

Area of Learning: Mathematics Number

Concept: **Cardinality and Counting**

The cardinal value of a number refers to the quantity of things it represents, e.g. the numerosity, ‘howmanyness’, or ‘threeness’ of three. When children understand the cardinality of numbers, they know what the numbers mean in terms of knowing how many things they refer to. Counting is one way of establishing how many things are in a group, because the last number you say tells you how many there are. Children enjoy learning the sequence of counting numbers long before they understand the cardinal values of the numbers. Subitising is another way of recognising how many there are, without counting.

Typical progression within this concept		Counting: saying number words in sequence	Counting: tagging each object with one number word or mark	Counting: knowing the last number counted gives the total so far	Subitising: recognising small quantities without needing to count them all	Numeral meanings	Conservation: knowing that the number does not change if things are rearranged (as long as none have been added or taken away)
Progression steps to enable typical progression within this concept	0 to 3	I can take part in finger rhymes with numbers – reacting to changes of amount in a group of up to 3					
		I can show counting like behaviour, such as making sounds, pointing or saying some number names					
		I can count in everyday contexts sometimes skipping numbers or saying them in the wrong order					
	3 – 4 years	I can say number names in order to 3 starting at 1	I can count a line of objects, tagging each object with a number word, to 3	I can count out 3 objects from a larger group	I can automatically recognise a group of 2 objects	I can say the correct number word when I see number symbols 1-3 in various contexts	I know that a group of 3 objects is still a group of 3 objects even when rearranged.
			I can count an irregular arrangement of 3 objects by tagging each object with a number word				
		I can say number names in order to 5 starting at 1	I can count a line of objects, tagging each			I can match the number symbol with	

			object with a number word, to 5		I can automatically recognise a group of 3 objects	a group of up to 3 objects.		
		I can say number names in order to 10 starting at 1	I can count an irregular arrangement of 5 objects by tagging each object with a number word			I can say the correct number word when I see number symbols 4-5 in various contexts		
	Reception	I can say number names in order to 20 starting at 1	I can count a line of objects, tagging each object with a number word, to 10	I can count out 5 objects from a larger group	I can automatically recognise a group of 4 objects	I can match the number symbol with a group of up to 5 objects.	I know that a group of 5 objects is still a group of 5 objects even when rearranged.	
		I can say number names in order beyond 20	I can count an irregular arrangement of 10 objects by tagging each object with a number word	I can count out 10 objects from a larger group	I can automatically recognise a group of 5 objects	I can say the correct number word when I see number symbols 6-10 in various contexts	I know that a group of 10 objects is still a group of 10 objects even when rearranged.	
								I can represent objects to 10 using my own marks
								I can count an objects or actions to 20 by tagging each object/action with a number word
		I can count an objects or actions beyond 20 by tagging each object/action with a number word				I can match the number symbol with a group of up to 10 objects.		
						I can use a tens frame to organise my counting		
						I know that the numbers in the one's column increase in the same way (1-9) for each ten.		
Guidance from NCETM progression document		<i>Children need to know number names, initially to five, then ten, and extending to larger numbers, including crossing boundaries 19/20 and 29/30. Counting back is a useful skill, but young children will find this harder because of the demand it places on the working memory.</i>	<i>Children need lots of opportunities to count things in irregular arrangements. For example, how many play people are in the sandpit? How many cars have we got in the garage? These opportunities can also include counting things that cannot be seen, touched or moved.</i>	<i>Children need the opportunity to count out or 'give' a number of things from a larger group, not just to count the number that are there. This is to support them in focusing on the 'stopping number' which gives the cardinal value.</i>	<i>Subitising is recognising how many things are in a group without having to count them one by one. Children need opportunities to see regular arrangements of small quantities, e.g. a dice face, structured manipulatives, etc., and be encouraged to say the quantity represented. Children also need opportunities to recognise small amounts (up to five) when they are not in the 'regular' arrangement, e.g. small handfuls of objects.</i>	<i>Children need to have the opportunity to match a number symbol with a number of things. Look for opportunities to have a range of number symbols available, e.g. wooden numerals, calculators, handwritten (include different examples of a number).</i>	<i>Children need the opportunity to recognise amounts that have been rearranged and to generalise that, if nothing has been added or taken away, then the amount is the same.</i>	

