

Subtraction Prior Learning Assessment : Question 3

LO: I can subtract mentally by counting on to find the difference.

NC : NAS2: add and subtract numbers mentally with increasingly large numbers

Teacher Input Ideas:

Allow the children time to discuss how they worked out the answer to Question 3. Ask the children what mental methods they used. You may find that many children will have used a written method here. Ask the children can we work this out mentally. What methods do we know so far? Which would be useful?

Model to the children how the answer can be retrieved by counting on to find the difference between the two numbers. Discuss with the children that the amounts are close in value therefore finding the difference through counting on is an efficient method to use. Discuss why and how it differs from taking away chunks of the amounts.

Model to the children the jumps taking place in your head:



Model how you are finding the difference by counting on in chunks. You may want to model this using a number line or making jottings.

$$365 + 200$$

$$565 + 2$$

Emphasise that it's okay to make quick jottings, however the use of the number line is to visually model the jumps happening in our heads. If we were to record this down on paper, this would be no more efficient than the formal written method.

Model with other amounts. Such as $550 - 410$. I know that 100 more would be 510 and then 40 more so the difference is 140. This makes working out a lot quicker and simpler.

The purple and the green activities solely focus on counting on in chunks to find the difference.

Practice Activities

Purple Practice: Most suited for children who have few mental methods for subtraction and need support visually.

The purple activity provides pre-drawn number lines to show the children how they can find the difference by counting on in chunks. The number lines are there to visually help the children to see how they can count on in chunks and the activity encourages the children to record down their thinking to find the answer. Towards the end of the activity the children are required to think independently of the chunks they can use as well as finding the answer.

Green Practice: Most suited for children who made errors in Question 3 of the prior learning assessment or over relied on written strategies.

The children are provided with sums to work out the difference by counting on. The children are to answer each question and use the counting on method to find the difference. Some children may find it useful to make jottings of the chunks they are counting on in or the intervals they are using in their working out. Do not encourage the children to draw number lines.

Yellow Practice Most suited for children who are ready to select efficient mental strategies for subtraction calculations.

The children are presented with subtraction sums; the children are to select which mental method they feel is best to use drawing upon the mental methods they have developed. Such as using rounding, counting back in chunks, counting on in chunks etc.

When the children have finished, ensure that they reflect on the methods they have used and share with others the types of methods they used for different questions.

Mastery: Practical problem solving and fluency (can be done in small groups or whole class)

You will need 5 boxes and padlocks where you have to enter a code. You will need 2 padlocks with 4 numbers and 3 padlocks with 3 numbers.

Inform the children that there is something inside each box. The children have to work out the code to open the box. You could set up the activity as a challenge. Children to compete in teams to unlock the boxes in the quickest time. Each time to have a go and record the time it took. The winning team receives the prize.

Give the children an envelope with cards inside with the following sums on. The answers to the cards will open the padlocks. However the children will not know which question will open which padlock. The children are to use mental strategies to find the answers and then work out which answer goes with which padlock. (padlock codes are in purple)

$$2441 - 2210 = 231$$

$$3567 - 199 = 3368$$

$$1365 - 109 = 1256$$

$$968 - 301 = 667$$

$$989 - 17 = 972$$

Answers

Purple:

1) 223

2) 94

3) 125

4) 2090

5) 136

6) 1019

Green:

1) 223

2) 125

3) 2090

4) 19

5) 2121

6) 44

7) 253

8) 1341

9) 1140

Yellow:

1) 2484

2) 480

3) 2537

4) 3083

5) 7765

6) 93

7) 1052


8) 176

9) 336


10) 711

Work out the answer to each sum. Record your working out in the thought bubbles.


1) $457 - 234 =$



2) $744 - 650 =$



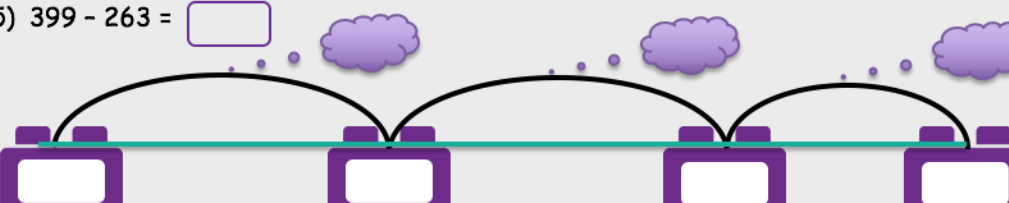
3) $1368 - 1243 =$



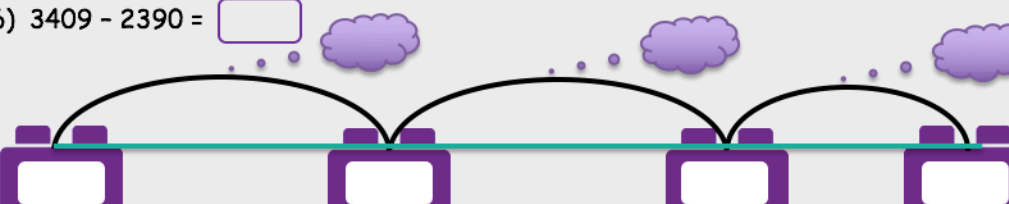
4) $5490 - 3400 =$



5) $399 - 263 =$



6) $3409 - 2390 =$



Look at each question and work out the answer to the sum mentally.

1) $\begin{array}{|c|c|} \hline & \\ \hline 4 & 5 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 7 & \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 2 & 3 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 4 & \\ \hline \end{array} = \boxed{}$

2) $\begin{array}{|c|c|} \hline & \\ \hline 1 & 3 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 6 & 8 \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 1 & 2 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 4 & 3 \\ \hline \end{array} = \boxed{}$

3) $\begin{array}{|c|c|} \hline & \\ \hline 5 & 4 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 9 & 0 \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 3 & 4 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 0 & 0 \\ \hline \end{array} = \boxed{}$

4) $\begin{array}{|c|c|} \hline & \\ \hline 3 & 4 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 0 & 9 \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 3 & 3 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 9 & 0 \\ \hline \end{array} = \boxed{}$

5) $\begin{array}{|c|c|} \hline & \\ \hline 6 & 9 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 2 & 1 \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 4 & 8 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 0 & 0 \\ \hline \end{array} = \boxed{}$

6) $\begin{array}{|c|c|} \hline & \\ \hline 1 & 5 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 9 & 4 \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 1 & 5 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 5 & 0 \\ \hline \end{array} = \boxed{}$

7) $\begin{array}{|c|c|} \hline & \\ \hline 1 & 3 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 7 & 8 \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 1 & 1 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 2 & 5 \\ \hline \end{array} = \boxed{}$

8) $\begin{array}{|c|c|} \hline & \\ \hline 4 & 8 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 4 & 1 \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 3 & 5 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 0 & 0 \\ \hline \end{array} = \boxed{}$

9) $\begin{array}{|c|c|} \hline & \\ \hline 1 & 2 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 6 & 6 \\ \hline \end{array} - \begin{array}{|c|c|} \hline & \\ \hline 1 & 1 \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline 5 & 2 \\ \hline \end{array} = \boxed{}$

Answer the questions below by selecting which mental method to use.

$$\begin{array}{|c|} \hline 2683 \\ \hline \end{array} - \begin{array}{|c|} \hline 199 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 789 \\ \hline \end{array} - \begin{array}{|c|} \hline 309 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 2671 \\ \hline \end{array} - \begin{array}{|c|} \hline 134 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 3184 \\ \hline \end{array} - \begin{array}{|c|} \hline 101 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 8767 \\ \hline \end{array} - \begin{array}{|c|} \hline 1002 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 843 \\ \hline \end{array} - \begin{array}{|c|} \hline 750 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 1069 \\ \hline \end{array} - \begin{array}{|c|} \hline 17 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 201 \\ \hline \end{array} - \begin{array}{|c|} \hline 25 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 399 \\ \hline \end{array} - \begin{array}{|c|} \hline 63 \\ \hline \end{array} = \boxed{}$$

$$\begin{array}{|c|} \hline 1421 \\ \hline \end{array} - \begin{array}{|c|} \hline 710 \\ \hline \end{array} = \boxed{}$$

Finished? Share the methods you used with a partner.