

Subtraction Prior Test: Questions 3 and 4

Q3: I can use an efficient written method to subtract without exchanging.

Q4: I can use an efficient written method to subtract with exchanging.

NASDM 8: I can solve problems involving subtraction

Teacher Input Ideas:

Input for Q3: children who made errors due to place value and layout as they had to subtract a 5-digit number from 6-digit number.

Give the children two cards each with these amounts on or display somewhere for all to see: two hundred and forty-five thousand, eight hundred and ninety- seven and thirty-four thousand, six hundred and seventeen. Inform the children that you would like to subtract the lower amount from the higher amount. Allow the children time to write this down on whiteboards and attempt to subtract. Look at the children's errors and model how to write the amounts accurately using understanding of place value. Ensure that you talk through the position of the digits as one is a five-digit number and the other is a six-digit number. For children finding this tricky, allow them to use a place value chart template to complete the subtraction. Or model creating headings and columns before completing the sum above the digits.

Encourage children to explain and model how to subtract the numbers from each other.

Input for exchanging (decomposition method)

Use a large place value chart template and base ten or sweets to model what exchanging is and why it is necessary

For example

Input with exchanging

I could use one of my tens and exchange it or open it up for get ten ones.

I haven't got enough here to take 8 away

946 – 138

Model how you would record this using the decomposition method. Repeat for 5 and 6 digit amounts.

Practice Activities

Purple Practice: Most suited for children that made errors in **Question 3 of the prior assessment tasks due recording down the digits in incorrect positions showing an error in place value too.**

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 any 3 digit from their answers or choose 8 answers to order.

Green Practice: Most suited for children that made errors in **Question 4 of the prior assessment tasks and show a lack of understanding when a subtraction sum requires exchanging.**

This activity provides the opportunity to practise using the decomposition method to work out sums that enable the children to exchange (for example exchanging a ten for ten ones or a hundred for ten tens - previously known as borrowing). Additionally, a few questions have been placed in the task to test the children's efficiency. Q2, Q6 and Q7 can be performed mentally and a written method is not required. If the children have used a written method for all questions, prompt them to return to the task and find the questions that could have been performed mentally (fluency and efficiency)

Some children may demonstrate difficulty on questions 5 and 9 as they must exchange when a zero is used as a place holder. The activities designed for Q5 in the prior assessment learning tasks further develop this skill.

Yellow Practice Most suited for children who are wanting to **secure using the decomposition method.**

The activity can be presented as a work sheet or cut up into smaller cards. The children are required to select two blocks and subtract the lower amount from the higher amount. Encourage the children to apply knowledge of rounding to help them to approximate what the answer will be and use this to check their answers are accurate. (fluency -rounding and approximating)

Mastery This activity tests the children's application of number and develops a variety of problem solving skills such as trial and improvement. Some children will just start with any number and use a trial and error approach.

Key questions for prompting:

Will you need to work systematically? Where would be a good place to start? Are there any patterns with the numbers? Is there anything you notice about the answer? What type of digits are used in the answer? What numbers will have been subtracted to make these odd numbers? What do you know about adding and subtracting odd and even numbers? How can an odd number be created?

Encourage the children to notice that to create an odd digit in the answer, an odd number must have been subtracted from an even number and vice versa. For example, $7 - 4 = 3$ or $8 - 3 = 5$. Encourage the children to find as many possibilities as possible for the amounts and children could be challenged to try combinations where exchanging is involved.

Answers

Purple: possible calculations and answers

$168597 - 24512 = 144085$

$168597 - 54243 = 114354$

$168597 - 13001 = 155596$

$168597 - 43250 = 145347$

$395767 - 24512 = 371255$

$395767 - 54243 = 341524$

$395767 - 13001 = 382766$

$395767 - 43250 = 352517$

$99577 - 24512 = 75065$

$99577 - 54243 = 45334$

$99577 - 13001 = 86576$

$99577 - 43250 = 56327$

$86885 - 24512 = 62373$

$86885 - 54243 = 32642$

$86885 - 13001 = 73884$

$86885 - 43250 = 43635$

Green

1) 53564

2) 12649

3) 570

4) 788709

5) 707109

6) 90,000

7) 810

8) 65240

9) 8879

10) 357409

11) 6365874

Yellow

There are many different combinations and answers. Children could use a calculator to mark or peer mark their answers. Look out for children who are making errors when exchanging with zero.

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

exchanging options:

3832 -4657

4691-1534

Pick any green brick and subtract it from any purple brick.

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.

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

1) $128827 - 75263 =$

2) $12848 - 199 =$

3) $12910 - 12340 =$

4) $909278 - 120569 =$

5) $720019 - 12910 =$

6) $91837 - 1837 =$

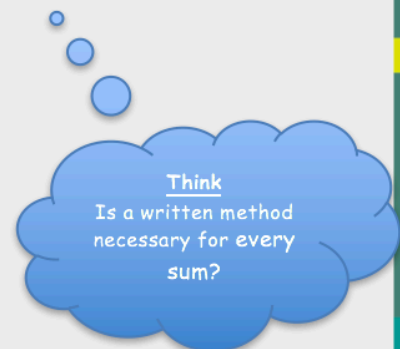
7) $829 - 19 =$

8) $73638 - 8398 =$

9) $38002 - 29123 =$

10) $982731 - 625322 =$

11) $6372873 - 6999 =$



Yellow Practice

LO: I can use a formal written method for subtraction (including exchanging)

Pick two blocks at a time. Create your own sums by subtracting the lower amount from the higher amount. Before performing the calculation, estimate what the answer will be.

three hundred and forty-two thousand, five hundred and twelve

one hundred and ninety-three thousand, seven hundred and seventy-one

four hundred and three thousand, five hundred and ninety-four

six hundred and seventy thousand and three

two hundred and ninety-four thousand, three hundred and sixty-seven

four million, five hundred and sixty thousand, two hundred and thirteen

seventy thousand, six hundred and eleven

eight million, two hundred and twelve thousand, six hundred and forty

eighteen thousand, four hundred and nineteen

one million, three hundred and sixty-four thousand, two hundred and sixteen

forty-eight thousand, six hundred and fifty-eight

nine thousand, nine hundred and ninety-nine

Challenge: Pick three of your calculations to explain to a friend how you use a written subtraction method and how you use exchanging.

This number was made when two different amounts were subtracted.



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?