

# KS2 Parents workshop

Rangeworthy

# Written Calculation Expectation

- Greater focus on known facts
- Column addition and subtraction
- Short and long multiplication
- Short and long division

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \end{array}$$

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 24 \\ \times 16 \\ \hline 240 \\ 144 \\ \hline 384 \end{array}$$

$$\begin{array}{r} 14 \\ 7 \overline{) 98} \\ \underline{7} \phantom{0} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

Answer: 14

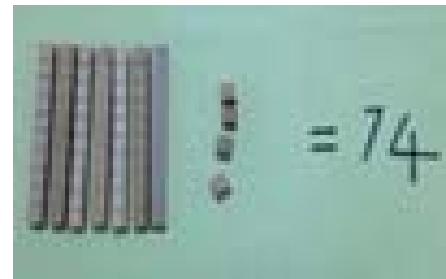
$$\begin{array}{r} 28 \text{ r } 12 \\ 15 \overline{) 432} \\ \underline{30} \phantom{0} \\ 132 \\ \underline{120} \\ 12 \end{array}$$

# Resources you might see

Numicon



Diennes or base 10



Arrow Cards

Cuisnere Rods

Number lines, 100 squares, tables, grids

# Place Value in Key Stage 2

Counting and understanding the value of the digits in a number

# Place Value

- Order numbers up to 10 million
- Recognise the value of digits
- Read and write numbers in words to 10 million
- Recognise decimal place value
- Estimation and rounding

# Examples

In July 2015, the population of the UK was estimated to be 64881609. **What is this rounded to the nearest million?**

- How can we describe 580500?

It has \_\_\_ hundred thousands.

It has \_\_\_ ten thousands.

It has \_\_\_ hundreds.

It is made of 580000 and \_\_\_\_\_ together.

- Spot the error:

289636, 299636, 300636,  
301636, 302636

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Make an estimate: Which of the following number sentences have an answer between 50 and 60?

$$274 - 219$$

$$533 - 476$$

$$132 - 71$$

# Count them game

# Games to support

- Ladders
- Follow the leader
- Mastermind
- Snap
- Bingo
- Top trumps



# Addition and subtraction

**Column Addition (Compact)**

$$43 + 24$$

$$\begin{array}{r} \text{T1's} \\ 43 \\ + 24 \\ \hline 67 \end{array}$$

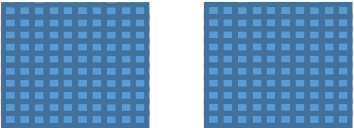

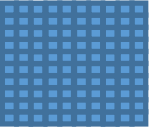
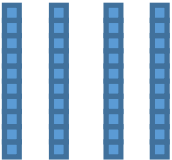

$$374 + 248$$

$$\begin{array}{r} \text{HT1'S} \\ 374 \\ + 248 \\ \hline 622 \\ 11 \end{array}$$

$$3.243 + 18.070$$

$$\begin{array}{r} 3.243 \\ + 18.070 \\ \hline 21.313 \\ \hline 1 \quad 1 \end{array}$$

# Expanded column addition with base 10

Hundred's	Ten's	One's
		
		

234  
148

## Column Subtraction (Expanded)

$$482 - 251 =$$

h	t	u
400	80	2
<u>-200</u>	<u>50</u>	<u>1</u>
<u>200 + 30 + 1 = 231</u>		

(decomposition)

$$481 - 257 =$$

h	t	70	u
400	<del>80</del>	11	
<u>-200</u>	<u>50</u>	<u>7</u>	
<u>200 + 20 + 4 = 224</u>			

## Column Subtraction (Compact)

$$48 - 23 =$$

tu
48
<u>-23</u>
<u>25</u>

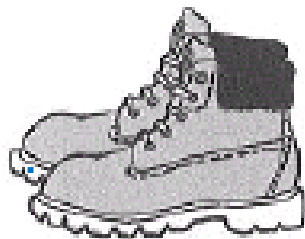
$$732 - 421 =$$

htu
732
<u>-421</u>
<u>311</u>

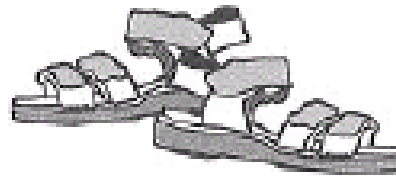
$$632.95 - 211.42 =$$

htu
632.95
<u>-211.42</u>
<u>421.53</u>

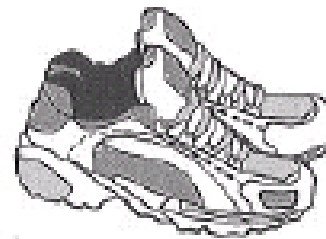
These are the prices in a shoe shop.



boots  
£45.50



sandals  
£12.75



trainers  
£34.99

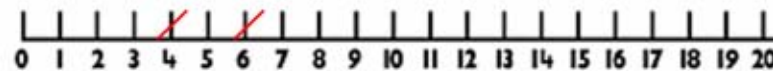
How much more do the boots cost than the trainers?

Rosie buys a pair of trainers and a pair of sandals.  
How much change does she get from £50?

# Games to support

- Snakes and ladders
- Number line game
- Card games
- Yatzee
- Monopoly
- Pick up sticks
- Shut the box
- Dominoes
- Beetle drive

## Number line game



$$6+4=10$$

$$10 \text{ take away } 9 = 1$$

$$1 \text{ add } 17 = 18$$

18 . . . .

# Multiplication and division

All times tables up to 12 x 12

Division facts

Word problems using these tables

# Arrays



egra.

- These are examples of arrays found in the environment.

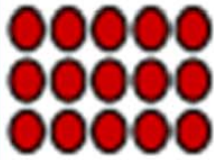


What multiplications do they show?

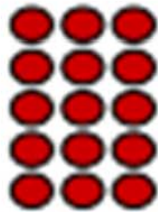




Arrays:



=



5 x 3

=

3 x 5

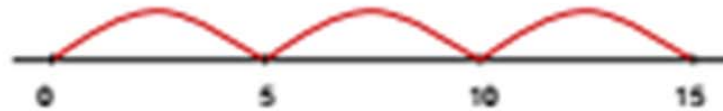
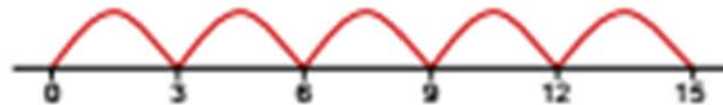
Numicon:



Dots/counters/cubes:



Repeated addition / number lines:



e.g.  $6 \times 5 = 30$

$5 \times 6 = 30$

$4 + 9 = 13$

$9 + 4 = 13$

## Grid Method

$16 \times 4 =$

x	10	6
4	40	24

$40 + 24 = 64$

or

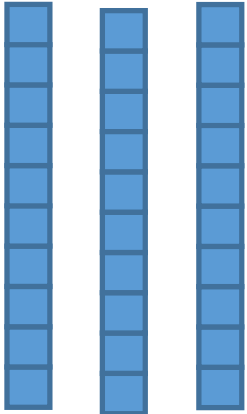
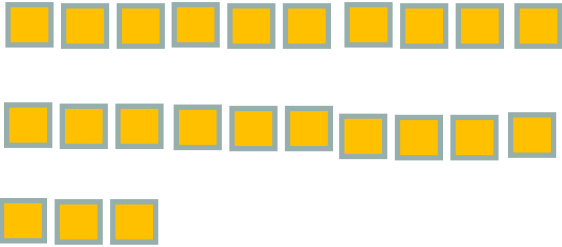
$$\begin{array}{r} 40 \\ + 24 \\ \hline 64 \end{array}$$

$246 \times 5 =$

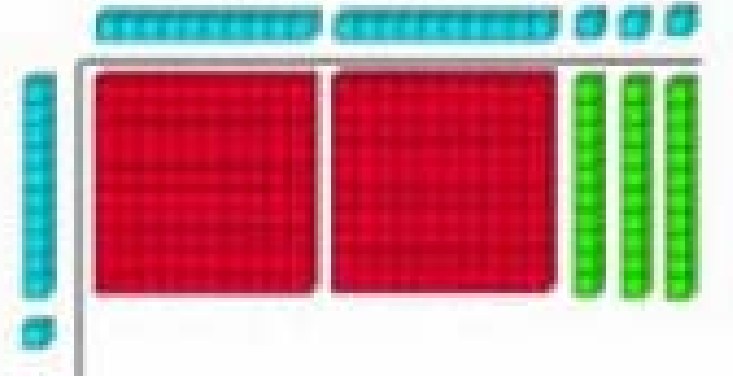
x	200	40	6
5	1000	200	30

$$\begin{array}{r} 1000 \\ 200 \\ + 30 \\ \hline 1230 \end{array}$$

# Grid Method

	10	8
3		

$23 \times 11$



# Long multiplication

$$\begin{array}{r} 32 \\ \times 24 \\ \hline 8 \\ 120 \\ 40 \\ 600 \\ \hline 768 \end{array}$$

(4 x 2)  
(4 x 30)  
(20 x 2)  
(20 x 30)

$$\begin{array}{r} 74 \\ \times 63 \\ \hline 212 \\ 240 \\ \hline 4662 \end{array}$$

$$\begin{array}{r} 1342 \\ \times 18 \\ \hline 13420 \\ 10736 \\ \hline 24156 \end{array}$$

# Long division

- Relies on knowing times tables
- Being secure with division
- Being confident at estimation

## Fact Box

$$1 \times 5 = 5$$

$$2 \times 5 = 10$$

$$3 \times 5 = 15$$

etc.

$$297 \div 27 =$$

What do you know ?

## Repeated Subtraction

$$23 \div 5 =$$

$$\begin{array}{r} 5 \overline{) 23} \\ \underline{- 5} \quad (1 \times 5) \\ 18 \\ \underline{- 5} \quad (1 \times 5) \\ 13 \\ \underline{- 5} \quad (1 \times 5) \\ 7 \\ \underline{- 5} \quad (\underline{1 \times 5}) \\ 2 \quad 4 \text{ lots of } 5 \end{array}$$

$$23 \div 5 = 4 \text{ r } 2$$

## Chunking (Expanded)

$$93 \div 4 =$$

$$\begin{array}{r} \overline{4) 93} \\ \underline{- 40} \quad (10 \times 4) \\ 53 \\ \underline{- 40} \quad (10 \times 4) \\ 13 \\ \underline{- 12} \quad (\underline{3 \times 4}) \\ 1 \quad 23 \text{ lots of } 4 \end{array}$$

$$93 \div 4 = 23 \text{ r } 1$$

## Short Division

$$\begin{array}{r} \underline{83} \\ 3 \overline{) 249} \end{array}$$

$$\begin{array}{r} \underline{64} \\ 4 \overline{) 2516} \end{array}$$

$$\begin{array}{r} \underline{51 \text{ r } 4} \\ 5 \overline{) 259} \end{array}$$

## Long Division

$$\begin{array}{r} \underline{31 \text{ r } 8} \\ 27 \overline{) 745} \\ \underline{71} \phantom{0} \\ 35 \\ \underline{27} \\ 8 \end{array}$$

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# Example questions

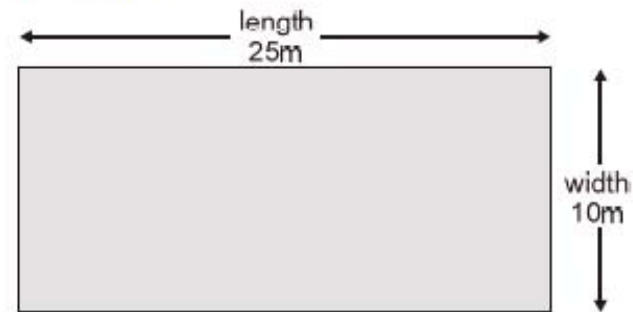
Calculate  $1453 \times 28$ .

Calculate  $942 \div 6$

Write in the missing digits to make this correct.

$$\begin{array}{r} \square \quad 4 \quad \square \\ \times \quad \quad \quad 6 \\ \hline 2 \quad 0 \quad 5 \quad 2 \end{array}$$

A rectangular swimming pool is 25 metres long and 10 metres wide.



David swims 5 lengths.

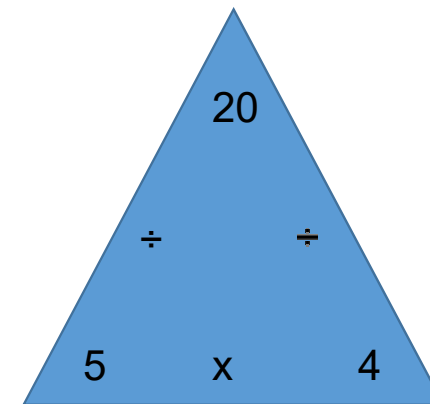
Rosie swims 12 widths.

How much further does David swim than Rosie?



# Practising times tables

- Songs
- Counting – rote
- Trios
- Using playing cards



# Maths assessment in Year 6

# End of year 6 expectations

4  $24 \times 3 =$

1 mark

5  $1,034 + 586 =$

1 mark

6  $48 \div 6 =$

26  $\frac{1}{4} \times \frac{1}{8} =$

1 mark

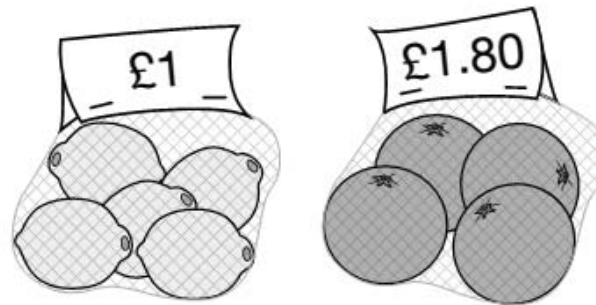
27 95% of 240 =

1 mark

28  $234,897 - 45,996 =$

A bag of 5 lemons costs £1

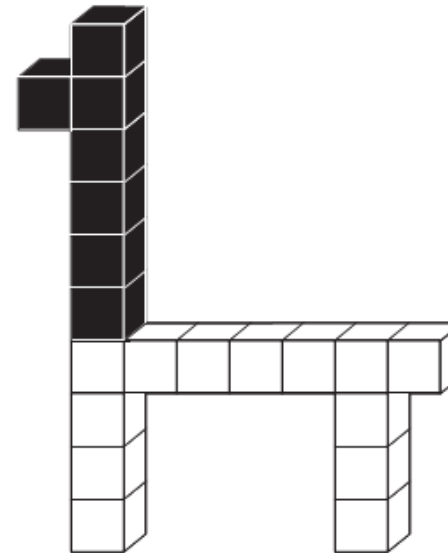
A bag of 4 oranges costs £1.80



How much **more** does one orange cost than one lemon?

This model is made with 20 cubes.

$$\begin{array}{cccc} \square & 6 & \square & 8 \\ + & 3 & \square & 9 \\ \hline 9 & 0 & 1 & 9 \end{array}$$



What **percentage** of the cubes in the model is black?

# Other key areas to support

# Telling the time

- Knowing their birthday
- Days of week, months of the year
- Reading the clock – hour, half hour, quarter to, quarter past, five minute intervals, 1 minute
- How many days in week
- How many months in year
- How many minutes in an hour, day... conversion
- 12 hour and 24 hour clock
- Analogue and digital time

# Practising telling the time

- As often as possible reading clocks, watches, timetables
- Daily timetable
- Using digital devices at home – setting DVD to record etc
- Looking at radio times, tv times etc.
- Bus timetables, train timetables
- Shop opening and closing times
- How long tv programmes or films last, how long is the piece of music

# Money

- Recognising coins and notes
- Different ways of making the same amount - what coins have I got in my purse/wallet ?
- How much is there ?
- Have I got enough for ?
- Shopping – 2 for 1 ? Using shopping vouchers
- Adding up the bills
- Swapping coins for fewer coins but the value is the same e.g 2p,2p,1p or 5p
- Best deals
- % off



# How you can help at home

Learn times tables and division facts

Practice telling the time, knowing days of week, months of the year, ordering days and months

Familiarisation with coins, simple shopping bills, value for money offers in shops

Playing board games – such as Yahtzee, Monopoly, snakes and ladders.

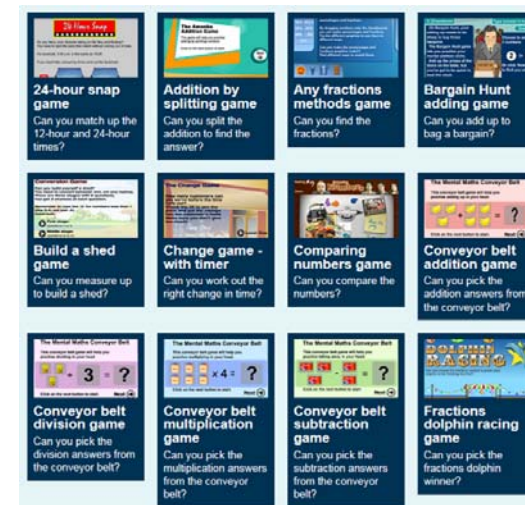
Play cards, darts, dominoes, snap, pick up sticks

Puzzles from the newspaper

Reading maths stories

# Good websites to use

- BBC Bitesize
- BBC Skills wise
- Maths is fun
- Arcademic Skills Builder
- Activity Village maths games
- Cbeebies
- Sumdog



# Useful websites

- [http://www.bbc.co.uk/bitesize/ks2/maths/number/multiplication\\_division/read/1/](http://www.bbc.co.uk/bitesize/ks2/maths/number/multiplication_division/read/1/)
- <http://resources.woodlands-junior.kent.sch.uk/maths/timestable/interactive.htm>
- <http://www.theschoolrun.com/times-tables>
- <http://www.topmarks.co.uk/maths-games/7-11-years/multiplication-and-division>
- <http://www.topmarks.co.uk/maths-games/7-11-years/fractions-and-decimals>
- [http://www.bbc.co.uk/bitesize/ks2/maths/number/fractions\\_basic/play/](http://www.bbc.co.uk/bitesize/ks2/maths/number/fractions_basic/play/)