

### Subtraction Prior Learning Assessment Question 4, 5 and 6:

**Q4:** I can use an efficient written method to subtract without exchanging.

**Q5&6 :** I can subtract amounts with different amounts of digits

**NC : NAS 1 :** add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)

**NAS3:** use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

### Teacher Input Ideas:

Provide the children with a word problem to select what they need to work out. For example: A sports car costs £75341 to make and a car dealership sells it for £87689. How much profit does the car dealership make? Discuss with the children what they are being asked to do. What type of calculation will retrieve the answer? Ask the children to estimate what the answer should be near too. How can they use rounding to help?

Ask the children now to work out the answer using a method they feel comfortable with. You should encourage the children to use a formal method for the subtraction sum. Together model laying out the sum and working out the answer with the formal subtraction method. Encourage the children to explain why it works and what they are doing at each stage using accurate vocabulary.

Then provide the children with other word problems or sums. Encourage the children to approximate the answer first. Provide the children with opportunities to subtract 4 and 5 digit amounts from 5 and 6 digit amounts, focusing on children that made errors in questions 5 and 6 of the prior learning assessment due to layout and place value.

### Practice Activities

**Purple Practice:** Most suited for children who show little understanding of using a formal method to subtract amounts and made errors in question 4 of the prior learning assessment.

The children are presented with sums that contain 4, 5 and 6 digit amounts. For each question, the children are required to layout the sum accurately so that they can subtract the amounts using the formal method. You may want the children to work out the answers on squared paper to help with the layout. Each sum requires the children to take away an amount with the same number of digits so that they can secure the use of the formal method. Additionally, no exchanging is required in any sum.

The children also have the opportunity of applying place value skills by writing the answers in words and recording the value of the digit 3 in each answer.

**Green Practice:** Most suited for children that made errors in Question 5 and 6 of the prior assessment as demonstrated errors with place value when subtracting amounts with different numbers of digits.

For this task, the children are to select a green block and subtract a purple block from this each time. The green blocks have 4 and 5 digit amounts on to subtract from the purple blocks, which contain 5 and 6 digit amounts. Encourage the children to select different blocks/combinations and ensure that they subtract the lower amount from the larger amount. Also, this activity provides the opportunity for the children to subtract amounts with different numbers of digits and encourages the children to use their knowledge of place value to layout the sum accurately. The children may want to work out the sums on squared paper or place value charts to help to ensure that the sum is presented accurately.

**Yellow Practice:** Most suited for children who demonstrated some understanding in Question 5 and 6 of the prior assessment and will benefit from applying knowledge of place value.

This activity is designed for children to practise subtracting 5 and 6 digit numbers ensuring that they have aligned the amounts correctly. Furthermore, it provides an opportunity for children to secure and show they are fluent with reading amounts in words and writing them down using digits in the correct place to perform written subtraction.

To make this a practical activity, the blocks can be cut out so that the children can select any purple block and subtract any green block from this amount. The children could be encouraged to work systemically too to ensure they have completed all calculations possible. A further challenge for the children could be to apply place value skills by writing the value of the digit 3 from their answers or choose 8 answers to order.

**Mastery: Problem solving**

This activity tests the children's application of number and develops a variety of problem solving skills. Such as: trial and improvement and working systematically.

Encourage the children to suggest how they are going to approach the problem. Where will you start? What type of numbers are the answer? What do we know about these? How are odd numbers created? Explain how the use of number bonds can be used. For the challenge, what options do you have now?

## Answers

### Purple:

- 1) 6635 (value thirty)
- 2) 6102
- 3) 619
- 4) 33102 (value thirty thousand and three thousand)
- 5) 22224
- 6) 27122
- 7) 100, 515
- 8) 311411 (value three hundred thousand)
- 9) 314709 (value three hundred thousand)
- 10) 360417 (value three hundred thousand)

### Yellow :

- |                           |                           |
|---------------------------|---------------------------|
| $168597 - 24512 = 144085$ | $168597 - 54243 = 114354$ |
| $168597 - 13001 = 155596$ | $168597 - 43250 = 145347$ |
| $395767 - 24512 = 371255$ | $395767 - 54243 = 341524$ |
| $395767 - 13001 = 382766$ | $395767 - 43250 = 352517$ |
| $99577 - 24512 = 75065$   | $99577 - 54243 = 45334$   |
| $99577 - 13001 = 86576$   | $99577 - 43250 = 56327$   |
| $86885 - 24512 = 62373$   | $86885 - 54243 = 32642$   |
| $86885 - 13001 = 73884$   | $86885 - 43250 = 43635$   |

### Mastery:

There are many different possibilities. Here you are looking for the children to be able to work through trial and improvement and notice that odd and even numbers must be subtracted from each other to make the odd digits. Some children may have also noticed that when you exchange this has impact on the digits chosen. You are looking for the children to explain their thought process.

### **Some possible answers**

- |           |           |           |
|-----------|-----------|-----------|
| 6489-3332 | 7588-4431 | 5479-2322 |
|-----------|-----------|-----------|

Look at the sums below. Decide how you are going to work these out and write the answers in the box provided.

1)  $8976 - 2341 =$

2)  $7183 - 1081 =$

3)  $12959 - 12340 =$

4)  $78312 - 45210 =$

5)  $98349 - 76125 =$

6)  $48654 - 21532 =$

7)  $200786 - 100271 =$

8)  $613512 - 302101 =$

9)  $539732 - 225023 =$

10)  $985739 - 625322 =$

**Challenge:** write the amounts for each sum in words. What is the value of the 3 digit in different amounts?

Pick any green brick and subtract it from any purple brick. Estimate what the answer will be before calculating.

TIPS:

Make sure you use your knowledge of place value and ensure that each digit is in the correct column.

168956

65893

395767

99577

56569

286885

Twenty-four thousand,  
five hundred and twelve

Fifty-four thousand, two  
hundred and forty-three

Three thousand and one

Forty thousand, two  
hundred and fifty.

**Yellow Activity**

LO: I can subtract 2 numbers using a formal written method.

Pick any green brick and subtract it from any purple brick. Estimate the answer before you calculate the answer.

TIPS:

Make sure you use your knowledge of place value and ensure that each digit is in the correct column.

One hundred and sixty-eight thousand, five hundred and ninety-seven

Three hundred and ninety-five thousand, seven hundred and sixty-seven

Ninety-nine thousand, five hundred and seventy-seven

Eighty-six thousand, eight hundred and eighty-five

Twenty-four thousand, five hundred and twelve

Fifty-four thousand, two hundred and forty-three

Thirteen thousand and one

Forty-three thousand, two hundred and fifty.

This number was made when two different amounts were subtracted.

3157

What could the two different amounts have been?

**Thinking Points**

Where will you start?  
What do you notice about the number created?  
Is there more than one combination of numbers?  
How will you ensure you have find all possible options?

**Challenge:**

The top amount in the sum is an odd number. What are the options now?