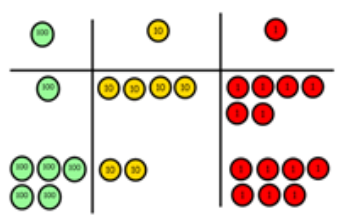# Great Linford Primary School

Addition

A handy pocket guide explaining the different stages of learning your child will go through as they learn about Addition in our school.

Concrete > Pictorial > Abstract

$$\begin{array}{r} \overset{1}{6}52 \\ +471 \\ \hline 1123 \end{array}$$

Concrete
We begin all of our maths learning journeys with the use of concrete apparatus. This might include counters, cubes, base 10, beadstrings, numicon, weights, measuring jugs etc. Using concrete apparatus helps children to visualise the numbers and understand their relative size.

Pictorial
We then use models/images to show children a pictorial version of the apparatus they have used. We might use symbols, or draw counters instead of handing them out on tables.

Abstract
Finally, children are confident enough to just use the abstract style of recording that mathematicians use, made up of numbers and symbols.

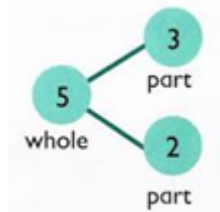# Stage 1 - counting and combining

Combining two or more parts to make a whole, and counting on from a number.
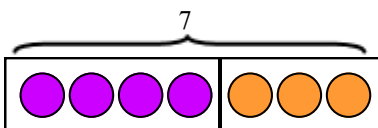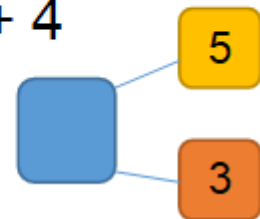
Skills needed:

- Counting sets of objects accurately.
- Knowing numbers bonds/doubles and spotting patterns.
- Understanding that numbers represent amounts or quantities.
- Being able to draw pictures/images to represent their thinking.
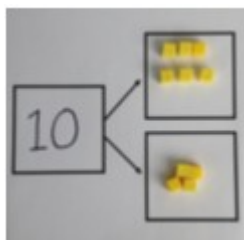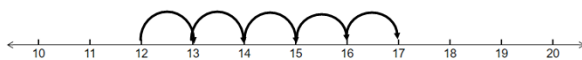
$$4 + 3 = 7$$

$$10 = 6 + 4$$

Children use cubes, numicon or counters to put together to make a 'whole'. We teach the children that when we are adding, we are putting parts together to make a 'whole'.

We use beadstrings and then numberlines to count on from a number. This starts with counting on in 1s, but moves onto counting on tens or larger groups of numbers at a time.

Stage 2 – partitioning

<u>Understanding place value and partitioning</u>
<u>Skills needed:</u>

- Understanding the place value of numbers (knowing that the 1 in the number 17 is worth ten, but the 1 in 31 is worth one).
- Multiples of 10 and counting in tens.
- Partitioning numbers into tens and ones.
- Recording numbers using pictorial images e.g. Drawing base ten, or drawing counters on a place value grid.
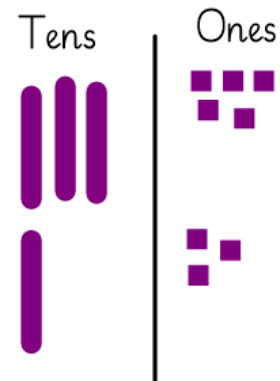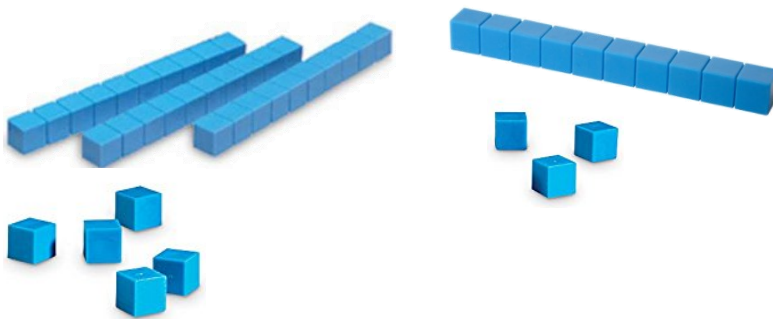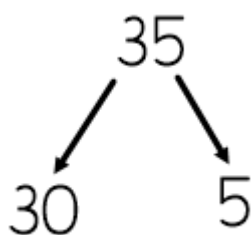
The children learn how to count up all their 'ones' first before counting up their tens to find the answer.

By playing the 'exchanging game' we learn how to regroup our ones and exchange them for a group of ten.

Place value counters and arrow cards help us to understand how to partition our numbers into hundreds, tens and units. In KS2 we use the same skills and resources to learn about larger numbers, as well as our decimal numbers.
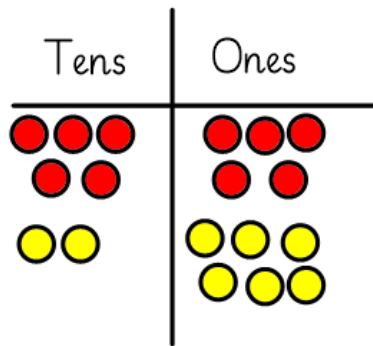
Stage 3 - Column method

<u>Understanding how to record using formal methods</u>
<u>Skills needed:</u>

- Understanding the place value of numbers and how to record these in columns.
- Multiples of 10 and counting in tens.
- Partitioning numbers
- Knowing how to regroup numbers (exchange ten 'ones' for a group of ten.)

35 + 26

Tens	Ones

At first, children practise 'exchanging' by adding counters into a place value grid, and swapping groups of ten 'ones' for a group of ten when they reach ten in a column.

We learn how to add in a grid using an 'expanded' method,

Tens	Ones
30	5
20	6

where we record the full place value amount of each number. Some children will also choose to use base ten cubes, counters, place value grids or beadstrings alongside this method to support them. Other children prefer to draw base 10 or counters.

```
  1
  35
+ 26
─────
  61
```

We then learn how to record formally. At first we just learn to record in columns with no 'exchanging'. Then we learn how to exchange. We record the exchanged digits above the next column.

<u>Year Group Expectations</u>
EYFS - adding numbers up to 20.
Years 1/2 - numbers up to 100.
Years 3/4 - three and four digit numbers.
Years 5 and 6 - 7 digit numbers and decimals