

Learning objective

PNS: Knowing and using number facts

- Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000.

Resources



'Build your own' file; photocopiable page 100
'Add and subtract' for each child.

Links to other subjects

Science

QCA Unit 4B 'Habitats'

- The children can use mental methods to find the overall total of different organisms they find in a given area.

Whiteboard tools

Use the Random Number Generator from the Gallery to generate random numbers.



Pen tray



Select tool




Gallery



Highlighter pen

Using + and - mental strategies

Starter

Open the 'Build your own' file, which consists of a blank Notebook page and a collection of images located in My Content in the Gallery . Invite a child to use the Random Number Generator, from the Mathematics folder under My Content, to generate a teen number. Ask the children to suggest addition and subtraction sentences with this integer as the answer (for example, 17: $19 - 2 = 17$ and $9 + 8 = 17$) and write them up on the interactive whiteboard. When several number sentences are on the board, ask the children to use these to find others. Ask: *How did you use what you can see to find this?*

Whole-class shared work

- Explain that the children will use mental methods to total pairs of two-digit whole numbers. Begin by totalling decade numbers, such as $50 + 70$.
- Ask the children how this might be calculated and record their suggestions. For example: $50 + 50 + 20 = 120$.
- Discuss why the methods work. Repeat for other examples. Include subtraction, such as $160 - \square = 90$.
- Move on to examples where one number is a decade and the other not, such as $43 + 60$ and $\square - 60 = 43$. Discuss different methods. If children are unsure, demonstrate with an empty number line.
- If the children are confident with the above, then extend to adding or subtracting any pair of two-digit numbers, such as $56 + 39$ and $95 - \square = 39$. Record methods and, where necessary, use the empty number line to demonstrate a mental method of counting up or back.

Independent work

- Provide each child with a copy of photocopiable page 100. Ask them to think about how they can solve the questions and to be ready in the Plenary to explain their chosen methods.
- Remind the less confident learners that they can draw empty number lines to help them to work mentally.
- More confident learners can write a set of four number sentences for each of the open questions at the end of the photocopiable sheet, using the same numbers for each set. This will produce two add and two subtract sentences.
- Target children to ask for explanations of the mental methods they choose to use for specific questions.

Plenary

- Review the photocopiable sheet together. Invite individual children to write up their addition sentences and to explain their mental methods.
- Repeat this for the subtraction sentences.
- Ask questions such as: *How did you work this out? Who used a different method? Do you think that one of these methods is better? Why do you think that?*