## Addition and Subtraction within 20

Children will now start to develop strategies for adding and subtracting numbers within 20. These strategies include:

Counting on: Children will learn to count on from the biggest number, either in their heads, on their fingers or using a number line. Knowing that addition is commutative (i.e. it can be done in any order), children should recognise that the most efficient way is to start from the biggest number. Careful attention should be given to ensure children do not include their start number when they use this method.

Known facts: Children will use their knowledge of number bonds to 10 to find number bonds to 20 . They should understand that the ones will stay the same but that one number will also have a ten. For example, $7+3$ could become $17+3$ or $7+13$. Significant time is spent practising subtracting numbers from 20 (e.g. $20-8$ ) as this can be more difficult to grasp.

Adding by making 10: To add numbers such as $8+7$, children will use their knowledge of numbers bonds within 10 to make 10 first (e.g. by partitioning the 7 into 2 and 5 and adding the 2 to the 8 ) and then add on the remaining ones (in this case 5). Using their knowledge of commutativity, they should see that it does not matter which number comes first when using this strategy.

Subtraction - crossing 10: For a calculation such as $13-5$, children will first partition the 5 into 3 and 2 . They will then subtract the 3 to make 10 , before subtracting the final 2 .

Children will use ten frames to help them develop these strategies.

Practise the different strategies described above to answer some of these questions. Which method do you prefer? Which one are you best at? Which one do you find most difficult? Ask an adult to help you get better at it!

Joseph has 8 flowers growing in his garden. He plants 7 more. How many does he have now?

I added two numbers together and got the answer 18. What was the calculation? How many different answers can you find?

I subtract 2 numbers that are less than 20 and get the answer 8 . What was the calculation? How many different answers can you find?

Choose a teen number and think of all of the ways you can make that number (e.g. $15=14+1,10+5,20-5$ etc.)

There are 15 apples on a tree. 6 of them fall off. How many are left? Write this as a number sentence.


Find some other pictures to write a number story about.
Ask a grown up to make up some more problems for you to solve. Perhaps you can write some of your own too!


In Sam and Jill's garden, there are two sorts of ladybirds. There are red Seven-Spot ladybirds with 7 black spots, and shiny black Four-Spot ladybirds with 4 red spots.


Sam and Jill looked at a leaf with three ladybirds on it. "One Seven-Spot ladybird," said Sam, "and two Four-Spot ones." "That's 15 spots altogether!" laughed Jill. "I wonder if we could find ladybirds whose spots add to other numbers. I know how to do 16 ."
"And 14 is easy too," added Sam.
How would you make 16 and 14 spots with the Seven-Spot and Four-Spot ladybirds? What other numbers can you make by adding 4 s and 7 s ? Can you get lots of numbers from say 4 to 35 ? Are there some numbers you can't get?

