

Can I add and subtract two numbers in my head quickly?

Teaching guidance

Key vocabulary

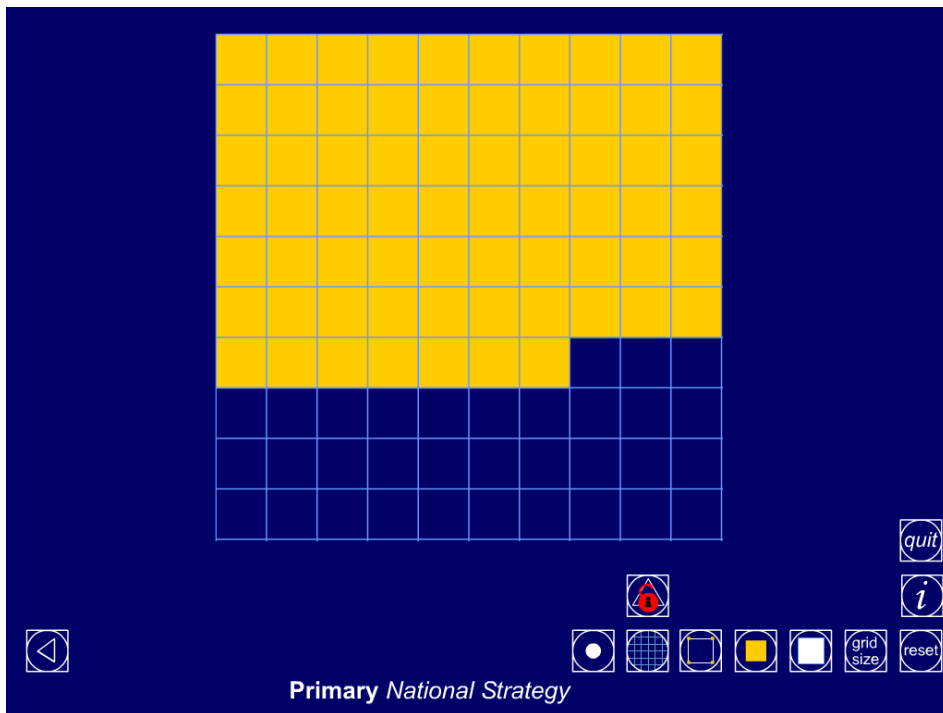
add, addition, plus, sum, altogether, how many more to make...?

subtract, subtraction, minus, take away, difference between

how many more/less than... ?, inverse, equation

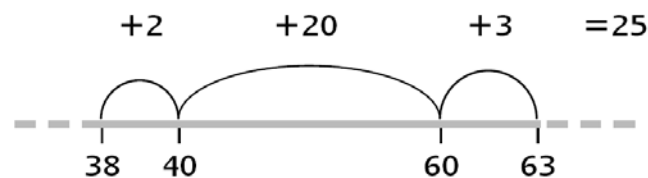
Models and images

Use a 100-square or the *Area ITP* to provide an image of complements to 100. As the number of squares in one region is increased, model how the number in the other region decreases by the same amount.



Area ITP

Demonstrate the use of an empty number line as a support for children's mental calculations.



Teaching tips

- Regularly discuss approaches to mental calculations so that alternative methods can be shared and discussed.
- When finding pairs of two-digit numbers that total 100, ask children what they notice about the corresponding digits of each pair (the number of tens total nine and the ones total ten).
- Ask children what they notice when the two-digit numbers are both multiples of ten.
- Reinforce addition facts and the corresponding subtraction facts.

For example, if you know $24 + 76 = 100$, there are three other number sentences you also know. When solving a question with missing numbers, it is helpful to write down the other three number sentences and then decide which one to use to find the missing number.

- Children need to see that they can use facts they know by heart in order to solve new problems without reverting to counting, for example, knowing $70 + 30$ helps when calculating $270 + 30$.
- Help children understand that when working mentally there are times when it is useful to jot down some notes because you can't always do the calculation solely in your head. Make sure this is modelled on a regular basis.
- Provide children with interesting contexts and problems that require them to use mental calculation strategies.
- After they have completed a practice mental test, give children a written copy of the questions. Ask children, in pairs, to read the questions together and sort them into those they can answer and those they can't. Collect the ones that most children have difficulty with, to discuss or provide further reinforcement.