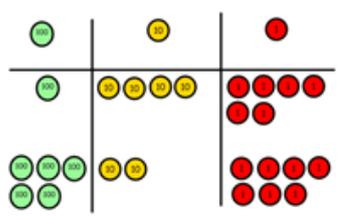




Subtraction

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

Concrete > Pictorial > Abstract



$$\begin{array}{r} 8 \\ 915 \\ -48 \\ \hline 47 \end{array}$$

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 - taking away and counting back

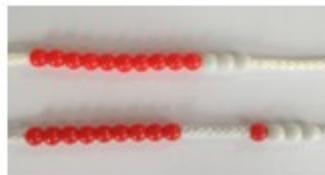
Counting back from a number and taking something away

Skills needed:

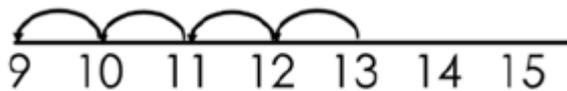
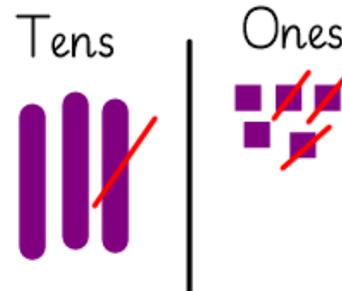
- Counting back in ones.
- Knowing number bonds, halves and spotting patterns.
- Understanding what subtraction is and how it is inverse to addition.
- Knowing that subtraction is not commutative (3-2 is not the same as 2 - 3)
- Knowing how to represent numbers with resources and pictures.
- Understanding the place value of numbers.



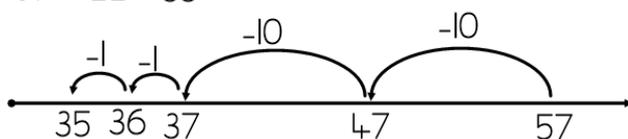
$$13 - 4$$



Children use cubes, numicon or counters to make the 'whole'. We learn that when we subtract, we start with the whole. Children then start by physically taking away amounts either in ones or in groups. When they draw images to show this, they will cross out as they 'take away'.



$$57 - 22 = 35$$



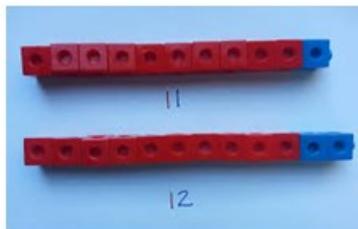
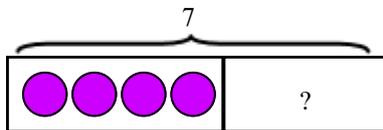
We use beadstrings and then numberlines to count back from a number. This starts with counting back in 1s, but moves onto counting back in tens or larger groups of numbers at a time.

Stage 2 - finding the difference and counting on

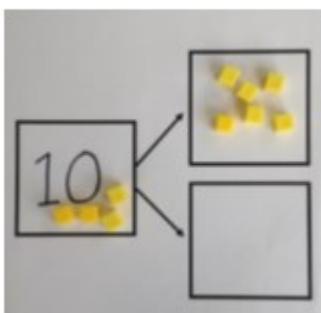
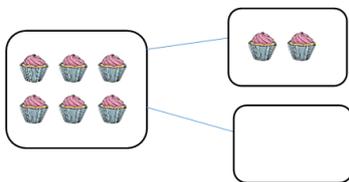
Knowing when to count on or find the difference

Skills needed:

- Understanding the place value of numbers
- Multiples of 10 and counting in tens.
- Understanding that addition and subtraction are inverse operations.
- Understanding that subtraction is finding the difference.
- Understanding that when we subtract, we start with the whole (Knowing which number we are 'taking away').

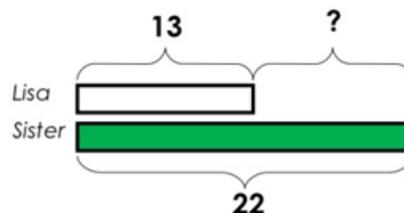


We learn how to use bar models and part whole models to find the 'missing part'. This helps us to understand the link between addition and subtraction. We do this at first with counters and then draw our own.



We make comparison bars to show that when we subtract, we are finding the difference between two amounts.

*Lisa is 13 years old. Her sister is 22 years old.
Find the difference in age between them.*



When solving calculations in our heads, we learn that sometimes it is quicker to 'take away' e.g. $356 - 8$ when the amount we are taking away is a small amount. For other calculations, it is quicker to 'count on' e.g. $356 - 339$ when the difference is a small amount.

