Subtraction Prior Learning Assessment : Question 7

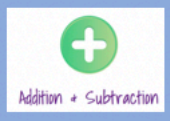
LO: I use estimation to check answers for subtraction questions.

I can use a written method to subtract amounts.

NC NAS 2 estimate and use inverse operations to check answers to a calculation

Assessment Question:

Prior Learning:



Question 7:
I can estimate the answer to a calculation.

I feel

Sophie is presented with this sum.

687 - 219

She approximates the answer. Circle which approximation is the most accurate:

500 400 300

Teacher Input Ideas:

Recap with the children the meaning of the word estimate. What does this mean? When is it used? Can you explain what rounding is? Place these numbers on the board. Ask the children to round these either the nearest thousand, nearest hundred or nearest ten.

1245 2876 167 441 509 750

Can the children explain how they rounded these amounts? What strategies did they use?

Place 2 sums on the board. Ask one half of the class to answer one question and the other half of the class to answer the other question. The children should stand up quickly when they have got the answer.

503 – 291 = 500- 300 =

The children answering 500 – 300 should be able to answer this quicker than the children answering 503- 291. Ask the children why this is? What did they notice when answering the sums? How can this sum (500- 300) help me to estimate the answer to

503 – 291? Discuss with the children that I know that 503 is very close to 500, so I round it to 500 to help me to roughly guess(estimate) what the answer will be. I know that 291 is quite close to 300 so I can use this to help me to estimate what the answer to the sum will be. I am estimating it first so that I know what the answer will be close to. When I have finished calculating, I can check my calculations using my estimate.

Model calculating the sum making an error with exchanging, such as :

```
  5 0 3
-
  2 9 1
-------
  3 9 2
-------
```

Model your thinking:

I know that 500 – 300 hundred is 200 and I can use this estimate to help me to check my answer. So I know that 392 must be incorrect as this is not close to 200. I must have made an error somewhere . Let me go back and check.

```
  4  1
  5 0 3
-
  2 9 1
-------
  2 1 2
-------
```

This is closer to my estimate and I am happy my calculations are accurate.

Repeat encouraging the children to round to the nearest hundred to help to estimate. Some children may be ready to round to the nearest ten if they are presented with sums that are still easy to mentally calculate such as: 249 – 54 =

Estimate 250 – 50 = 200

Discuss that some amounts when rounding to ten make it trickier to estimate quickly so rounding to the nearest hundred or thousand may be more appropriate.

Practice Activities

Purple Practice: Most suited for children who made errors in Question 7 of the prior learning assessment and demonstrate little confidence in estimating and rounding.

For this activity the children are provided with 3 digit subtraction sums laid out. The children are to round each 3 digit amount to the nearest hundred to help them to estimate the answer to the subtraction sums. The amounts that the children are presented with are quite close to the nearest hundred, therefore the children should be able to round easily. Children that are finding this hard may want to use number lines to help them to see which hundred is closer. Once the children have made an estimation they should be encouraged to use the column method for subtraction to calculate the answer. The first 3 sums require no exchanging and the children should be able to consolidate the written method. The rest of the questions require the children to exchange when calculating.

Green Practice: Most suited for children who demonstrate errors in Question 7 of the prior learning assessment and will benefit from developing their understanding of using estimation when calculating.

For this activity the children are provided with 2 and 3 digit subtraction sums laid out. The children are to decide if they should round to the nearest hundred or ten to help them to estimate the answer to each sum.

Once the children have made an estimation they should be encouraged to use the column method for subtraction to calculate the answer. The questions require the children to exchange when calculating. They should then use their estimation and discuss how this helped them to check their answer.

Yellow Practice: Most suited for children who demonstrate some understanding in Question 7 of the prior learning assessment.

For this activity the children are provided with purple and green blocks. These can be cut up so that the children can explore different combinations and create their own subtraction sums. The children are to select a green block and subtract this from a purple block. The children need to decide whether to round the amounts to either the nearest ten or hundred to help them to estimate the answer to the sum. If they are rounding to the nearest ten, then they should be able to make the estimates easily still mentally. Such as 203 – 52 could be rounded as 200 -50 – 150. This would be easy to estimate and provide a more accurate estimate than 200 – 100 = 100.

The children should apply the use of written subtraction methods to calculate the answer. Encourage the children to discuss how their estimate helps to check their calculation.

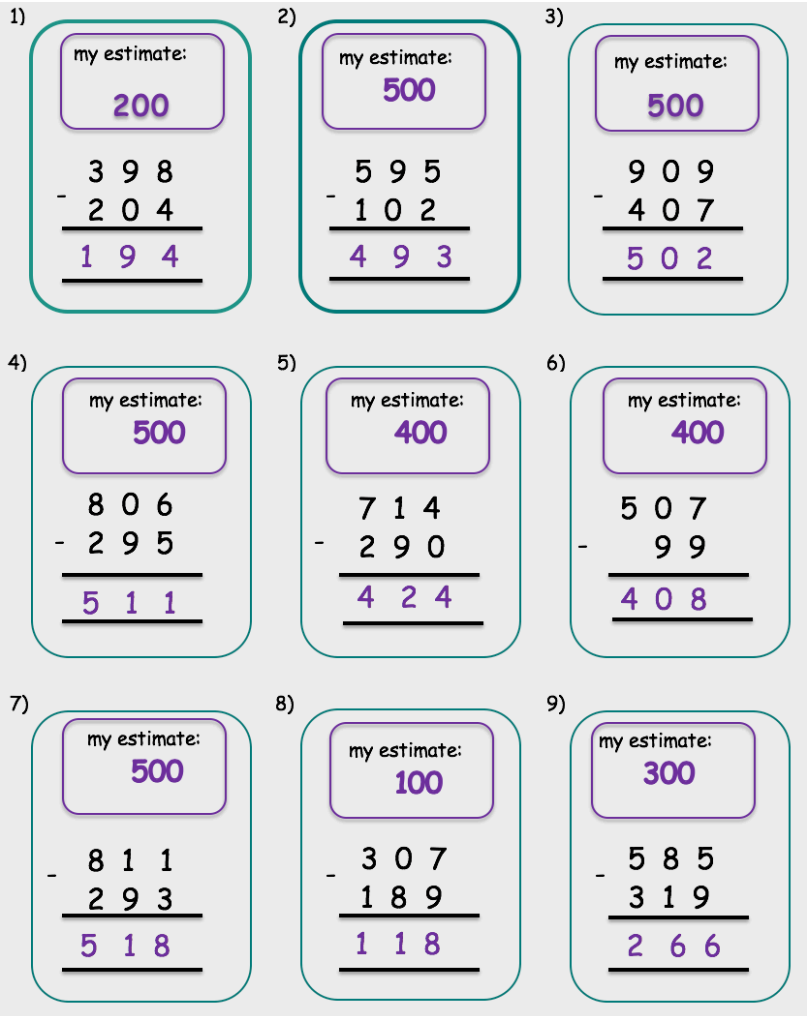
Mastery : **Reasoning**

For this task the children are presented with a sum .They are to look at the estimations 3 children have made and discuss if these are sensible estimates to help them to calculate the answer and explain why.

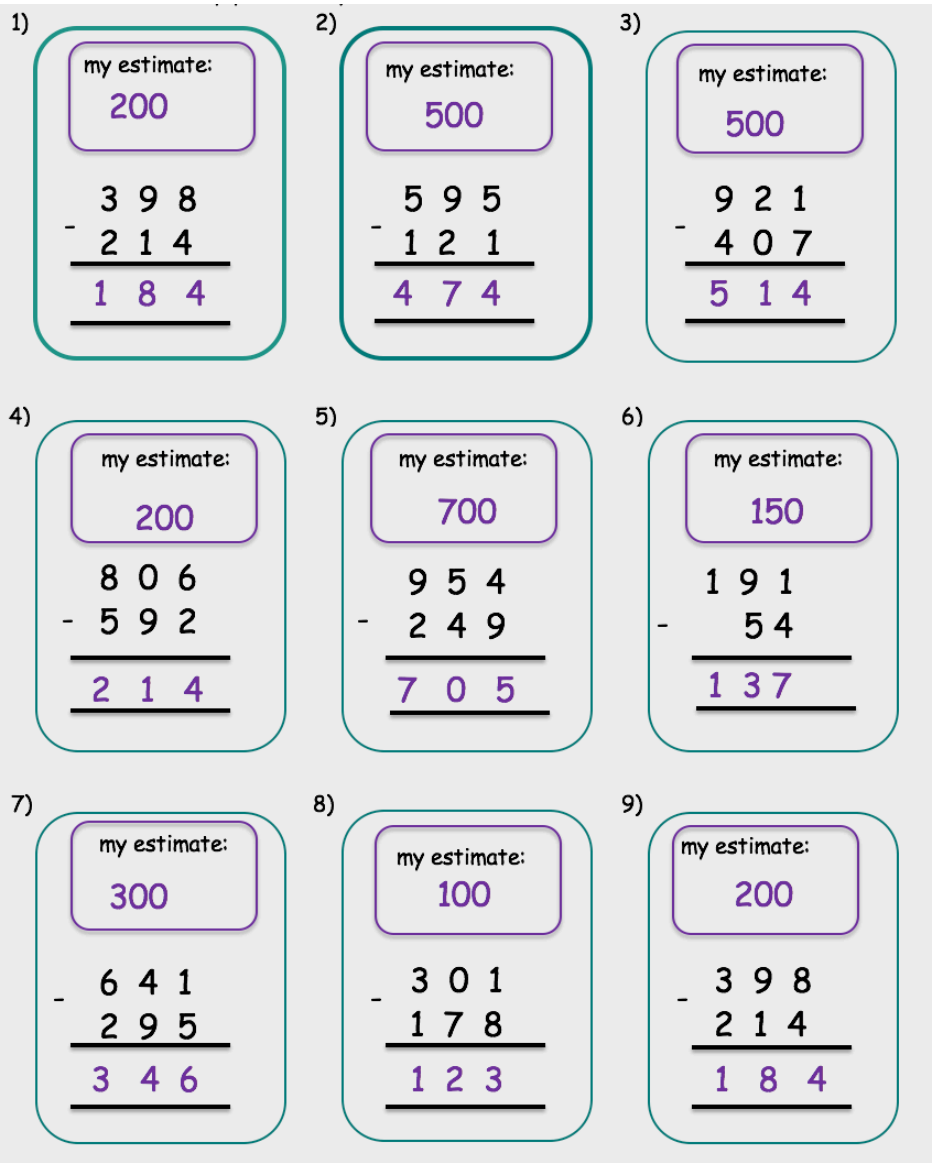
Key questions: How has this child estimated the answer? Is this number close to the first amount in the sum? Do you think there is a multiple of hundred that is closer? What about the second amount? Now let's calculate the answer. What is the answer? Are these sensible estimates? How do you know?

Answers

Purple:



Green:



Children may suggest different estimates dependent on whether they round to the nearest hundred or fifty or ten.

Mastery:

Children should show through their discussion and explanation that Zain and Samia have made sensible estimations however Theo has not.

BRICKWORK Mathematics

Purple Activity

LO: I can estimate the answer to subtraction calculations.

Look at each question and select a written method to use. Estimate what the answer will be first to help you check your answer is accurate.

1)
my estimate:

$$\begin{array}{r} 398 \\ -\ 204 \\ \hline \\ \hline \end{array}$$

2)
my estimate:

$$\begin{array}{r} 595 \\ -\ 102 \\ \hline \\ \hline \end{array}$$

3)
my estimate:

$$\begin{array}{r} 909 \\ -\ 407 \\ \hline \\ \hline \end{array}$$

4)
my estimate:

$$\begin{array}{r} 806 \\ -\ 295 \\ \hline \\ \hline \end{array}$$

5)
my estimate:

$$\begin{array}{r} 714 \\ -\ 290 \\ \hline \\ \hline \end{array}$$

6)
my estimate:

$$\begin{array}{r} 507 \\ -\ 99 \\ \hline \\ \hline \end{array}$$

7)
my estimate:

$$\begin{array}{r} 811 \\ -\ 293 \\ \hline \\ \hline \end{array}$$

8)
my estimate:

$$\begin{array}{r} 307 \\ -\ 189 \\ \hline \\ \hline \end{array}$$

9)
my estimate:

$$\begin{array}{r} 585 \\ -\ 319 \\ \hline \\ \hline \end{array}$$

BRICKWORK Mathematics

Green Activity

LO: I can estimate the answer to subtraction calculations.

Look at each question and select a written method to use. Estimate what the answer will be first to help you check your answer is accurate.

1)

my estimate:

$$\begin{array}{r} 398 \\ -\ 214 \\ \hline \\ \hline \end{array}$$

2)

my estimate:

$$\begin{array}{r} 595 \\ -\ 121 \\ \hline \\ \hline \end{array}$$

3)

my estimate:

$$\begin{array}{r} 921 \\ -\ 407 \\ \hline \\ \hline \end{array}$$

4)

my estimate:

$$\begin{array}{r} 806 \\ -\ 592 \\ \hline \\ \hline \end{array}$$

5)

my estimate:

$$\begin{array}{r} 954 \\ -\ 249 \\ \hline \\ \hline \end{array}$$

6)

my estimate:

$$\begin{array}{r} 191 \\ -\ 54 \\ \hline \\ \hline \end{array}$$

7)

my estimate:

$$\begin{array}{r} 641 \\ -\ 295 \\ \hline \\ \hline \end{array}$$

8)

my estimate:

$$\begin{array}{r} 301 \\ -\ 178 \\ \hline \\ \hline \end{array}$$

9)

my estimate:

$$\begin{array}{r} 398 \\ -\ 214 \\ \hline \\ \hline \end{array}$$

BRICKWORK Mathematics

Yellow Activity

LO: I can estimate the answer to subtraction calculations

Pick a green block to subtract from a purple block. Estimate what the answer will be before calculating the answer.

892	602	910
729	652	549

421	208	149
489	309	374

BRICKWORK Mathematics

Mastery

Reasoning

Three children estimate the answer to this sum:

$$679 - 321$$

Zain

I estimate the first number in the sum as 700 and the second number as 300.

700 - 300 = 400

Theo

I estimate the first number in the sum as 1000 and the second number as 300.

1000 - 300 = 700

Samia

I estimate the first number in the sum as 650 and the second number as 300.

650 - 300 = 350

Which children do you agree with? Why?