



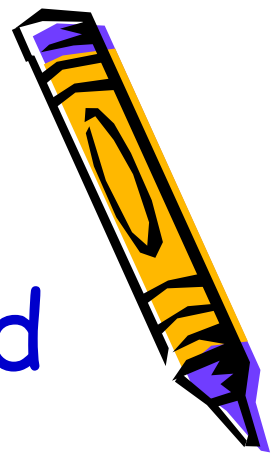
**Maths for parents
of children in
Reception and Year
1**



Maths is like Sprouts.....



You either love or hate it
depending on how it was served
up to you as a child!



At St Leonard's we want
your child's experiences
of Maths to be.....



exciting

practical



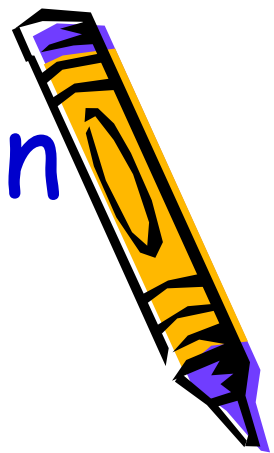
interesting

fun

memorable



The Early Years Foundation Stage Mathematics



Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.



Early Learning Goals



Number *Children at the expected level of development will:* - Have a deep understanding of number to 10, including the composition of each number; - Subitise (recognise quantities without counting) up to 5; - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Numerical Patterns *Children at the expected level of development will:* - Verbally count beyond 20, recognising the pattern of the counting system; - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.



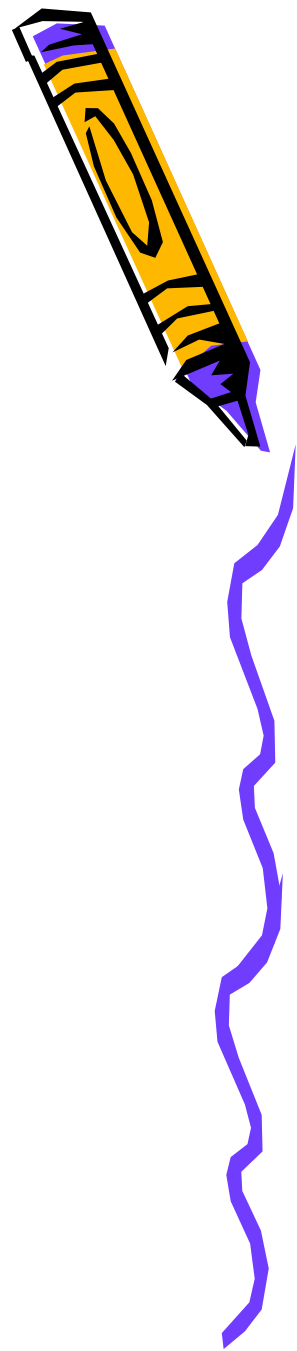


#MathsEveryoneCan

[Maths resources for teachers | White Rose Maths](#)

Progression of Knowledge and Skills

[Mathematics | St Leonard's Church of England, VA Lower School](#)
stleonards.beds.sch.uk



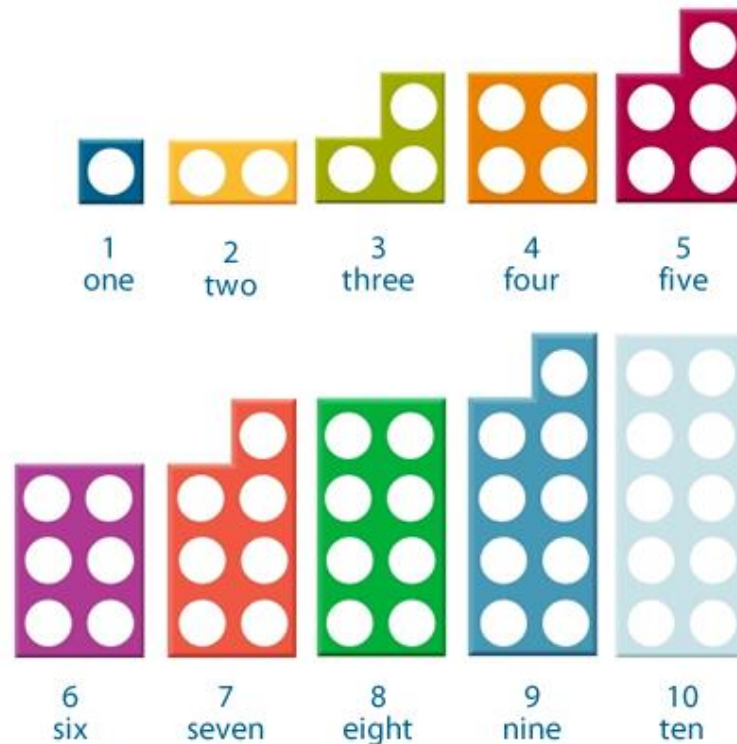


	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Getting To Know You		Match, sort and compare		Talk about measure and patterns		It's me 1,2,3		Circles and triangles	1,2,3,4,5		Shapes with 4 sides
Spring	Alive in 5	Mass and capacity	Growing 6,7,8		Length, height and time		Building 9 and 10		Building 9 and 10	Explore 3-D shapes		
Summer	To 20 and beyond		How many now?	Manipulate, compose and decompose		Sharing and grouping		Visualise, build and map			Make connections	Consolidation



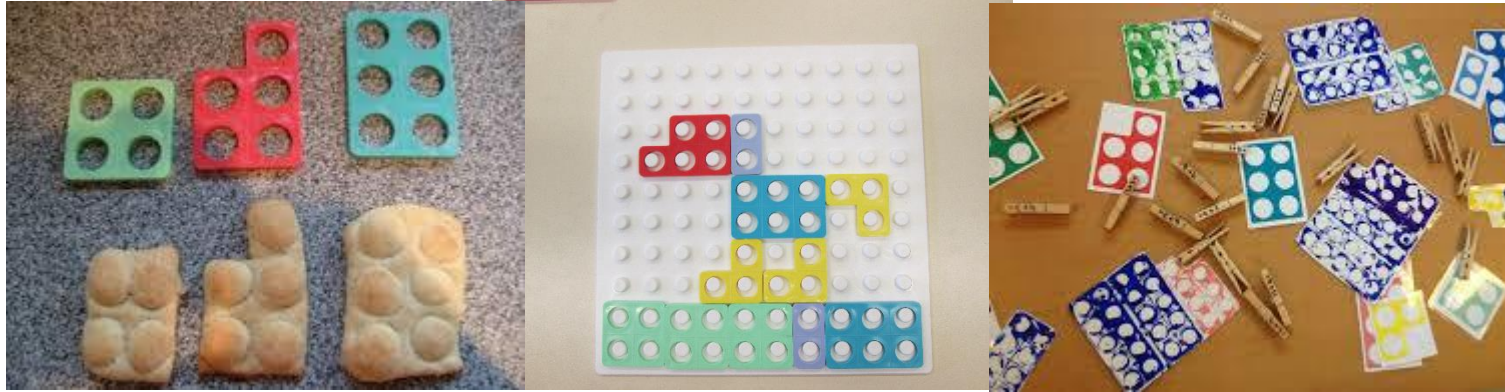
In order to support our children's understanding of number in the Early Years, we use Numicon as one of the ways in which we represent numbers.

Numicon is a multi-sensory resource which helps children to build a basic understanding of number. Essentially, it makes numbers real.

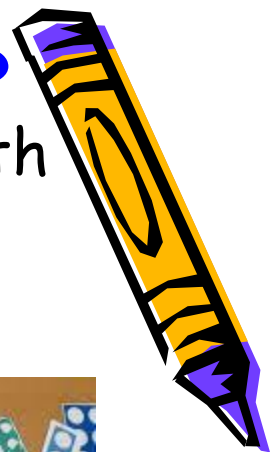


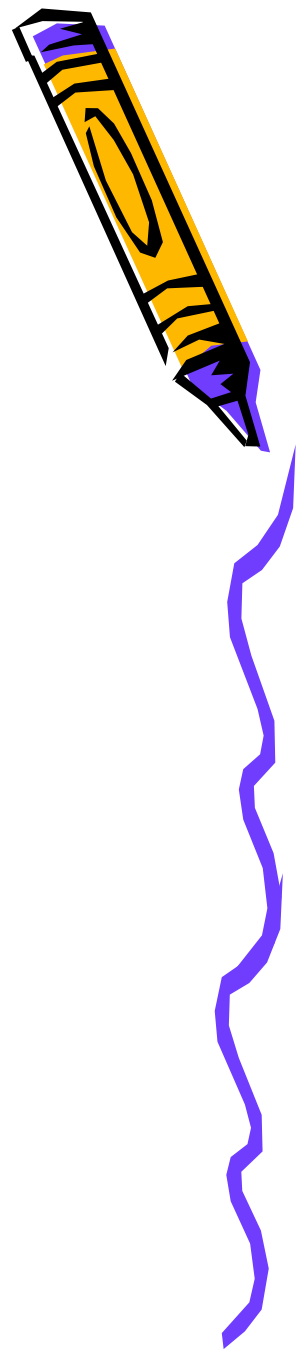
How is Numicon be introduced in the classroom?

To begin with the children will become familiar with the shapes, and enjoy using them in a range of activities.



They will then match the shapes to an object or a number





Counting

Subitise: Recognising numbers of things without counting

One to one principle: This involves children assigning one number name to each number that is being counted

The stable order principle: Children understand when counting the numbers have to be said in a certain order

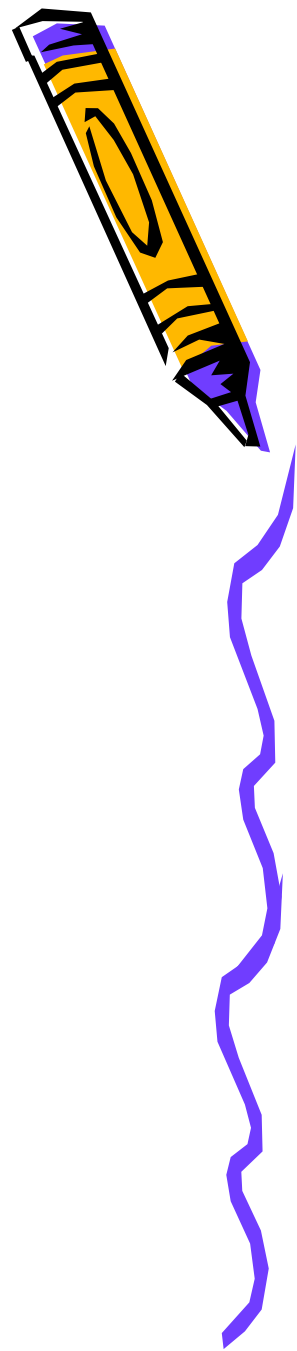
The cardinal principle: Children understand that the number name assigned to the final object in the group is the total number of objects in that group.

The abstraction principle: This involves children understanding that anything can be counted including things that cannot be touched, including sounds and movements e.g. jumps.

The order irrelevance principle: This involves children understanding that the order that we count a group of objects is irrelevant, there will be still be the same number.



A deep understanding of numbers to 5



The story of 4

$$1+3=4$$

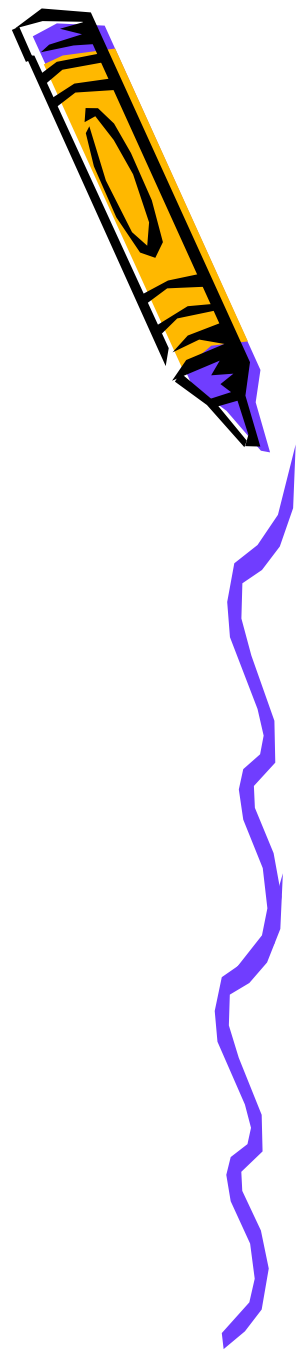
$$2+2=4$$

$$0+4=4$$

$$4-1=3$$

$$4-2=2$$



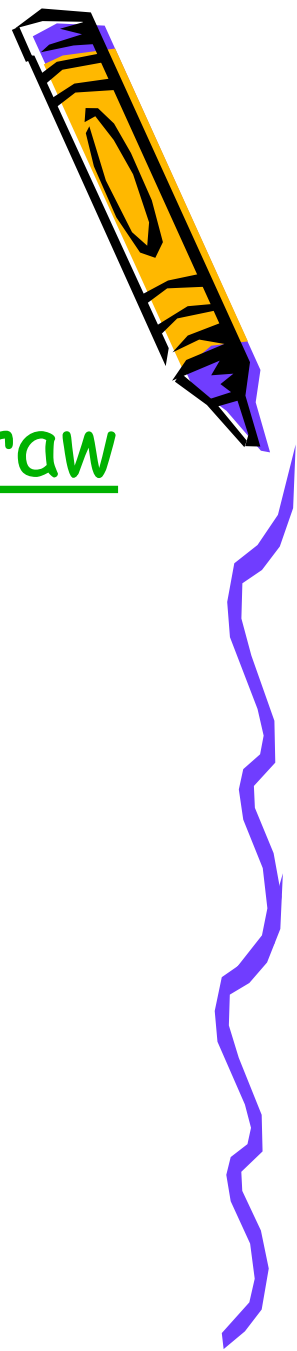


- Numberblocks - CBeebies - BBC



Writing numbers

- [Numberblocks Songs | Let's All Draw Numbers | CBeebies - YouTube](#)



Shape, Space and Measures

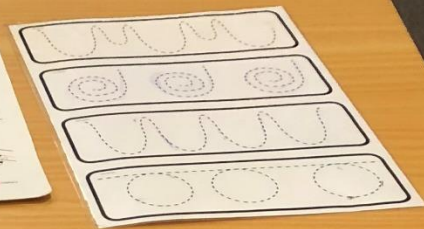


Patterns - we look at colours, shapes and repeating sequences.

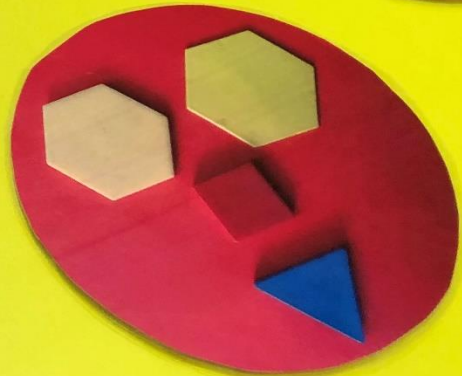
Time - we begin with times of the day such as 10 o'clock is assembly time, 12 o'clock is lunchtime, 3 o'clock is home time.

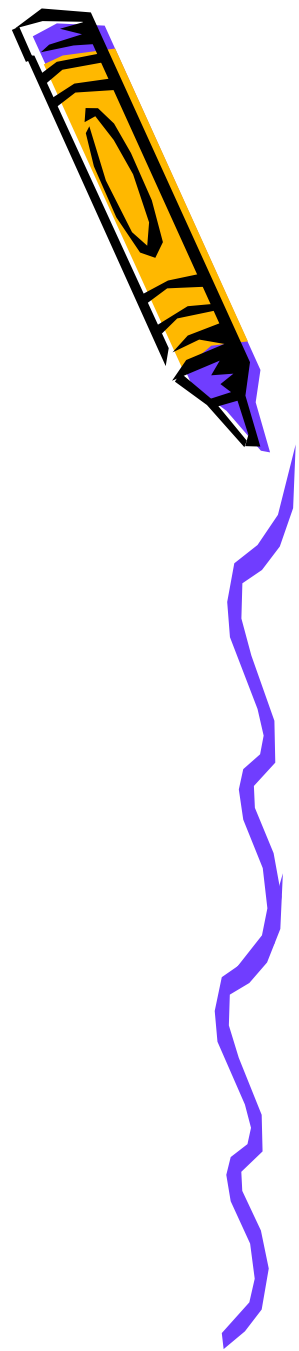
Measures - we use non-standard measures e.g. cubes, objects, hand span. Mathematical language to compare measures. (full, empty, half full, longer, longest, shorter, shortest, smaller, bigger, biggest etc.)





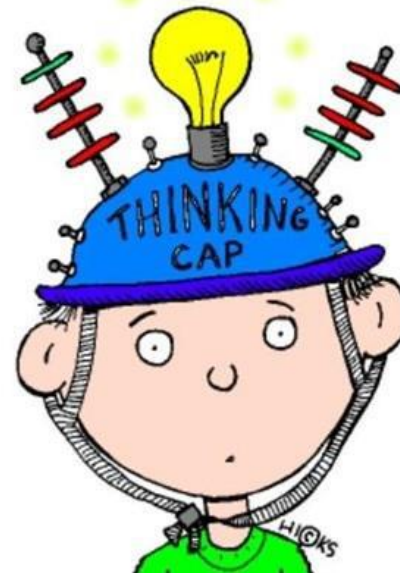
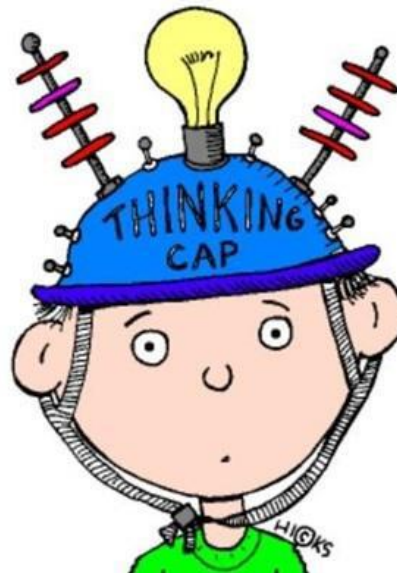
Can you
make a face
using 2d
shapes?





Problem solving

We want to teach maths through problem solving rather than just showing them how to solve problems.



Problem solving and Recording - addition



- Pictures and objects:

- I eat 2 cakes and my friend eats 3. How many cakes did we eat altogether?

- *May be recorded as $2 + 3 = 5$*



- Using children and a makeshift bus...

- 5 people are on the bus. 3 more get on at the next stop. How many people are on the bus now?

- May be recorded as $5 + 3 = 8$



Problem solving and Recording - subtraction



- Pictures and objects:
 - I have five cakes. I eat two of them. How many do I have left?
 - *May be recorded as $5 - 2 = 3$*



Practical maths

Your child will also learn about how to solve problems in practical ways such as:

Money
in shops



Estimating
with food



Using measuring cups
at bath time

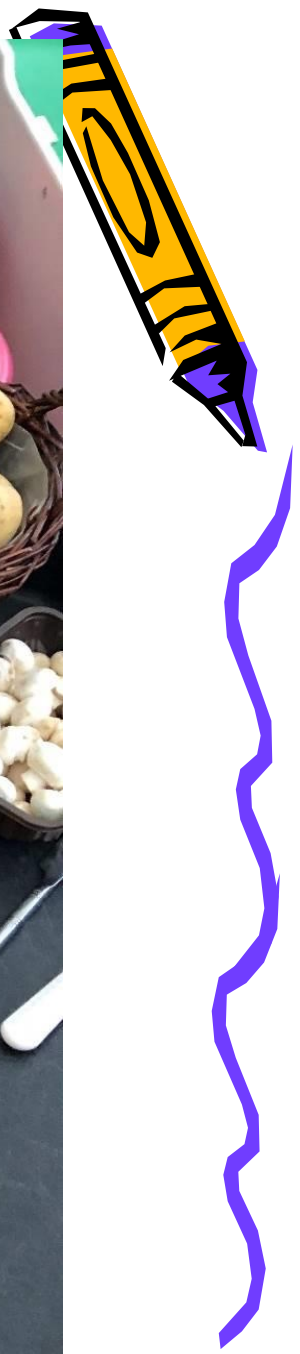


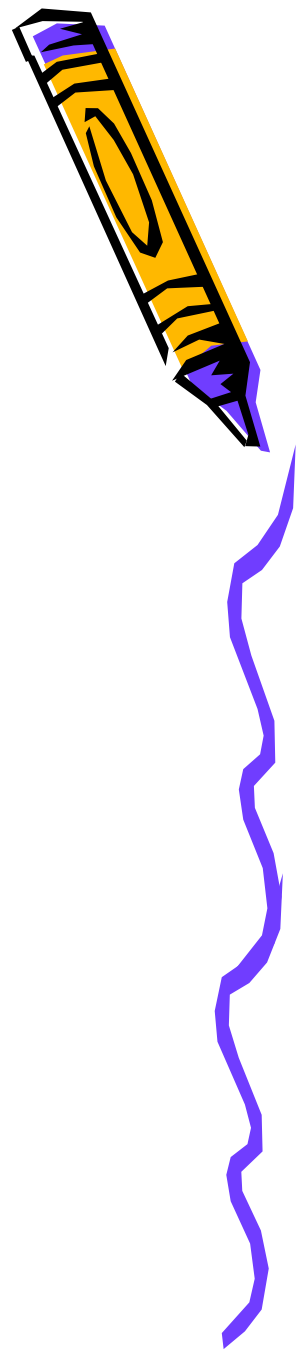
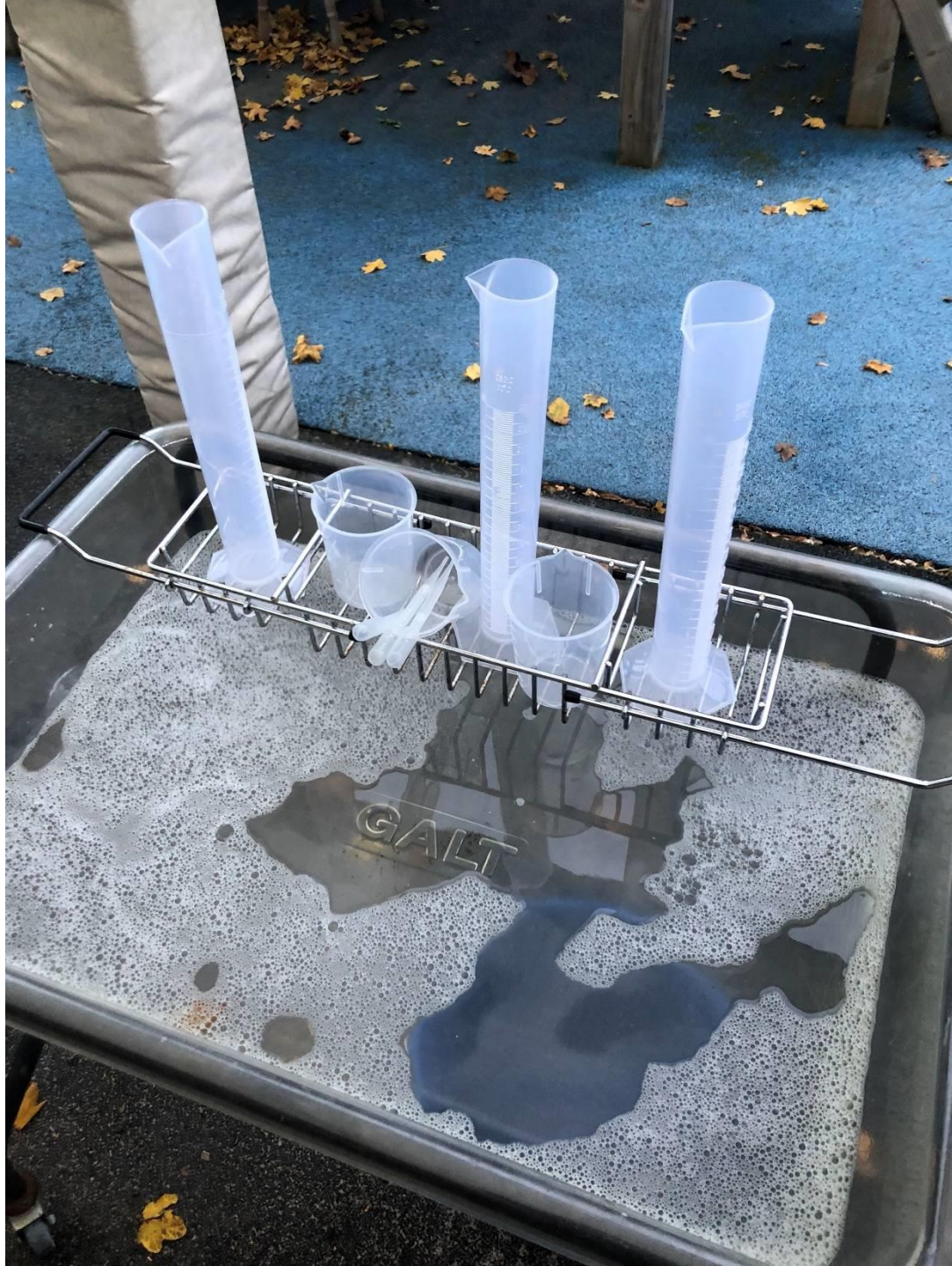
Talk about door
or bus numbers

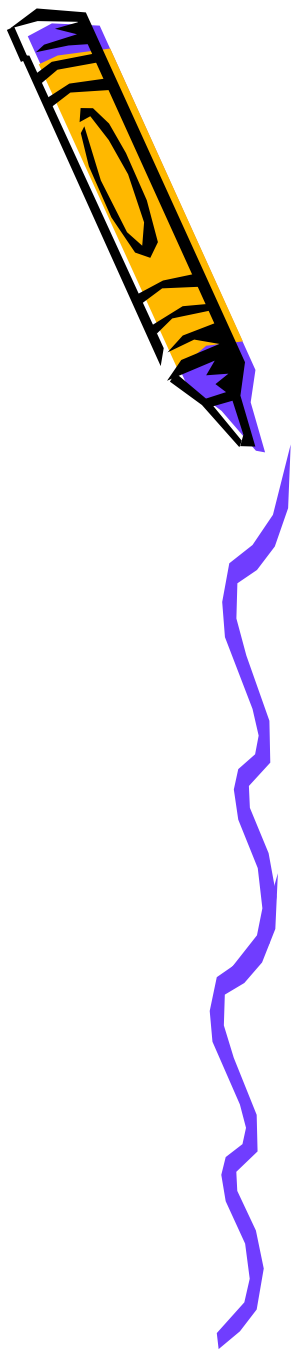


Cooking



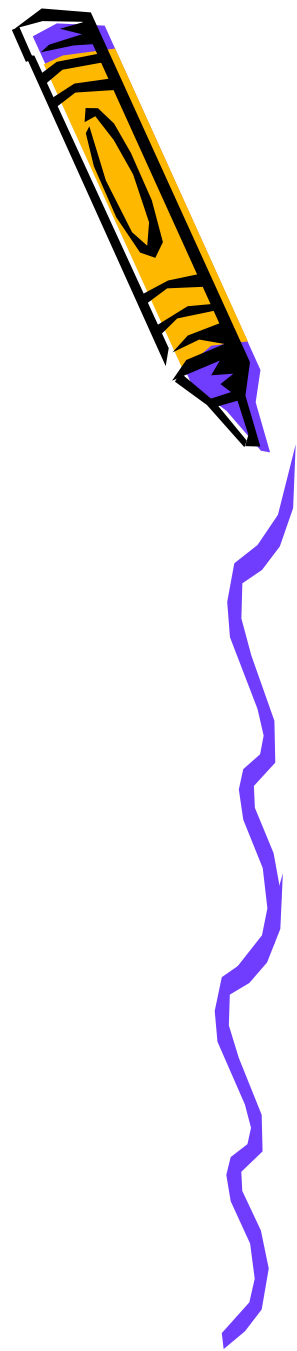






The National Curriculum

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.





	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value (within 10)				Number: Addition and Subtraction (within 10)					Geometry: Shape	Number: Place Value (within 20)	
Spring	Consolidation	Number: Addition and Subtractions (within 20)			Number: Place Value (within 50)			Measurement: Length and Height		Measurement: Weight and Volume		Consolidation
Summer	Consolidation	Number: Multiplication and Division			Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time	

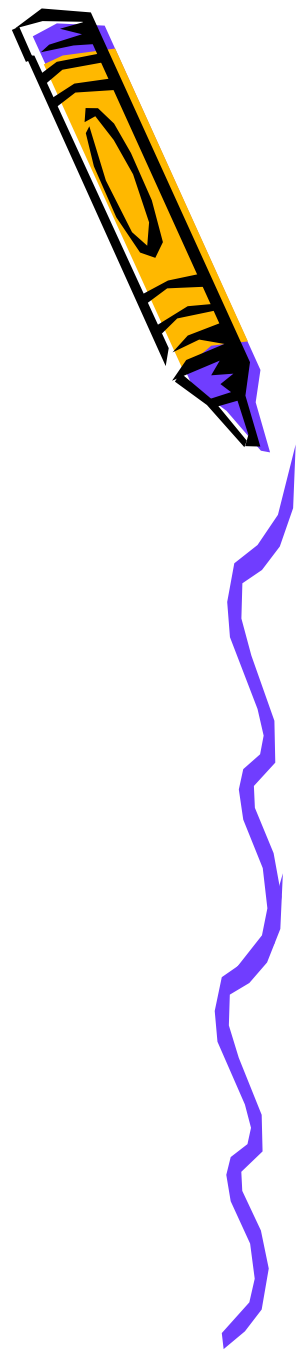


Year 1

Number – number and place value

Pupils should be taught to:

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
- given a number, identify one more and one less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- read and write numbers from 1 to 20 in numerals and words.

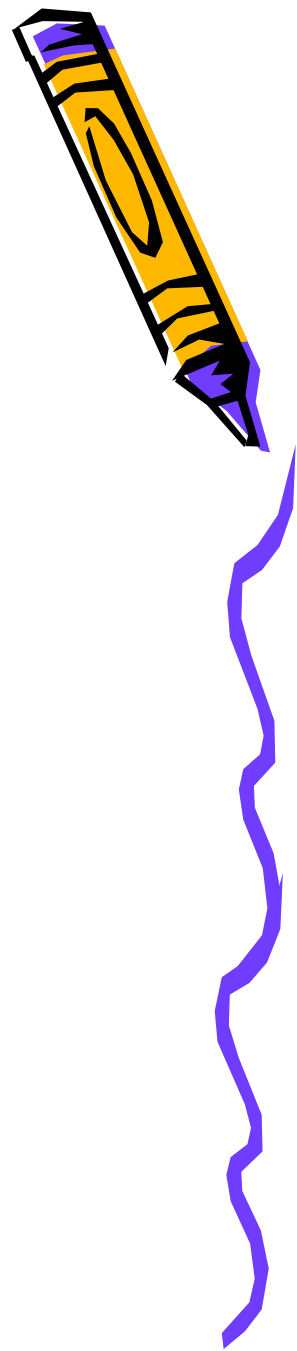


MASTERY

Concrete – children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

Pictorial – alongside this children should use pictorial representations. These representations can then be used to help reason and solve problems.

Abstract – both concrete and pictorial representations should support children's understanding of abstract methods.



Place Value

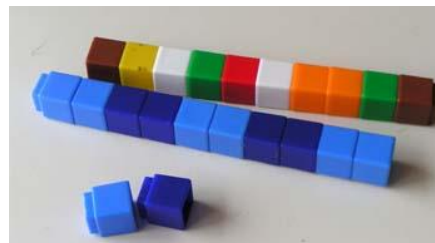
Understanding of numbers

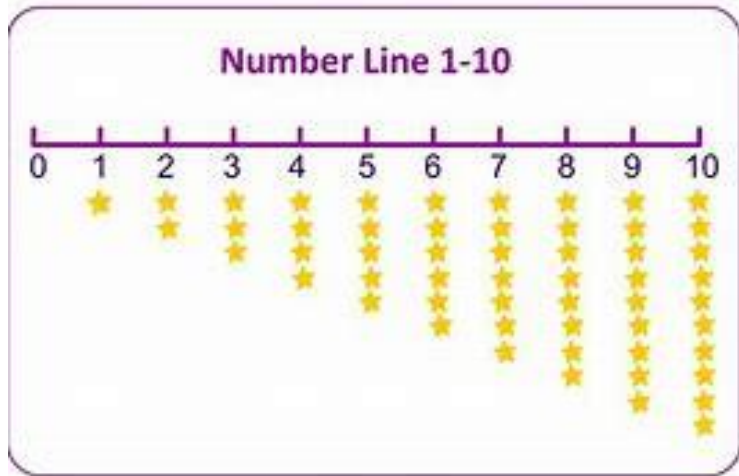
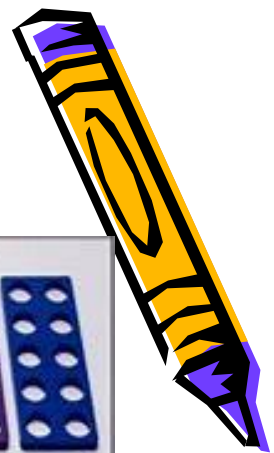
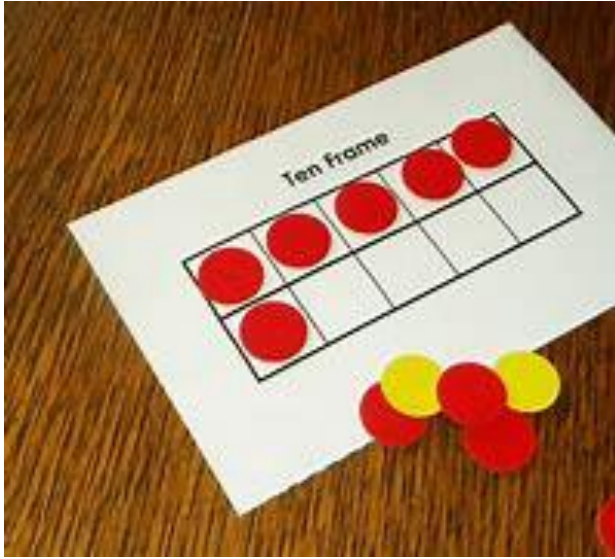


- We use place value cards in combination with unifix cubes and 100 squares to recognise values of numbers.
i.e. make the number 16

Step 1: separate the number into its value
a ten and 6 ones

Step 2: make that number with either cubes or a value card.





Value

Match

Count back

Most

One less

Digit

Order

Fewer

Number

Count on

Least

One more

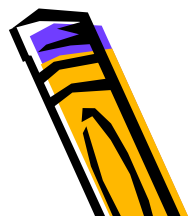
Compare

Greater than >

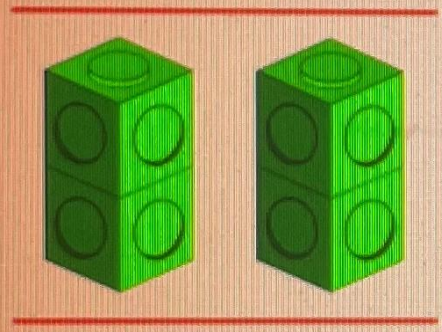
Less than <

Equal to =

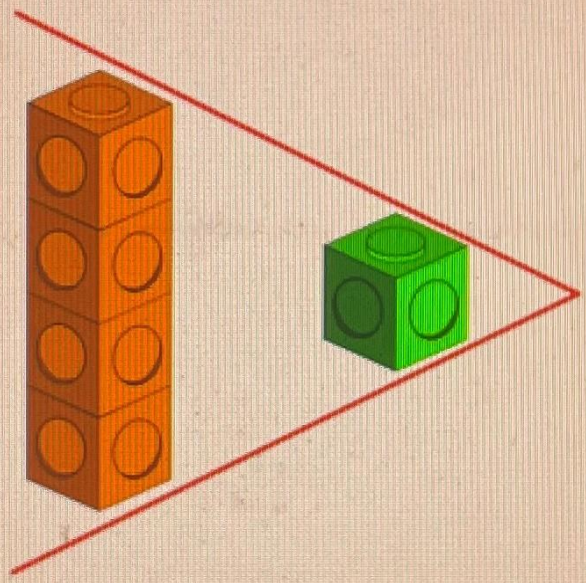




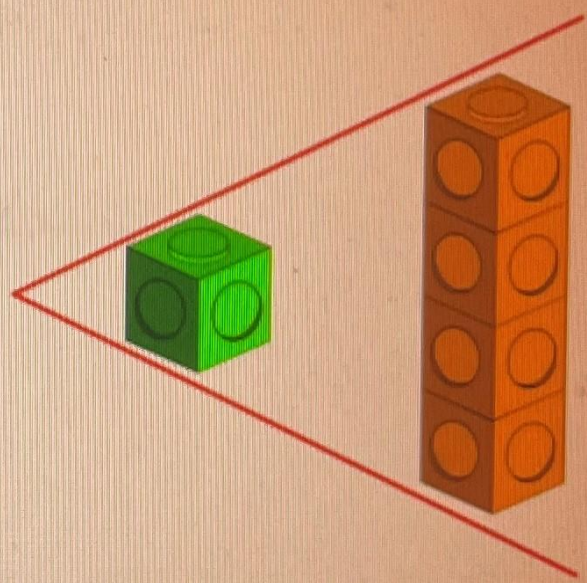
Confusion between inequality symbols



$$2 = 2$$



$$4 > 1$$



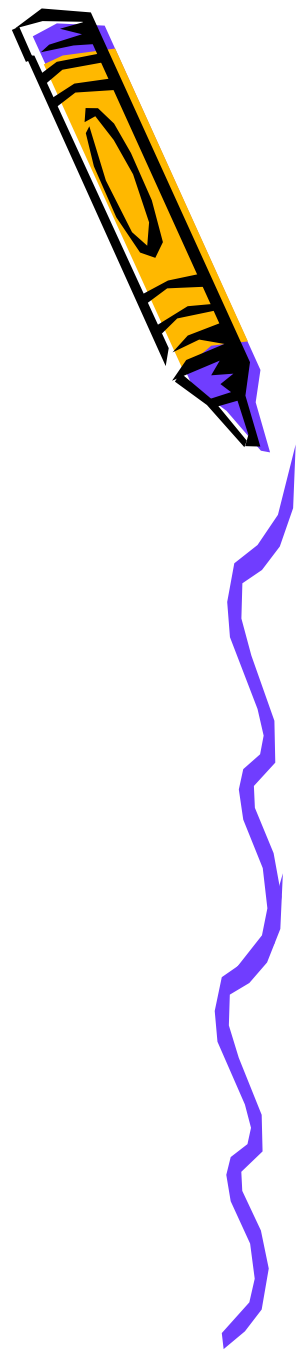
$$1 < 4$$



Number – addition and subtraction

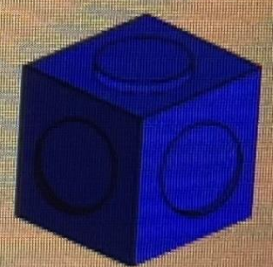
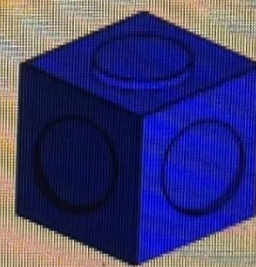
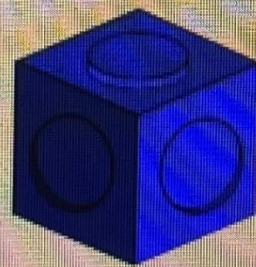
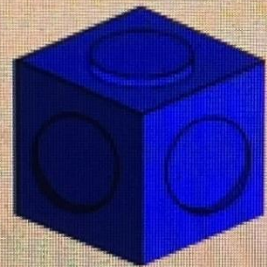
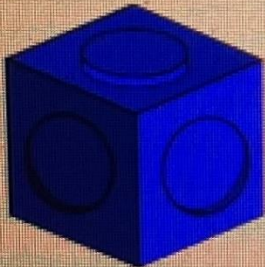
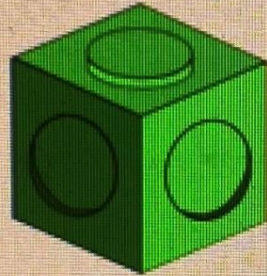
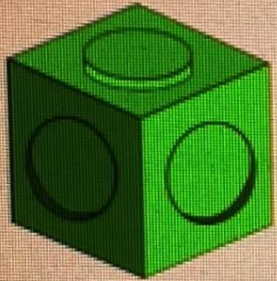
Pupils should be taught to:

- read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \quad - 9$.





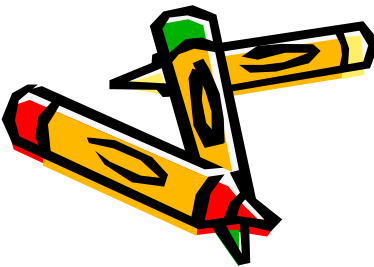
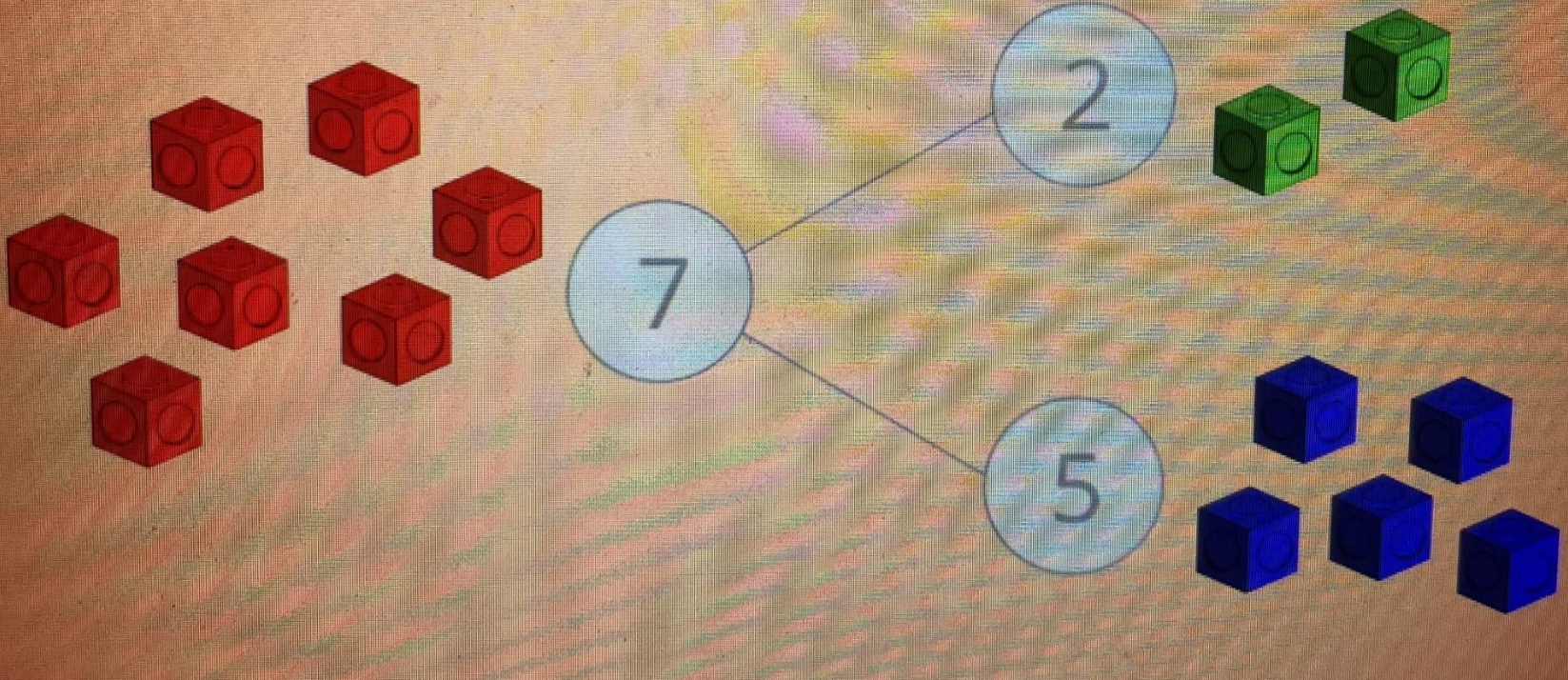
Cubes



$$2 + 5 = 7$$



Part-whole model



How many?

Whole

Total

Partition

Part

Plus

Number sentence

Add more

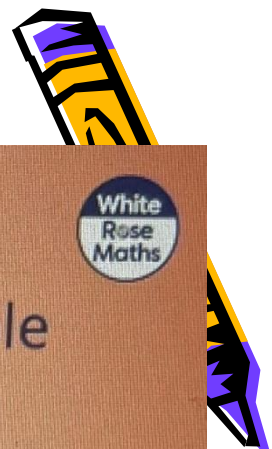
Take away

Count all

First, then, now

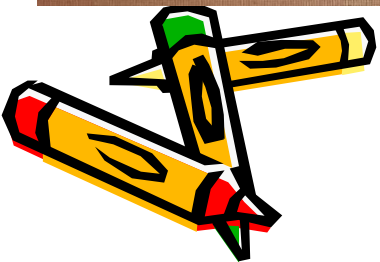
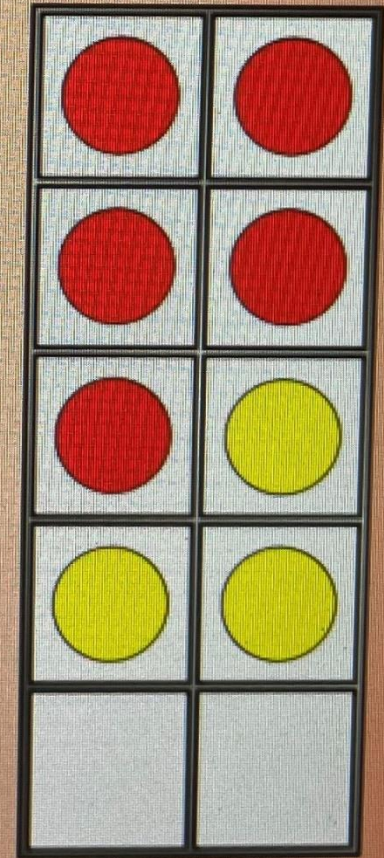
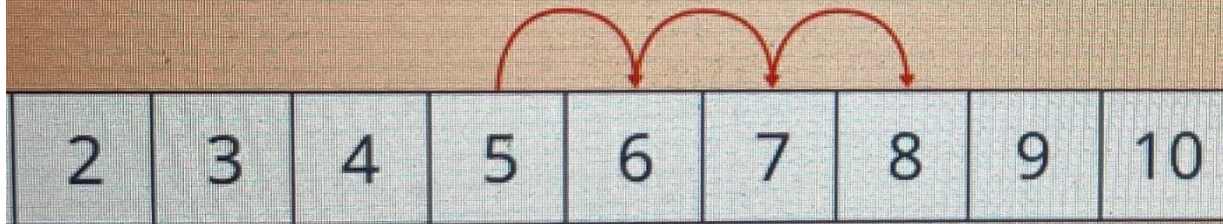
Add +

Subtract -



Miscount when using a number track or number line

$$5 + 3 =$$



Thinking subtraction is commutative

$$8 - 3 = 5$$

$$3 - 8 = 5 \quad \times$$



Fact families

$$6 + 4 = 10$$

$$10 = 6 + 4$$

$$10 - 6 = 4$$

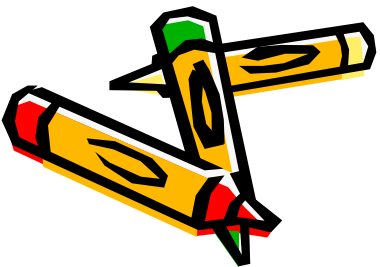
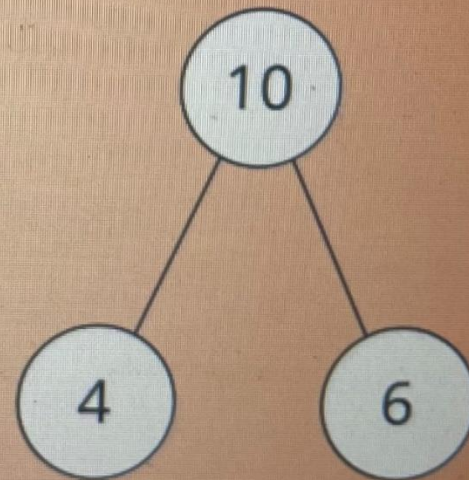
$$4 = 10 - 6$$

$$4 + 6 = 10$$

$$10 = 4 + 6$$

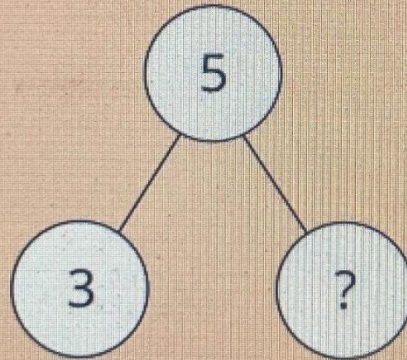
$$10 - 4 = 6$$

$$6 = 10 - 4$$

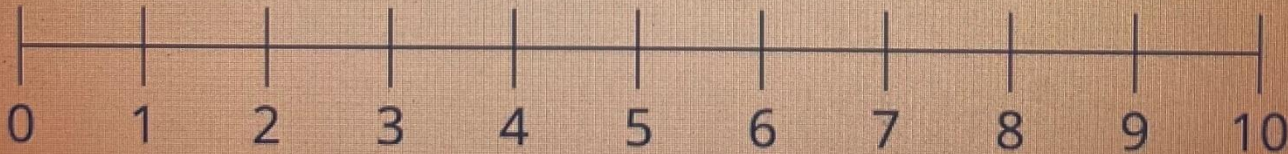


Understand different subtraction structures

Partition

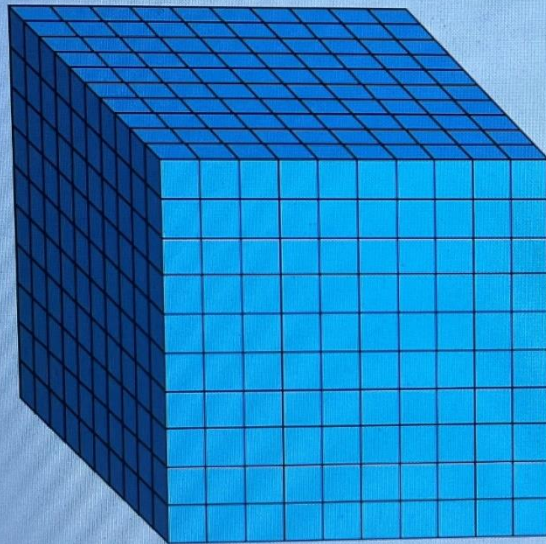


5 is the whole
3 is a part
? is a part

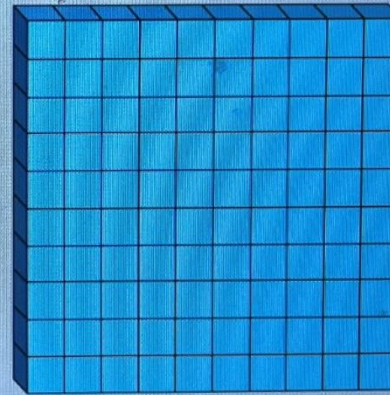


Base 10

White
Rose
Maths



1000



100



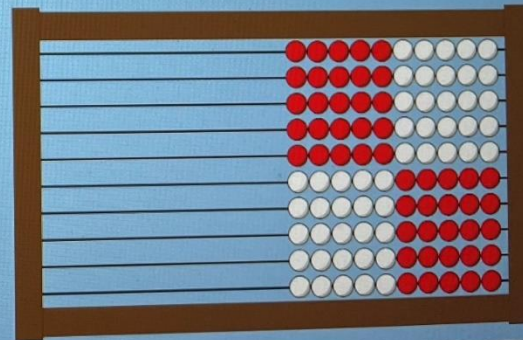
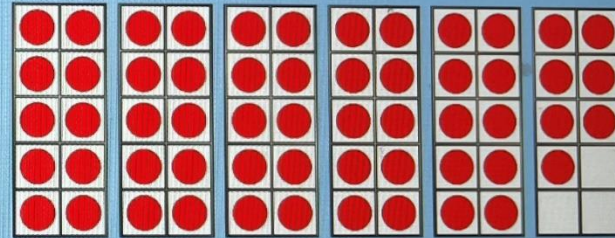
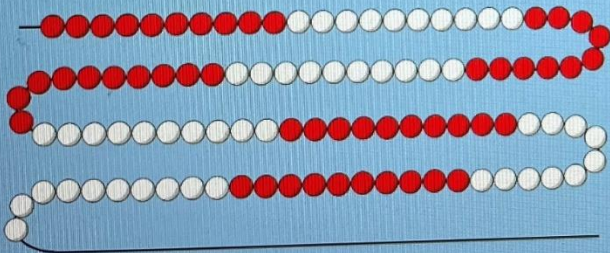
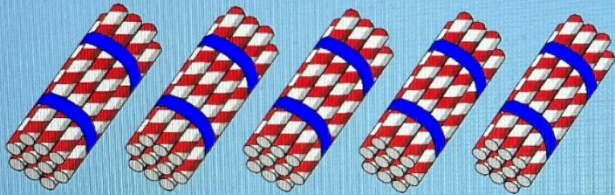
10



1



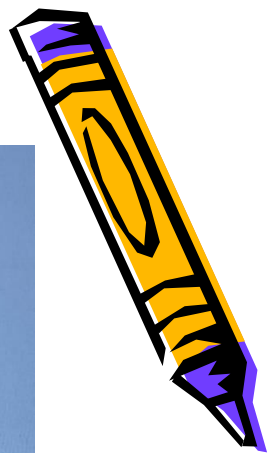
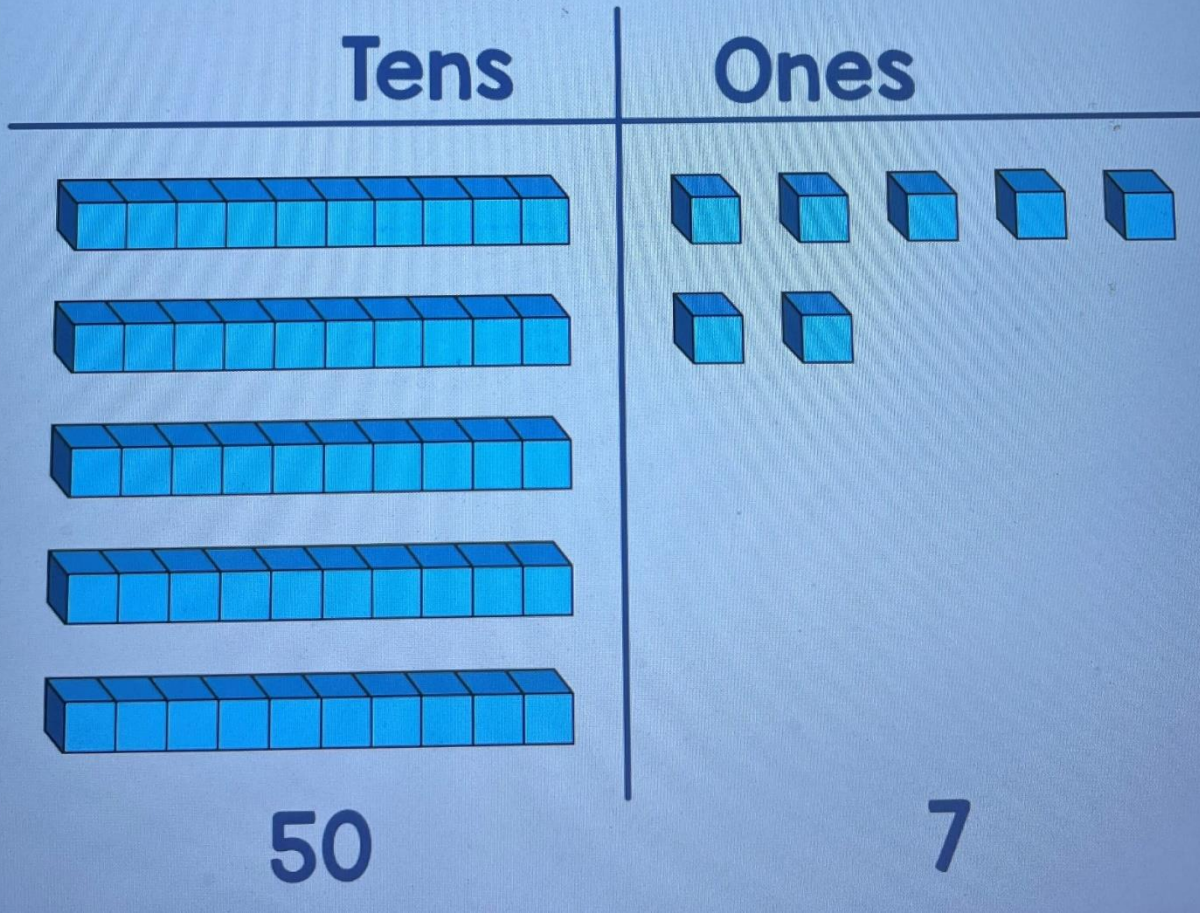
Which manipulatives would you use to support the understanding of place value for two digit numbers?



Pause


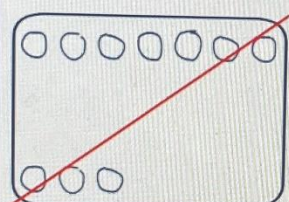


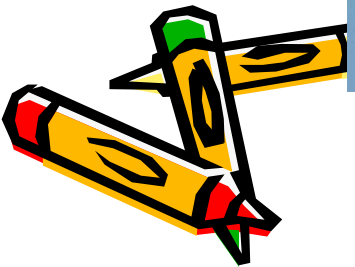
Place Value Grid



Calculate $37 + 23$

White
Rose
Maths

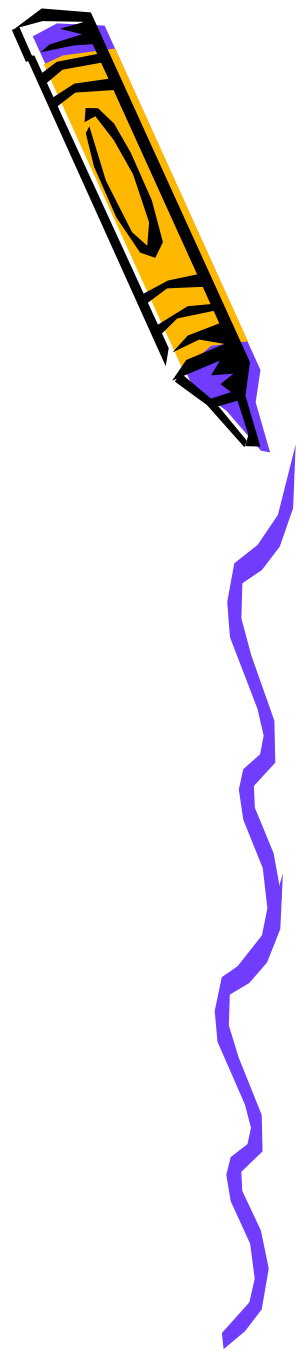
Model		Calculations
Tens	Ones	
		$\begin{array}{r} 37 \\ + 23 \\ \hline 60 \\ \hline \end{array}$



Number – multiplication and division

Pupils should be taught to:

solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.



Multiplication as repeated addition

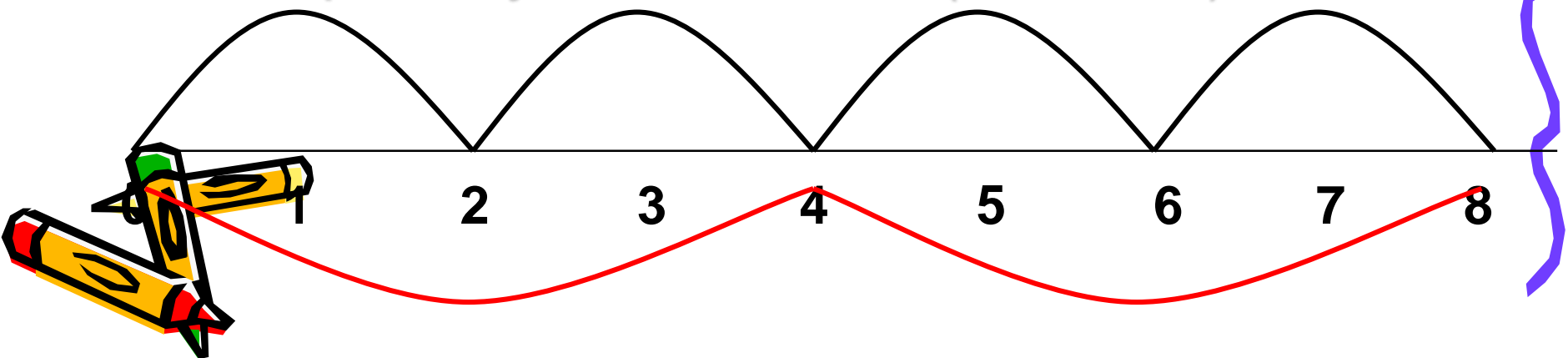
$$2 + 2 + 2 + 2 = 8$$

4 pairs of socks is 8 socks

4 groups of 2 is 8 $(4 \times 2 = 8)$

Or show as 4 hops of 2 on a number line

2 multiplied by 4 is 8 $(2 \times 4 = 8)$



Multiplication as describing an array



$$5 \times 7 = 35$$

$$7 \times 5 = 35$$



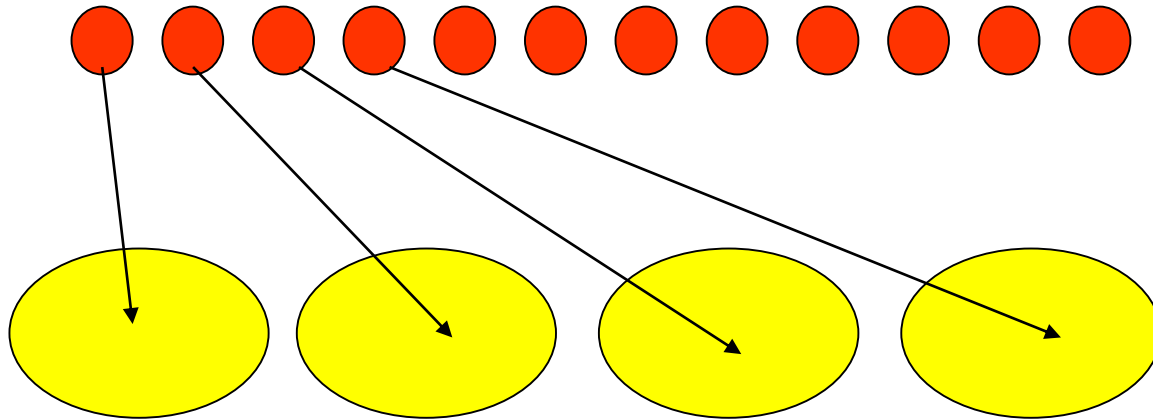
Division

(eg "12 ÷ 4")



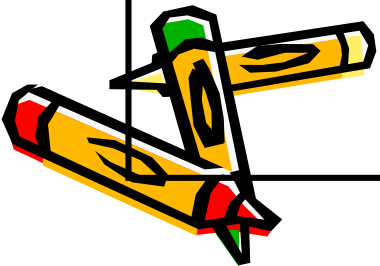
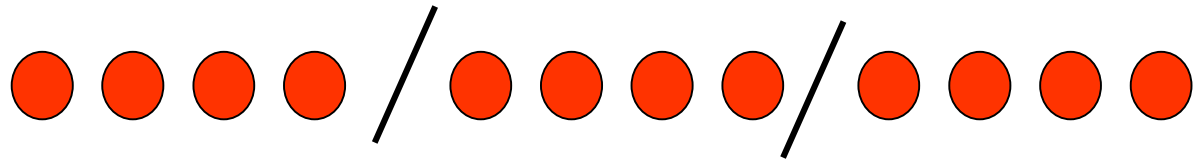
EQUAL SHARES:

"12 sweets between 4 children"



GROUPING:

"12 sweets into groups of 4"





Maths with Michael | Michael Underwood | White Rose Maths (whiteroseeducation.com)

Maths home learning | Home learning | White
Rose Maths (whiteroseeducation.com)





- Each child yr 1-4 has a login





Autumn term Week 10 Small steps 10-17

Real world maths

Get 10 cubes, counters or other small objects from around your home.
Roll a dice.
Take this amount of objects away.
How many do you have left?
Write a subtraction to match.

How many do you need to subtract?

$\square - \square = \square$

Talk it out

Max writes a subtraction to match the ten frame.

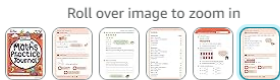
$10 - 3 = 7$

Explain the mistake.

I have noticed ... The mistake Max has made is ...

The correct subtraction is ...

How did you find these questions?



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