Written addition (3)

National Curriculum attainment targets

- Add whole numbers with more than four digits, including using the formal written methods (columnar addition)
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Lesson objectives

- Add whole numbers with five and six digits using the formal written method
- Use rounding to check answers to calculations

Previous related lessons

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

Prerequisites for learning

Pupils need to:

- use the formal written method with four-digit numbers

Vocabulary

column addition, place value, rounding

Future related lesson

Unit 11, Week 1, Lesson 2

Success criteria

Pupils can:

- write out the calculation correctly
- add each column
- carry the digit to the next column when needed

Throughout the lesson, ensure that the digits are referred to by their place value not just as a one-digit number. So in 15 728, the digit 7 must be referred to as 700.

Read each calculation before working it out to ensure that children are aware of the whole number not just focusing on columns.

Getting Started

- Choose an activity from Number – Addition and Subtraction.
- Choose a game or activity from *Fluency in Number Facts: Y5/Y6* – Addition and subtraction.

Teach

Collins Connect
Year 5, Unit 9, Week 2

Resources

mini whiteboard, pen and eraser (per child)

- Display: Slide 1.
- Say: **Work out the calculation using the formal written method.**
- Watch the children's working out and notice any steps that children are unsure of.
- Work through the calculation as a class, asking different pairs to explain what needs to be done next and why. Focus on any aspects that you have noticed the class found tricky.
- Say: **Now let's check our answers by rounding the numbers in the calculation.**
- Ask: **What is 43 748 rounded to the nearest multiple of 100**? Write 43 700 on the board.
- Ask: **What is 37 286 rounded to the nearest multiple of 100?** Write 37 300 on the board.

- Say: **Work out 43 700 + 37 300 and use the answer to check your calculation.**
- Display: Slide 2. Say: **Remember to work neatly so you do not miss any of the digits that you move to the next column.**
- Say: **Work out this calculation and then use rounding to check the answer.**
- Watch the children's working out and notice any steps that children are unsure of.
- Work through the calculation with the class, asking different children to explain what needs to be done next and why.

Add five-digit numbers.

- Say: **As the 10 000s column added up to 10 and it is the end of the calculation, we add a 100 000 column so the answer is 104 450.**
- Display: Slide 3.
- Say: **Work out this calculation together**.
- Work through the calculation as a class, including rounding to check the answer.
- Write on the board: 438 951 + 394 239.

- Say: **Work out this calculation.**
- Work through the calculation as a class, focusing on any aspects children have found challenging.
- Write on the board: 367 529 + 41 735.
- Ask: **How can you use the formal written method to add this five- and six-digit number together?**
- Ask a pair to share their working. Check that the rest of the class agree.
- Establish that digits with the same place value must be written out underneath each other.
- Write on the board: 586 314 + 8297.
- Say: **Add these two numbers together.**

Individualised Learning

Refer to Activity 2 from the Learning activities on page 362.

Pupil Book 5C: – Page 14: Written addition (3)

Progress Guide 5: – Extension, Year 5, Unit 9, Week 2, Lesson 2: Which digit where?

Plenary

Resources

mini whiteboard, pen and eraser (per pair)

- Say: **Remind me when the formal written method is the best method to use.**
- Ask some children to share their ideas.
- Write 54 899 + 60 999 on the board. Ask: **What do you think is the best way to work this calculation?** Ask some pairs to share their ideas. Establish that as both numbers can be easily rounded, a mental method would be very efficient for this calculation.
- Say: **If I round 54 899 to 55 000, and 60 999 to 61 000, then I can easily add them mentally, and adjust the answer.**
- Talk children through your mental addition strategy – you may want to make jottings as you do this.
- Say: **Write down a similar calculation that would be better added mentally.**
- Ask some pairs to share their calculation with the class. The rest of the class should work it out mentally.

Overcoming Barriers

- If children are making mistakes with the formal written method, it indicates that they do not have a secure understanding of why the method works. Children who do understand the method can apply it to any numbers. Stay with three-digit numbers and show the adding of each column separately alongside the formal written method so that children can clearly see the place value of each answer, e.g. 500 + 200.