



Subtraction Progression



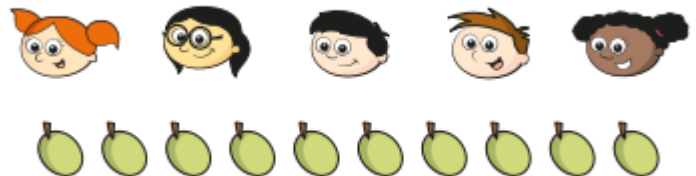
Step 1: Begin to share and group objects equally through practical activities, including working in pairs.

Jo and Max are sharing some sweets.



a) Share the sweets equally between Jo and Max.

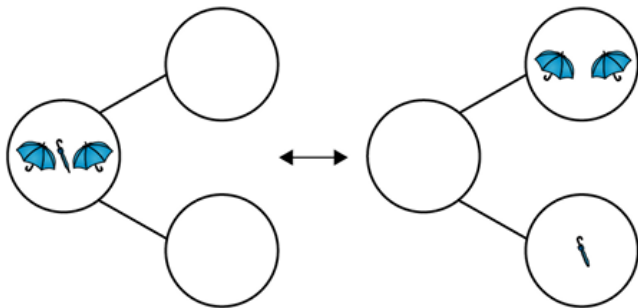
Five children share some grapes.



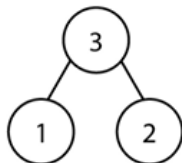
a) Share the grapes equally between the children.

Step 2: To know that a whole group of objects can be composed of 2 or more parts with the use of a part-part-whole diagram. Pupils to be confident that the parts can be split in different ways and look different but that these combine to make a whole. This can begin with images and move on to numeral representation.

Part-part-whole cherry representation with pictures:



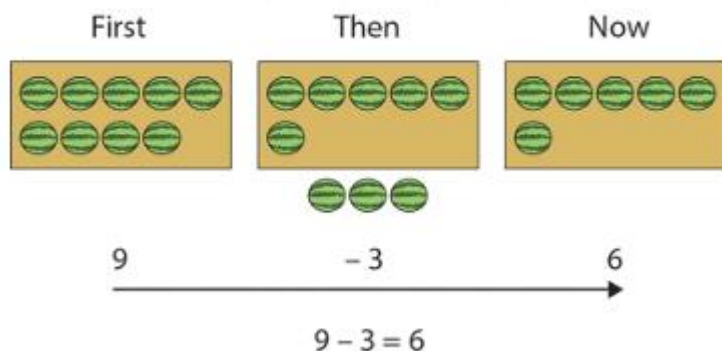
Part-part-whole cherry representation with numerals:



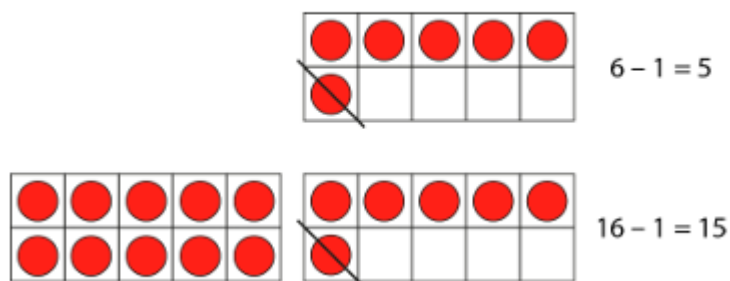
- 'The 3 represents the whole group of umbrellas.'
- 'The 1 represents the closed umbrellas.'
- 'The 2 represents the open umbrellas.'

Step 3: Use of first, then, now and to recognise that subtraction Use of pictures.

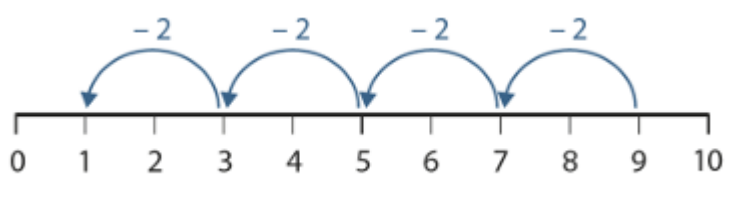
'At first the grocer had nine watermelons. Then he sold three of them. Now he has six watermelons left.'



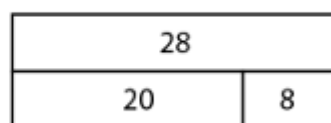
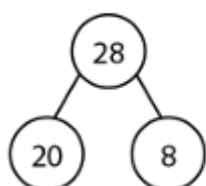
Tens frames and counters:



Step 4: Use of numberlines to show subtraction and patterns.



Step 5: Use resources and models to show partitioning the subtrahend in to tens and ones



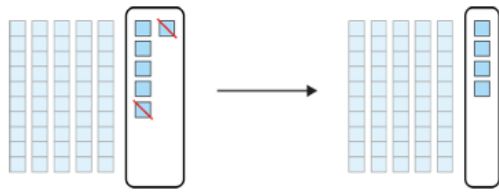
$$28 - 20 = 8$$

$$28 - 8 = 20$$

$$8 = 28 - 20$$

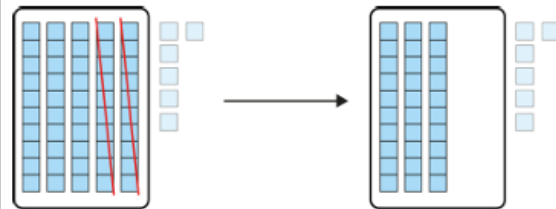
$$20 = 28 - 8$$

Subtracting a one-digit number from a two-digit number:

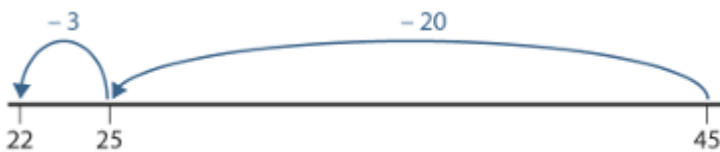


- 'I know that six minus two is equal to four...'
 - '...so fifty-six minus two is equal to fifty-four.'
- $56 - 2 = 54$

Subtracting a multiple of ten from a two-digit number:



- 'I know that five minus two is equal to three...'
- '...so, five tens minus two tens is equal to three tens.'
- 'Five tens and six ones, minus two tens, is equal to three tens and six ones.'

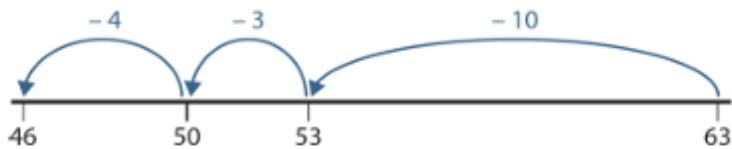


Step 6: Use of bridging to a multiple of ten.

Bridging a multiple of ten – subtracting the tens first:

$$\begin{array}{r} 63 \\ - 17 \\ \hline \end{array}$$

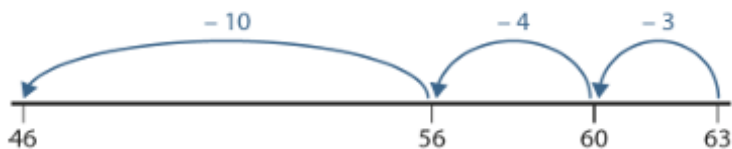
10 7



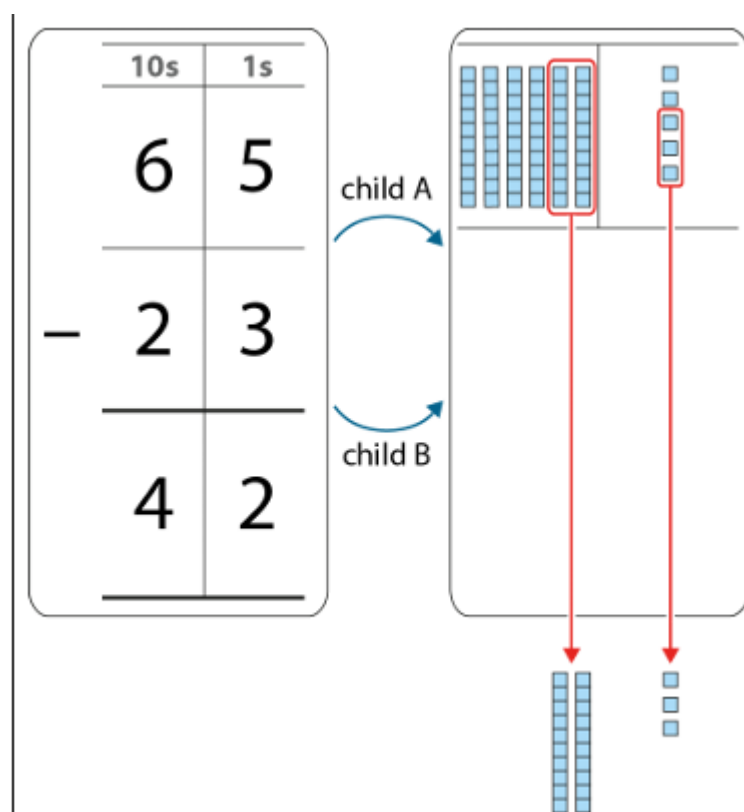
Bridging a multiple of ten – subtracting the ones first:

$$\begin{array}{r} 63 \\ - 17 \\ \hline \end{array}$$

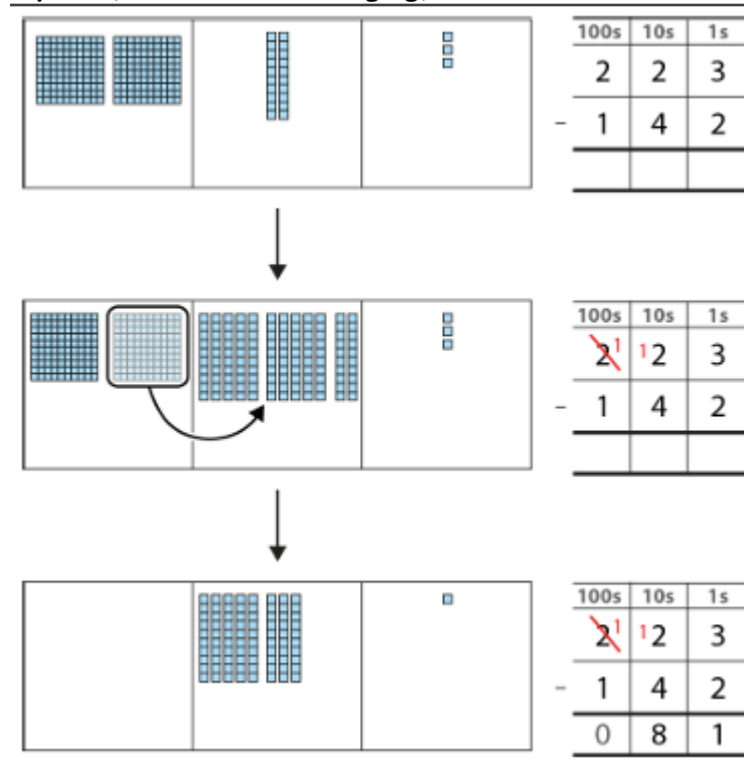
7 10



Step 7: to then move on to column addition layout (no exchanging)

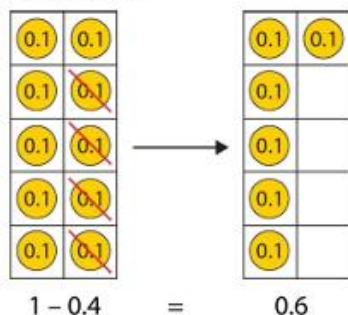


Step 8: Use resources to show subtracting tens and ones to then move on to column subtraction layout (to include exchanging)



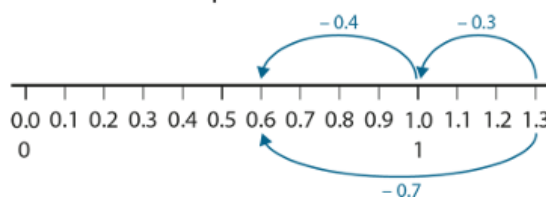
Step 9: To know that numbers with tenths can be subtracted

Tens frames and place-value counters – example subtraction calculation:



'One is equal to ten tenths; ten tenths minus four tenths is equal to six tenths.'

Number line – example subtraction calculation:



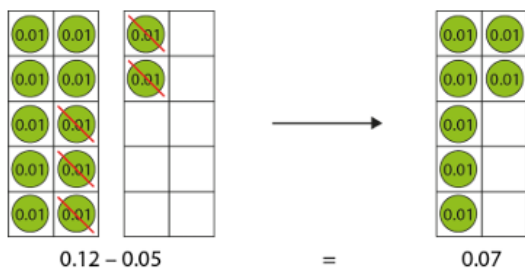
$$1.3 - 0.7 = 0.6$$

$$\begin{array}{r} 6.5 \\ - 2.3 \\ \hline \end{array}$$

$$\begin{array}{r} 4.3 \\ - 1.7 \\ \hline \end{array}$$

Step 10: Numbers with hundredths can be subtracted using resources and models before moving on to formal written methods.

Tens frames and place-value counters – bridging one tenth:



'Twelve hundredths minus five hundredths is equal to seven hundredths.'

$$\begin{array}{r} 1.58 \\ - 0.32 \\ \hline \end{array}$$

$$\begin{array}{r} 4.53 \\ - 3.27 \\ \hline \end{array}$$

$$\begin{array}{r} 2.34 \\ - 0.72 \\ \hline \end{array}$$

$$\begin{array}{r} 5.03 \\ - 2.48 \\ \hline \end{array}$$

Step 11: formal subtraction with larger numbers (to include decimals to 2dp) looking at efficient methods of decreasing the minuend and subtrahend of the same value to then calculate

- 'Complete the calculation.'

$$\begin{array}{r} 23.4 \\ - 7.62 \\ \hline \end{array}$$

'Twenty-three-point-four has no hundredths digit, but I still need to subtract two hundredths from the number.'

$$\begin{array}{r} 23.4\overset{3}{\cancel{0}} \\ - 7.62 \\ \hline \end{array}$$

Written method – column subtraction:

$$\begin{array}{r} \overset{1}{\cancel{2}}\overset{9}{\cancel{0}}\overset{9}{\cancel{0}}\overset{9}{\cancel{0}}\overset{9}{\cancel{0}} \\ - 158,436 \\ \hline 041,564 \end{array}$$

Same difference:

$$\begin{array}{r} 200,000 \xrightarrow{-1} 199,999 \\ - 158,436 \xrightarrow{-1} -158,435 \end{array}$$