Number squares

National Curriculum attainment target

• Add and subtract numbers mentally with increasingly large numbers

Previous related lessons

Unit 1, Week 2, Lesson 1; Unit 1, Week 2, Lesson 2; Unit 3, Week 1, Lesson 1; Unit 5, Week 2, Lesson 1; Unit 9, Week 2, Lesson 1

Prerequisites for learning

Pupils need to:

- understand the place value of six-digit numbers
- understand the place value of decimals to two places
- add and subtract mentally with four- and five-digit numbers

Vocabulary

add, subtract, strategy, jottings

Lesson objective

• Add and subtract mentally whole numbers and decimals

Future related lessons

None

Success criteria

Pupils can:

- know which digit(s) to focus on when adding or subtracting
- use jottings to support mental calculation



Collins Connect

Year 5, Unit 11, Week 1

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

Resources

mini whiteboard, pen and eraser (per child)

1

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- Display: Slide 1. Say: We are going to use our mental addition and subtraction to complete this number square. All the sides of the square must add up to 10.
- Point to the empty circle on the top side of the square.
- Ask: How can we find out what number needs to go in here?
- Ask some pairs to share their ideas.
- Children may suggest adding the two existing numbers together and then subtracting the answer from 10. Alternatively they may suggest subtracting one of the numbers from 10 and then subtracting the other number from the answer.
- Choose the strategy that most pairs have chosen and record the first calculation on the board.
- Say: Work out this calculation, showing your working out.
- Work through the calculation as a class, modelling the method that most children prefer.
- Ask: Now we have this answer, what calculation do we need to work out next to find the missing number? Ask a pair to share their calculation, and record it on the board.
- Say: Work out this calculation, showing your working out.
- Work through the calculation as a class, modelling the method that most children prefer. Write the missing number on the number square.
- Point to another missing number. Say: Work out this missing number together. Ask a pair to share their answer and check that the rest of the class agree. Write it on to the number square.

- Model the strategy for adding or subtracting decimal numbers if this is appropriate.
- Point to another missing number. Say: Work out this missing number together. Ask a pair to share their answer, and check that the rest of the class agree. Write it on to the number square.
- Model the strategy for adding or subtracting decimal numbers if this is appropriate.
- Repeat for the final missing number. This time ask the class to use the operation that has been least used.

Individualised Learning

Refer to Activity 1 from the Learning activities on page 420.

2

Pupil Book 5C: – Page 52: Number squares Progress Guide 5: – Extension, Year 5, Unit 11, Week 1, Lesson 1: Number square mystery

Plenary

Resources

mini whiteboard, pen and eraser (per child)

- Display: Slide 2. Say: Write a decimal number to two places, lower than 20, on your board.
- Choose four of the numbers and write them in the corners of the square.
- Say: Each side of the square totals 20.
- Pointing to one side of the square, say: What could the two missing numbers on this side be?
- Children who have completed Challenge 3 have already worked on number squares with two missing numbers on each side. You may want to ask them to share their strategies.
- Ask some other children to share their answers and strategies.
- Say: As there are two missing numbers, there is
- not just one possible answer.Record several sets of answers.
- Complete the other sides of the square if there is time.

Homework Guide 5

Year 5, Unit 11, Week 1, Lesson 1: Missing decimals

Overcoming Barriers

• Children will find this challenging if they do not have a secure understanding of the place value of the numbers involved and how to use jottings to support their mental calculation. It is important to model this for them rather than let them use the formal written method for calculations that could be done mentally.