

## Grove Road Primary School Parent workshop – KS2

This is a copy of some of the slides used in the evening workshop session on Thursday 6<sup>th</sup> December 2012.

We have made these available to parents who attended the session as an aide memoir of what was covered during the evening.

There is also a handout which summaries the games and activities which could be tried at home with your children.

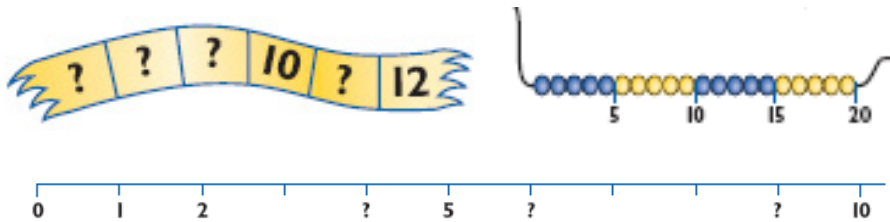
The copyright for these materials remains with Hertfordshire County Council.



© Hertfordshire County Council



### Counting



Counting forwards and backwards

Counting in jumps  
2s, 5s, 10s,

7s, 9s, 25s

0.5s, 0.25s, 150s

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
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
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Pattern spotting with numbers.

“What do you notice?”



# Place value

The value of each part of the number

H	T	U	•	t
3	5	6	•	

H	T	U	•	t
	3	5	•	6

## Addition



Add

total

more than

Altogether

increased by

plus



How would you work these out?

$$5.6 + 2.9$$

$$416 + 418$$

$$£37.86 + £24.99$$

## Mental Strategies

- **partitioning** :

eg  $123 + 235 =$

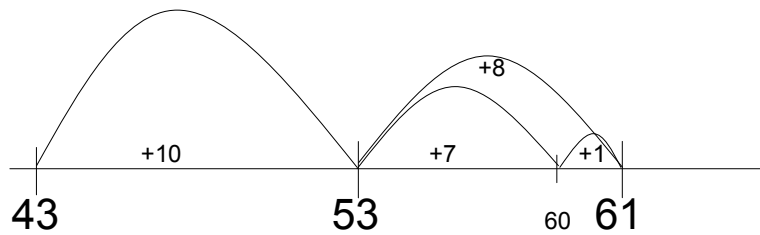
$$100 + 20 + 3 \text{ and } 200 + 30 + 5$$

$$100 + 200 = \underline{300} \quad 20 + 30 = \underline{60} \quad 3 + 5 = \underline{8}$$

- **recombining** means we combine the hundreds, tens and units totals to get the answer  $358$

- Using a numberline

$$43 + 18 = 61$$



## Moving onto a 'column' method:

Expanded forms first, to secure place value

$$23 + 45 =$$

T	U	
20	+ 3	
<u>40</u>	+ <u>5</u>	
60	+ 8	= 68

$$36 + 19 = 36 +$$

T	U	
<u>1</u>	<u>9</u>	
15	(6 + 9)	
<u>40</u>	(30 + 10)	
<u>55</u>		

This aids understanding of the value of the digits before 'carrying' is introduced.

## Final step – a formal written method

2, 3 or 4 numbers

Several digits

Decimals, money

$$\begin{array}{r} 435 \\ + 257 \\ \hline 692 \\ 1 \end{array}$$

$$\begin{array}{r} \text{£}2.35 \\ \text{£}6.99 \\ + \text{£}7.24 \\ \hline \end{array}$$



© Hertfordshire County Council



## Subtraction

subtract

less

minus

take away

decreased by

difference



© Hertfordshire County Council



**What method would you use for these calculations?**

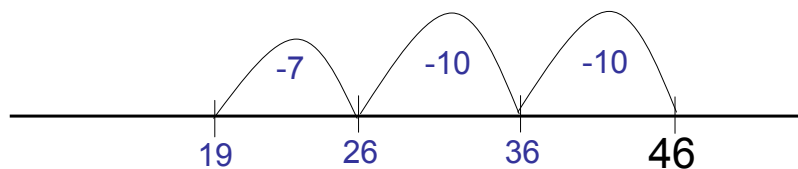
$$42 - 27$$

$$3.6 - 2.4$$

$$421 - 379$$

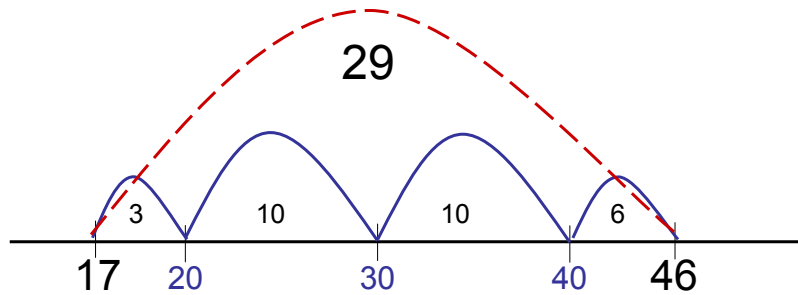
$$4007 - 3996$$

**The use of the 'Empty Number Line' for  
Subtraction – counting back**



$$46 - 27 = \underline{\hspace{2cm}}$$

## The use of the 'Empty Number Line' for Subtraction – counting up



$$46 - 17 = \underline{\quad}$$

## Moving onto an expanded form of column subtraction

$\begin{array}{r} 70 + 4 \\ - 20 + 7 \\ \hline \end{array}$	$\begin{array}{r} 60 \quad 14 \\ \cancel{70} + 4 \\ - 20 + 7 \\ \hline 40 + 7 \end{array}$	$\begin{array}{r} 6 \quad 14 \\ \cancel{7} - 4 \\ - 2 \quad 7 \\ \hline 4 \quad 7 \end{array}$
---	--	--

$$4007 - 3996 =$$

$$367 - 239 =$$

$$\begin{array}{r} 4007 \\ - 3996 \\ \hline \end{array}$$

$$\begin{array}{r} 367 \\ - 239 \\ \hline \end{array}$$

What is the the most efficient method?



© Hertfordshire County Council



Multiplication



multiplied by

groups of

Product

lots of

times



© Hertfordshire County Council



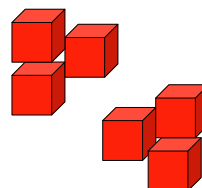


## Learning tables: X Tables Fun

Choose a table you're not yet confident with  
e.g. 3s, 4s, 6s or 7s

$1 \times 3 = 3$   
 $2 \times 3 = 6$   
 $3 \times 3 = 9$   
 $4 \times 3 = \dots$

1. Make it using cubes  
dried pasta, buttons
2. Write the list
3. Then...



## Make it a game

- Using small pieces of card
- Put the question on the front and answer on the back



- Play games:
  1. In order, then out of order
  2. Take turn to choose cards to answer, keep card if right
  3. Keep going until you make a mistake
  4. Time challenge – can you get them all in a minute?

## Methods for multiplication

- Multiplying by partitioning – mental or written method

$$23 \times 4$$

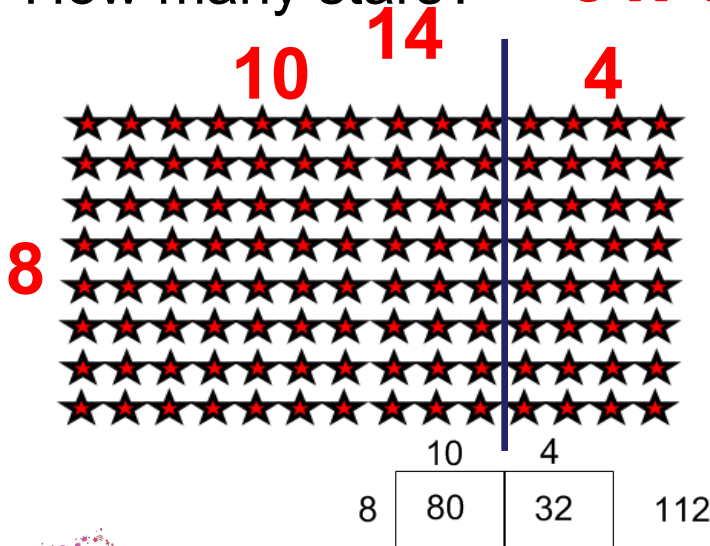
$$23 = 20 + 3$$

$$20 \times 4 = 80$$

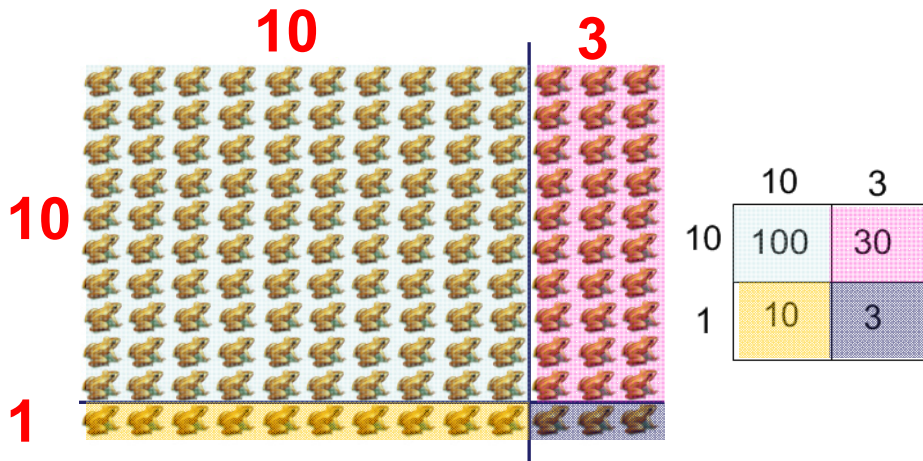
$$3 \times 4 = \underline{12}$$
$$92$$

How many stars?

$$8 \times 14$$



How many frogs?  $11 \times 13 = 143$



### Using the grid method and long multiplication

$32 \times 24$

X	30	2
20	600	40
4	120	8

600  
40  
120  
8 +

Answer =

$\begin{array}{r} 56 \\ \times 27 \\ \hline 1000 \\ 120 \\ 350 \\ \hline 42 \\ \hline 1512 \\ 1 \end{array}$	$50 \times 20 = 1000$ $6 \times 20 = 120$ $50 \times 7 = 350$ $6 \times 7 = 42$
--	--

$\begin{array}{r} 56 \\ \times 27 \\ \hline 1120 \\ \hline 392 \\ \hline 1512 \\ 1 \end{array}$	$56 \times 20$ $56 \times 7$
---	---------------------------------

division



divide

share

into groups of



quarter

halve



## Division by chunking

$$182 \div 7$$

Without working this out, can you give a rough estimate of what you think the answer might be?

What are the strategies you are using?

$$182 \div 7 = \underline{26}$$

$$\begin{array}{r} 182 \\ -70 \text{ (10 x 7)} \\ \hline 112 \\ -70 \text{ (10 x 7)} \\ \hline 42 \\ -35 \text{ (5 x 7)} \\ \hline 7 \\ -7 \text{ (1 x 7)} \\ \hline 0 \end{array}$$

What do we know?

$$1 \times 7 = 7$$

$$2 \times 7 = 14$$

$$5 \times 7 = 35$$

$$10 \times 7 = 70$$

$$182 \div 7 = 26$$

$$\begin{array}{r} 182 \\ -140 \text{ (20 x 7)} \\ \hline 42 \\ -42 \text{ (6 x 7)} \\ \hline 0 \end{array}$$

## Using 'chunking' and short division

$$\begin{array}{r} 24 \overline{) 560} \\ -480 \quad 24 \times 20 \\ \hline 80 \\ 72 \quad 24 \times 3 \\ \hline 8 \end{array}$$

Answer: 23 R 8

$$258 \div 5$$

$$5 \overline{) 258}$$

## Mathematics is a life skill...

- Ask your child to show you what they have been learning
- Use everyday situations...pencil and paper not needed  
e.g. when shopping, in the car or cooking, planning a day out
- provide opportunities to:
  - tell the time – What does the clock say? How long until...?
  - use money – paying for small items and checking their change
  - weigh things – looking carefully at the divisions on scales
  - practise times tables – make the cards, play the games
  - ask questions – “What do you notice...?” “Why do you think...?”
  - solve problems – I’m buying 3 packets of... they each cost...



© Hertfordshire County Council

