

1 Add single digits, mentally [VELS 1]

VELS 1

Adding and subtracting by counting forward and backward using the numbers from 0 to 20.

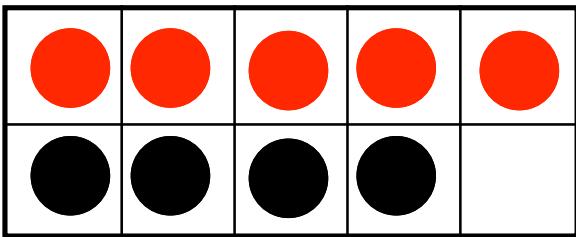
Teach for understanding

There are many ways to have children understand these calculations. Most rely only on counting.

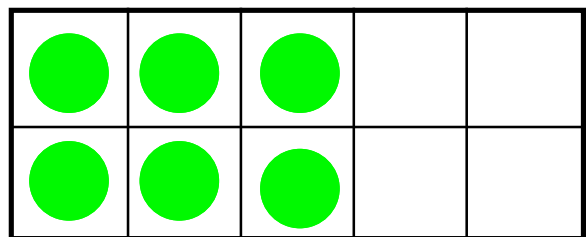
Suggested activities

- **Numbers to 10 using ‘10-frames’**

A basic skill involves great familiarity with combinations that total 10 or less. The best tool for this is the 10-frame. Students can explore the many combinations possible and learn about odd and even numbers.



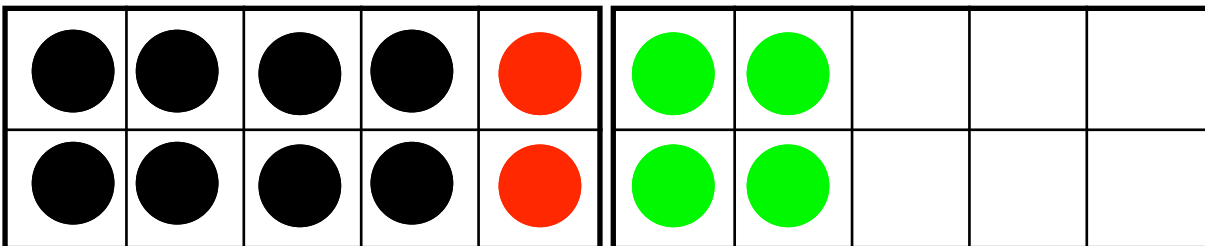
$5 + 4 = 9$. The 10-frame arranges numbers into pairs. Because there is an extra counter – the odd one out – this number is odd.



Double 3 is 6. Doubling always makes pairs. Numbers that have only pairs are ‘even’.

- **Numbers to 20, with ‘20-frames’**

As a logical extension of ‘10-frames’, make use of ‘20-frames’. Use them for finding and understanding the combinations of single digits that go over 10. These can be understood as ‘making up to 10’ and then ‘some over’.



$$8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$$

- **Tens and ones**

Try to stress the place value idea that a number can be broken into tens and ones. It is the start of many similar approaches with larger numbers, and is also the basis of subtraction when the process is reversed.

Here is an example: $8 + 7$.

Find the first number, and count on. Note that you can think of 7 as 2 (to make 10 with the 8) and 5



Although children can find the answers by counting, they should get used to ‘regrouping’ into ten and what is left. Children can answer by colouring over the first number in one colour and the part added in another.

- **Flashcards**

Use flashcards if you have them. Confident automatic response to these additions is vital.

- **Double any single digit.**

Treat this as adding. Students should learn to recognise that doubling 5, 6, 7, 8 or 9 will produce a tens digit.

Instant recall of the pairs of numbers that add to 9 and to 10 is particularly useful later.

Resources for learning

- **Guidelines in Number:** p11, 20-21
- **Spreadsheets from the Interactive Learning CD** Adding to 20, Addition facts

2 Subtracting a single digit from a number between 10 and 18, mentally [VELS 1]

VELS 1

Adding and subtracting by counting forward and backward using the numbers from 0 to 20.

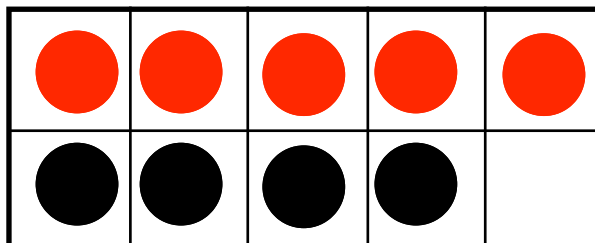
Teach for understanding

This is exactly the reverse of the process of adding two single digit numbers. This method stresses the idea that a number in tens and ones can be broken into separate parts. It is the start of many similar approaches with larger numbers, and is also the basis of subtraction when the process is reversed.

Suggested activities

- **Subtract using only numbers to 10 using ‘10-frames’**

A basic skill involves great familiarity with combinations that total 10 or less. The best tool for this is the 10-frame. Students can learn to ‘see’ many combinations and represent them as additions or subtractions.



This shows $9 - 4 = 5$, and also $9 - 5 = 4$.

- **Find differences by counting backwards**

Here is an example: $16 - 9$. Start at the first number. Count backwards the amount of the second number.

Note that you can count back to 10 by taking off the amount of the ones digit, then take off the rest.