Parent's Guide to Supporting Maths in the National Curriculum. Reception.

The National Curriculum is significantly more challenging than before. The children will need to develop a very sound understanding of their maths to be able to meet these challenges. These need to be taught in an "age appropriate" manner which allow the children to use a series of representations and resources that will be suitable for a developing 4-5 year old brain.

Below you will find an overview of the types of calculating your child will be expected to do in Reception. We have included the types of representations we use with them. In line with the National Curriculum Aims we use these to develop **an understanding** of the concept to build a really firm foundation in calculations and therefore **do not** teach the children a procedure to follow to "do a sum" as this has been shown to have no long term benefit. Some children will prefer some representations more than others and may not use all of them. They all will progress at different rates. Practical handling of resources is essential to aid secure understanding ready for this more demanding curriculum.

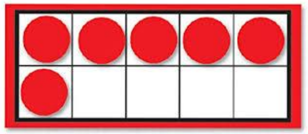
40-60 months	Early Learning Goal
Children in Reception will be learning to: Count objects, actions and sounds. Subitise. Link the number symbol (numeral) with its cardinal number value. Count beyond ten. Compare numbers. Understand the 'one more than/one less than' relationship between consecutive numbers. Explore the composition of numbers to 10. Automatically recall number bonds for numbers 0–10. Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. Continue, copy and create repeating patterns. Compare length, weight and capacity.	**ELG: Number** Children at the expected level of development will: - Have a deep understanding of number to 10, including the composition of each number; - Subitise (recognise quantities without counting) up to 5; - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. **ELG: Numerical Patterns** Children at the expected level of development will: - Verbally count beyond 20, recognising the pattern of the counting system; - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Place Value

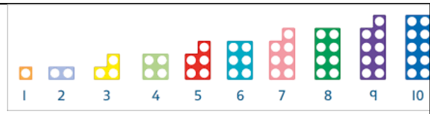
Representations we use for Counting.

We use lots of different objects for counting. We count accurately by touching or moving each object physically.

We use number lines to help us count and connect the number name we are



We put counters into the holes on a tens frame so we can compare numbers easily and see that 6 is made up of 5 and 1 more.



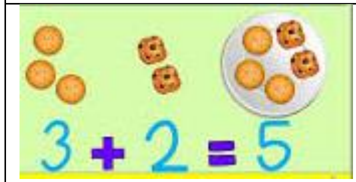
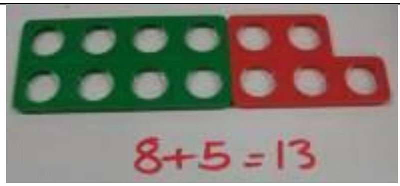
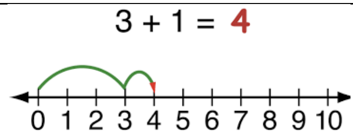
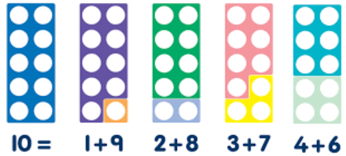
We can put our fingers in the holes in each Numicon piece to count the number. We soon learn what number each colour represents and use these to make numbers.

We make numbers above 10 by starting with the blue 10 Numicon.

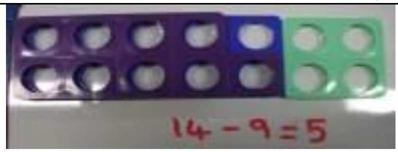
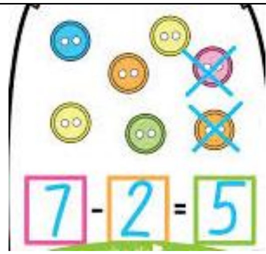
Then we can count pictures of objects that we can't move by touching each one.	saying with the number symbol. We use pegs on string or coat hangers to make number lines too.			

Addition and Subtraction

Representations we use for addition.

 We start by using objects to combine two groups to add. We start by having to count all of them to find the total, before we realise we can count on from the biggest number. In Reception, we don't have to write the addition number sentence or "sum", as long as we can record what we have done in pictures and numbers.	 We can use the Numicon shapes to find the answer which saves us having to count out objects.	 As well as combining 2 groups, addition is seen as counting on. We can use a number line or a ruler to hop forwards from the biggest number and count on. We can use a number line or ruler to say what number is 1 more or 1 less than 3.	 We learn lots of ways of making each number. For example, we have 10 fingers because 5 and 5 make 10, 9 and 1 more make 10, 8 and 2 make 10. This helps us to understand how big 10 is. This helps us to learn our number bonds that make 10 too which we use a lot in Year 1 to help us know the answer without having to work it out.

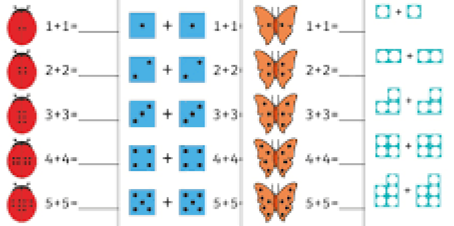
Representations we use for Subtraction.

 We start by using objects and physically taking away 7 balls from a group of 10.	 Then we use Numicon so we don't have to count out 14. We lay the 9 on top so we can see the difference or we cover up 9 holes out of 14.	 As well as taking away, we need to see subtraction as counting backwards. We use a number line to hop backwards.	 We can cross out the ones we are taking away on a picture. In Reception, we don't have to write the subtraction number sentence or "sum", as long as we can record what we have done in pictures and numbers.

Multiplication and Division

Representations we use for Multiplication.

We learn about doubles by using pairs of socks and then other objects.

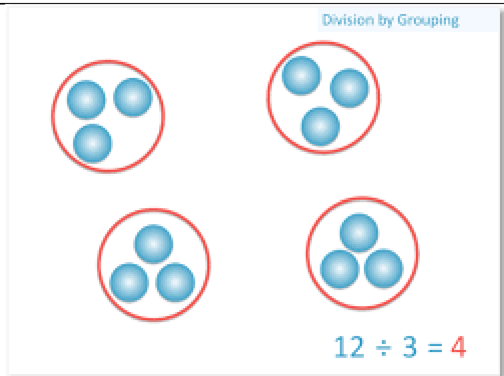


We start to learn our doubles - double 5 is 10 is an easy one to learn. We use ladybird spots, with the same number of spots on each side of the body, as well as dice, Numicon and other objects. We can then start to learn to count in twos ready for year 1.

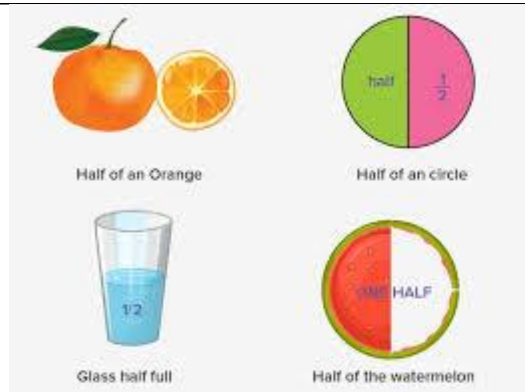
Children are encouraged to make up their own mathematical problems and some of these will involve multiplication and “lots of”. For example, if we put 2 sweets on each cake and there are 3 cakes, how many sweets do we need? Four of us are going to play with the bean bags, we need 3 bean bags each for the target game, how many bean bags do we need to get out?

Representations we use for Division.

We use objects to sort onto sharing circles or into sorting boxes. Children usually have a well-developed sense of sharing fairly. In this example we can share 12 sweets between 4 children fairly, by giving each child 3 each.



We need to see division as how many groups of 3 can we make as well as sharing objects between people. In this example we can make 4 groups of 3 out of 12 counters.



Children also need to be able to understand a half as two equal pieces or groups. We halve objects such as fruit, string, playdough and simple shapes by cutting them in half.