Year 4, Unit 5, Week 2, Lesson 2

Written subtraction (I)

National Curriculum attainment targets

- Subtract numbers with up to 4 digits using the formal written method of columnar subtraction where appropriate
- Estimate and use inverse operations to check answers to a calculation

Previous related lesson

None Prerequisites for learning

Pupils need to:

- understand the place value of three- and four-digit numbers
- use the written method and decompose ones and tens

Vocabulary

place value, hundreds, tens, ones, estimate, change, inverse

Lesson objectives

- Subtract numbers with up to 4 digits, using the formal written method of columnar subtraction (decomposition)
- Estimate and use inverse operations to check answers to a calculation

Future related lessons

Unit 7, Week 2, Lesson 2; Unit 7, Week 2, Lesson 3; Unit 9, Week 2, Lesson 2; Unit 11, Week 1, Lesson 2

Success criteria

Pupils can:

- write the calculation vertically and make a sensible estimate
- subtract the ones, change the ones column when needed
- subtract the tens, change the tens column when needed
- subtract the hundreds



Collins Connect

Year 4, Unit 5, Week 2

Getting Started

- Choose an activity from Number Addition and subtraction.
- Choose an activity from *Fluency in Number Facts:* Y3/Y4 Addition and Subtraction.

Teach

Resources

mini whiteboard, pen and eraser (per child)

- The layout for the formal column method used in this lesson will continue to be used in future lessons. If this does not fit with your Calculation Policy then adapt lessons accordingly.
- Throughout the lesson, ensure that the digits are referred to by their place value, not just as a one digit number. So in 728, the digit 2 must be referred to as 20, and 7 as 700.
- Write 847 572 on the board. Ask: **Can you work out this calculation mentally?** Share children's ideas and establish that, although it could be worked out mentally, it is easier if we use the formal written method.
- Ask: What is your estimate for the answer to this question? Remember, estimates are usually round numbers. Ask some children to share their estimates and record them on the board.
- Ask: What helps us estimate an answer? Share children's ideas. Establish that focusing on the most significant digit (hundreds) is a good place to start.
- Say: Work out the calculation using the column method. Observe children's working out and notice any steps they are not clear of.
- Say: When we use this method, if in any column the digit we are subtracting from is lower than the digit we are subtracting, we need to change the column.
- Say: In this calculation, the tens column has a lower digit above a higher digit.
- Work through the calculation as a class. Say: When we get to the tens column, we need to change it so we can work out the calculation. I am going to change 40 to 140 by taking from the hundreds. Cross out 8 and clearly write 7 above it. Say: Now there is 700 in the hundreds column.

Remind children what a round number is.





- Cross out 4 and above write 14. Say: There are now 14 tens, or 140, in the tens column. Now we can subtract 70. Finish working through the calculation.
- Write 736 379 on the board. Underneath, re-write the calculation vertically. Say: Estimate the answer to this question.
- Say: In this calculation, both the ones and the tens columns need changing. When we have calculations like this, the working out needs to be laid out very clearly or it is easy to make a mistake.
- Ask children to copy the calculation on to their whiteboards. Work through the calculation as a class. After you model each step, the children write it on their whiteboard. This will enable you to check their working out is laid out neatly.
- Ask: How can we check the answer to this calculation? Discuss children's answers.
- Say: We are going to check it using the inverse operation, addition. We need to add the answer to the number I subtracted.
- Write the calculation 357 + 379 on the board.
- Say: Work out this calculation to check our answer.
- Write 815 247 on the board. Say: Work out the calculation using the written method.
- Work through the calculation with the class, asking different children to explain what needs to be done next and why. Focus on any aspects you have noticed the class found tricky.

Individualised Learning

Refer to Activity 2 from the Learning Activities on page 214.

Pupil Book 4B: – Page 9: Written subtraction 1 Progress Guide 4: – Extension, Year 4, Unit 5, Week 2, Lesson 2: Lowest answer Resources: 1 × 0–9 dice (per child)

Plenary

- Write 1352 1138 on the board. Say: We can use the same method with four-digit numbers.
- Say: You need to give me instructions as to how to work this out. I am someone who has never used this method before. I am going to listen to your instructions but I am not going to speak or ask questions.
- Ask various different children to give you step-by-step instructions. Expect very clear instructions. If they are not clear, look puzzled. Ask other children to improve them.
- Say: We have applied the method to a four-digit number. Next we will look at how to change the hundreds column.

Overcoming Barriers

 If children are making mistakes with the formal written method, it indicates they do not have a secure understanding of why the method works. It is important that children have a secure understanding of the place value of three- and four-digit numbers in order to understand why columns are changed. Using Base 10 to model as this will develop their understanding.