Maths

Year 1

Calculation Policy

https://www.owlsmoorprimary.com/page/?title=Year+Group+Related+Information&pid=49

Aims for this session

- To look at the White Rose scheme with a focus on the 4 operations (addition, subtraction, multiplication and division)
- To discuss how mathematics is taught through a CPA approach (Concrete – Pictorial – Abstract)
- How to support your children at home with their maths learning
- A chance for you to explore the concrete resources

How do we teach maths?

We follow the White Rose scheme.

- Place Value
- Addition, Subtraction, Multiplication and Division
- Fractions
- Time
- Shape
- Money

White Rose also has a focus on developing the children's reasoning and problem solving skills. The children are encouraged to discuss their answers, embedding the correct mathematic vocabulary.

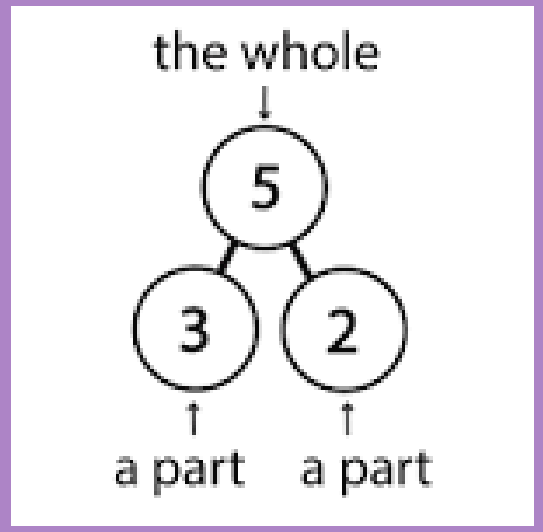
We also use the CPA approach (Concrete – Pictorial – Abstract)

CPA Approach: Concrete Pictorial Abstract

- **Concrete:** 'doing' the maths - introducing real objects that can be manipulated to bring the problem to life. Eg: money, counters.
- **Pictorial** : 'seeing the maths' - making connections between the concrete and the pictorial representations and the pictorial and the abstact. Eg: part whole models, bar models, ten frames.
- **Abstract:** the ultimate goal is for children to understand abstract mathematical concepts, signs and notation. When a child demonstrates with concrete models and pictorial representations that they have grasped a concept, we can be confident that they are ready to explore the abstract.

You can find our calculation policy on the school website

Children now need to understand a concept to then be able to use and apply it in a variety of context.



Place Value

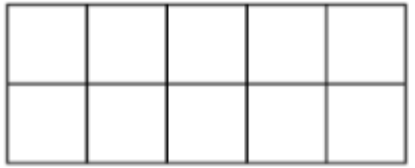
- Partitioning numbers.
- Understanding the significance of each digit.
- One more, one less.
- The importance of zero as a place value holder.

Addition

- Number bonds to 10 and then 20.
- Related number facts to 20.
- Add within 20.
- Adding using concrete resources.
- Commutative nature of addition (done in any order).

Concrete resources

Bead strings
Dienes
10s frames
Numicon
Two sided counters
Hundred square
Number line



Pictorial

Part-part whole

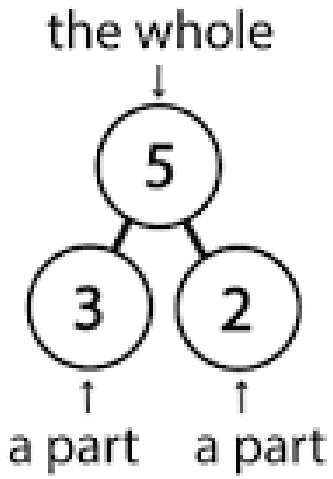
Drawing dienes

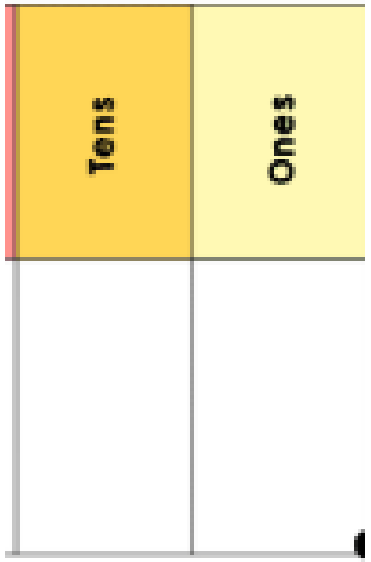
Bar model

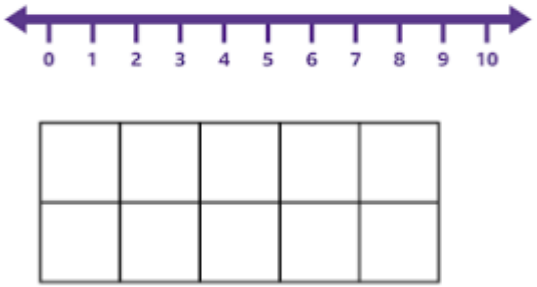
Number lines

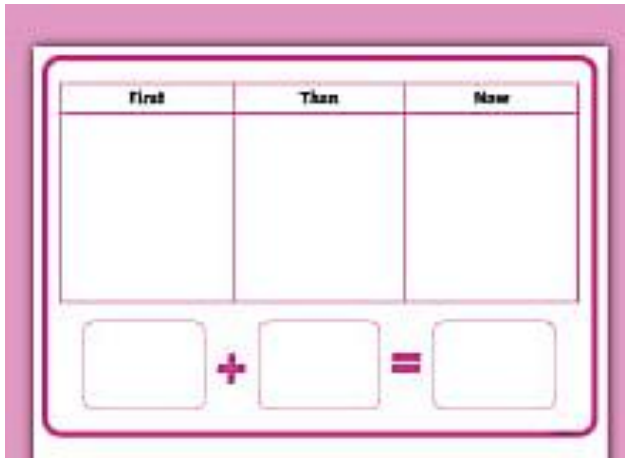
Place value chart

First, then and now board









Abstract

8 + 2 = ? ? = 2 + 8

2 + 8 = ? ? = 8 + 2

Tiny is finding bonds to 10

1 + 0 = 10

Explain the mistake Tiny has made.

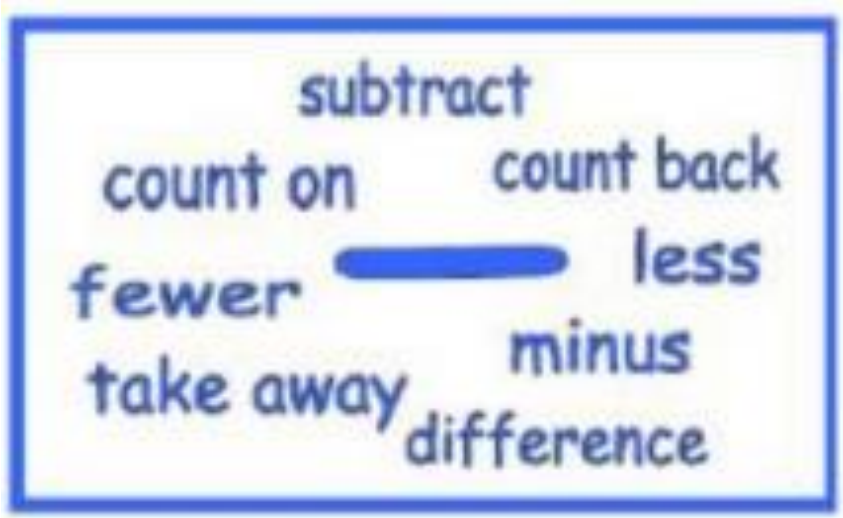
What is the missing number?

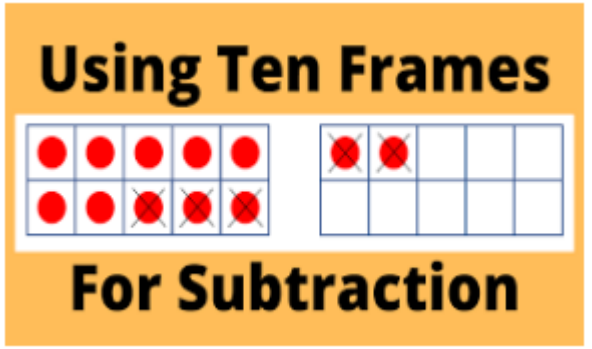
Subtraction

- Counting back in ones.
- Find the difference by counting back.
- Subtract by crossing out.
- Relationship between + and – (fact families).

Concrete resources

Dienes
Place Value counters
10s frames
Cubes
Number line
Hundred square



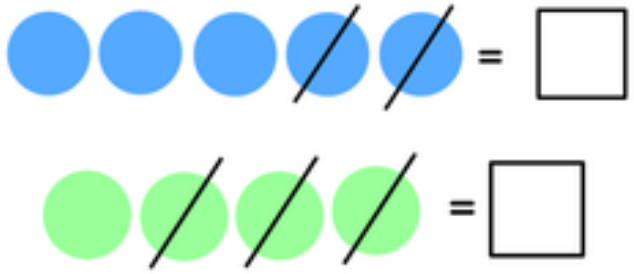


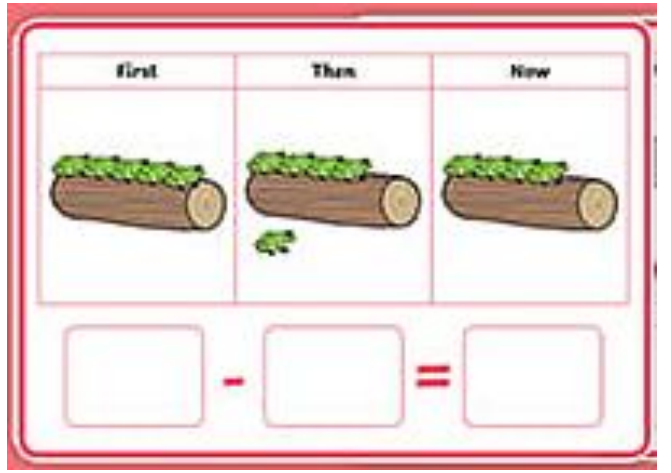
Pictorial

Drawing dienes

Bar model

Number lines



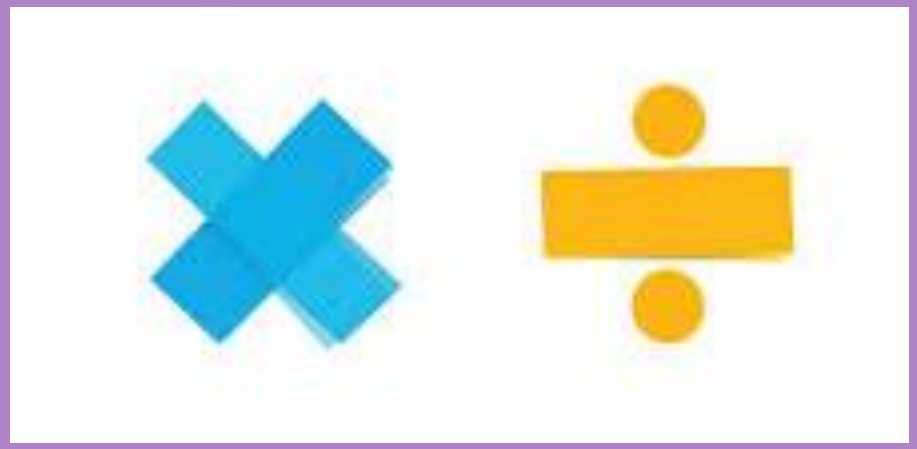


Abstract

$7 - 3 = ?$

$? = 7 - 3$

$4 = ? - 3$

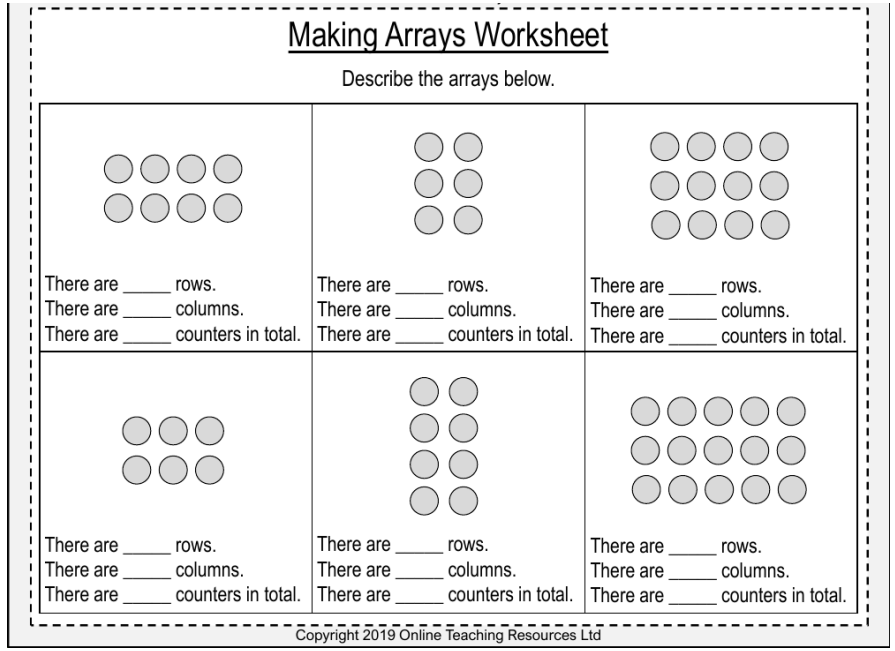


Multiplication & Division

Its important that this maths knowledge builds through concrete to meaningful contexts using concrete objects.

- Arrays.
- Concrete and pictorial resources.
- Count in 2s, 5s and 10s.
- Recognising equal groups.
- Add equal groups.
- Doubling.
- Sharing and grouping.
- Making equal groups.
- Find half and a quarter of a quantity.

Concrete & Pictorial



Making Arrays Worksheet

Describe the arrays below.

There are _____ rows. There are _____ columns. There are _____ counters in total.	There are _____ rows. There are _____ columns. There are _____ counters in total.	There are _____ rows. There are _____ columns. There are _____ counters in total.
There are _____ rows. There are _____ columns. There are _____ counters in total.	There are _____ rows. There are _____ columns. There are _____ counters in total.	There are _____ rows. There are _____ columns. There are _____ counters in total.

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Abstract

3 x 2 =

6 ÷ 2 =