of **2** can I make out of **6**?”

Answer: **3**



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk

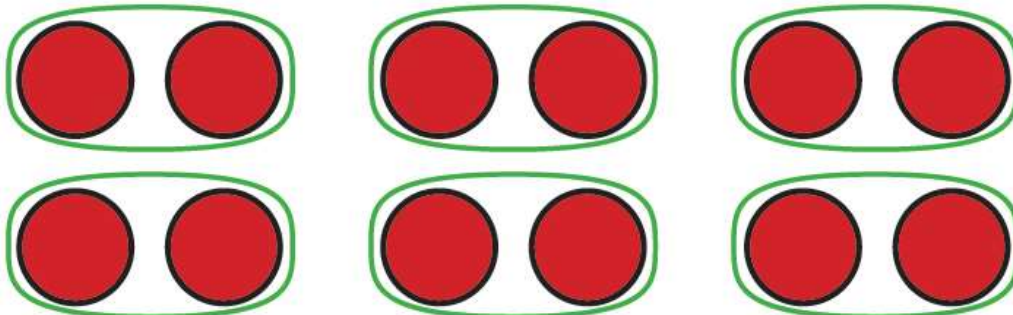


D4: Division as Grouping

$$12 \div 2 = 6$$

“How many groups of **2**
can I fit into **12**?”

Answer: **6**



Toner Avenue Primary School

Toner Avenue Primary School VCP Expanded Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk

