

# **Welcome to the KS2 parents maths workshop 2016**

# From 2016 Arithmetic and 2 x Reasoning Tests for KS2 (Year 6)

## Increased Expectations

**34**

3 7 2 3 3 1

Show your method

2 marks

**36**

$\frac{3}{4} \div 2 =$

1 mark

# **DEVELOPING CALCULATION SKILLS**

**LANDSCORE PRIMARY SCHOOL**

**Useful for Upper Key Stage 1 and 2**

**BOOKLETS AVAILABLE FOR YOU TO TAKE HOME TODAY**

# LANDSCORE WEBSITE



**ACCESS VIDEOS ONLINE**

# Key things to Reinforce

Seeing the link between number facts:

$$34 + 66 = 100 \quad \text{so} \quad 100 - 34 = 66$$

$$8 \times 4 = 32 \quad 32 \div 4 = 8 \quad \text{and} \quad 32 \div 8 = 4$$

Using something we know to find something else:

$$\text{Using } 62 + 38 = 100, \text{ to know } 362 + \dots\dots = 500$$

Understanding the equals sign:

$$246 = \dots\dots + 94 \quad \dots \times 4 = 20 - \dots\dots$$

Making the link between arithmetic and real life:

$$\text{£}3.20 \div 55\text{p} = \dots \quad \text{is: How many 55p packets of stickers can I buy for £3.20?}$$

**Rounding**

**Column Subtraction**

**Column Addition**

**Rounding**

**Number Line**

**Number Line**

**Addition**

**Subtraction**

# Bag of Tricks

Choosing the best approach for the calculation

**Multiplication**

**Division**

**Rounding**    **Grid Method**

**Number Line**

**Using Factors**

**Using Factors**

**Chinese Method**

**Bus Shelter**

# Mental Addition

$3+7=$

Number bonds to ten – KS1

$9+8=$

Bridging ten – KS1

$17+8=$

Bridging twenty – KS1/lower KS2

$34+27=$

Partitioning – year 2/year 3

$156+43=$

Partitioning

$56+19=$

Rounding to a near ten and adjust

$78+29=$

Rounding to a near ten and adjust

$156+197=$

Rounding to 100 and adjust

(compensation)

# Column Addition

$$\begin{array}{r} \bullet \ 137 \\ + \ 243 \\ \hline \end{array}$$

300

70

10

---

380

Expanded method Lower KS2  
moves into a more compact method  
by the end of KS2 (Y5 and 6)



# Written Addition

$$24.6 + 37.85$$

# Subtraction

$7-4=$

Robber sums – Known facts

$17-4=$

$27-9=$

Using rounding to ten and adjust

$27-11=$

Using the number line

$56-34=$

$159-104=$

$£10 - £3.64=$

$93-67=$

$332-276=$

Rounding the second number to 100 and adjust

(compensation)  $476-395=$

# Column Subtraction

The expanded method - Lower KS2

$$462 - 257 =$$

$$400 + 60 + 2$$

Partition to expand

$$- 200 + 50 + 7$$

start with the units

---

leads into a more compact method by years 5 and 6

# Written Subtraction

$$462 - 257$$

$$400 + 60 + 2$$

$$200 + 50 + 7$$

$$462$$

$$257$$

---

---

# Written Subtraction

$$136.4 - 57.85$$

# Over to you!!

Think about the methods shown.

Choose the best method for the question.

$$34 + 19$$

$$44 - 28$$

$$246 + 187$$

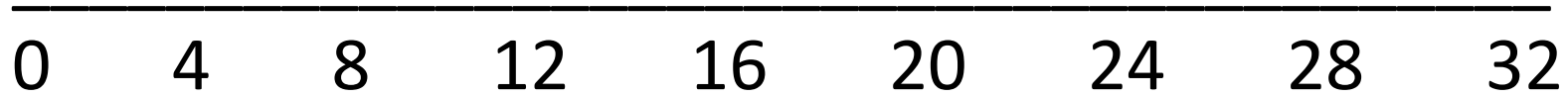
$$246 - 187$$

$$34.8 + 17.94$$

$$36.6 - 26.93$$

# Multiplication 2X4, 7X8, 9X11

Counting using the number line



Understanding that multiplication is repeated addition ( $4 \times 3$  is  $4 + 4 + 4$ ).

Understanding that multiplication sums can be written in both directions.  $4 \times 3$  and  $3 \times 4$  is the same.

Seeing  $x$  in arrays .

Times tables learned by the end of year 4

# Times tables

Help children see that by learning key facts you have less to learn in the long run. Getting the basics right is important. 2, 5, 10, 11. Where next?

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144



# Multiplication

## Partitioning

$$4 \times 17$$

$$(4 \times 10) + (4 \times 7)$$

$$40 + 28 = 68$$

Rounding  $6 \times 19$ :  $(6 \times 20) - (6 \times 1) = 114$

## Using Factors

# Multiplication of Larger numbers

6X23

X	20	3
6	120	18

The grid method  
= 138

23

x 6

---

18 (3x6)

120 (20x6)

---

138

The Ladder

# Multiplication of Larger numbers

$$\begin{array}{r} 23 \\ \times 6 \\ \hline 132 \\ 1 \end{array}$$

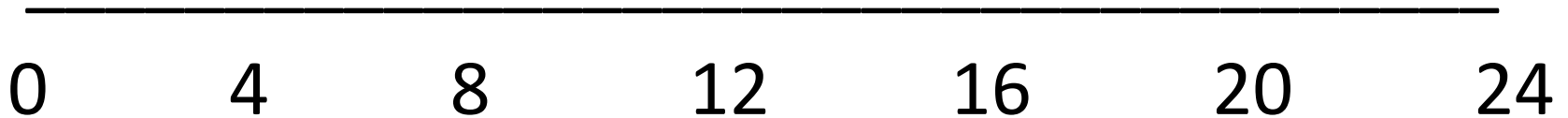
Short Multiplication

# Division

KS1 - division using concrete materials

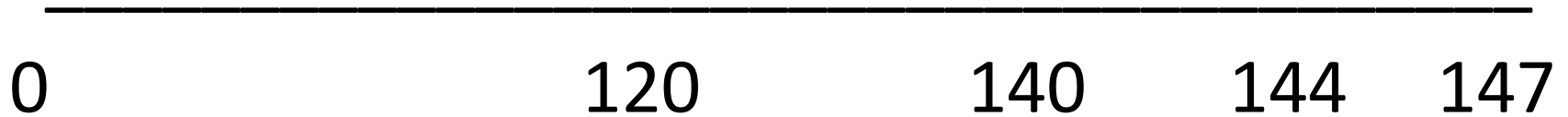
Using times table facts to support with the

NUMBER LINE:  $24 \div 4 = 6$



# Division of Bigger numbers

Using the number line:  $147 \div 4 =$



$672 \div 8 =$



# Bus Shelter

8 | 247.00

# Over to you!!

Think about the methods shown.

Choose the best method for the question.

$$39 \times 6$$

$$92 \div 4$$

$$47 \times 20$$

$$372 \div 6$$

$$36.8 \times 27$$

$$487 \div 5$$