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.

NS3: estimate the answer to a calculation and use inverse operations to check answers

Assessment Question:

Prior Learning:

Question 7:
I can estimate the answer to subtraction calculations.

I feel:

James is presented with this sum.

397 - 112

He 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 means? Place these 3 numbers on the board. Ask the children to round these to the nearest hundred.

198 287 408

How did the children round these amounts?

Place 2 sums on the board. Ask one halve 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.

298 - 115 and 300 – 100.

The children answering 300 – 100 should be able to answer this quicker than the children answering 298- 115. Ask the children why this is? What did they notice when answering the sums? How can this sum (300- 100) help me to estimate the answer to 298 – 115? Discuss with the children that I know that 298 is very close to 300, so I

round it to 300 to help me to roughly guess(estimate) what the answer will be. I know that 115 is quite close to 100 so I can use this to help me to estimate what the answer will be 300 – 100 = 200. 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. If I have the answer of 632, I know this can't be accurate as the amounts are close to 300 and 100. The children will also further benefit from this when they have learnt about exchanging in year 4 as often mistakes occur in calculation at this stage.

How does this estimate help me? Now let's subtract the actual amounts. Ask the children to select a strategy to use. Encourage the children to apply a written method to calculate the answer to 298- 115.

Practice Activities

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

For this activity the children are provided with green and purple blocks. The amounts written on these are close to a multiple of hundred so that these can be easily rounded to the nearest hundred. This allows the children to apply rounding skills and begin to make simple estimates when calculating. The children are to select a green block to subtract from a purple block. The children can generate their own sums and estimate what the answer will be before deciding how to calculate/work out the answer. Encourage the children to discuss how they have made their estimates. Any children requiring further support could use hundred number lines to see how close the next hundred is and spot which hundred that will be.

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 green blocks. They are to select 2 blocks and subtract the smaller amount form the larger amount. This provides the children with the opportunity to generate their own sums, ensuring that the smaller amount is subtracted from the larger amount. The children also have amounts that can be rounded to the nearest hundred to help them to make estimations. Once they have made an estimation, they can select a written method to calculate the answer. Some children may create sums where exchanging will need to occur and may not have been taught this yet. Ensure that this is discussed and encourage them to notice that it is difficult to subtract some amounts from others. This can be addressed or the activity can be revisited when exchanging has been taught. You will find subtraction with exchanging in the year 4 activities, when you feel that some children are ready to explore this concept.

<u>Yellow Practice</u>: Most suited for children who demonstrate some understanding in Question 7 of the prior learning assessment and will benefit from exploring rounding to the nearest hundred and ten.

For this activity the children are provided with yellow blocks. They are to select 2 blocks and subtract the smaller amount form the larger amount. This provides the children with the opportunity to generate their own sums, ensuring that the smaller amount is subtracted from the larger amount. The children also have amounts that can be rounded to the nearest hundred or the nearest ten to help them to make estimations when calculating subtraction sums. Encourage the children to decide which number is easy to round too. If they are rounding to the nearest ten, then 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 good estimate.

Some children may create sums where exchanging will need to occur and may not have been taught this yet. Ensure this is discussed with the child and encourage them to notice that it is difficult to subtract some amounts from others. This can be addressed or the activity can be revisited when exchanging has been taught. You will find subtraction with exchanging in the year 4 activities, when you feel that some children are ready to explore this concept.

<u>Mastery</u> : 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 Mastery:

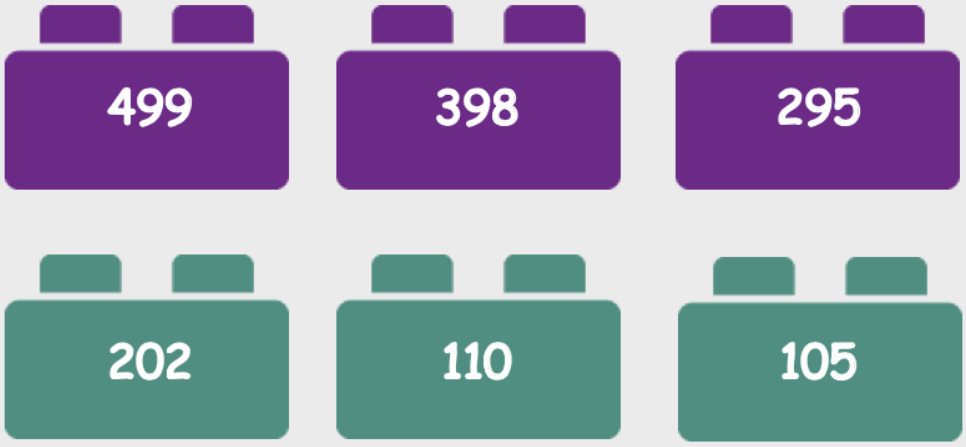
Children should show through their discussion and explanation that Zain and Samia have made sensible estimations however Theo has not.

BRICKWORK Mathematics

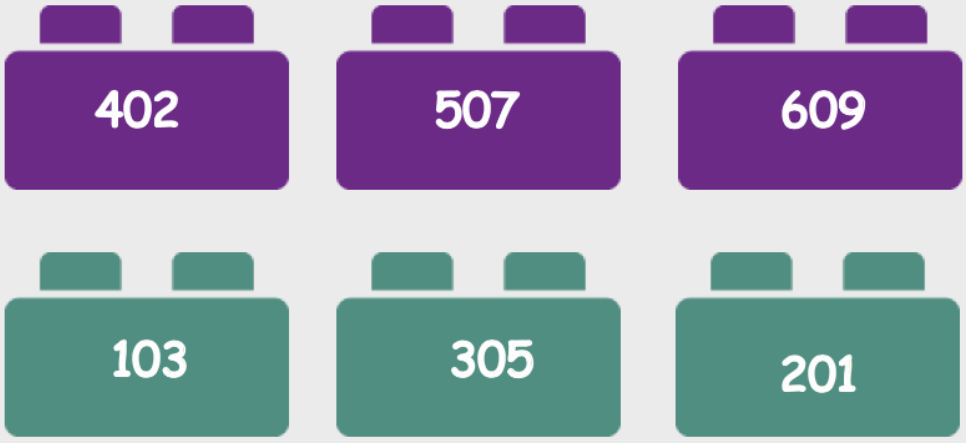
Purple Activity

Lo: I can estimate the answer to a subtraction sum.

Pick a green block to subtract from a purple block. Estimate what you think the answer will be first and then calculate the answer.



Pick a green block to subtract from a purple block. Estimate what you think the answer will be first and then calculate the answer.



Challenge: Samia thinks of subtraction sum. She estimates the answer to be 300. Think of 2 numbers that could be in Samia's sum.

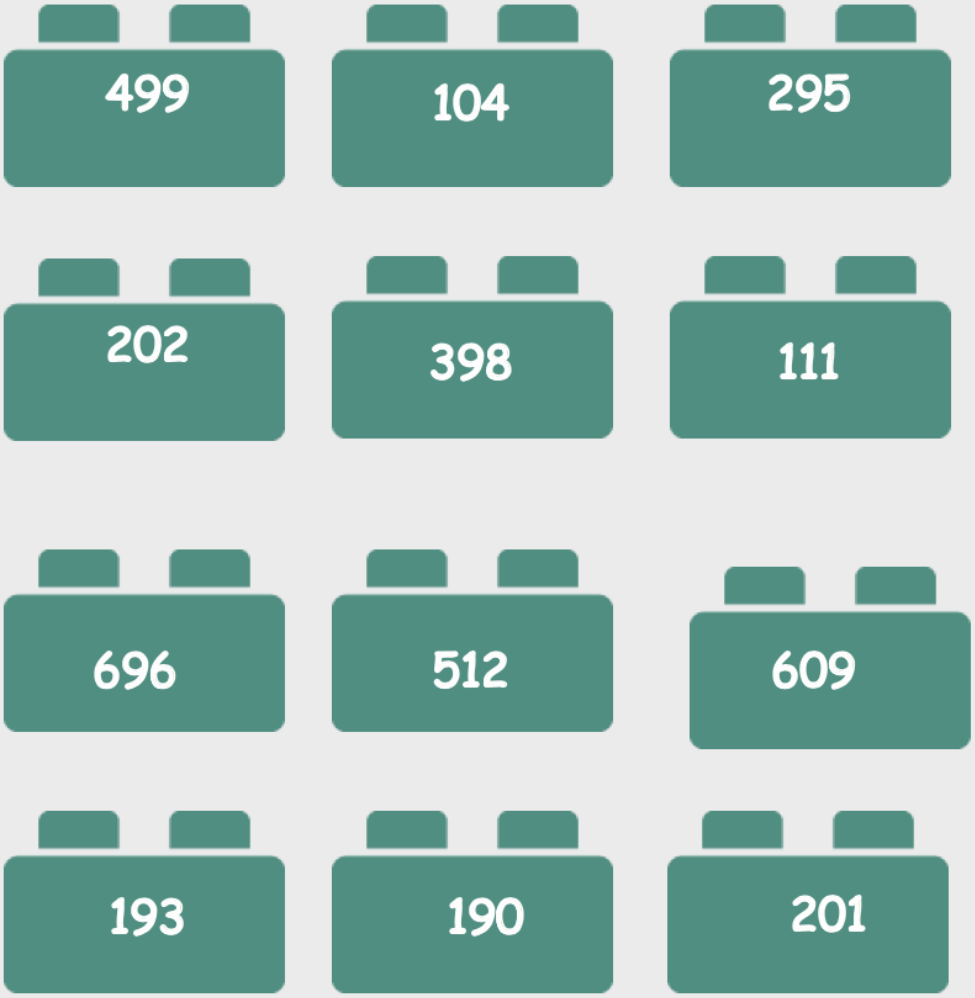
BRICKWORK Mathematics

Green Activity

Lo: I can estimate the answer to a subtraction sum.

Pick 2 blocks. Estimate what the answer will be when the lower amount is subtracted from the larger amount.

Use a mental or written method to work out the answer.



Challenge: Samia thinks of subtraction sum. She estimates the answer to be 300. Think of 2 numbers that could be in Samia's sum.

BRICKWORK Mathematics

Yellow Activity

I can estimate the answer to a subtraction sum.

Pick 2 blocks. Estimate what the answer will be when the lower amount is subtracted from the larger amount.

Use a mental or written method to work out the answer.

395	203	599
81	52	187
111	890	901
420	306	512
200	15	145

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
So 700 - 300 = 400

Theo

I estimate the first number in the sum as 1000 and the second number as 300
So 1000 - 300 = 700

Samia

I estimate the first number in the sum as 650 and the second number as 300
So 650 - 300 = 350

Which children do you agree with?