

Staples Road Primary School - Subtraction Calculation Progression

Stages

STAGE 1

Count back using number tracks / number lines / 100 grids to support the development of the concept of subtraction as take away.

1st



2nd



Develop subtraction facts initially to ten and then to 20.
Record related number facts (and make links to related addition facts)
e.g. $9 - 4 = 5$, $9 - 5 = 4$



STAGE 2

Develop understanding of the equals sign / equality and the concept of 'empty box' questions.
Record solutions to calculations such as $9 - \quad = 5$.

Use understanding of patterning, place value and partitioning to derive number facts.

e.g. $7 - 3 = 4$ (known fact)

$$17 - 3 = 14$$

$$27 - 3 = 24$$



Begin to use understanding of place value and partitioning to support subtraction of one-digit and two-digit numbers.

STAGE 3

TU - U

Continue to develop understanding of partitioning and place value and use this to support subtraction.

$$41 - 8$$

$$41 - 1 - 7$$

$$41 - 8 = 33$$

Practical apparatus are used to support this, as are number tracks /100 squares/bead strings and number lines.
Record the outcomes of calculations in horizontal format.



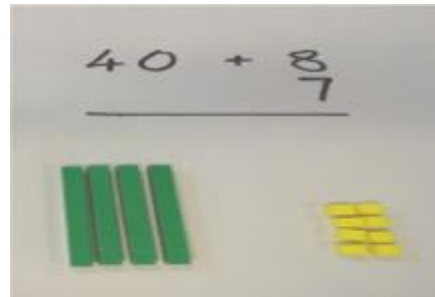
STAGE 4

Pupils continue to continue to determine when calculations are best carried out using mental strategies.

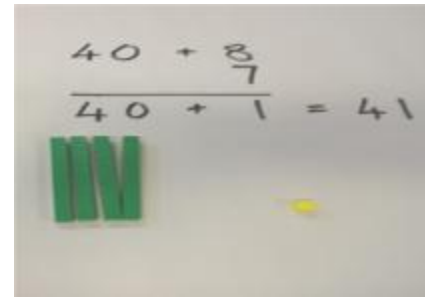
Horizontal recording can begin to be replaced with recording in columns with a focus on place value. Use expanded recording and apparatus to illustrate concept initially if required before moving towards the formal written method.

No exchange

$$48 - 7 =$$



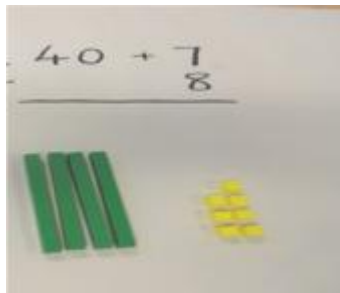
Step 1: Partition and set up base 10



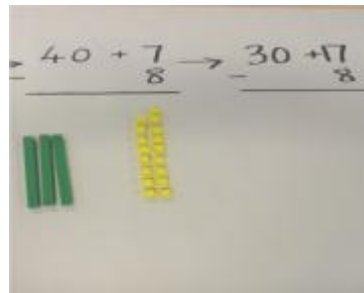
Step 2: subtract

Exchanging

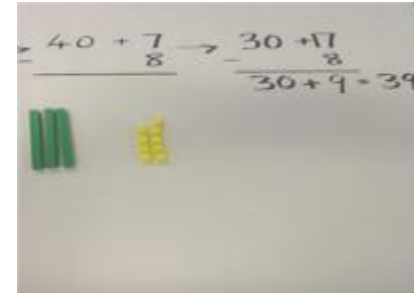
$$47 - 8 =$$



Step 1: partition and dienes



Step 2: Can we take 8 from 7?
Exchange a 10 for 10 units/ones.



Step 3: Subtract

STAGE 5

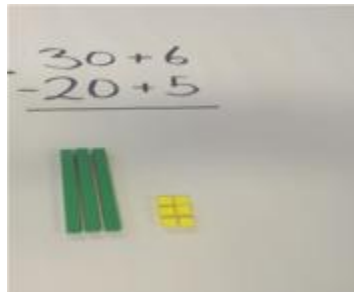
TU - TU

Continue to determine when calculations are best carried out using mental strategies.

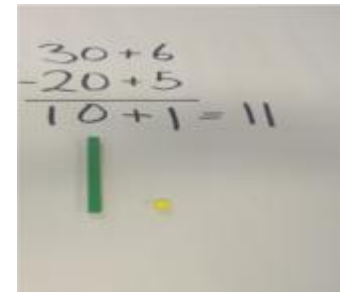
Develop use of the formal written method. Use expanded recording and apparatus to illustrate concept initially if required before moving towards the formal written method.

No exchange

$$36 - 25 =$$



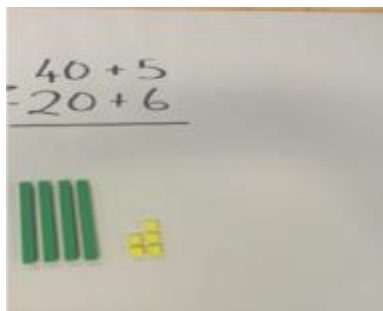
Step 1



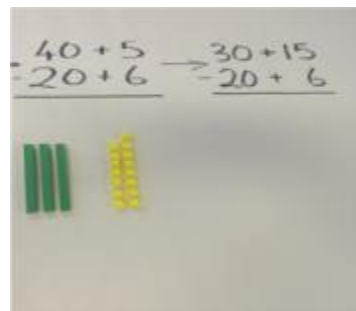
step 2

Exchange

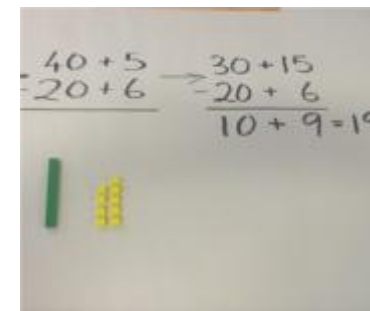
$$45 - 26 =$$



Step 1: Partition and Create the problem



Step 2 Can we take away 6 from 5?
Exchange a 10 for 10 units/ones?



Step 3: subtract the amount

STAGE 6

HTU - HTU

Continue to determine when calculations are best carried out using mental strategies.

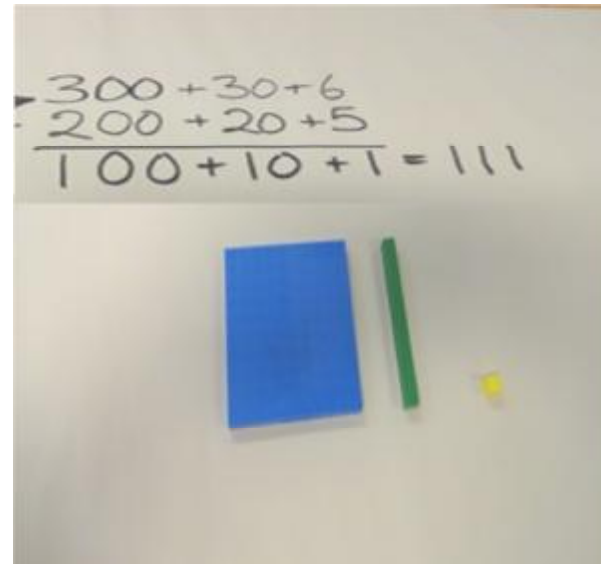
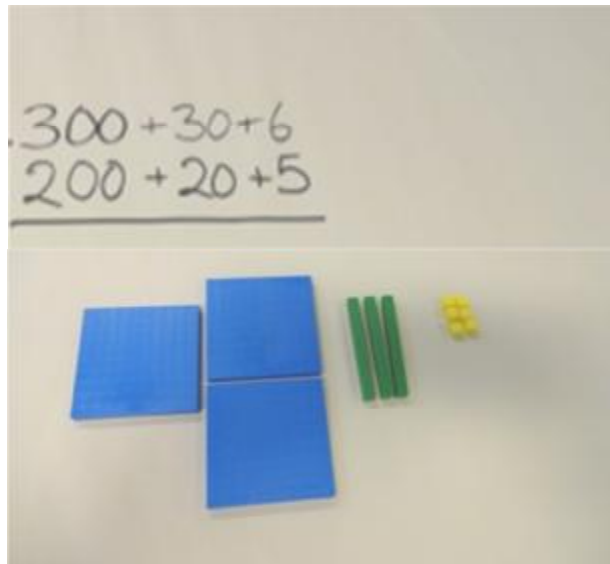
Develop use of the formal written method. Use expanded recording and apparatus to illustrate concept initially if required before moving towards the formal written method.

Explore how the process relates to numbers with zeros as place holders.

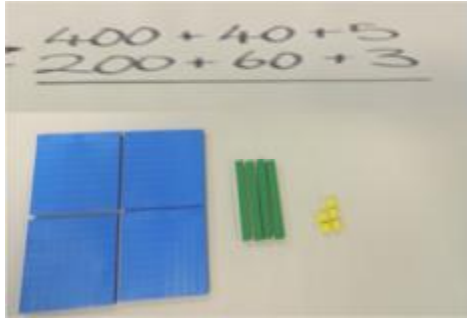
No exchange

Using an expanded method of recording if appropriate before moving to formal method

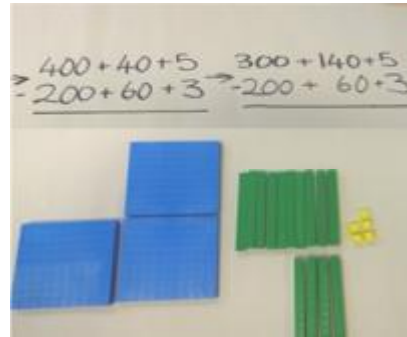
$$336 - 225 =$$



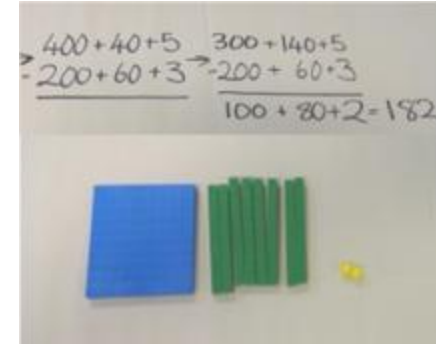
$$445 - 263 =$$



Step 1: Partition and make



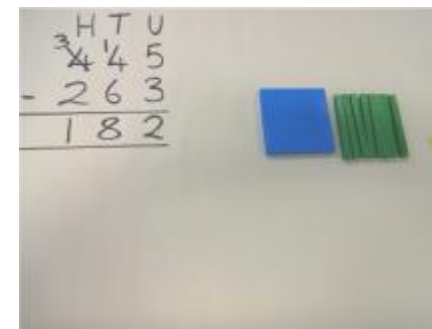
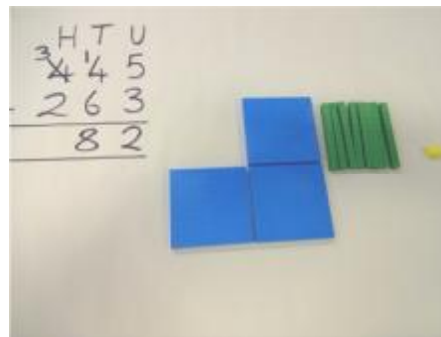
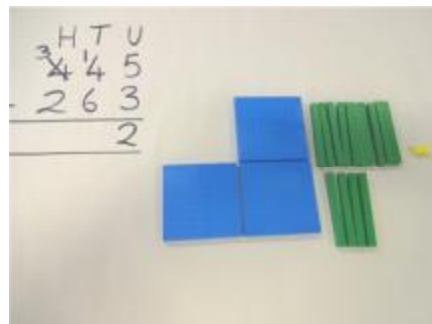
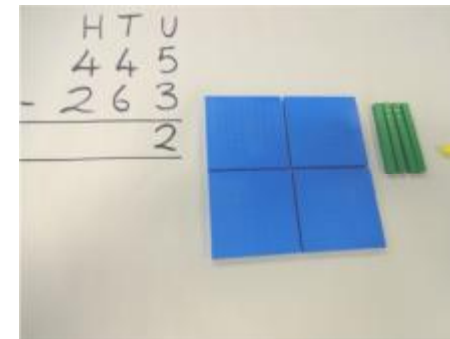
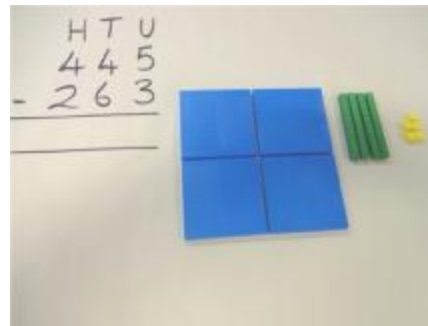
Step 2: Do I need to exchange?



Step 3: Subtract

This then becomes

Ensure chn can verbalise what they are doing. Use apparatus initially.



Exchange with zero as place holders

$$\begin{array}{r}
 \text{H} \quad \text{T} \quad \text{U} \\
 4 \quad 0 \quad 5 \\
 - 2 \quad 6 \quad 9 \\
 \hline
 \end{array}
 \longrightarrow
 \begin{array}{r}
 400 + 0 + 5 \\
 - 200 + 60 + 9 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 300 + 100 + 5 \\
 - 200 + 60 + 9 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 300 + 90 + 15 \\
 - 200 + 60 + 9 \\
 \hline
 100 + 30 + 6 = 136
 \end{array}$$

becomes

$$\begin{array}{r}
 \text{H} \quad \text{T} \quad \text{U} \\
 \overset{3}{4} \quad \overset{1}{0} \quad \overset{1}{5} \\
 - 2 \quad 6 \quad 9 \\
 \hline
 1 \quad 3 \quad 6
 \end{array}$$

STAGE 7

Continue to determine when calculations are best carried out using mental strategies.

Develop use of the formal written method of subtraction of increasingly large numbers. Use expanded recording and apparatus as above to illustrate concept initially if required before moving towards the formal written method.