

# National Curriculum For Mathematics



## Calculation Policy

## Routes through Subtraction

2021

## EARLY SKILLS - Most children in Year 1

**Story around structure** - I have a set of 6 objects to start with and so many of them get partitioned off, taken away, eaten, lost... 'How many are left?'. Often modelled with sets of 'things' - essentially the story follows the same plot of 'have', 'take away', 'have left'

**Lots of songs and rhymes.**

**Number tracks and number lines (labelled)** - Supports children to learn to count backwards from the larger number.

**Part-Whole Models** - Children understand partitioning and know to subtract a part from the whole.

**Bar models** - Another type of a part-whole model that can support children to represent subtraction. Cubes and counters can be used in a line as a concrete representation, noticing the comparative number sentences too.

• Very practical

- **Number shapes (numicon)** - useful to support children to find bonds and subtract an amount.
- **Cubes/counters** - support children to count out a child finding  $9 - 3$ , gets 9 objects and takes away 3, counts how many remain?
- **Tens Frame (within 20)**- The frame can support children to understand different structures of subtraction. It can be used to subtract within 20 by finding 10.
- **Bead Strings (10 and then 20)** - Effective to find subtraction number sentences bonds to 10, 20 and 100
- **Base 10/dienes** - Supports children adding tens and ones together.
- **Straws (lollipop sticks)** - This method will support pupils' understanding as the straws/lollipop sticks represent the exchange from 1 to 10 ones.

### Concrete

7 - 3 = 4

7 - 3 = 4

7 - 3 = 4

7 - 3 = 4

7 - 3 = 4

7 - 3 = 4

10 - 5 = 5

10 - 5 = 5

### Pictorial

First      Then      Now

14 - 6 = 8

7 - 3 = 4

14 - 6 = 8

7 - 3 = 4

14 - 6 = 8

### Abstract

10 - 4 = 6

14 - 6 = 8

**Most children in Year 2**

**Number tracks and number lines (labelled)** - Supports children to learn to count backwards from the larger number.

**Part-Whole Models** - Children understand partitioning and know to subtract a part from the whole.

**Bar models** - Another type of a part-whole model that can support children to represent subtraction.

**Number shapes (numicon)** - useful to support children to find bonds and subtract an amount.

**Bead Strings (10 and then 20)** - Effective to find subtraction number sentences bonds to 10, 20 and 100

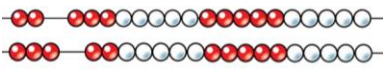
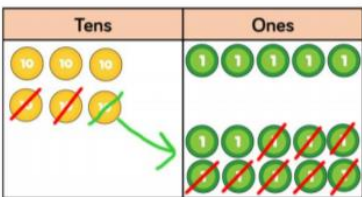
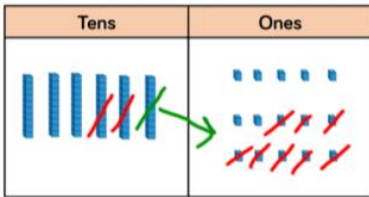
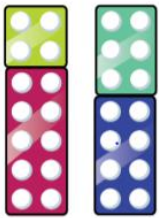
**Base 10/dienes** - Supports children adding tens and ones together.

**Straws (lollipop sticks)** - This method will support pupils' understanding as the straws/lollipop sticks represent the exchange from 1 to 10 ones.

**Base 10/dienes** - Supports children adding two 2-digit numbers together (and crossing 10s).

**Place Value Counters** - Supports children adding two 2-digit numbers together (and crossing 10s).

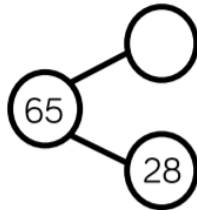
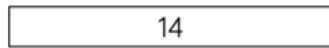
**Concrete**



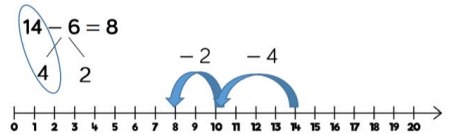
$42 - 17 = 25$



**Pictorial**



**Abstract**



$65 - 28 = 37$

Most children in year 3 and 4

**Number tracks and number lines (blank and labelled)** - Supports children to learn to count backwards from the larger number.

**Part-Whole Models** - Children understand partitioning and know to subtract a part from the whole.

**Bar models** - Another type of a part-whole model that can support children to represent subtraction.

**Base 10/dienes** - Supports children adding two 2-digit numbers together (and crossing 10s).

**Place Value Counters** - Supports children adding two 2-digit numbers together (and crossing 10s).

Concrete	Pictorial	Abstract

**Most children in Year 5 and 6.**

**Part-Whole Models** - Children understand partitioning and know to subtract a part from the whole.

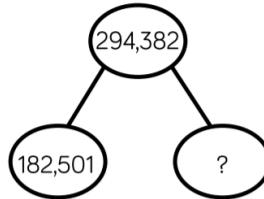
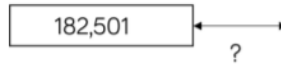
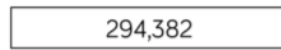
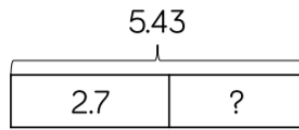
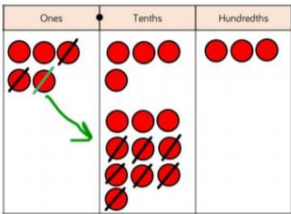
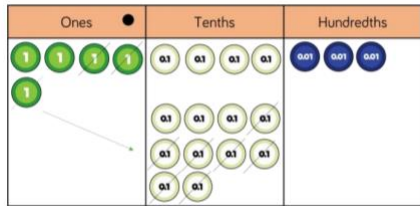
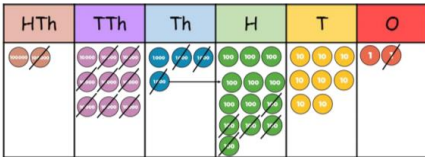
**Bar models** - Another type of a part-whole model that can support children to represent subtraction.

**Number lines (blank)** - to support children subtracting time intervals (before/earlier).

**Column Subtraction** -

• **Concrete method to support column subtraction-**

- **Place Value Counters** - Supports children subtracting large/decimal numbers.



	2	9	<del>3</del>	13	8	2
-	1	8	2	5	0	1
	1	1	1	8	8	1

$$\begin{array}{r}
 4 \quad 1 \\
 5.43 \\
 - 2.7 \\
 \hline
 2.73
 \end{array}$$

