Subtraction: Green (Y3)

Mental Work
Derive and recall
- subtraction facts for numbers to 100, e.g. 100 -81, drawing on knowledge of inverse operations and number bonds.
- differences of multiples of 10, e.g. 120 - 90

Work mentally (with jottings if needed)
- add and subtract groups of small numbers, e.g. 5 – 3 + 2
- subtract a 2-digit number from a multiple of 10, e.g. 90 – 27 (knowledge of bonds to 10)
- Add and subtract mentally HTU – U, HTU – T, HTU - H
- count back in minutes and hours, bridging through 60 (analogue times); partition

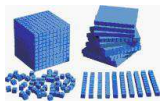
Children should be encouraged to:

* **approximate** their answers before calculating

***consider if a mental calculation** would be appropriate **before** using written methods

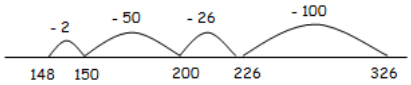
***check their answers** after calculation using an appropriate strategy

Practical work
Use arrow cards to show the partitioning of numbers.
Use Base 10 materials to show partitioning and exchange (see recording below).



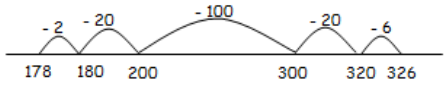
Number lines
Children could continue to use empty number lines with increasingly large numbers.

326 – 178 = 148

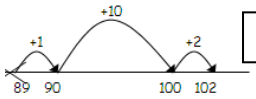


Count back obvious jumps **or**

Count back to 178.



Where the numbers are involved in the calculation are close together or near to multiples of 10, 100 etc counting **on** using a number line should be used, e.g. 102 – 89 = 13 (method much less prone to errors)



Encourage the children to stop at the BFZN.

102 – 89 = 13

The children must be secure with place value and where numbers are on a number line.

Recording
Decomposition
This process should be demonstrated using base 10 materials to show the **decomposition** of the number.
Children will begin to use informal pencil and paper methods (jottings) to support record and explain partial mental methods building on existing mental strategies. **The children must have secure mental skills.**

Stage 1: no exchange

tens	ones

$$\begin{array}{r} 89 \\ -\ 57 \\ \hline \end{array}$$

In this example, children should be taught that 57 **DOES NOT EXIST AS AN AMOUNT** – it is what you are subtracting from the other number. Therefore, when using Base 10 materials, children would only need to count out the 89.

Stage 2: standard decomposition

$$\begin{array}{r} 71 \\ -\ 46 \\ \hline \end{array}$$

$$\begin{array}{r} {}^{6}\not{7}\,{}^{1}1 \\ -\ 4\,6 \\ \hline 2\,5 \end{array}$$

Children should know that units line up under units and tens line up under tens then move onto HTU – TU, HTU - U

Standard decomposition:
Using this method, children should be able to
subtract numbers with different numbers of digits and decomposing both tens and hundreds (HTU – HTU; HTU – TU), e.g. 754 – 286.

$$\begin{array}{r} {}^{6}\not{7}\,{}^{14}\not{5}\,{}^{1}4 \\ -\ \ 8\,6 \\ \hline 6\,6\,8 \end{array}$$

$$\begin{array}{r} {}^{6}\not{7}\,{}^{14}\not{5}\,{}^{1}4 \\ -\ 2\,8\,6 \\ \hline 4\,6\,8 \end{array}$$

CHILDREN SHOULD NOT MOVE ONTO THE NEXT STAGE IF:
1) they are not ready
2) they are not confident