Reception Mathematics Workshop
Counting and subitisng

Aims

- To look briefly at the principles of counting.
- To think about number composition and learn about subitising.
- To give you an opportunity to work with your child and 'do' the Maths.
- To give you some ideas of how you can support your children at home.

Our curriculum

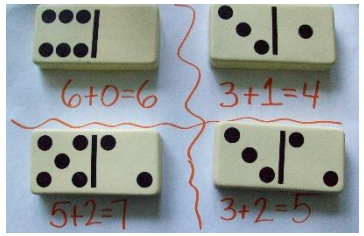
At Hunters Hall, we have our own maths curriculum which follows **White Rose Maths**

We teach new skills

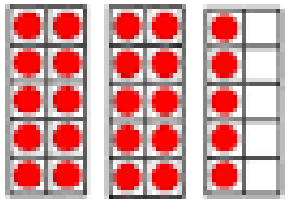
- As a whole or half class
- In smaller groups

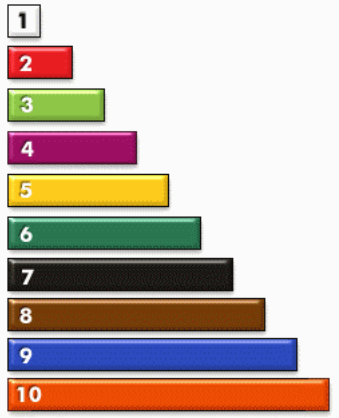
We believe that ‘maths is everywhere’. We are always seeking ‘**in the moment**’ opportunities for maths teaching and learning.

Concrete and pictorial resources



Ten Frame



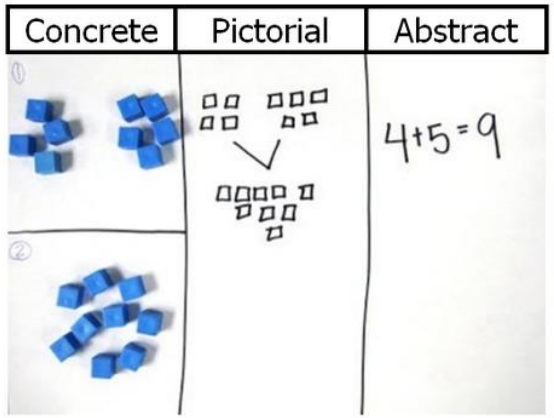


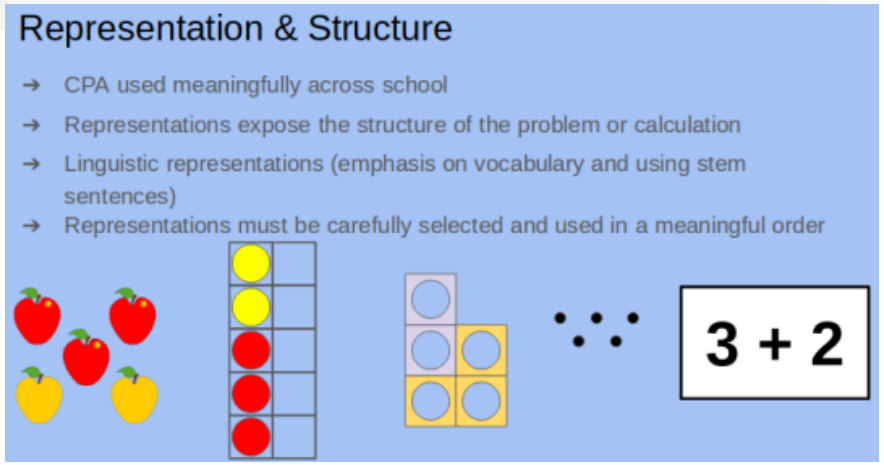
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

CONCRETE – PICTORIAL – ABSTRACT

- **Concrete** – students should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.
- **Pictorial** – students should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.
- **Abstract** – with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence.

- **Language** – using, understanding and explaining the meaning of mathematical vocabulary is essential for depth in mastery.





The 5 principles of counting

1. One to one correspondence

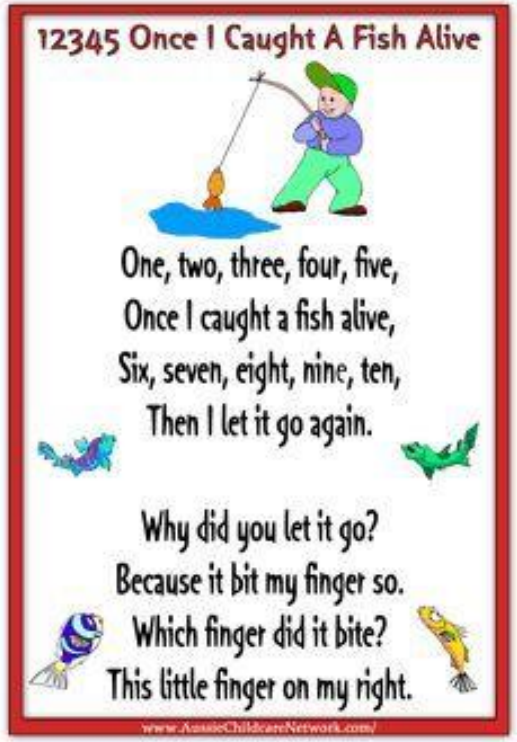
Understanding that each object that is counted must be touched once and counted once. We often say, " Touch and count."

Some children find it easier to line objects up and move them as they count.

The 5 principles of counting

2. Stable Order

This just means understanding that there is a counting sequence that stays the same. It is always 1,2,3,4,5,6,7 etc not 1,2,4,5,8



The 5 principles of counting

3. Cardinality

- Understanding that the last number we say when we count a set of objects is the total number in the set.
- We remind the children to ‘touch and count’.
- We model counting e.g There are 1,2,3,4 marbles in the jar. There are 4 marbles.

6

The 5 principles of counting

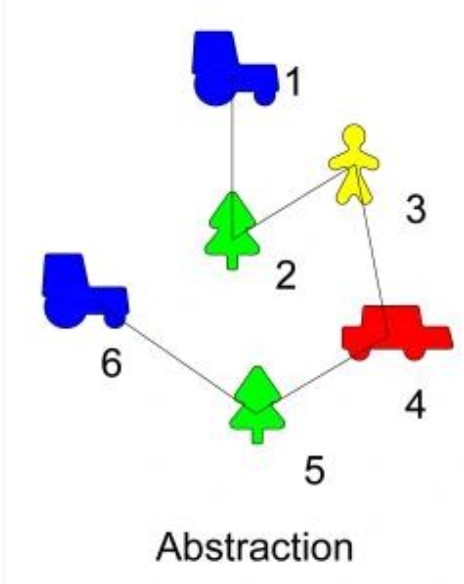
4. Abstraction

- Understanding that it doesn't matter what we count, how we count stays the same. For example we can count anything regardless of shape, size colour. We can even count non physical things like claps or sounds.

The 5 principles of counting

5. Order Irrelevance

This is knowing that we can count a set of objects in any order to get a total.

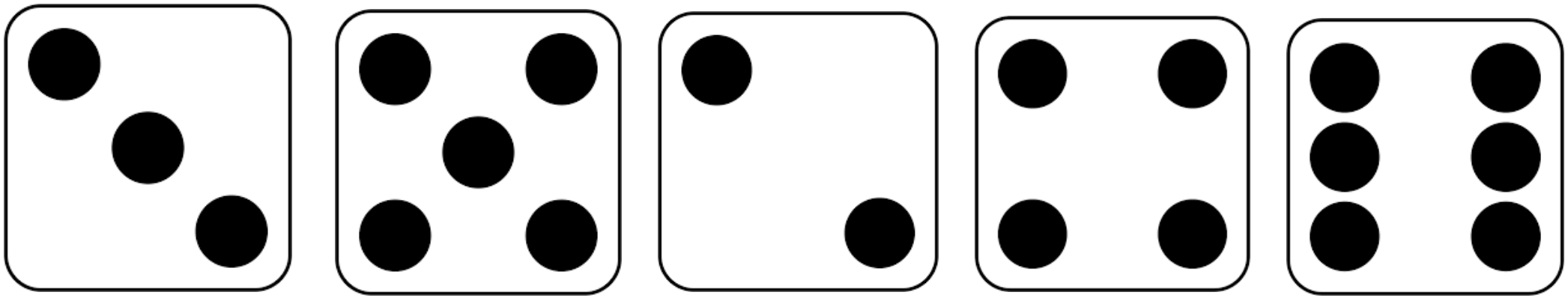


Abstraction

Subitising

- Subitising is the ability to quickly recognise how many objects there are in a group without actually counting them.
- Subitising reinforces the principles of counting, develops number sense, pattern making, addition and subtraction. It lays the foundations for deeper mathematical thinking.

What can you see?



Subitising – what can you see?

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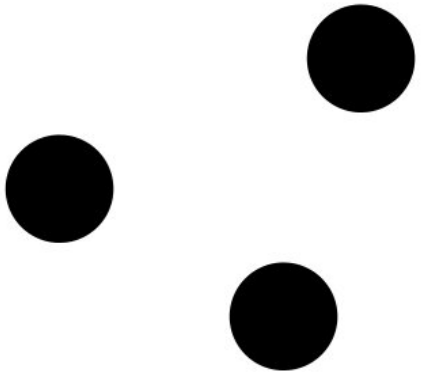

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Subitising

Perceptual Subitising – is the ability to look at a set of objects under 5 and instantly recognise how many there are without needing to count them.

Here’s an arrangement of objects:

Your brain tells you straight away that

There are 3 pine cones.

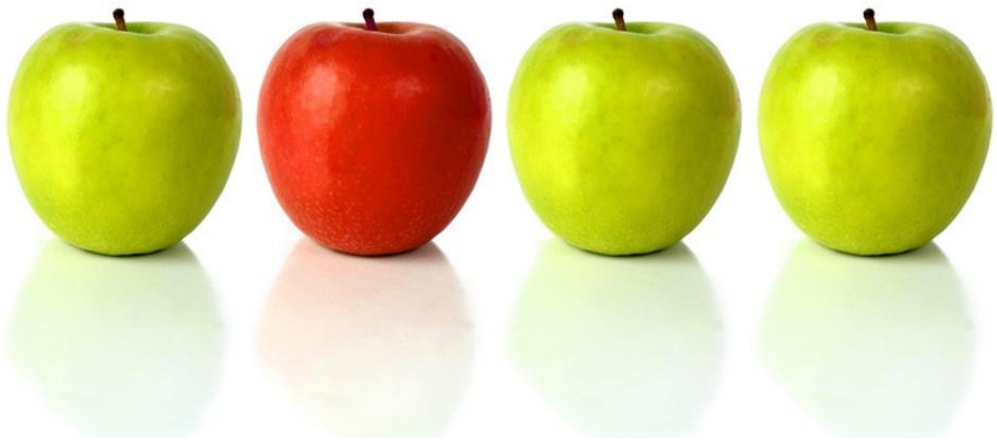
Subitising

- Conceptual subitising- is when we look at a group of objects with more than 5 items. We cannot immediately see the whole amount so we look for smaller groups within the bigger arrangement.

What you can probably see is 5 acorns and 3 acorns giving a total of 8.

Separating and combing numbers this way is the basis of addition and subtraction.

Subitising – What can you see?



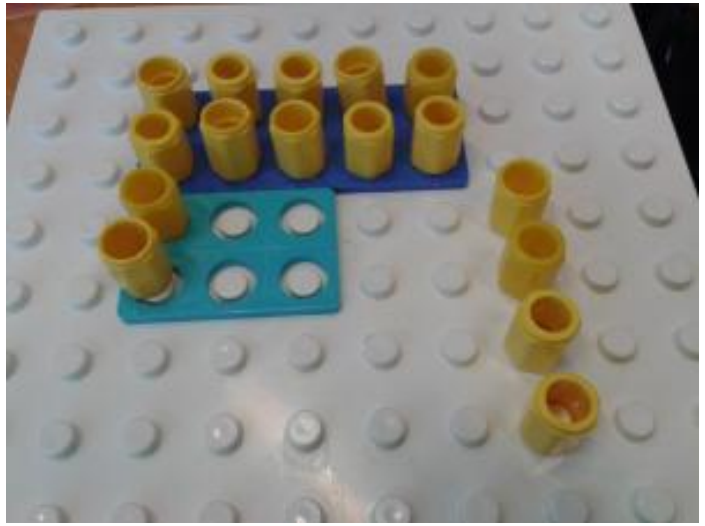
Numicon – number shapes.

Children learn these shapes represent a number and then use these shapes for calculations.

Activity – Can you use the counting resources to solve this number sentence –

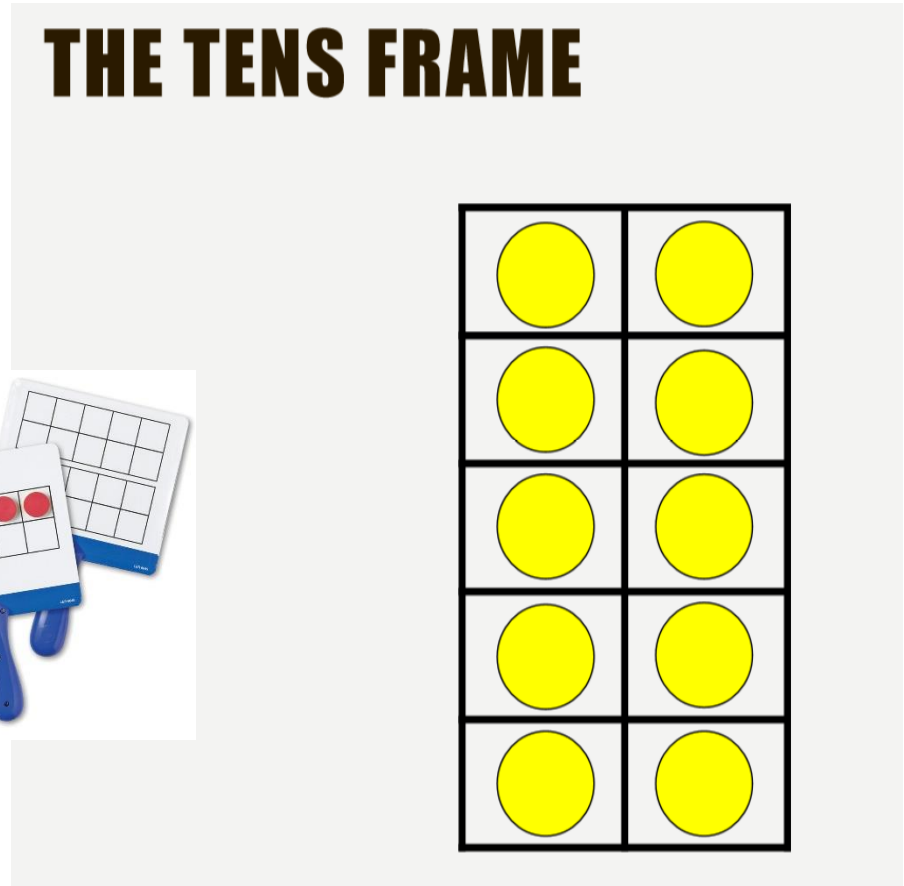
7+3=

Numicon – for addition, subtraction, halving and doubles



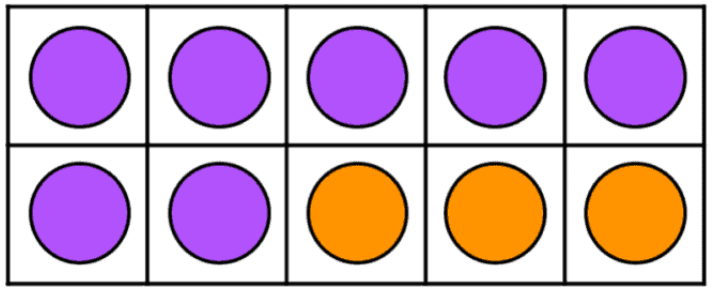
Numicon allows children to ‘see’ doubling and halving.

Using the tens frame as a structure:



Subitising numbers - instant number recognition.

"A strong 'sense of ten' needs to be developed as a foundation for both place value and mental calculations" – Jenni Way, Professor of Maths.



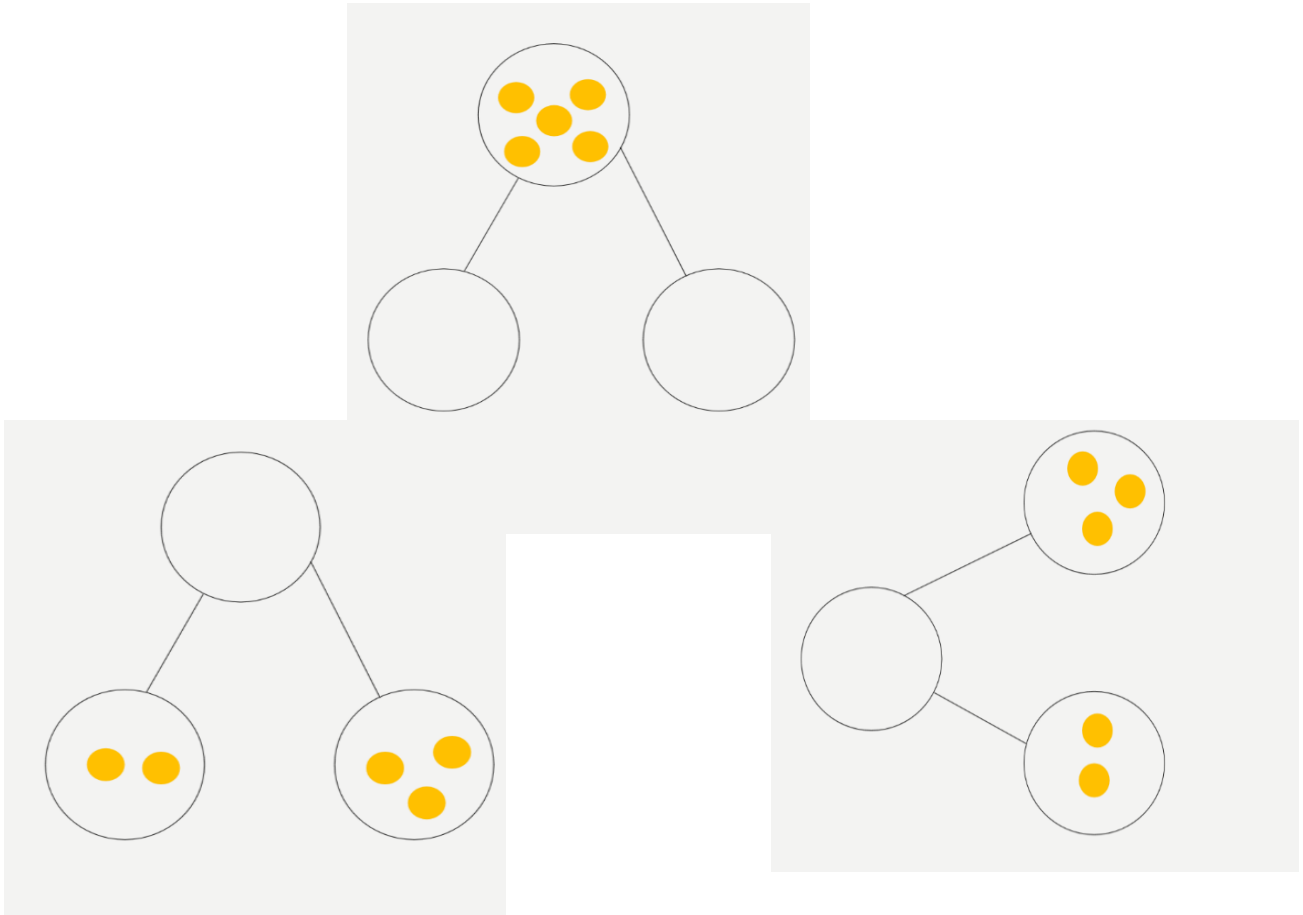
Part - Part – Whole – Structures

These enable children to see the maths happening (and can be built upon as children move through the year groups)

Concrete resource.

Part - Part – Whole (Moving from concrete to pictorial)

Pictorial structure – to support addition, number bonds, equality, related number facts.



Then, moving from pictorial to abstract.

5 = 2 + 3
2 + 3 = 5

3 + 2 = 5

1 + 4 = 5
4 + 1 = 5

5 + 0 + 5
5 + 0 = 5

How to help at home……

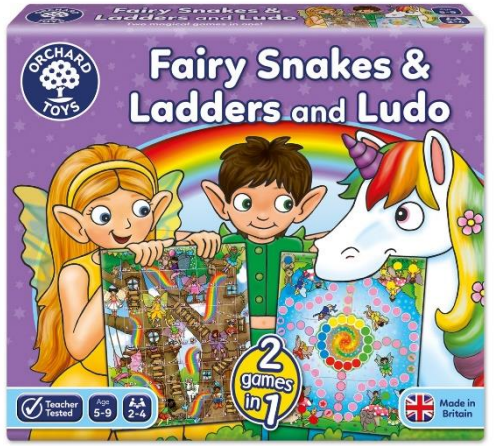
Finding groups in the house or in the garden. What can you see? You can do this with stones, pasta or buttons etc..

Three or not three? (or another number up to 5)

How to help at home……

- Play dominoes, dice games, games with playing cards.
- Scatter groups of up to 6 objects on the table e.g counters, pasta shapes, bricks and see how quickly your child can tell you what they can see.

"Board games boost early maths skills" https://www.theguardian.com/education/2008/mar/25/schools.uk3



Useful websites……

- www.topmarks.co.uk – search ‘early years’
- www.crickweb.co.uk/early-years
- www.sheppardsoftware.com/math.htm#earlymath
- www.snappymaths
- www.matholia.com – select reception tab
- www.splashmath.com/number-games

- APP https://whiterosemaths.com/resources/1-minute-maths#download