St Matthew's C of E Primary School

YEAR 1 CALCULATION POLICY

YEAR 1
MAIN PRINCIPLES

Scan QR codes to be directed to the MNP website with further information and videos.

What is maths mastery?

Teaching maths for mastery is a transformational approach to maths teaching which stems from high performing Asian nations such as Singapore. When taught to master maths, children develop their mathematical fluency without resorting to rote learning and are able to solve non-routine maths problems without having to memorise procedures.

Concrete, pictorial, abstract (CPA)

Concrete, pictorial, abstract (CPA) is a highly effective approach to teaching that develops a deep and sustainable understanding of maths. Developed by American psychologist, Jerome Bruner, the CPA approach is essential to maths teaching in Singapore.

Number bonds

Number bonds are a way of showing how numbers can be combined or split up. They are used to reflect the 'part-part-whole' relationship of numbers.

Bar modelling

The bar model method is a strategy used by children to visualise mathematical concepts and solve problems. The method is a way to represent a situation in a word problem, usually using rectangles.

Fractions

In Singapore, the understanding of fractions is rooted in the Concrete, Pictorial, Abstract (CPA) model, where children use paper squares and strips to learn the link between the concrete and the abstract. At the heart of understanding fractions is the ability to understand that we're giving an equal part a name.

YEAR 1
PLACE VALUE - COUNTING

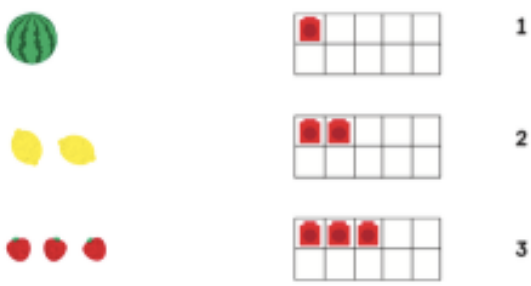
Counting to 10:

We can count on....

We can count back....

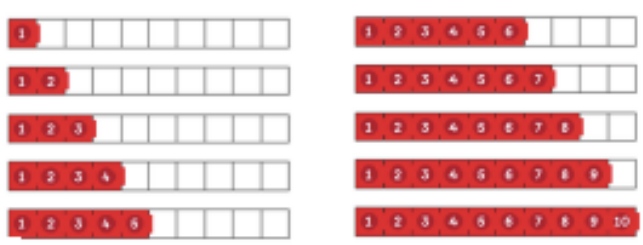
Then we learn about 0.

Counting with objects:



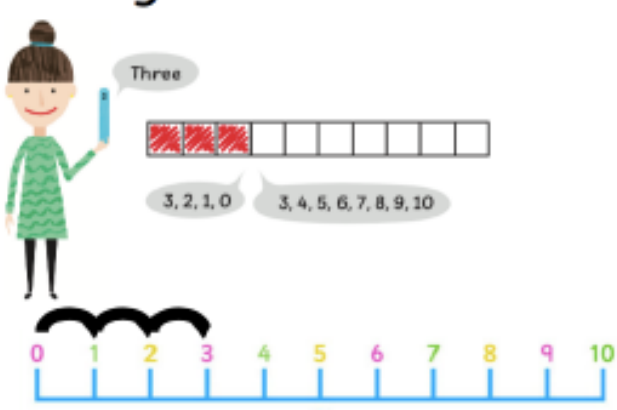
Physical objects Tens squares

Counting with objects:



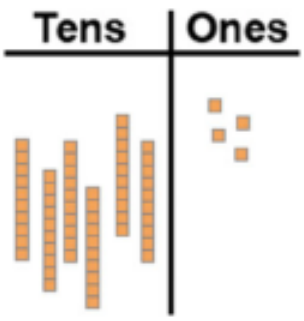
Counting with number lines:

Using multilink cubes



YEAR 1
PLACE VALUE

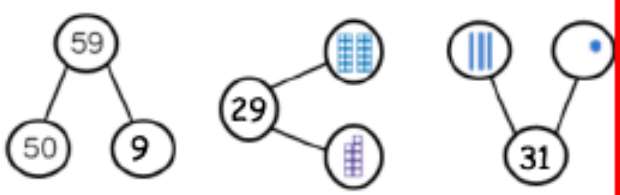
Dienes to represent numbers:



The dienes show **6 tens** and **4 ones.**

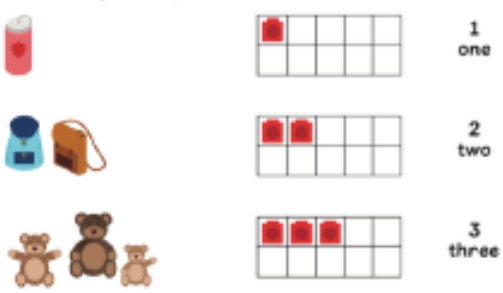
This shows the number **64.**

Number bond method:

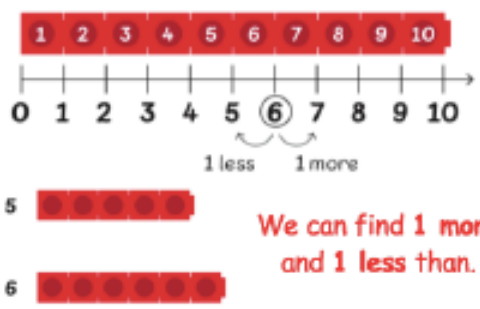


Separating the numbers apart like this is called **partitioning.**

Writing numbers to 10:



Ordering numbers:



We can find 1 **more** and 1 **less** than.

Comparing numbers:

There are 3 cupcakes.

There are 5 cookies.

There are 7 doughnuts.

Which number is more than the others?
Which number is less than the others?

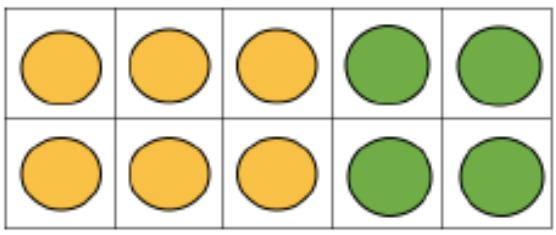
7 is more than 5.
7 is more than 3.
7 is the **greatest.**

3 is less than 7.
3 is less than 5.
3 is the **smallest.**

1	2	**3**	4	**5**	6	**7**	8	9	10

YEAR 1
ADDITION

Tens frame:

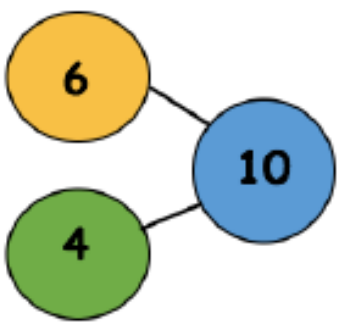


Tens strip:

Count on from the biggest number:

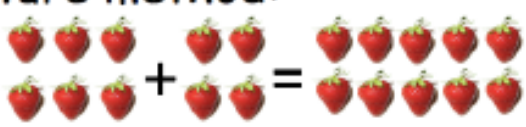
6 + 4 = 10

Number bond method:

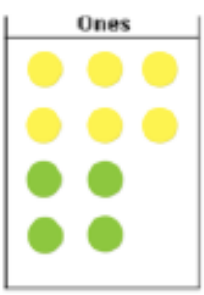


Number bond method:

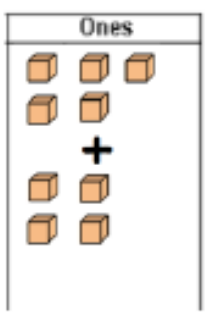
Picture method:



Counters method:



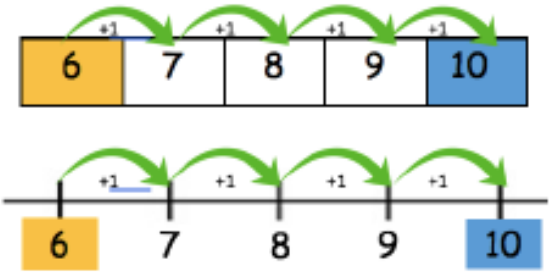
Base 10 method:



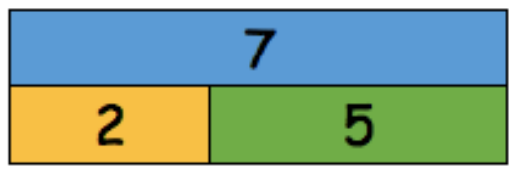
Abstract calculations:

Commutative	Inverse
2 + 5 = 7	7 - 5 = 2
5 + 2 = 7	7 - 2 = 5

Number line method:

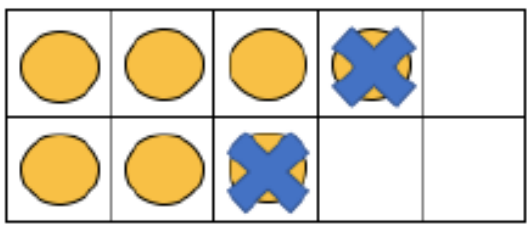


Bar model:



YEAR 1
SUBTRACTION

Tens frame:

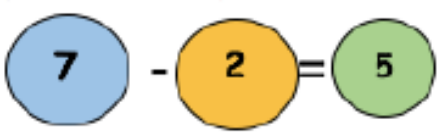


Tens strip:

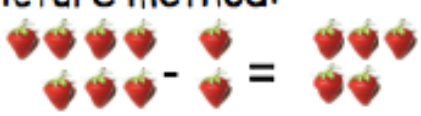
Count back from the biggest number:

7 - 2 = 5

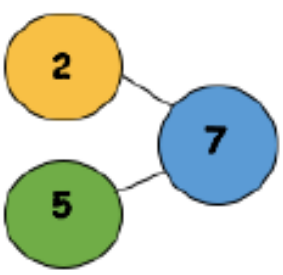
Number bond method:



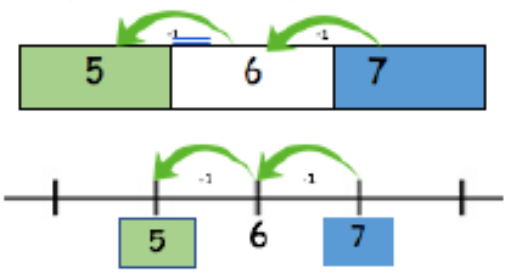
Picture method:



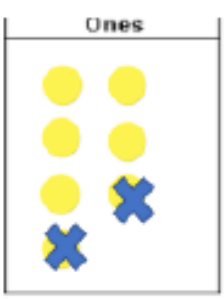
Number bond method:



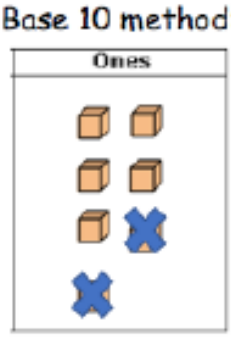
Number line method:



Counters method:

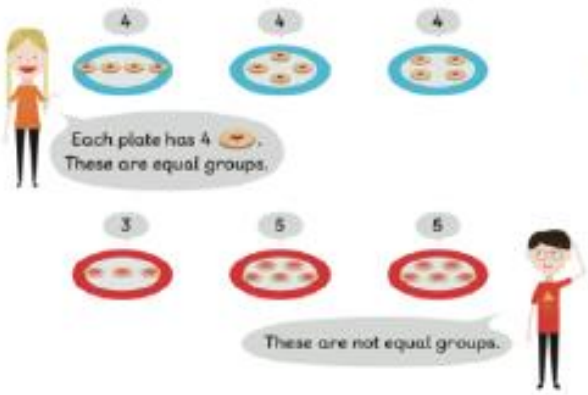


Base 10 method:



YEAR 1
MULTIPLICATION & DIVISION

Making equal groups

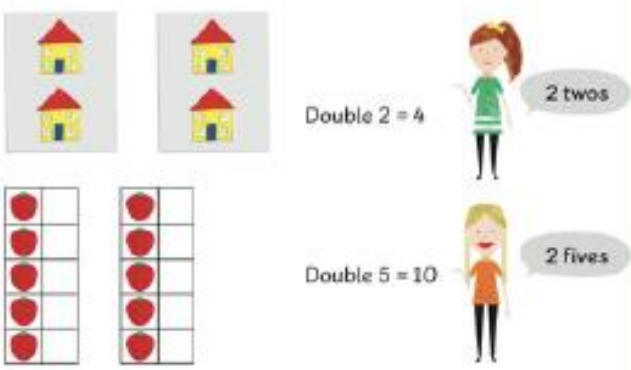


Adding equal groups

Making equal rows

There are 10 toy soldiers in one row.
2 tens = 20
There are 20 toy soldiers altogether.

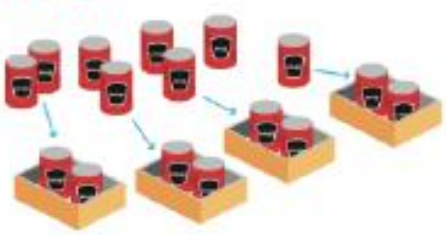
Making doubles



DIVISION

Grouping equally

There are 8 cans.



There are 4 boxes of 2 cans.

Sharing equally

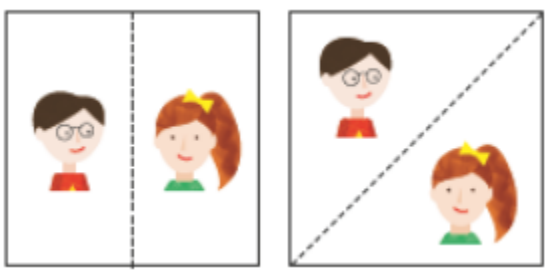
There are 6 cookies and 3 children.
Each child takes one cookie.

Each child takes one more cookie.

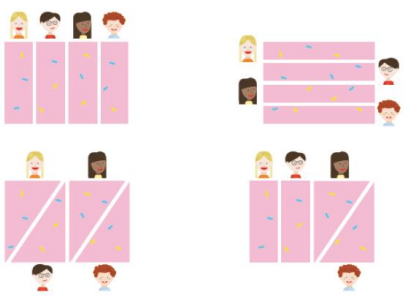
Each child gets 2 cookies.

YEAR 1
FRACTIONS

Making halves



Making quarters in different ways



Sharing Equally

1 gets a quarter of 12 coins.
How many coins does he get?

2 gets half of 10 books.
How many books does she get?