The Meadows Primary School

EYFS Calculation Policy

Version Control

Version	Date	Purpose	Author
2	27/04//2022	Update of previous policy	L.Heath

Contents

Rationale 2

addition 0

subtraction 0

multiplication 1

division 1

fractions 2

concrete - pictorial - abstract 3

- addition 3
- subtraction 4
- division 4
- multiplication 5

progression in the teaching of counting in eyfs 6

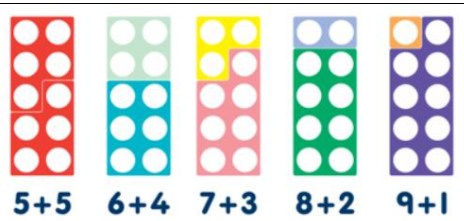
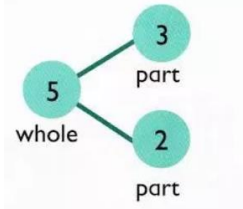
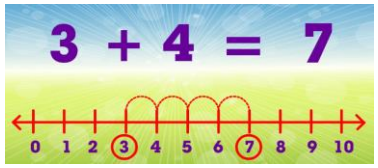
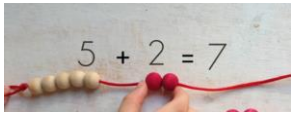
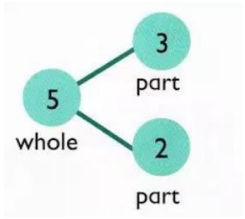
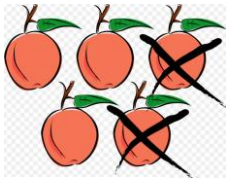
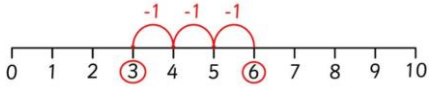
- precounting 6
- ordering 6
- 1:1 correspondence 6
- cardinality 6
- subitising 6
- abstraction 6
- order irrelevance 6

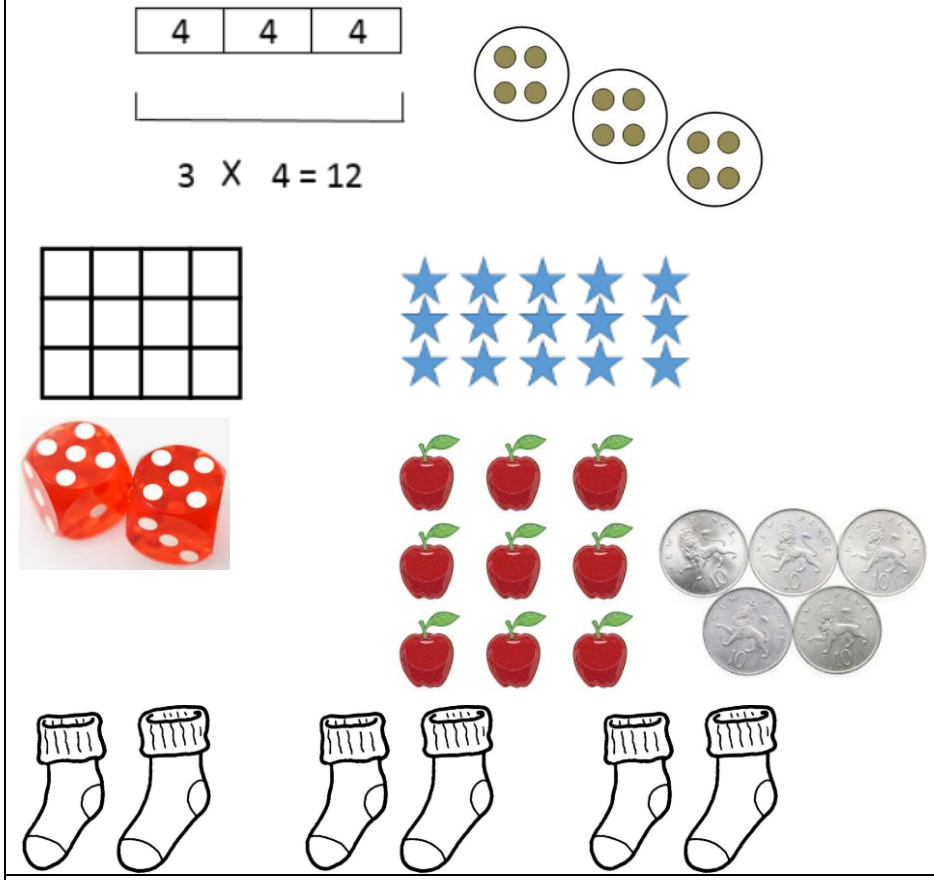
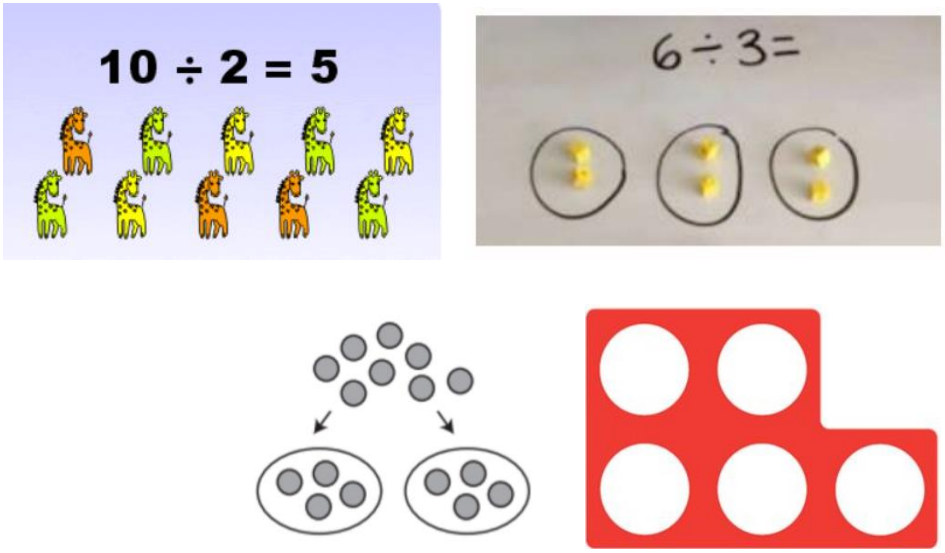
Rationale

At The Meadows we believe in implementing a Calculation Policy which reflects the teaching across school. Our policy shows how we use a specific range of representations consistently to support the conceptual understanding of maths. Mathematical understanding is developed through the use of representations with a Concrete – Pictorial -Abstract approach (CPA).

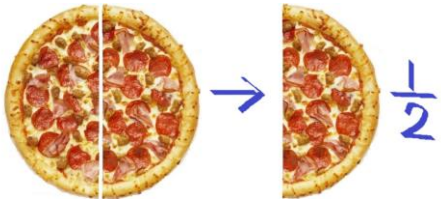
e.g. Concrete (Base 10, Numicon…)
Pictorial (Bar Model, PV Counters, Array…)
Abstract (Number Sentences…)

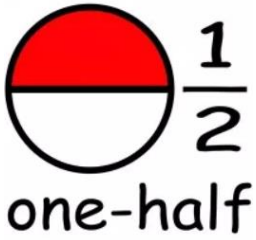
Each operation is broken down to show a range of models and images which underpin the teaching of calculation in each year group. The representations are consistent and build progressively and can be applied to both written and mental methods.

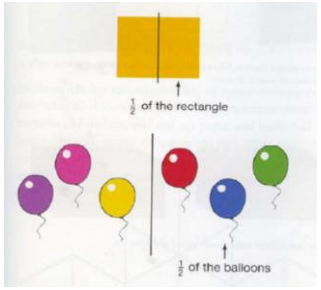
ADDITION	SUBTRACTION
    	 7 - 3 = ?   6 - 3 = 3
Plus, Add **More, One/two… more** **Sum, Total, Altogether, Score, Makes** **Double** **Part-Part-Whole** ***How many more make…..?*** ***How many more is ….. than …..?***	**Subtract, Take, Minus** **Difference** **Part-Part-Whole** **(One, two) less** ***How many are left? Leftover?*** ***How many have gone?*** ***How many fewer is …. than …..?***

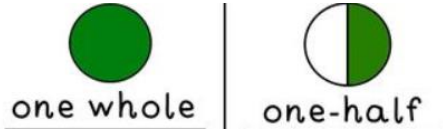
MULTIPLICATION	DIVISION
	
Times **Double** **Multiply** **Repeated addition / Adding the same again** **Multiple of …** **Counting up in (groups of) …** **Equal groups of …**	**Halve** **Share equally** **Equal groups** **Divide** **Divide into** **Divide by** **….. each**

FRACTIONS



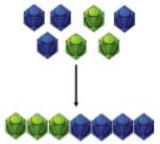
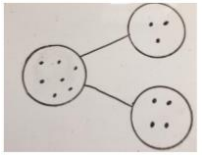
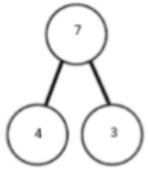
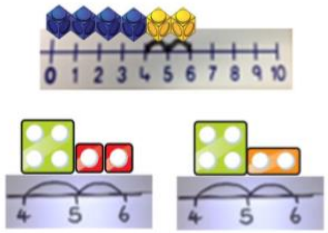
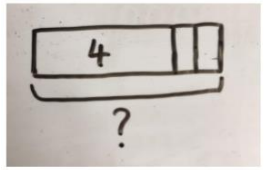
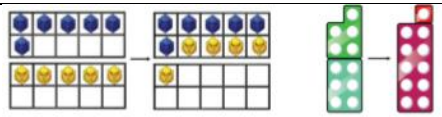
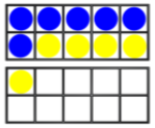
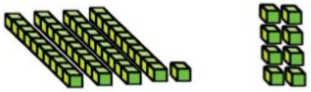
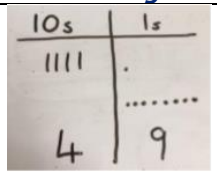
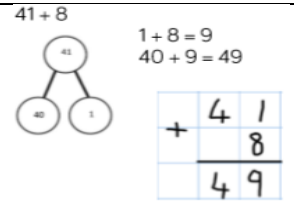
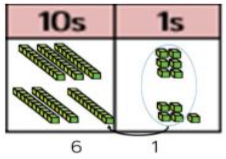
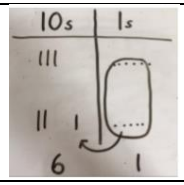
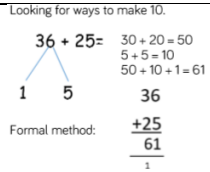


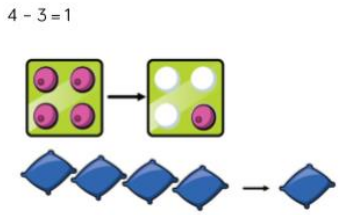
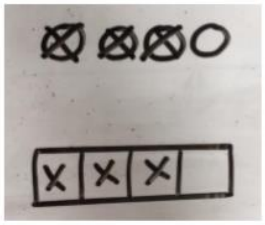
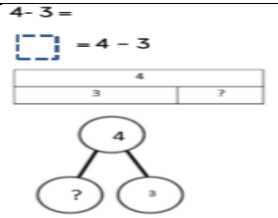
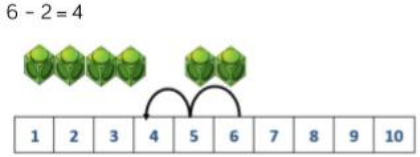
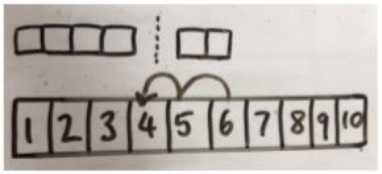
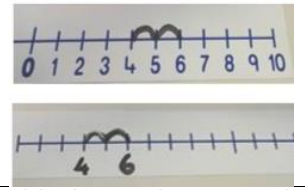
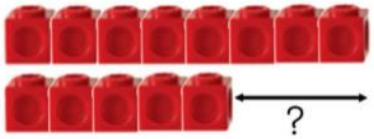
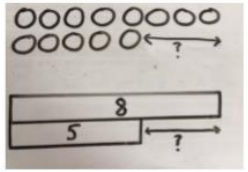


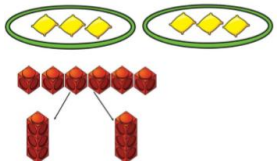
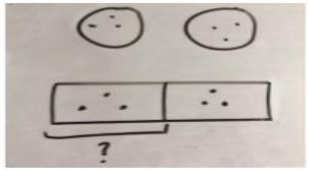
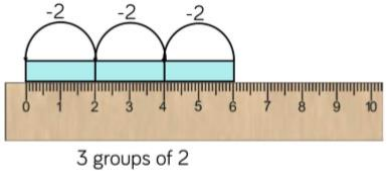
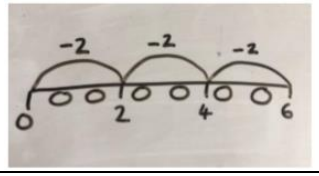
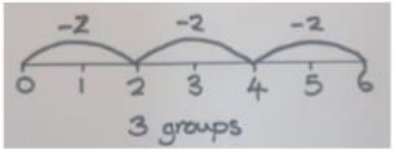


One Whole
One Half
Two Halves
One out of two (pieces)
Share equally
Equal groups
Cut into _____ parts
Split into _____ parts
Half of …. Is ….
Part-Part-Whole

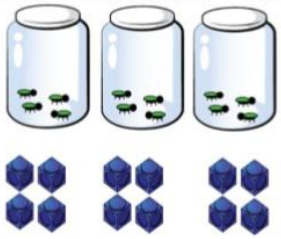
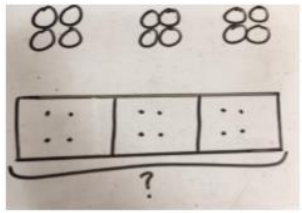
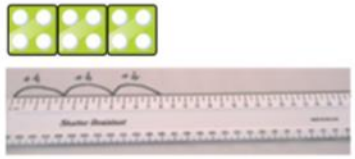
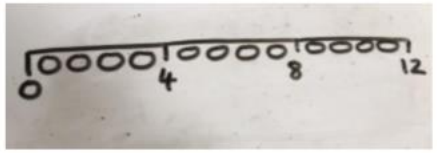
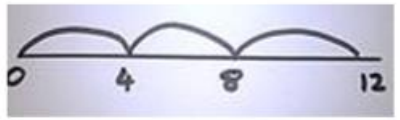
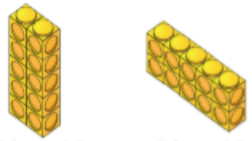
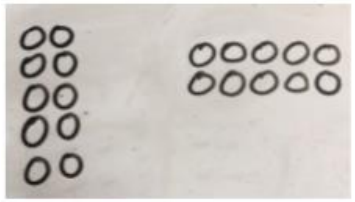
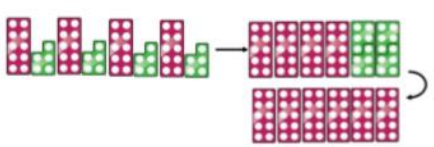
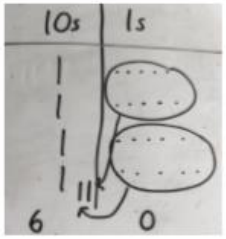
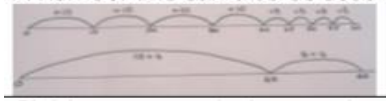
CONCRETE - PICTORIAL - ABSTRACT

ADDITION	CONCRETE	PICTORIAL	ABSTRACT
Combining two parts to make a whole *Use a range of concrete resources – cubes, counters, shells.*		 ***Represent on P-W diagram using different formats such as numbers, dots, numerical images, resources***	
Counting on using Number Line *Use range of concrete resources such as cubes or numicon.* *Use Bar models to count on.* *Abstract number line with questioning such as What is total of 4 and 2?*			 ***What is the total of 4 and 2? What is 2 more than 4? What is the sum of 4 and 2?***
Regrouping to make 10 *Using ten frames/counters/cubes and/or numicon*		 ***Children represent themselves by drawing***	$6 + \square = 11$ $6 + 5 = 5 + \square$ $6 + 5 = \square + 4$ ***Children develop an understanding of equality***
TO + O using base 10 *Continue to develop understanding of partitioning and PV e.g. 41 + 8* *Use of lines/dots/dashes to represent base 10*			
TO + TO using base 10 *Continue to develop understanding of partitioning and PV e.g. 36 + 25*			

SUBTRACTION	CONCRETE	PICTORIAL	ABSTRACT
Physically taking away and removing objects from a whole			
Counting back *using number lines or number tracks* *Eventually move onto an empty number line (abstract)*			
Finding the difference *Use a range of resources e.g. cubes, Cuisenarie Rods*			Find the difference between 8 and 5. 8 – 5, the difference is ☐ Children to explore why 9 - 6 = 8 – 5 = 7 – 4 have the same difference.

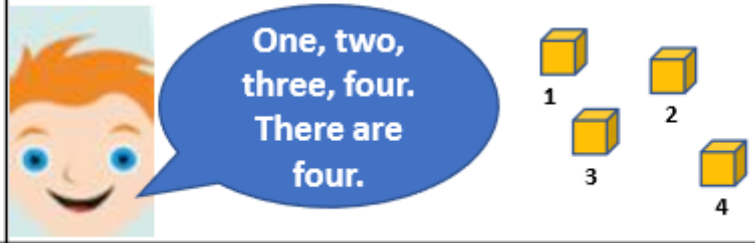
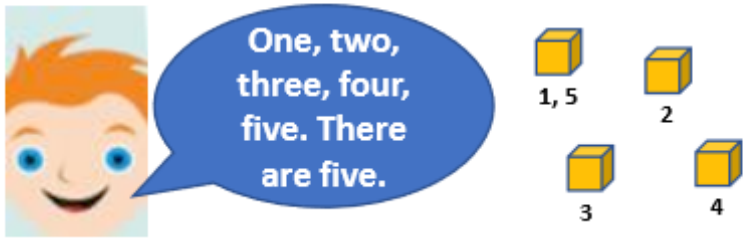
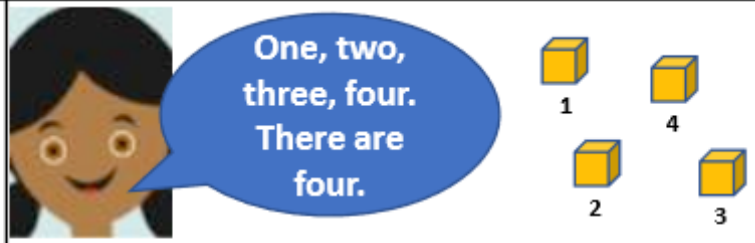
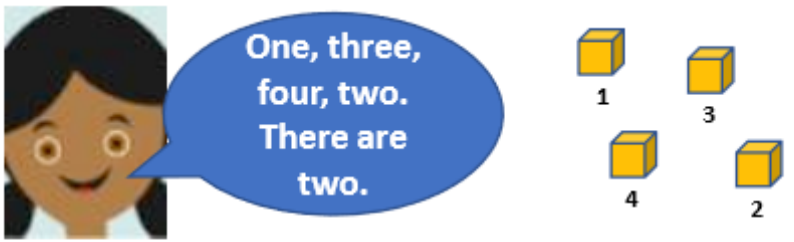
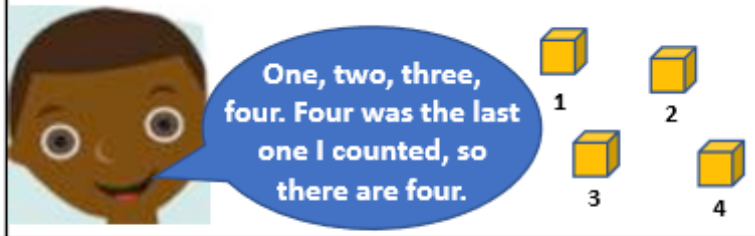
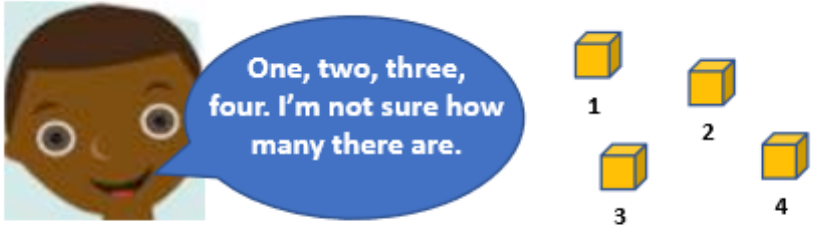
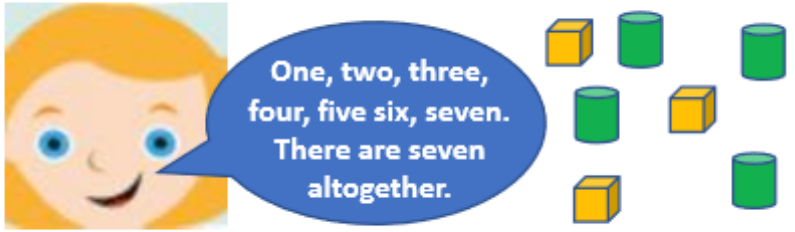
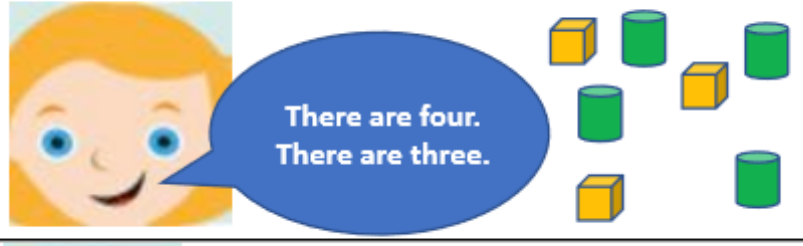
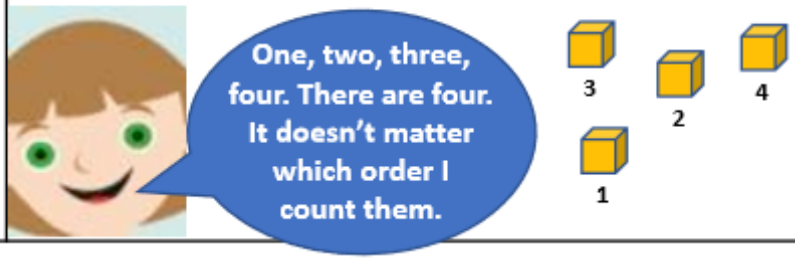
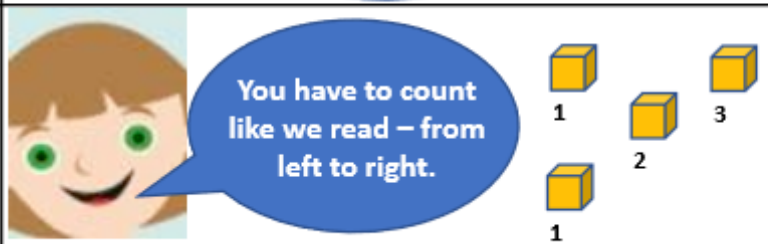
DIVISION	CONCRETE	PICTORIAL	ABSTRACT
Sharing			6 ÷ 2 = 3 3 | 3 ***Children should be encouraged to use their x2 table facts***
Repeated subtraction *e.g. using Cuisenaire rods above a ruler*			

CONCRETE - PICTORIAL - ABSTRACT

MULTIPLICATION	CONCRETE	PICTORIAL	ABSTRACT
Repeated grouping/addition	3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group. 		3 × 4 = 12 4 + 4 + 4 = 12
Number lines to show repeated groups	Number lines to show repeated groups- 3 × 4 		3 × 4 = 12 
Use arrays to illustrate commutativity	2 × 5 = 5 × 2 		10 = 2 × 5 5 × 2 = 10 2 + 2 + 2 + 2 + 2 = 10 10 = 5 + 5 ***Children able to use an array to write a range of calculations***
Partition to multiply	4 × 15 		4 × 15 10 5 10 × 4 = 40 5 × 4 = 20 40 + 20 = 60 A number line can also be used 

PROGRESSION IN THE TEACHING OF COUNTING IN EYFS

PRECOUNTING	ORDERING	1:1 CORRESPONDENCE	CARDINALITY
The key focus in pre-counting is an understanding of the concepts more, less and the same and an appreciation of how these are related. Children at this stage develop these concepts by comparison and no counting is involved.	Count by reciting the number names in order forwards and backwards from any starting point.	One number word has to be matched to each and every object. Lack of coordination is a source of potential error – it helps if children move the objects as they count, use large rhythmic movements, or clap as they count.	Count out a number of objects from a larger collection. Know the number they stop counting at will give the total number of objects – i.e. the final number is the final total.
SUBITISING	**ABSTRACTION**	**ORDER IRRELEVANCE**	
(recognise small numbers without counting them) Children need to recognise small amounts without counting them eg. dot patterns on dice, dots on tens frames, dominoes and playing cards as well as small groups of randomly arranged shapes stuck on cards.	You can count anything – visible objects, hidden objects, imaginary objects, sounds etc. Children find it harder to count things they cannot move (because the objects are fixed), touch (they are at a distance), see, that move around. Children also find it difficult to count a mix of different objects, or similar objects of very different sizes.	Ultimately children need to realise that when objects are rearranged the number of them stays the same.	

COUNTING SKILL	SECURE	NOT YET SECURE
ONE-TO-ONE (Count each thing once)		
STABLE-ORDER (The order of number names doesn't change)		
CARDINALITY (The last number you count is how many there are)		
ABSTRACTION (You can count anything but they don't have to be the same)		
ORDER-IRRELEVANCE (We can count by starting with any item in a set)