

KS2 Parents workshop

Written Calculation Expectation

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

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

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

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

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

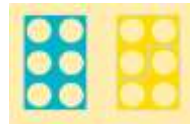
$$\begin{array}{r} 14 \\ 7 \overline{) 98} \\ \underline{7} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

Answer: 14

$$\begin{array}{r} 28 \text{ r } 12 \\ 15 \overline{) 432} \\ \underline{300} \\ 132 \\ \underline{120} \\ 12 \end{array}$$

Resources you might see

Numicon



Diennes or base 10

Place Value counters



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

- 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

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

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

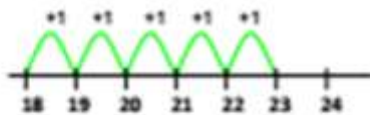
- Ladders
- Follow the leader
- Mastermind
- Snap
- Bingo
- Top trumps

Addition and subtraction

Beads:

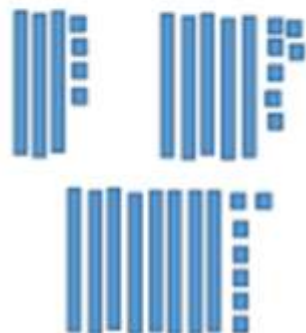


Number line:



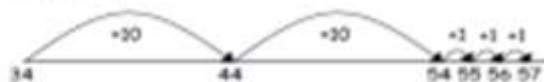
$$34 + 23 = 57$$

Dienes:



Number line:

$$34 + 23 = 57$$



Partitioning:

$$\begin{array}{r}
 34 + 23 = 57 \\
 \begin{array}{l}
 30 \quad 4 \quad 20 \quad 3 \\
 \text{---} \quad \text{---} \\
 30 + 20 \quad 4 + 3
 \end{array}
 \end{array}$$

Intro

$$12 + 25 = 37$$

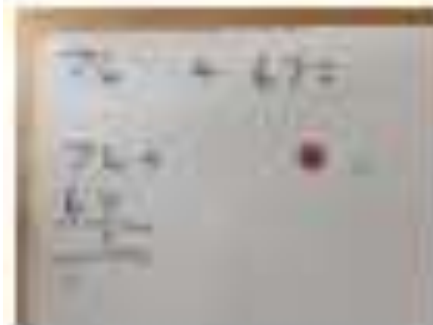
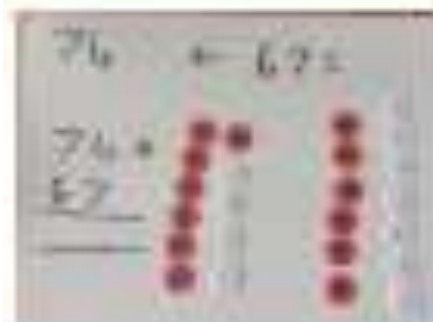


Column Addition

Model partitioning for expanded written method first.

$$\begin{array}{r}
 12 \\
 + 25 \\
 \hline
 7 \\
 30 \\
 \hline
 37
 \end{array}$$

$$\begin{array}{r}
 18 \\
 + 25 \\
 \hline
 13 \\
 30 \\
 \hline
 43
 \end{array}$$



Column Addition -

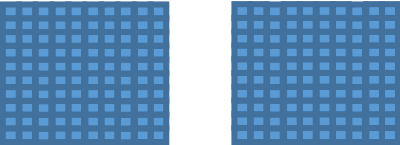
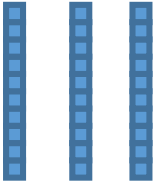

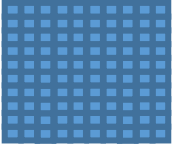
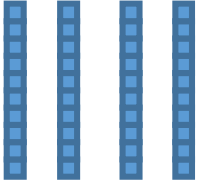
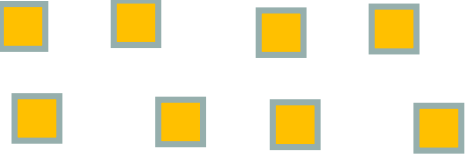
Use the language of carrying

$$\begin{array}{r} 18 \\ + 25 \\ \hline 43 \\ \hline \end{array}$$

$$\begin{array}{r} 43 \\ + 91 \\ \hline 134 \\ \hline \end{array}$$

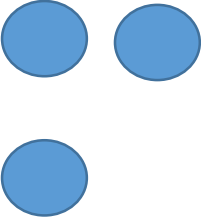
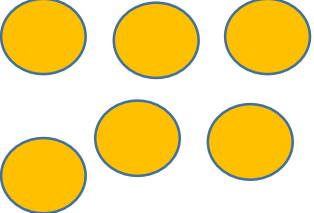
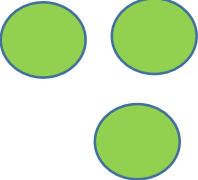
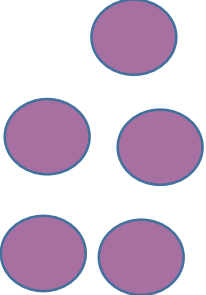

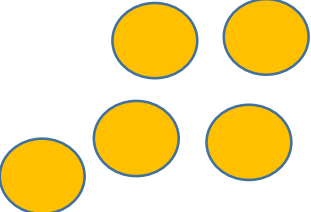

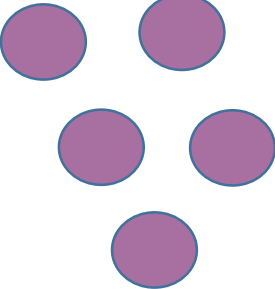

$$\begin{array}{r} 74 \\ + 67 \\ \hline 141 \\ \hline \end{array}$$

Expanded column addition with base 10

Hundred's	Ten's	One's
		
		

234
148

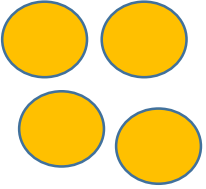
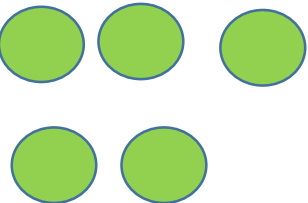
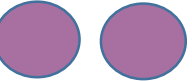
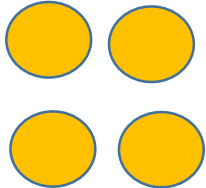
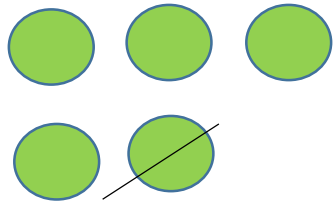
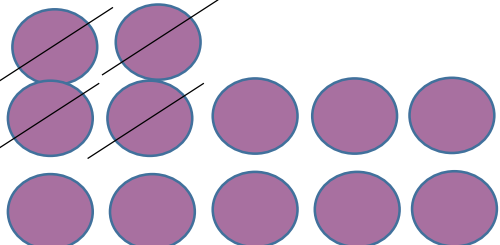
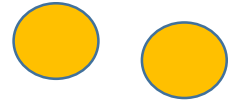

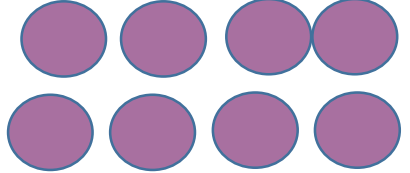
Column addition

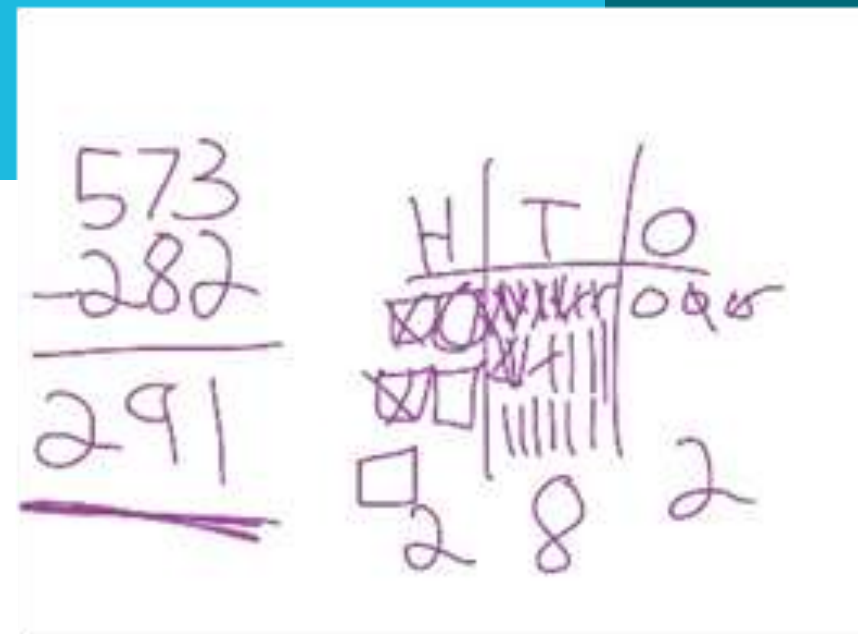
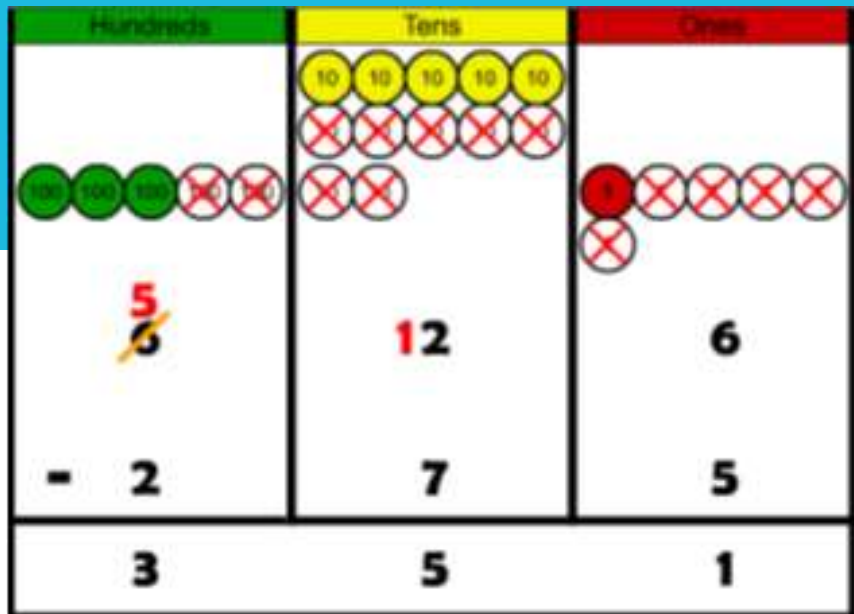




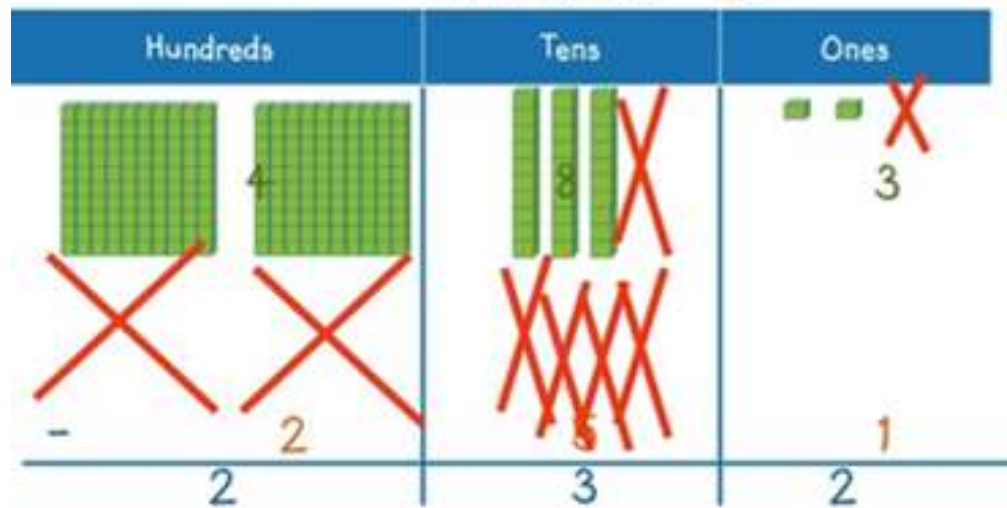
Column Method - exchanging

Hundreds	Tens	Ones
		
		
		

$$\begin{array}{r}
 \begin{array}{cc} 4 & 1 \\ \hline 4 & 5 & 2 \end{array} \\
 - \begin{array}{r} 2 & 1 & 4 \end{array} \\
 \hline
 \begin{array}{r} 2 & 3 & 8 \end{array} \\
 \hline
 \end{array}$$



What is $483 - 251$?



These are the prices in a shoe shop.



boots
£45.50



sandals
£12.75



trainers
£34.99

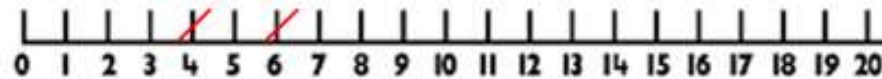
How much more do the boots cost than the trainers?

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:



=



5×3

=

3×5

Numicon:



Dots/counters/cubes:



Repeated addition / number lines:



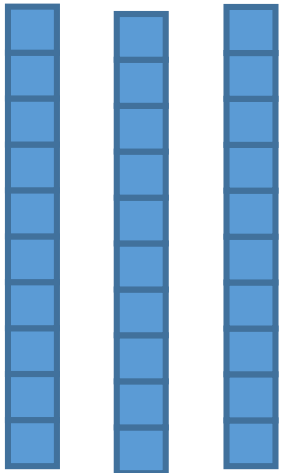
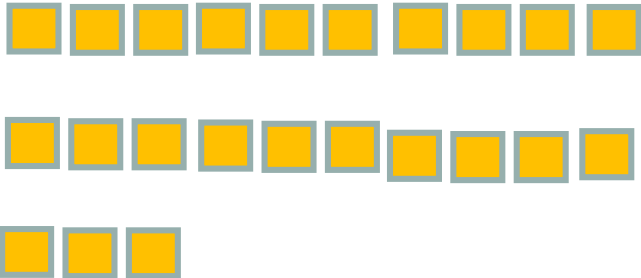
e.g. $6 \times 5 = 30$

$5 \times 6 = 30$

$4 + 9 = 13$

$9 + 4 = 13$

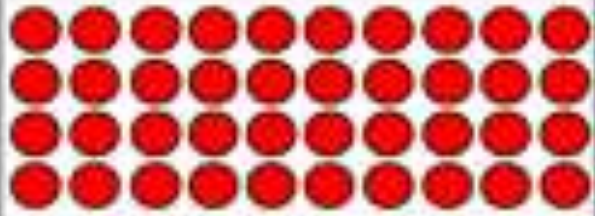

Grid Method

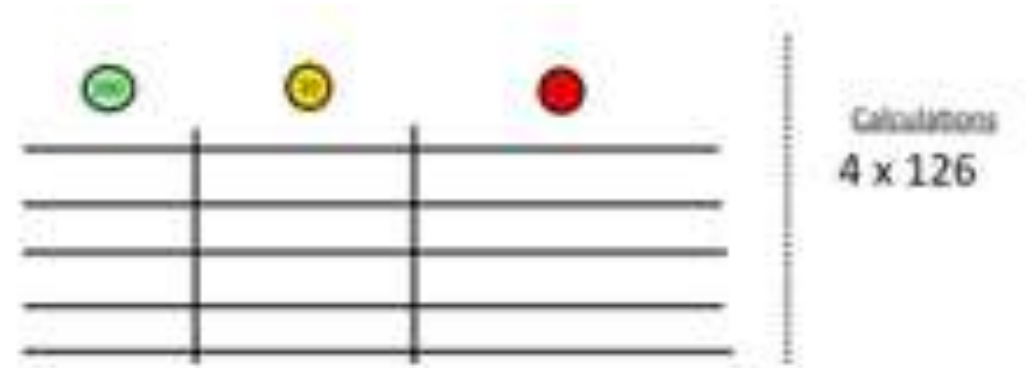
	10	8
3		

23×11





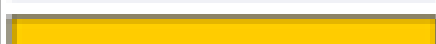





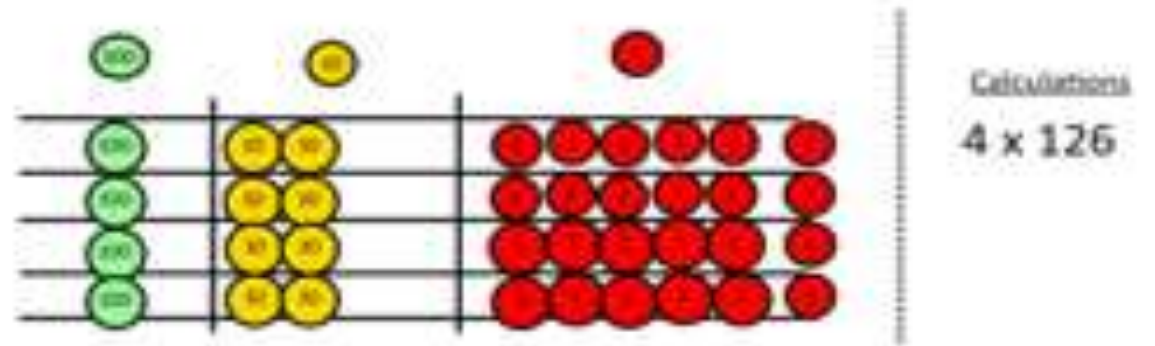
Moving to short multiplication

x	10	3
4		



Fill each row with 126.

x	T	U
		
		
		
		



Long multiplication

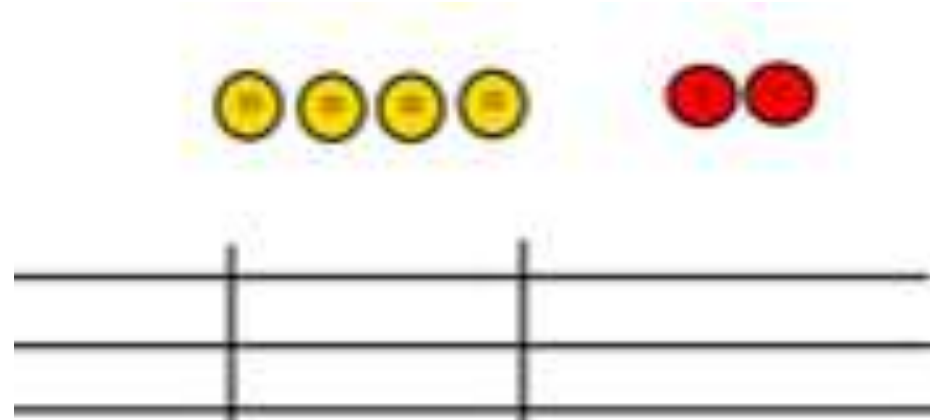
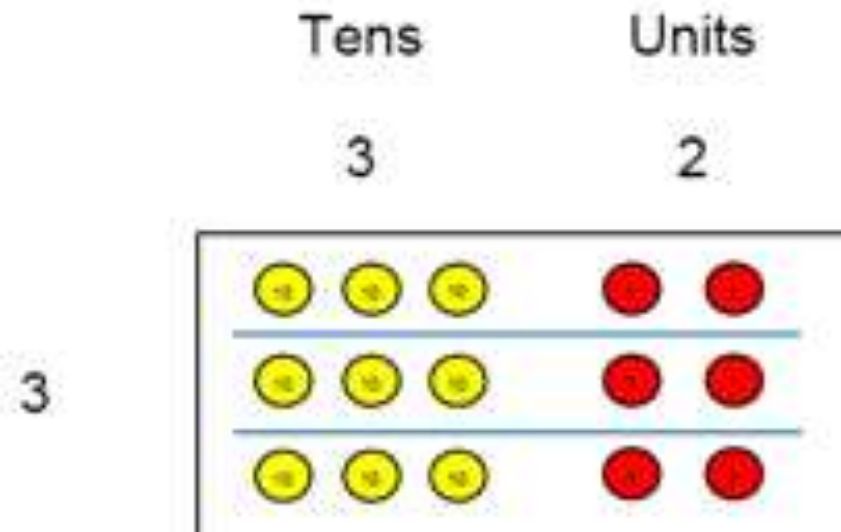
$$\begin{array}{r} 32 \\ \times 24 \\ \hline 8 \\ 120 \\ 40 \\ 600 \\ \hline 768 \end{array}$$

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

$$\begin{array}{r} 74 \\ \times 63 \\ \hline 212 \\ 240 \\ + 4200 \\ \hline 4662 \end{array}$$

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

Short division with counters



Calculations:
 $42 \div 3$

$$\begin{array}{r} 218 \\ 3 \overline{) 42} \\ \underline{6} \\ 12 \\ \underline{12} \\ 0 \\ 0 \\ 0 \end{array}$$

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 ?

$$578 \div 25 = 23 \text{ r } 3$$

Handwritten long division of 578 by 25 using base ten blocks. The blocks are represented by red and orange dots.

$$\begin{array}{r} 25 \overline{) 578} \\ \underline{250} \quad (10 \times 25) \\ 328 \\ \underline{250} \quad (10 \times 25) \\ 78 \\ \underline{75} \quad (3 \times 25) \\ 3 \end{array}$$

Example questions

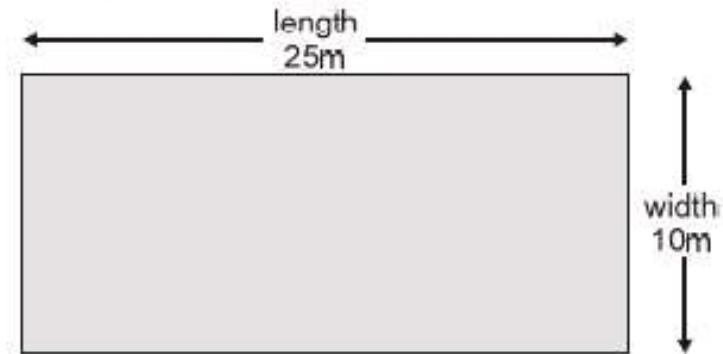
Calculate 1453×28 .

Calculate $942 \div 6$

Write in the missing digits to make this correct.

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

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



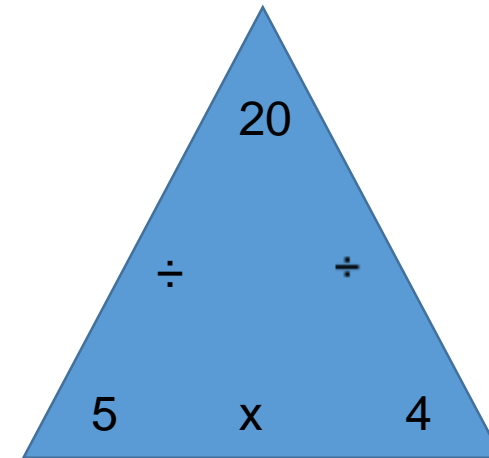
David swims 5 lengths.

Rosie swims 12 widths.

How much further does David swim than Rosie?

Practising times tables

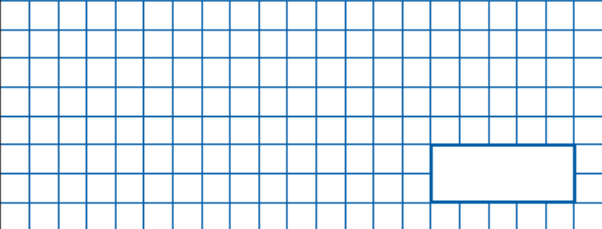
- Songs
- Counting – rote
- Trios
- Using playing cards



Maths assessment in Year 6

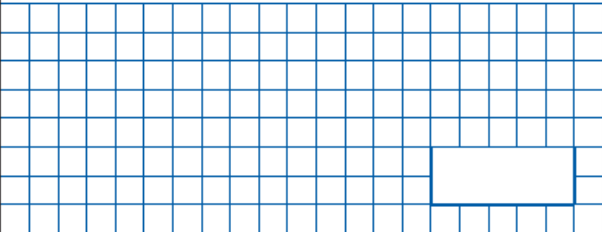
End of year 6 expectations

4 $24 \times 3 =$



1 mark

5 $1,034 + 586 =$

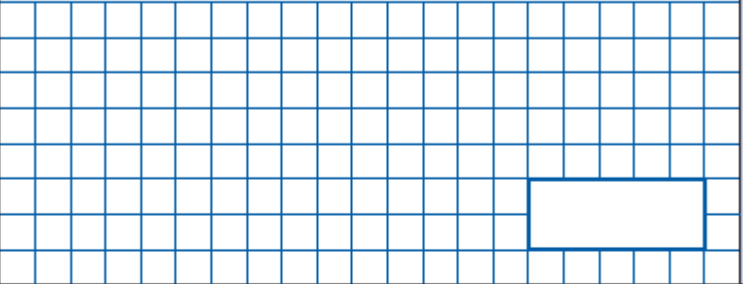


1 mark

6 $48 \div 6 =$

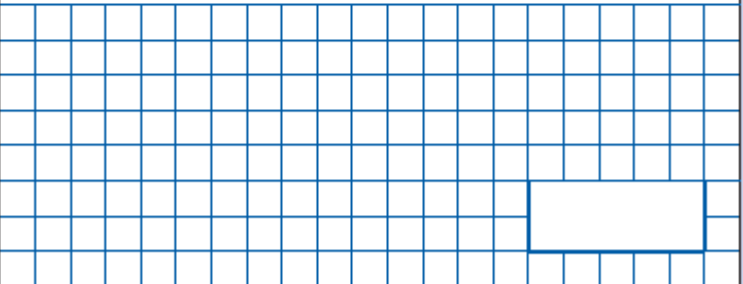


26 $\frac{1}{4} \times \frac{1}{8} =$




1 mark

27 95% of 240 =



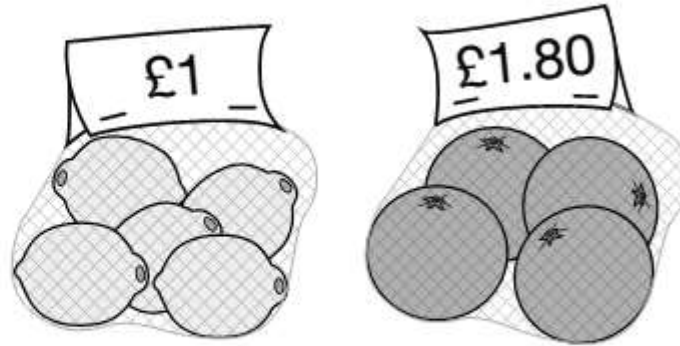
1 mark

28 $234,897 - 45,996 =$



A bag of 5 lemons costs £1

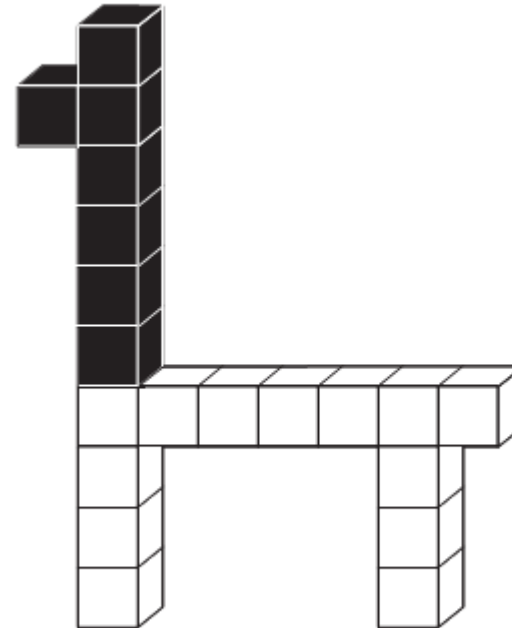
A bag of 4 oranges costs £1.80



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://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.bgfl.org/custom/resources_ftp/client_ftp/ks2/maths/fractions/index.htm