

Welcome to our Maths Information Workshop for Parents

How maths is taught today... What are all those strange bits of equipment?
How you can help...



Key Stage 1

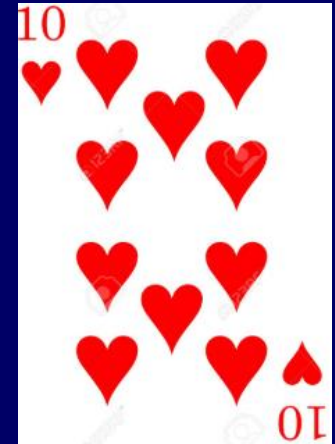
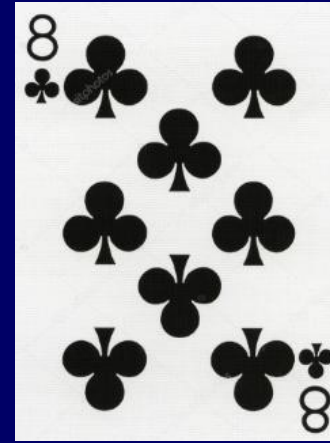
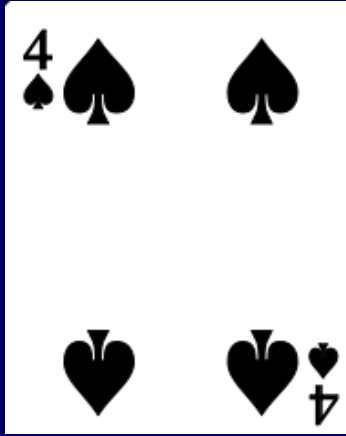
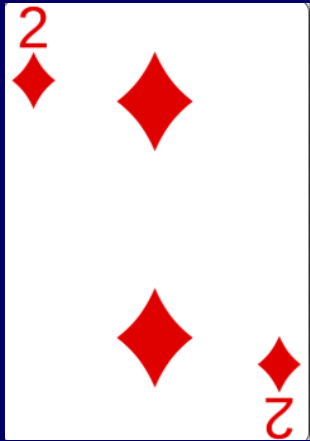
Years 1 and 2

March 2019



Quick warm up...

Maths



Select some cards...

What numbers can you make with these cards
when you put them in a number sentence?

Examples...

$$10 - 8 = 2$$

$$8 \div 2 = 4$$

$$10 - 1 \times 2 = 18$$

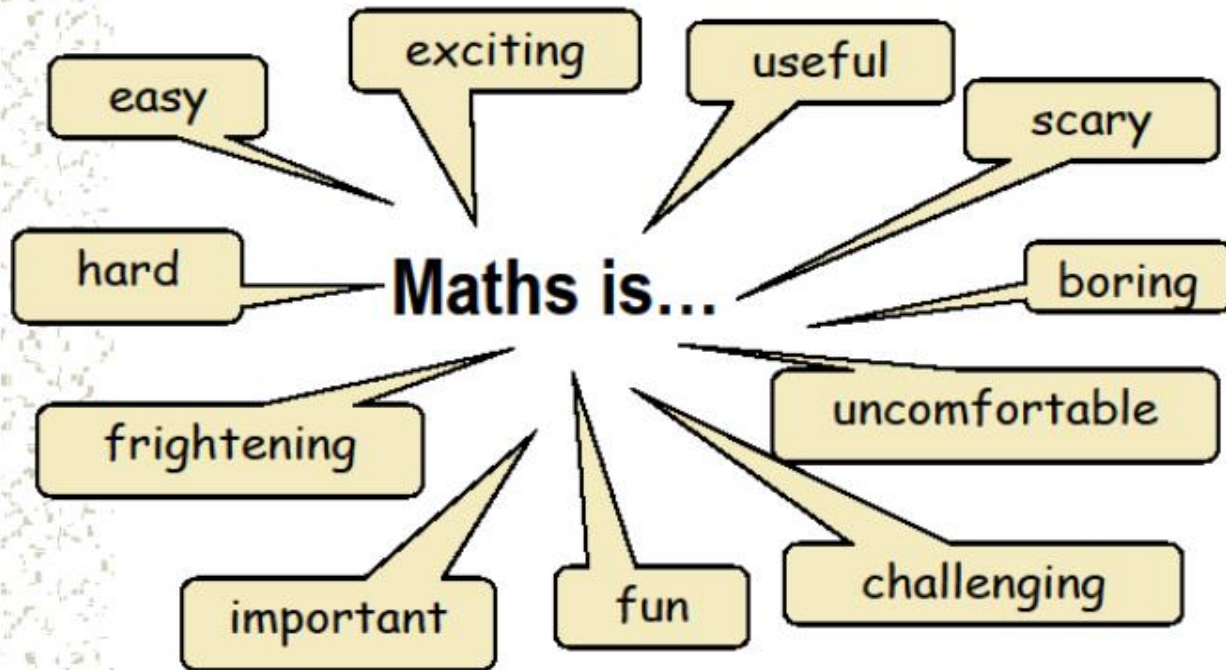
$$10 \times 8 \times 2 = 160$$



How do you feel about maths?

Maths

Which of these words would you use to describe mathematics?





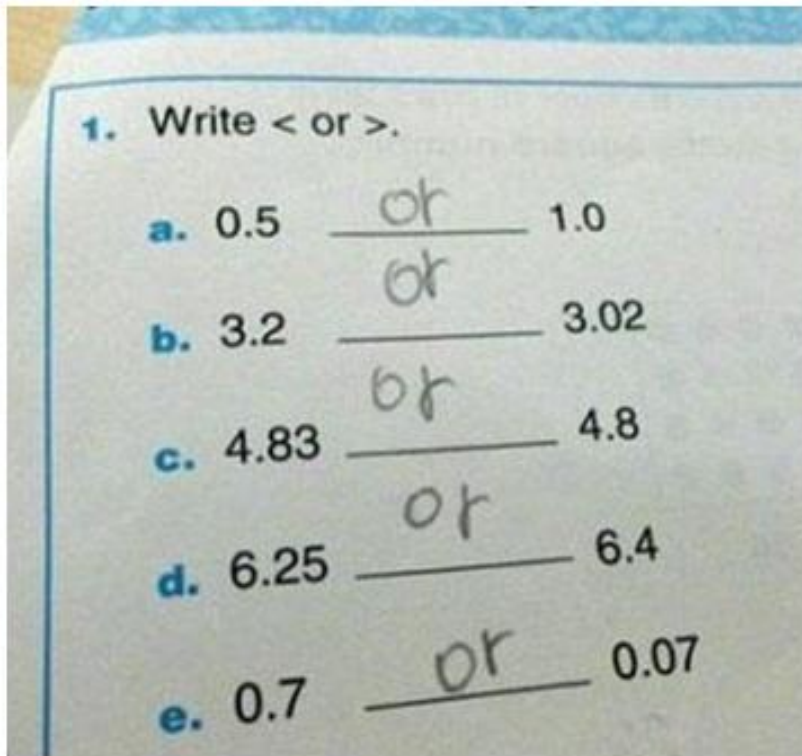
Maths

Maths today is a bit different to
how some of us might remember
being taught it!



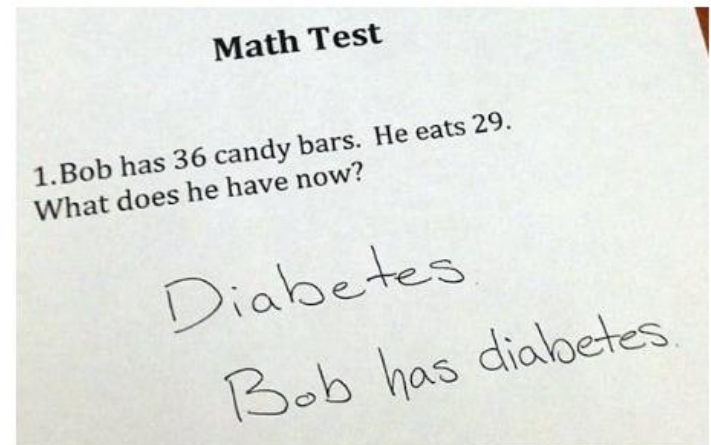
Why we do things differently...

Maths



Q: What's the difference between 9 and 4?

Child's answer: The 9 is curvy and the 4 is all straight!





How we teach maths: National Curriculum 2014

Maths

Aims

Fluency ...Sense of playfulness with number, seeing patterns, seeing numbers within numbers....

Reasoning ...Making sense of maths and explaining connections...

Problem Solving ...Using and applying maths understanding and skills to different contexts/ puzzles ...



Equals... equivalence.. balance

Maths

‘Old’ style

$$8 + 4 = \underline{\quad}$$

$$4 + 8 = \underline{\quad}$$

$$7 + 5 = 8 + \underline{\quad}$$

‘New style’ maths

$$8 + 4 = \square$$

$$12 = \square + 4$$

$$120 = 80 + \square$$

$$7 + \square = 8 + \square$$

$$\square + \square + \square = \square + \square$$



Maths

Equals... equivalence.. balance

New

$$7 + \boxed{} = 8 + \boxed{}$$

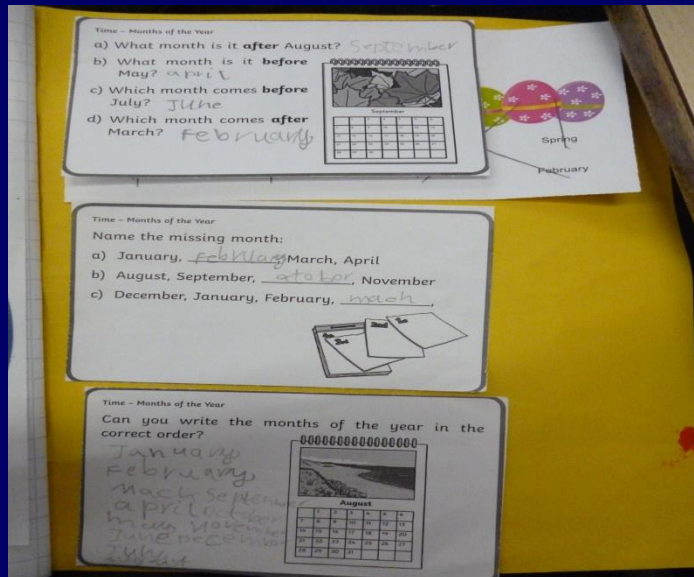
$$\boxed{} + \boxed{} + \boxed{} = \boxed{} + \boxed{}$$

Greater depth

Is it possible to only use odd numbers for the missing boxes?
Or just even numbers?

Using just the digits 1-7?

Can you change the operation
+ - x ÷ and keep the balance?



Mastery approach

- Learning sequences build on each other and help children make connections between mathematical concepts.
- Longer time on key concepts to give secure foundations – not dawdling but deepening
- Time to think deeply about maths - with same focus/pace for most of class but opportunities for broadening and deepening
- An inclusive approach that helps to build self-confidence, with misconceptions tackled as they happen
- Not accelerating onto later year's content or larger numbers – challenge with same concept

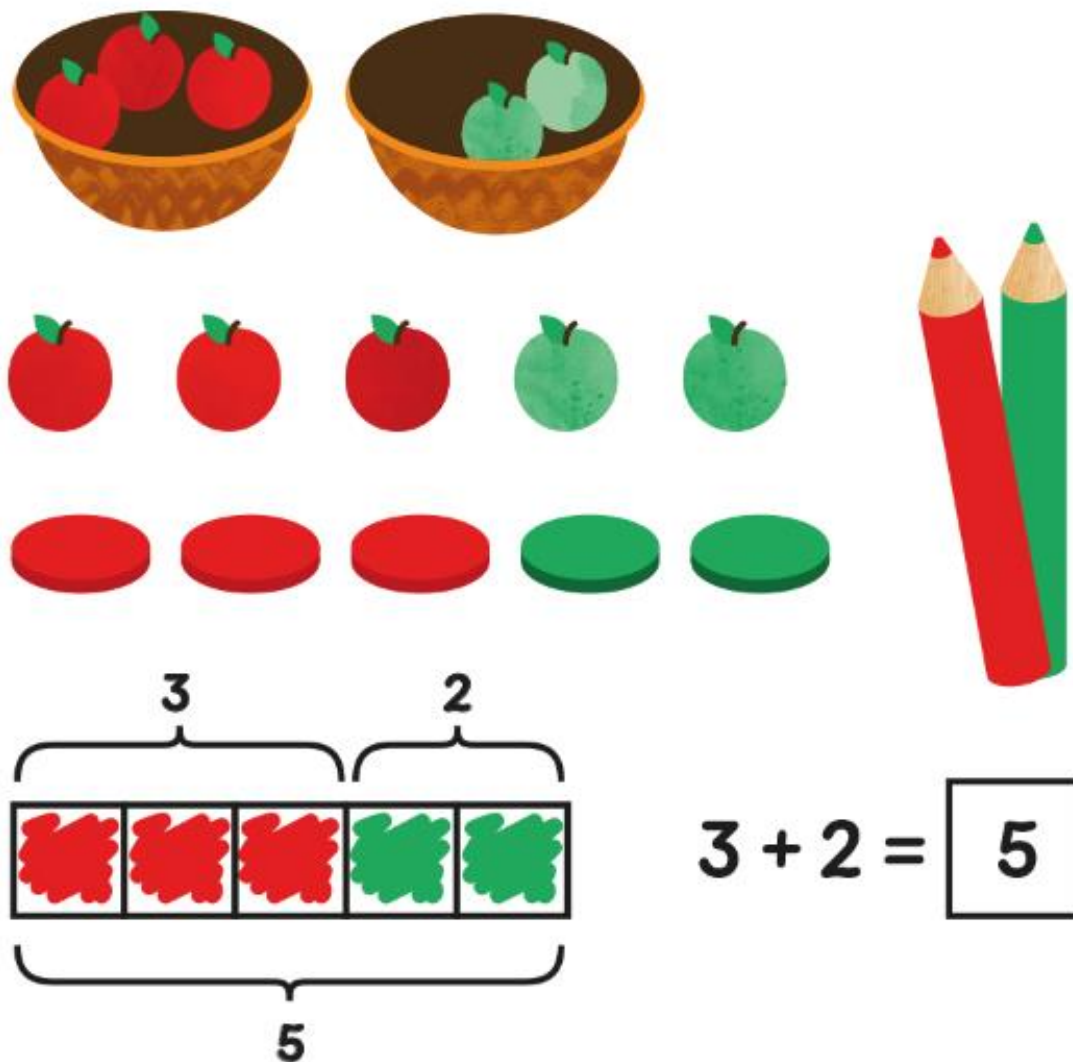


Maths



Concrete... pictorial... abstract

Maths

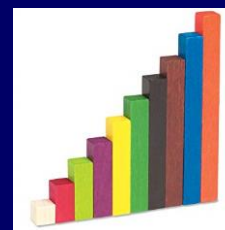




Manipulatives that your children will be routinely using in class

Maths

Counters



Cuisenaire

Multilink



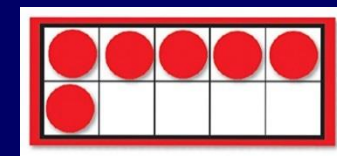
Dice



Base 10
'Dienes'
equipment



Bead
strings



Tens
frames



Maths Pictures

Year 2

Maths

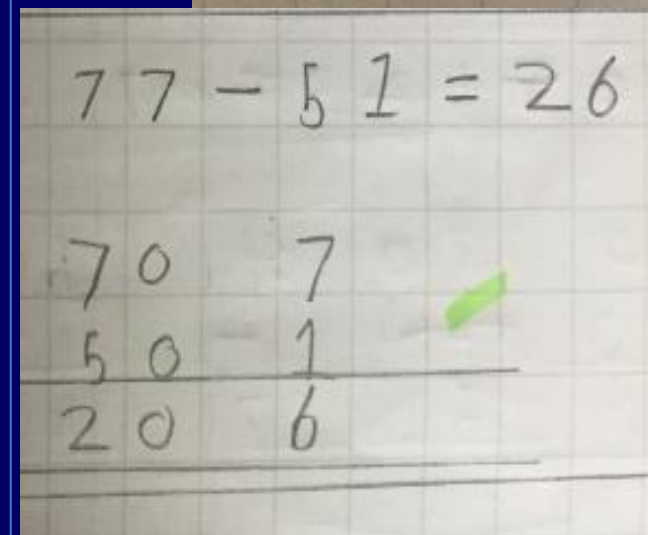
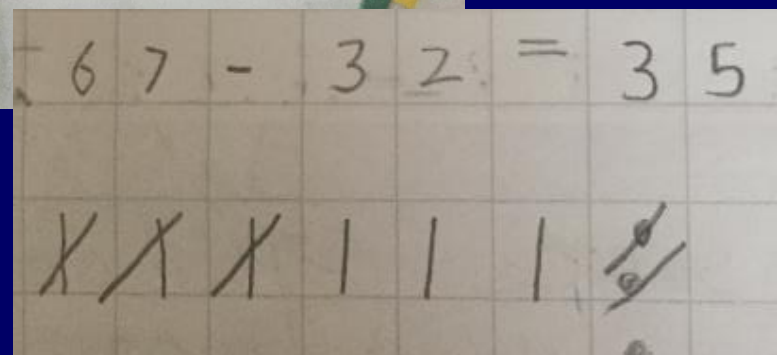
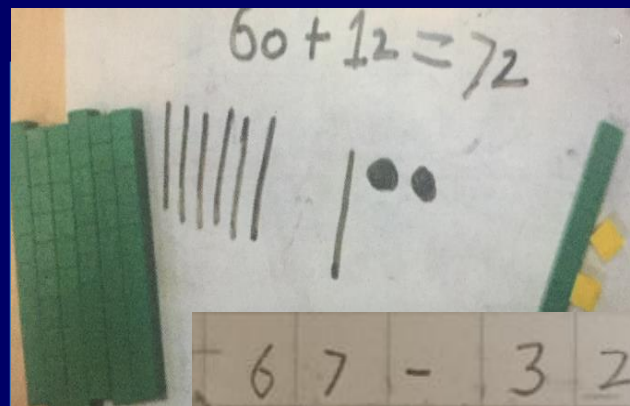
Year 1



Chosen
number



Draw it...





Maths

Fluency

...Sense of playfulness with number, seeing patterns, seeing numbers within numbers....

$$8 + 9 =$$

Children need strategies beyond using concrete apparatus and counting:

Near doubles

Bridging ten

Rounding and adjusting



Maths

Lack of Fluency

Children who leave
KS1 **counting**

3 + 4 on fingers, not secure on
**doubling, halving and basic
number + and - facts**

face a real problem when
learning written methods to add
or subtract in Year 3

Children who leave
Year 4 not knowing all their
times table facts find accessing
calculation work, fractions,
decimals, area much slower in
Years 5 and 6

You can really help support your child at
home to develop their fluency (more later)



Maths

Reasoning

If I know $8 + 9 = 17$, what else do I know?

$$80 + 90 =$$

$$8 + 9 = 17$$

$$17 - 8 = 9$$

$$0.8 + 0.9 =$$



Maths

The same is true for multiplication -

Working from the base fact:

$$6 \times 4 = 24$$

What else do we know?

$$4 \times 0.6 = 2.4$$

$$60 \times 40 = 2400$$

$$24 \div 4 = 6$$

$$240 \div 6 = 40$$



Maths

Reasoning

Here are 4 numbers:

What do you notice about these numbers?

8 16 15 23

Which is the odd one out and why?

Explain your reasons



Problem-solving

Maths

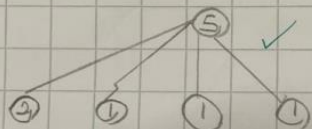
L.O: to be able to create a part whole model.

S2S

Can you draw the part whole model?

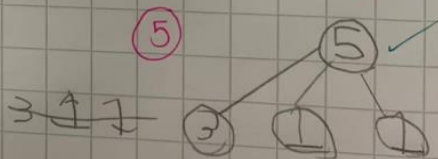
Can you decide which are the parts and how many parts there will be?

Can you calculate the whole?



$$2 + 1 + 1 + 1 = 5$$

Could you group them another way?



Kelly had 56 1p coins and she gave 25 to her sister. How many did she have left?

$$56p - 25p = 31p \quad \checkmark$$

$$\begin{array}{r} 50p \quad 6p \\ - 20p \quad 5p \\ \hline 30p \quad 1p \end{array}$$

Sam had 14 lollies and Ben had 22 lollies. How many did they have altogether?

$$14 + 22 = 36$$

$$\begin{array}{r} 10 \quad 4 \\ + 20 \quad 2 \\ \hline 30 \quad 6 \end{array} \quad \checkmark$$

Debbie counted 56 cars and Lucy counted 38 cars. How many had they seen altogether?

$$56 + 38 = 94 \quad \checkmark$$

$$\begin{array}{r} 50 \quad 6 \\ + 30 \quad 8 \\ \hline 80 \quad 14 \\ \hline 94 \end{array} \quad \checkmark$$



Maths

Talk frames

Speaking Frame

I can see 7 tens and 2 ones.

The number is 72.

The number is 2 more than 70.

The pink is longer than the gray.

The pink are longer than the gray.

The pink is taller than the yellow.

The pink are taller than the gray.

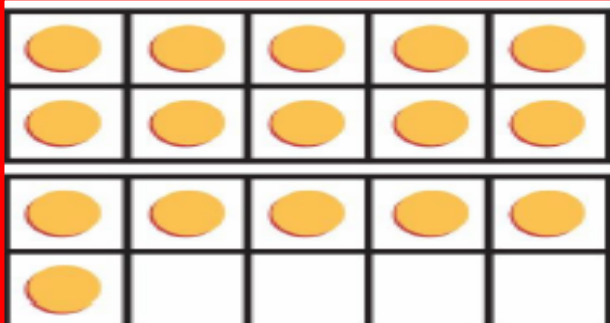
The yellow is shorter than the pink.

The hats are shorter than the yellow.



CPA and talk together

Maths



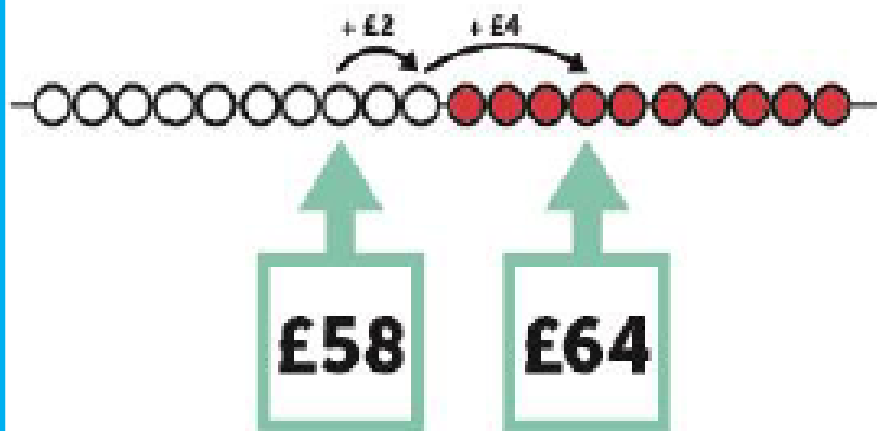
How many counters are there?

How does the tens frame help you know how many counters are there?

There are 16.

I can see that there is one full tens frame and in the other the top row is full and one more which is six. I can see 10 and 6 more is 16.

This group has more because it has 16 counters and the other group has 5. Sixteen is more than 5.



I count on from £58 to £60 which is £2. Then £4 more to £64. I have counted on £6 altogether.
 $£58 + £6 = £64$ so $£64 - £58 = £6$

Our maths week:



Maths

Core Learning (5 sessions) Herts for Learning Essentials Maths

Customised to our learners by additional challenge and carefully crafted practise opportunities sourced by teachers. Includes scaffolds to support the closing of gaps and ARE questions to help assessment.

Fluency Skills - discrete teaching sessions focusing on fluency to keep new skills live, often using games. Weekly arithmetic and number fact practise. E-learning e.g. using *Numbergym*.

Additional pre-teaching **and** intervention to support children as needed.

Cross curricular opportunities to give maths meaning and purpose.

Homework - overlearning number facts, practising of key concepts, topic opportunities (e.g. recipes, statistics).



Maths

Book A Week 9

Weekly Written Arithmetic Questions

1 $7 + 2 = 9$	6 $8 - 1 = 7$	11 $20 - 1 = 19$
2 $1 - 1 = 0$	7 $4 + 3 = 7$	12 $2 + 8 = 10$
3 $1 + 7 = 8$	8 $0 + 0 = 0$	13 $9 + 10 = 19$
4 $17 + 1 = 18$	9 $8 - 7 = 1$	14 $2 - 0 = 2$
5 $7 + 2 = 9$	10 $3 - 0 = 3$	15 $0 + 2 = 2$

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1 2 3 4 5 6 7
 0 0 2 0 0 0 0 0
 0 0 0 0 0 0 0
 1
~~1~~ - 1 = 0
 0 0 1 0 0 0 0 0
 1 + 7 = 8

Book B Week 19		Weekly Written Arithmetic Questions	
1 $4 + 7 + 4 = 15$ ✓	8 $15 + 2 = 17$ ✓	15 $\boxed{60} \div 10 = 6$ ✓	
2 $37 - 2 = 35$ ✓	9 $33 + 33 = 66$ ✓	16 $8 + 2 + 8 = 18$ ✓	
3 $10 + \boxed{20} = 30$ ✓	10 $72 - 20 = 52$ ✓	17 $\boxed{11} + 9 = 20$ ✓	
4 $\frac{1}{3}$ of 6 = 2 ✓	11 $18 + 11 = 29$ ✓	18 $4 \div 2 = 2$ ✓	
5 $45 + 30 = 75$ ✓	12 $\frac{1}{\boxed{2}} = \frac{2}{4}$ ✓	19 $1 + 7 + 3 = 11$ ✓	
6 $40 + 4 = 44$ ✓	13 $33 + 10 = 43$ ✓	20 $5 - 4 = 1$ ✓	
7 $40 + 20 = 60$ ✓	14 $22 + 14 = 36$ ✓	21 $100 - 81 = 19$ ✓	

Book B Week 19

22 $38 + 26 = \boxed{64}$ ✓

23 $64 + \boxed{21} = 85$

24 $\boxed{934} - 63 = 29$

25 $91 - 23 = \boxed{68}$ ✓

$$\begin{array}{r} 24 \\ 25 \end{array}$$



Year 1

The National Curriculum, detailed Programmes of Study, and Year group learner documents are all on the school website. You can also find information about what's coming up in maths on our termly class newsletter.

Maths

Thorough understanding of numbers 1-20

- Making them
- Comparing
- Part- whole models and regrouping
- Rounding
- Adding and subtracting
- Doubling and halving

Recognising place value beyond 20 to 100

Counting in multiples of 2,5 and 10

Common 2D and 3D shape

Telling the time O'clock, half past

Days of the week, months of the year

Begin to measure length, mass, capacity

Fluency focus:

Numbers to 20

Numbers to 100



Year 1 Learning in Action!

Maths

1LS10 4+5=13 6+7=13 7+7=13

Step 4 Write, Make, Draw

Write its name...

Chosen number

is 10 and more.

Make it...

Draw it...

7+7=14

10+5=15



Year 2

The National Curriculum, detailed Programmes of Study, and Year group learner documents are all on the school website. You can also find information about what's coming up in maths on our termly class newsletter.

Maths

Year 2 programme of study

Number and place value	Addition and subtraction	Multiplication and division	Fractions	Measurement	Geometry: properties of shapes	Geometry: position and direction	Statistics
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward recognise the place value of each digit in a two-digit number (tens, ones) identify, represent and estimate numbers using different representations, including the number line compare and order numbers from 0 up to 100; use <, > and = signs read and write numbers to at least 100 in numerals and in words use place value and number facts to solve problems. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> solve problems with addition and subtraction: <ul style="list-style-type: none"> using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and = recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. know the number of minutes in an hour and the number of hours in a day. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces identify 2-D shapes on the surface of 3-D shapes [for example a circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D and 3-D shapes and everyday objects. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> order and arrange combinations of mathematical objects in patterns and sequences use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ask and answer questions about totalling and comparing categorical data.

Fluency focus:
Numbers to 100

Numbers beyond
100



Year 2 Learning in Action!

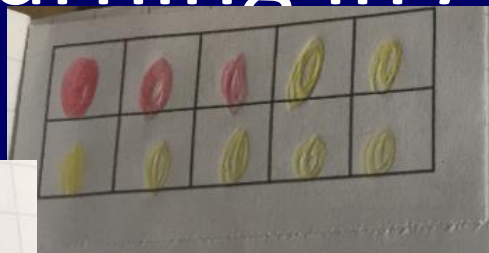
26

20	6
----	---

$20 + 6 = 26$
 $6 + 20 = 26$
 $26 - 6 = 20$
 $26 - 20 = 6$

26

20 6



$$30 + 70 = 100 \checkmark$$

$$76 + 30 = 100$$

$$100 - 30 = 70$$

$$100 - 70 = 30$$

Fruits	Tally	Total
banana	II	2
apple		9
grape	II	2
strawberry		17

27

$10 + 10 + 6 + 1$
 $5 + 5 + 5 + 3$
 $20 + 7$
 $30 + 30 + 10 + 1$
 $60 + 10 + 1$
 $70 + 1$

71

60 + 12 = 72

|||||

||

||



Maths

Enjoying maths at home

1. Praise your child for effort
2. When checking homework, don't just point out mistakes – explain it to them
3. All mistakes are beautiful and a learning opportunity!
4. Try not to show frustration. Take a break, let everyone calm down and come back to it
5. Do not pressurise children. Whilst knowing times tables is important, it doesn't make you a bad mathematician if you can't remember them.
6. Don't describe yourself as useless at maths
7. Show yourself to be curious about maths and playful with numbers. Make it fun!



Maths

How can parents help at home

- Especially in years 1,2,3 Counting and dice games, card games, any maths games!
- Look for Maths in the Every Day (next slide)
- Practise number facts at home (continue beyond Yr 4)
 - + and – facts to 10, 20
 - x tables base facts

Come in and ask us if you need advice!



Maths

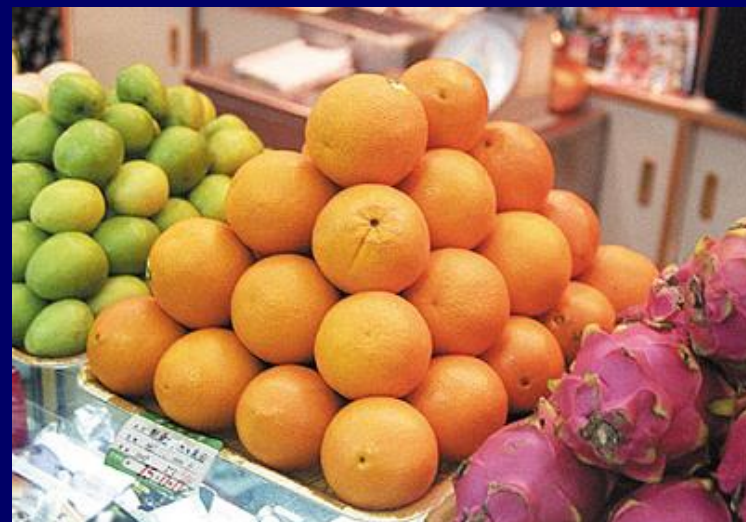
Need help with strategies?

- School planners – contain examples of written methods we use, explanations of fractions, shapes, perimeter, area, rounding, time etc.
- Please look at them and encourage children to use them to support homework.

Come in and ask us if you need advice!



Maths in the Every Day



E-learning that supports maths and children can log onto free from home



Maths



'Numbergym'

www.numbergym.co.uk

User name: ashwell

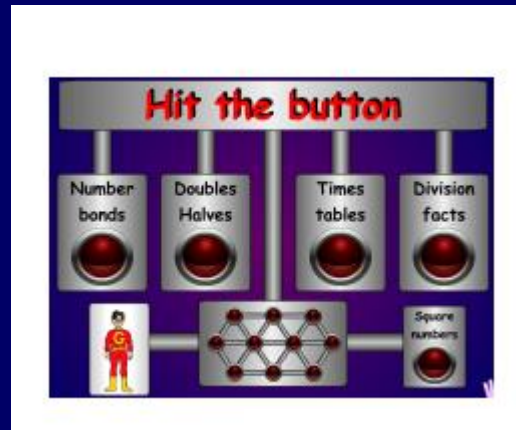
Password: silver

This is an excellent resource
to help with learning
in all areas of maths.

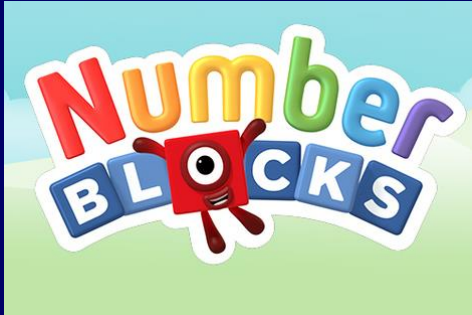
Bond Builder and Table Trainer
are accessible via tablet.



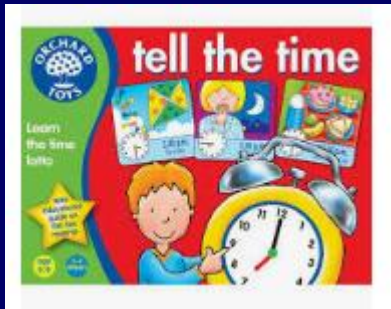
Purple Mash



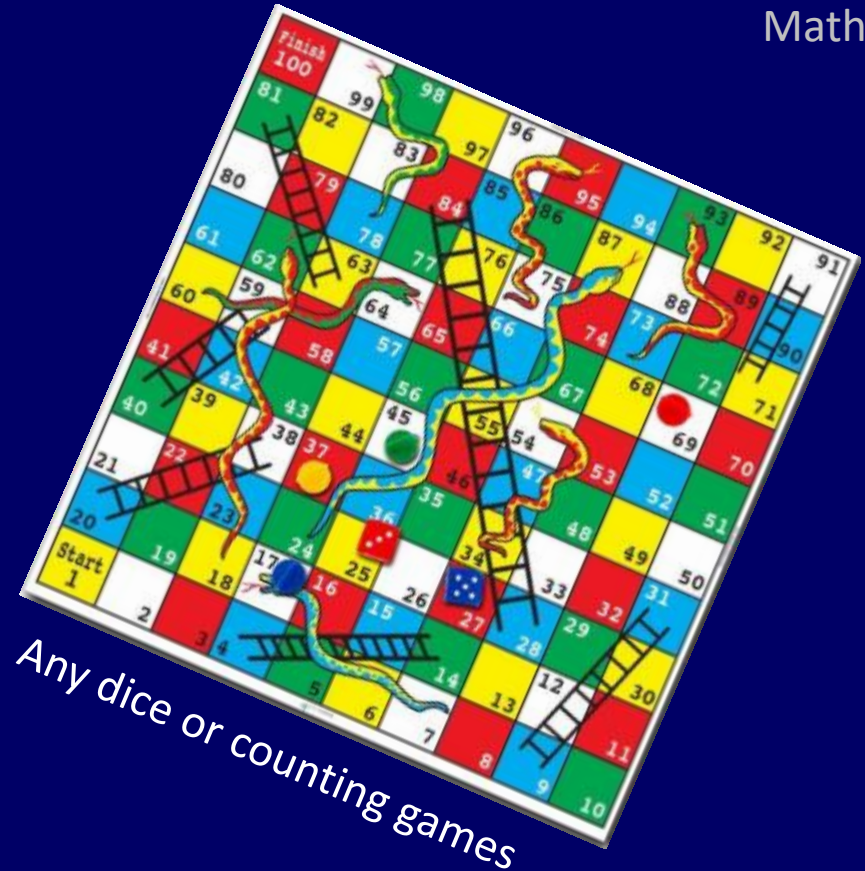
Years 1 and 2



Number Blocks TV Show



Orchard Toys Board Games



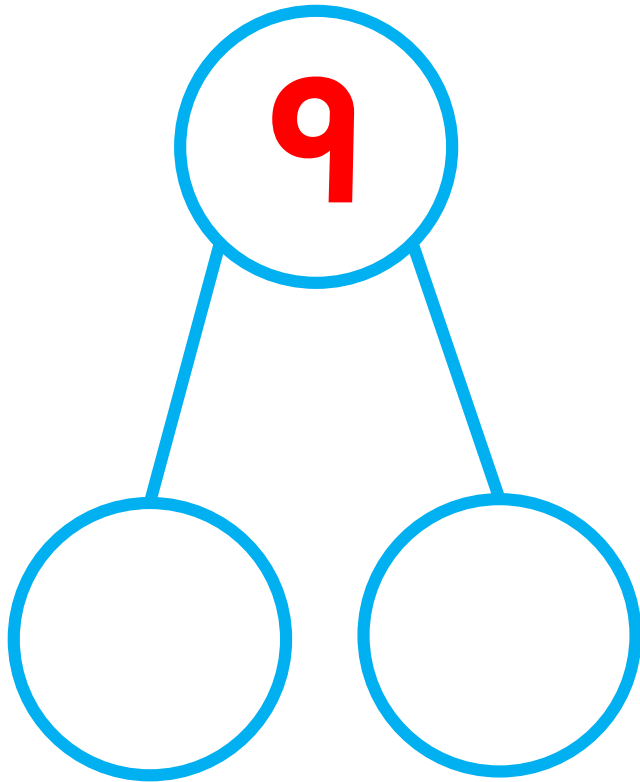
Any dice or counting games



Maths

Time to try our activities!

Activity 1



How many different ways
can you partition the
number 9?

Activity 2

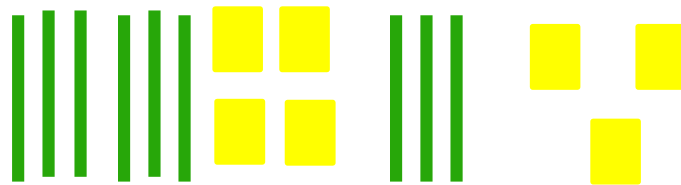
Solve these calculations by drawing base 10 under them:

$$64 + 33 =$$

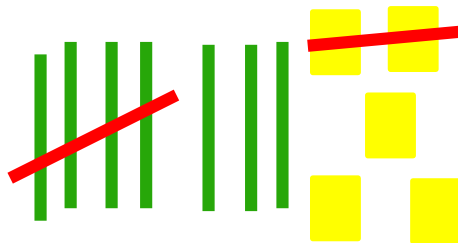
$$75 - 42 =$$

Activity 2 - Answers

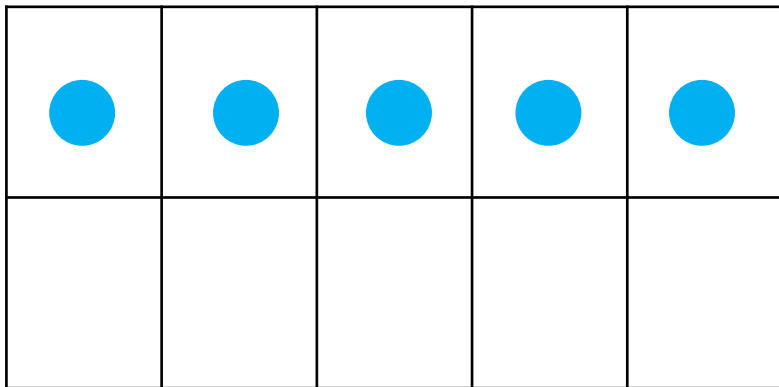
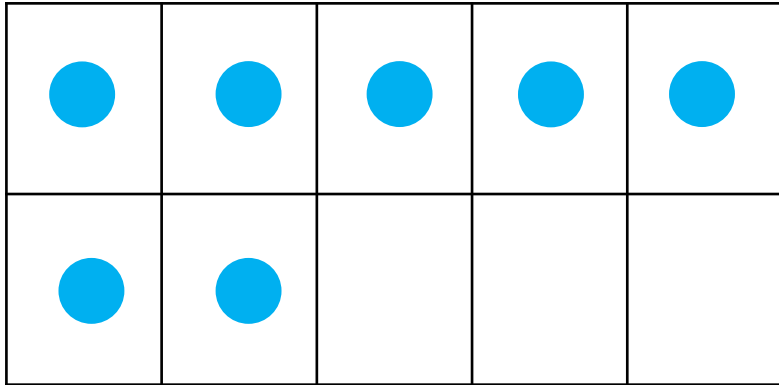
$$64 + 33 = 97$$



$$75 - 42 = 33$$



Activity 3



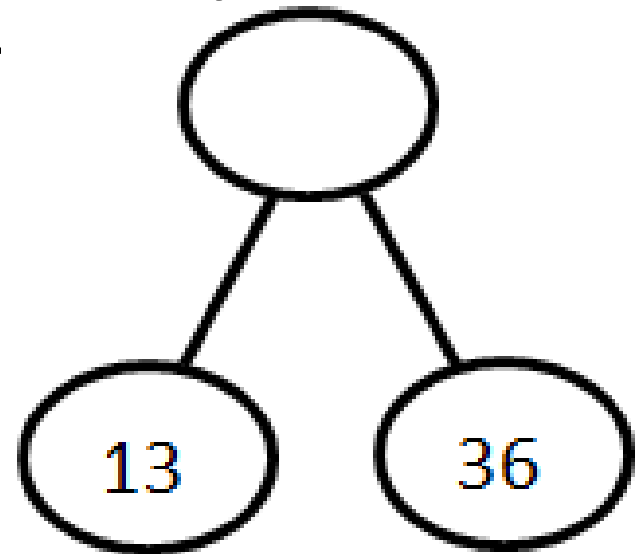
Regrouping to aid
addition:

$$7 + 5 =$$

Activity 4

Use the cherry model to help you solve the unknown in this word problem:

There were 36 butterflies in the park and 13 more came in the afternoon. How many butterflies were there altogether



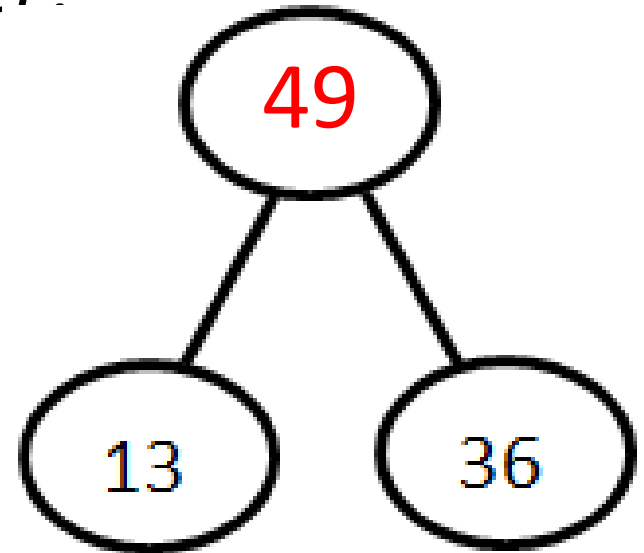
Activity 4 - Answers

There were 36 butterflies in the park and 13 more came in the afternoon. How many butterflies were there altogether?

Part + part = whole

$$36 + 13 = 49$$

$$\begin{array}{r} 30 \\ 10 \\ \hline 40 \end{array} \quad \begin{array}{r} 6 \\ 3 \\ \hline 9 \end{array}$$



Activity 5

Here are 4 numbers:

8 16 15 23

Which is the odd one out and why?

Activity 6

30

There are **76** cars in the car park.

18 more cars go into the car park.

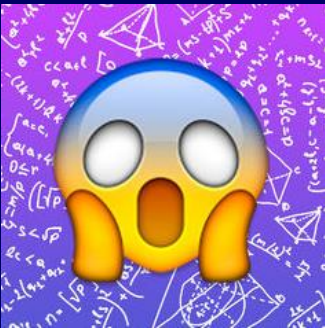
Then **35** cars go out.

How many cars are in the car park **now**?



Many thanks for attending tonight.
We hope you have found it useful.

Please fill in our evaluation survey.



Mrs Wild's talk about mental health
begins at 7pm in the main hall!