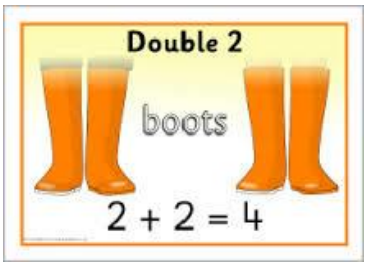
Multiplication Stations

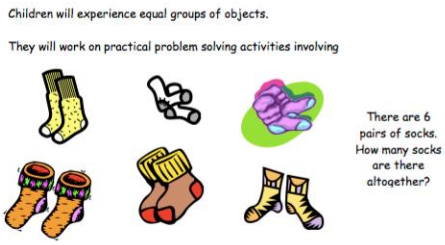
Following my previous explanations of how we perform addition and subtraction calculations using concrete (physical) resources and visual (pictorial) representations, we are now going to explore how we carry out multiplication in Key Stage 1. An explanation of the multiplication into Key Stage 2 will follow next week.

Reception Class

In Year R we tend to use the following vocabulary when teaching children to multiply: part, whole, groups of, lots of.

Year R children experience equal groups of objects and try to solve problems by pairing and counting.





Year 1

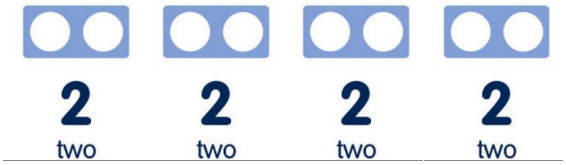
In Year 1 we tend to use the following vocabulary when teaching children to multiply: part, whole, ones, groups, lots of, doubling, repeated addition, groups of, lots of, times, columns, rows, longer, bigger, higher etc and times as (big, long, wide …etc)

Children in Year 1 are taught to count in multiples of 2, 5 and 10 from zero

2 × 4 = 8

Children should count the number of groups on their fingers as they are skip counting.

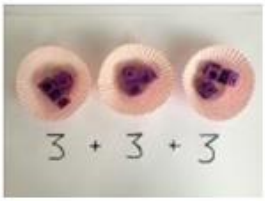
4 groups of 2 = 8

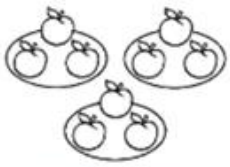


The children are still taught how to use resources to aid their understanding, but move on to using visual representations that they or their teachers draw using working drawings. However, it is VERY important to use the correct vocabulary when describing the calculation e.g.

This image represents two groups of 4 or 4 twice

Children also learn to multiply by carrying out repeated addition e.g.



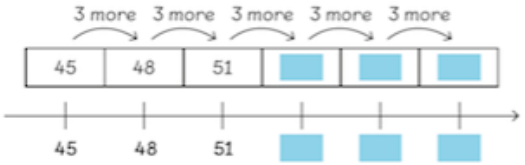


3 + 3 + 3 = 9

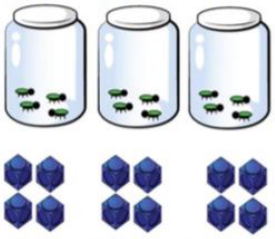
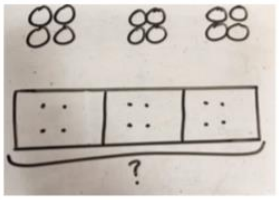
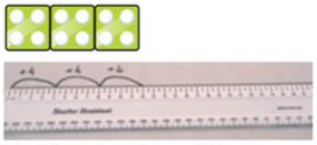
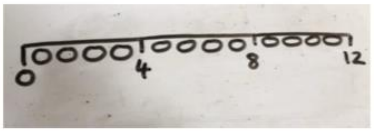
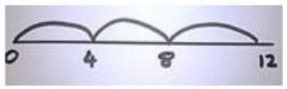
Year 2

In Year 2 we tend to use the following vocabulary when teaching children to multiply: part, whole, multiple, multiplication array, multiplication tables / facts, groups of, lots of, times, columns, rows

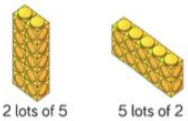
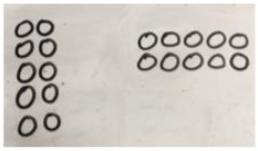
In Year 2 the children learn to skip count in multiples of 2, 3, 5, 10 from 0 and recall the multiplication tables for the 2, 5 and 10 times tables.



They learn to multiply by grouping objects/repeated addition using practical resources before moving to pictoral representations (top centre) and then the abstract (top right). They are also taught to use number lines to show repeated groups (see bottom left to right)

Repeated grouping/repeated addition 3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group. 	Children to represent the practical resources in a picture and use a bar model. 	3 × 4 = 12 4 + 4 + 4 = 12
Number lines to show repeated groups- 3 × 4  Cuisenaire rods can be used too.	Represent this pictorially alongside a number line e.g.: 	Abstract number line showing three jumps of four. 3 × 4 = 12 

Year 2 children use arrays to help them understand that multiplication can be done in different ways e.g. 5 x 2 is the same answer as 2 x 5.

Use arrays to illustrate commutativity counters and other objects can also be used. 2 × 5 = 5 × 2 	Children to represent the arrays pictorially. 	Children to be able to use an array to write a range of calculations e.g. 10 = 2 × 5 5 × 2 = 10 2 + 2 + 2 + 2 + 2 = 10 10 = 5 + 5

You can see that, as with addition and subtraction, when they are ready, they move from using the resources to drawing visual representations and then to abstract numbers. If children move too quickly to the abstract or don't have experience of the resources they may not understand the maths behind the concept. This is where, as adults we can go wrong sometimes, as we forget the journey we made to get to our own understanding or were taught a procedure rather than actually understanding what is going on mathematically.

Anyway, I hope that you have found this insight into how we teach multiplication in KS1 useful. Next week we will explore how we teach multiplication in Key Stage 2.

Mr Wheat