Written addition (5)

National Curriculum attainment targets

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

Lesson objectives

- Add numbers with up to 4 digits using the formal written method of columnar addition
- Estimate and use inverse operations to check answers to a calculation

Previous related lessons

Unit 3, Week 1, Lesson 2; Unit 3, Week 1, Lesson 3; Unit 7, Week 1, Lesson 4; Unit 7, Week 2, Lesson 1

Prerequisites for learning

Pupils need to:

- understand the place value of three and four-digit numbers
- use the formal method and carry ones and tens and hundreds

Vocabulary

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

Future related lesson

Unit 11, Week 1, Lesson 1

Success criteria

Pupils can:

- write the calculation vertically, make a sensible estimate
- add the ones carrying ten when needed
- add the tens, carry hundreds when needed
- add the hundreds, carrying thousands when needed

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 4, Unit 9, Week 2

Teach

Resources

mini whiteboard, pen and eraser (per child)

Use three-digit numbers and/or calculations where only one or two columns add up to more than 9.

Throughout the lesson ensure that the digits are referred to by their place value not just as a one digit number. So in 1728, the digit 2 must be referred to as 20, and 1 as 1000.

- Write 3573 + 2649 on the board. Underneath, re-write the calculation vertically.
- Ask: **What is your estimate for the answer to this question?** Ask some children to share their estimates, and record them on the board.
- Say: **Work out the calculation using the column method.**
- Watch the children's working out and notice any steps that children are unsure of.
- Say: **In this calculation the ones, tens and hundreds added up to more than 9. So we had to carry in all three columns.**
- Work through the calculation as a 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.
- Ask: **How can we check the answer to this calculation?** Share children's ideas.
- Say: **I am going to model using the inverse operation, subtraction. I need to subtract one of the numbers I added from the answer.**
- Write out the calculation and work it out. Say: **As we have the same numbers in both calculations we know our answer is right.**
- Write 4763 + 852 on the board.
- Say: **Work out this calculation using the column method.**
- Ask: **What makes this calculation different to the other calculations we have worked on?**
- Share the children's ideas. Establish that the two numbers have different numbers of digits.

3573
+ 2649
6222
111

- Look at the way the children wrote out the calculation in order to work it out. Choose a pair who have laid it out correctly and ask them to show it to the class.
- Ask: **Why did you lay out your written method so that it is all neatly lined up on the right-hand side?** Ask the rest of the class what they think.
- Lead a discussion and draw out that the digits must be written under digits of the same place value or the method will not work.
- Work through the calculation together.
- Write 628 + 4736 on the board. Underneath, re-write the calculation vertically.
- Say: **Work out this calculation. Think carefully about how you write it out.**
- Work through as a class if appropriate.

Individualised Learning

Refer to Activity 1 from the Learning activities on page 350.

Pupil Book 4C: – Page 8: Written addition 5

Progress Guide 4: – Extension: Year 4, Unit 9, Week 2, Lesson 1: Find the answers

Resources: 0–9 dice (per child)

Plenary

- Ask: **In one sentence what would you say to someone to help them add up three-digit and four-digit numbers correctly?** (digits must be written under digits of the same place value)
- Share some children's sentences. Pick the three most useful and say them together as a class.
- Write 5372 + 819 on the board. Choose a child to come to the front. Say: **This child is not allowed to say anything. They must follow instructions exactly. They do not know how to work out this calculation using the formal written method. They need you to tell them.**
- Say: **I am going to choose children randomly to give the next instruction so everyone needs to be ready.**
- Work through the calculation, choosing children to give instructions to the child at the front. Ensure instructions are clear and precise and are using the correct mathematical language.

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. Stay with three-digit numbers and show the adding of the ones, tens, and hundreds separately alongside the column method so children can clearly see the place value of each answer.