Formal written method of column subtraction (2)

National curriculum attainment targets

- Subtract numbers with up to three digits, using the formal written method of columnar subtraction
- Estimate the answer to a calculation and use inverse operations to check

Lesson objectives

- Subtract three-digit numbers using the formal written method of column subtraction (decomposition)
- Estimate and check the answer to a calculation

Previous related lesson

Unit 7, Week 2, Lesson 1

Prerequisites for learning

Pupils need to:

- understand the place value of three-digit numbers
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

Vocabulary

place value, hundreds, tens, ones (units), estimate, carry, subtract

Future related lessons

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

Success criteria

Pupils can:

- write the calculation vertically
- subtract the ones, change the ones column when needed
- subtract the tens, change the tens column when needed
- subtract the hundreds

Getting Started

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

Collins Connect
Year 3, Unit 7, Week 2

Teach

Resources

mini whiteboard, pen and eraser (per child).

The words "ones" and "units" have been used throughout this lesson, as children need to be familiar with both these words when referring to the least significant digit.

- Display: Slide 1.
- Say: **In your head, what is your estimate for the answer to this question?** Ask some children to share their estimates.
- Say: **Work out this question using the formal column method.**
- Work through the calculation as a class, if appropriate.
- Display: Slide 2.
- Say: **In this calculation, it is the tens column that we need to change.**
- Ask: **What is the answer I write in the ones column?** Write 3 in the answer box.
- Say: **Next we subtract the tens.**
- Ask: **What is the tens calculation and what is the problem?** Insist that children refer to the digits as multiples of ten and not ones.
- Say: **As we cannot subtract 80 from 30, we need to change 437 to increase the tens column.**
- Display: 437 using Base 10 or the Base 10 tool. Write HTO over the relevant sections on the whiteboard.
- Count the Base 10 together. Say: **I will still have 437, but I can just change the way it is organised. I can take one hundred from the hundreds column and put it in the tens column.** Drag and drop a hundred square.
- Say: **Now the tens have 130 so 80 can be subtracted from it. The hundreds have changed to 300.**

HTO
3 13
4 ~~1~~ ~~3~~7
– 1 8 4
2 5 3

- Go back to the written calculation. Say: **This is how to do it on the calculation.**
- Cross out the 4 digit**.** Say: **I can take 100 from the 400 and it becomes 300.** Write 3 clearly above the crossed out 4.
- Say: **The hundred that I take I give to the tens column. So the 30 now becomes 130, 100 and 30.** Cross out the 3 and clearly write 13 above it. Say: **I write 13 because 130 is 13 tens.**
- Work through the calculation as a class.
- Display: Slide 3.
- Say: **Work out this calculation. You will need to change the tens column.**
- Work through the calculation as a class, focussing on any aspects children find challenging.

Individualised Learning

Refer to Activity 2 from the Learning activities on page 286.

Pupil Book 3B – Page 33: Column subtraction (2)
Progress Guide 3 – Extension, Year 3, Unit 7, Week 2, Lesson 2: Subtraction instructions

Plenary

Resources

mini whiteboard, pen and eraser (per child)

- Say: **We are going to write some instructions to help us with this method for subtraction.** If any children have worked on Extension: Subtraction instructions, ask them to have their instructions ready to share.
- Ask: **What do you think the first instruction should be?**
- Work together as a class and compile a set of instructions.
- Write a calculation on the board for the class. Ask them to copy it on to their whiteboards.
- Say: **I will read out the instructions. Work out the calculation as I read them out.**
- As the instructions are carried out, ask the class if they think they work or whether they need to be adapted.
- Say: **We can use these instructions every time we learn about the formal column method for subtraction.**

Homework Guide 3
Year 3, Unit 7, Week 2, Lesson 2: Practising the column method for subtraction

Overcoming Barriers

- Children will find this method challenging if they do not have a secure understanding of the place value of three-digit numbers and instant recall of the addition and subtraction number facts to 20. Continue to focus on mental methods to develop this understanding or model the method using Base 10.