

Maths Workshop



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Aim:

To show how we use manipulatives (resources/objects) to support children's learning in mathematics.

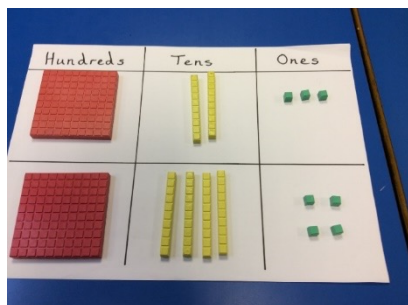
CPA approach

C concrete

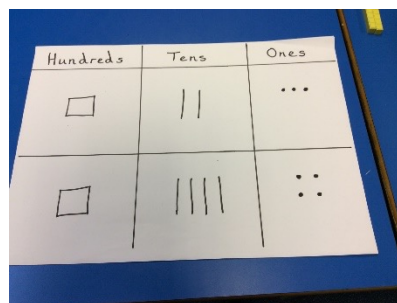
P pictorial

A abstract

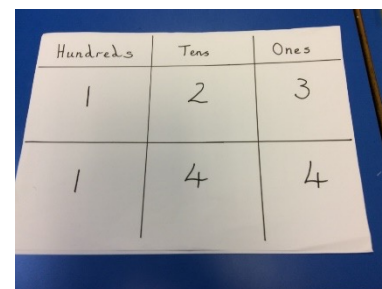
Concrete



Pictorial



Abstract



Why use manipulatives?

- The Concrete phase helps children to understand a concept by using physical objects.
- Manipulatives/objects support children to explore abstract ideas and misconceptions.
- Using objects takes away the need to imagine or visualise when learning a new concept.

Counting and subitising

Early Years and Foundation Stage EYFS

- Objects to count, group

Subitising

- Blocks with ant pictures
- Stones
- Dice

KS1 & KS2

- Adding the spots on 2 dice
- Playing board games at home – subitising, adding, taking turns

Tens Frames

EYFS

5 Frame –

How many people are at school today?

Not here today?

Link 5 Frames with subitising

-Baking tins

Sharing the objects between the sections

Tens Frames

KS1

Number bonds

Addition

Subtraction

KS2

$$6+7=$$

$$16+7=$$

$$56 + 7 =$$

$$756 + 7 =$$

Bead strings

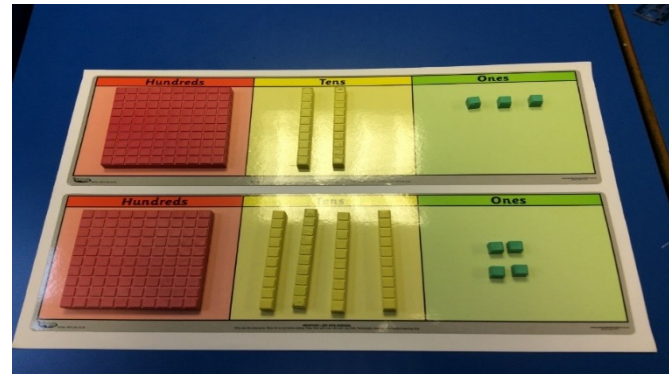
- 10 / 20 / 100 beads
- Counting
- Adding /subtracting / multiplying / dividing
- Used to show adding is commutative
- Link bead strings with number lines
- Number lines - rounding

Base 10 & place value table

Place value / number magnitude – 1000 block

Ones (units)

- Addition / subtraction

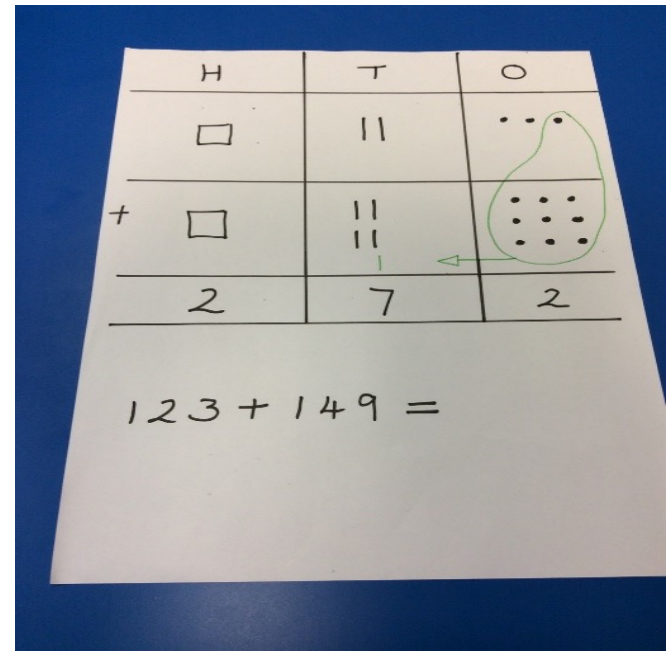


- Exchanging/ regrouping
- Exchanging 10 Ones for 1 stick of Ten

Place value counters

Place value table

- KS2 – Year 4
 - Column addition
 - Exchanging/ regrouping
-
- counters are used with decimals



- Playing cards
- KS1 & KS2
- Risky – mental recall practise

Problem solving

Division by grouping using manipulatives



A boat can hold a maximum of 4 people.
There are 20 children wanting to go boating.
How many boats will be needed?



How many groups of 4 did
you add to reach 20?

I divided the 20 children into groups
of 4 for each boat.
20 divided into groups of 4 is 5.