




Sense of Number Visual Calculation Policy

Basic Edition for
Barlby Bridge CP School
November 2015

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


For sole use within Barlby Bridge CP School.

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



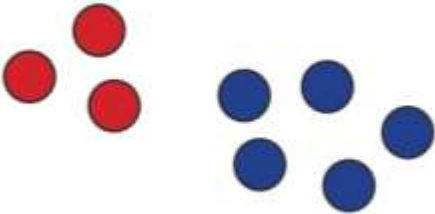
Barlby Bridge CP School

Barlby Bridge CP School VCP Basic Edition © Sense of Number 2015
For sole use by purchasing school. Bespoke Graphic Design by Dave Godfrey - www.senseofnumber.co.uk




Addition

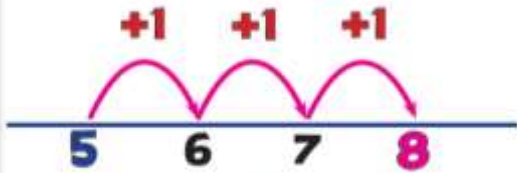
A1: Objects & Pictures




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



A2: Counting On




$5 + 3 = 8$




A3: Forwards Jump

$43 + 24 = 67$



$43 + 24 = 67$



A4: Partitioning

$$43 + 24 = 67$$
$$40 + 20 = 60$$
$$3 + 4 = 7$$

$$67$$

Barlby Bridge CP School

A5: Partition Jot

$$43 + 24 = 67$$
$$60 + 7$$

Barlby Bridge CP School

A6: Expanded Column Addition

	100	10	1	
	6	8	7	
+	2	4	8	
		1	5	
	1	2	0	
	8	0	0	
	9	3	5	

Barlby Bridge CP School

A7: Column Addition

	100	10	1	
	6	8	7	
+	2	4	8	
		1	5	
	1	2	0	
	8	0	0	
	9	3	5	

Barlby Bridge CP School

MA1: Partitioning

$$45 + 82 = 127$$
$$120 + 7 = 127$$

Barlby Bridge CP School

MA2: Counting On

$$45 + 20 = 65$$

45 + 20 = 65

Barlby Bridge CP School

MA3: Number Bonds

$$45 + 95 = 140$$

40 + 100 = 140

Barlby Bridge CP School

MA4: Double & Adjust

$$45 + 46 = 91$$

45 + 45 + 1 = 91

90 + 1 = 91

Barlby Bridge CP School

MA5: Round & Adjust

$$45 + 39 = 84$$


45 + 40 - 1 = 84

85 - 1 = 84

Barlby Bridge CP School

Subtraction

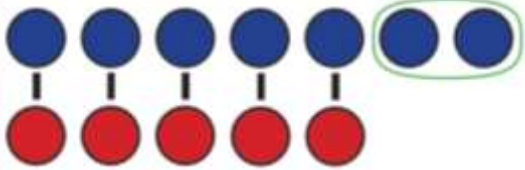
S1: Objects



$7 - 3 = 4$

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

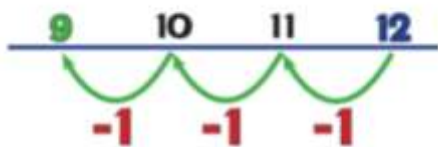
S2: What's the Difference?



$7 - 5 = 2$

"How many more is 7 than 5? What is the difference?"

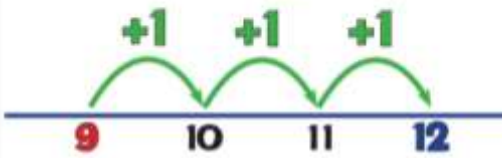
S3: Counting Back



$12 - 3 = 9$

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

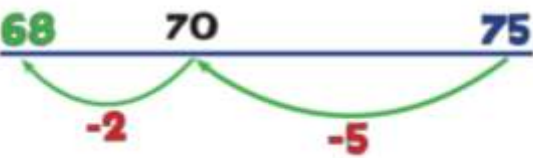
S4: Counting On



$12 - 9 = 3$

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

S5: Backwards Boing



$75 - 7 = 68$

S6: Backwards Bounce

64 65 66 67 77 87

-1 -1 -1 -10 -10

$$87 - 23 = 64$$

Barlby Bridge CP School

Detailed description: A number line starting at 64 and ending at 87. The numbers 65, 66, and 67 are in between. Green arcs connect 64 to 65, 65 to 66, and 66 to 67, each labeled with '-1'. Another green arc connects 67 to 77, labeled with '-10'. A final green arc connects 77 to 87, also labeled with '-10'. Below the number line, the equation 87 - 23 = 64 is written in large, colorful digits.

S7: Backwards Jump

38 45 75

-7 -30

$$75 - 37 = 38$$

Barlby Bridge CP School

Detailed description: A number line starting at 38 and ending at 75. The number 45 is in between. A green arc connects 38 to 45, labeled with '-7'. Another green arc connects 45 to 75, labeled with '-30'. Below the number line, the equation 75 - 37 = 38 is written in large, colorful digits.

S8: Triple Jump!

+3 +30 +5

37 40 70 75

$$75 - 37 = 38$$

Barlby Bridge CP School

Detailed description: A number line starting at 37 and ending at 75. The numbers 40 and 70 are in between. Green arcs connect 37 to 40 (labeled '+3'), 40 to 70 (labeled '+30'), and 70 to 75 (labeled '+5'). The words 'Bump', 'Slip', and 'Jump' are written below the arcs. Below the number line, the equation 75 - 37 = 38 is written in large, colorful digits.

S9: 10s Jump, 1s Jump!

+30 +8

37 67 75

$$75 - 37 = 38$$

Barlby Bridge CP School

Detailed description: A number line starting at 37 and ending at 75. The number 67 is in between. A green arc connects 37 to 67, labeled with '+30'. Another green arc connects 67 to 75, labeled with '+8'. Below the number line, the equation 75 - 37 = 38 is written in large, colorful digits.

S10: Expanded Column
Subtraction (100, 10, 1)

$$723 - 356 = 367$$

600	110	1	
700	20	3	
- 300	50	6	
300	60	7	

Barlby Bridge CP School


S11: Column Subtraction

100	10	1	
6	11	1	
7	2	3	
- 3	5	6	
3	6	7	

Barlby Bridge CP School

Multiplication

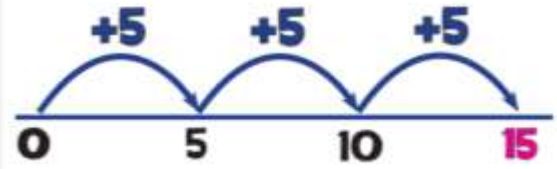
M1: Repeated Addition
(Groups)


$$5 \times 3 = 5 + 5 + 5 = 15$$

"5 multiplied by 3" means "5, 3 times", which gives "3 lots of 5!"

Barlby Bridge CP School


M2: Repeated Addition
(Number Line)


$$5 \times 3 = 5 + 5 + 5 = 15$$

"5 times 3" means "5, 3 times!"

Barlby Bridge CP School

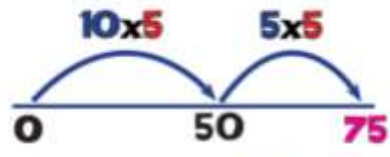
M3: Arrays



$3 \times 5 = 15$ or $5 \times 3 = 15$

Barlby Bridge CP School

M4: Multi Boing!



$10 \times 5 = 50$
 $5 \times 5 = 25$
 $50 + 25 = 75$

$15 \times 5 = 75$

Barlby Bridge CP School

M5: Grid Method

Short Multiplication

$15 \times 5 = 75$

x	10	5
5	50	25

$50 + 25 = 75$

Barlby Bridge CP School

M6: Expanded Column

	100	10	1	
	1	4	7	
x			4	
			28	(4 x 7)
			160	(4 x 40)
			400	(4 x 100)
			588	

Barlby Bridge CP School

M7: Column Multiplication

	100	10	1	
	1	4	7	
x			4	
			28	
			160	
			400	
			588	
			1	2

Barlby Bridge CP School

M8: Grid Method

Long Multiplication

$$43 \times 65 = 2795$$

x	40	3
60	2400	180
5	200	15

$$2400 + 180 + 200 + 15 = 2795$$

Barlby Bridge CP School

M9: Long Multiplication

Column

$$\begin{array}{r} 43 \\ \times 65 \\ \hline 215 \\ + 2580 \\ \hline 2795 \end{array}$$

(5 x 43)
(60 x 43)

Barlby Bridge CP School

MM1: Jump!

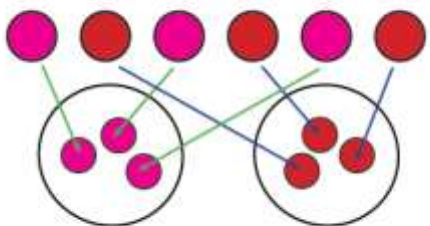
$1000 \quad 100 \quad 10 \quad 1 \quad \frac{1}{10} \quad \frac{1}{100}$

$$\begin{array}{r} \times 100 \quad 3400 \\ \times 10 \quad 340 \\ +10 \quad 3.4 \\ +100 \quad 0.34 \end{array}$$

Barlby Bridge CP School

Division

D1: Sharing (Concept)

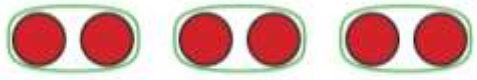


"If I share 6 into 2 equal amounts, how many in each group?" Answer: 3

Barlby Bridge CP School

This diagram illustrates the concept of sharing. It shows six items (three pink and three red) arranged in a row. Two circles represent groups. Lines connect the items to the groups: the first two items (one pink, one red) go into the first group, and the remaining four items (two pink, two red) go into the second group. This visualizes dividing 6 items into 2 equal groups of 3.

D2: Grouping (Concept)



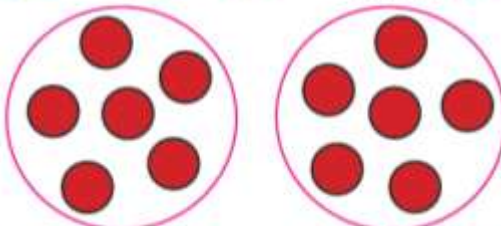
"How many groups of 2 can I make out of 6?" Answer: 3

Barlby Bridge CP School

This diagram illustrates the concept of grouping. It shows six red items arranged in a row. Three ovals represent groups, each containing two red items. This visualizes dividing 6 items into 3 groups of 2.

D3: Division as Sharing

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

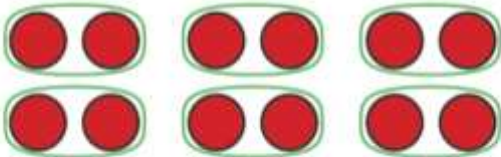


Barlby Bridge CP School

This diagram illustrates division as sharing. It shows two large circles, each containing six red items. This visualizes dividing 12 items into 2 equal groups of 6.

D4: Division as Grouping

$12 \div 2 = 6$ "How many groups of 2 can I fit into 12?" Answer: 6



Barlby Bridge CP School

This diagram illustrates division as grouping. It shows twelve red items arranged in two rows of six. Six ovals represent groups, each containing two red items. This visualizes dividing 12 items into 6 groups of 2.

D5: Grouping on a Number Line

0 5 10 15 20

20 ÷ **5** = **4**

"How many 5s in 20?"
Answer: 4

D6: Grouping Grid

4	4	4	4	4
4				3

"How many times can I fit (groups of) 4 into 27?"
Answer: 6r3

27 ÷ **4** = **6r3**

D7: Chunking Jump

0 40 72

72 ÷ **4** = **18**

"How many 4s in 72?"
Answer: 18

D8: Find the Hunk!

72 ÷ **4** = **18**

The Hunk!	+	Chunk	
40	+	32	
↓		↓	÷ 4
10	+	8	= 18

D9: Mega Hunk!

136 ÷ **4** = **34**

Mega Hunk!	+	Chunk	
120	+	16	
↓		↓	÷ 4
30	+	4	= 34

D10: Short Division

$$136 \div 4 = 34$$
$$\begin{array}{r} 34 \\ 4 \overline{) 136} \end{array}$$

Barlby Bridge CP School

D11: Chunking

$$\begin{array}{r} 34 \\ 4 \overline{) 136} \\ - 120 \quad (4 \times 30) \\ \hline 16 \\ - 16 \quad (4 \times 4) \\ \hline 0 \end{array}$$
$$136 \div 4 = 34$$

Barlby Bridge CP School

D12: Long Division
Short Division Method

$$\begin{array}{r} 26r21 \\ 37 \overline{) 983} \end{array}$$

Barlby Bridge CP School

D13: Long Division
Chunking Method

$$\begin{array}{r} 26r21 \\ 37 \overline{) 983} \\ - 740 \quad (37 \times 20) \\ \hline 243 \\ - 222 \quad (37 \times 6) \\ \hline 21 \end{array}$$
$$983 \div 37 = 26r21$$

Barlby Bridge CP School

D14: Long Division
Traditional Method

$$\begin{array}{r} 26r21 \\ 37 \overline{) 983} \\ - 74 \\ \hline 243 \\ - 222 \\ \hline 21 \end{array}$$
$$983 \div 37 = 26r21$$

Barlby Bridge CP School