Lesson - Addition and subtraction to 100

Year: Year 2

Hello, I am Otto! In Year 2 you add and take away two-digit numbers. You can use your head, a number line, a hundred square or a written method. All the answers in this chapter are up to 100. Let us find the method that works best for each sum.

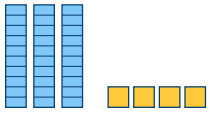
Starter activity

Pip the puppy has 34 dog biscuits in a tin. Grandad gives Pip 25 more. How many biscuits are there now? Think about the tens first (30 and 20) and then the ones (4 and 5). Can you do it in your head? Now Pip eats 12 biscuits. How many are left?

Adding tens and ones

Definition: partitioning

Partitioning means splitting a number into tens and ones. 25 is 2 tens and 5 ones, so 25 = 20 + 5. You can partition numbers to make them easier to add and subtract.



34 is 3 tens and 4 ones: 34 = 30 + 4.

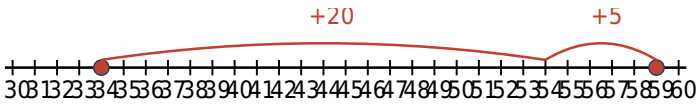
Method: adding by partitioning

1. Split the second number into tens and ones.
2. Add the tens to the first number.
3. Add the ones to your new total.

Worked example 1

Work out 34 + 25.

Split 25 into 20 and 5. First, 34 + 20 = 54. Then 54 + 5 = **59**.



Jump 20 from 34 to 54, then jump 5 to land on 59.

Bridging through 10

Definition: bridging

Bridging through a ten means splitting a number so that you first make the next ten, and then add what is left. It works well when the ones add up to more than 10.

Method: bridging through 10

1. Look at the ones digits. How many more make the next ten?
2. Split the number you are adding into that part and the rest.
3. Make the ten first. Then add the rest.

Worked example 2

Work out 47 + 6.

47 needs 3 more to make 50. Split 6 into 3 and 3. 47 + 3 = 50. Then 50 + 3 = **53**.

Worked example 3

Work out 38 + 25.

Add 20 first: 38 + 20 = 58. Then add 5, bridging through 60: 58 + 2 = 60 and 60 + 3 = **63**.

Column method for adding

Method: column addition

1. Write the numbers one under the other. Line up the ones under the ones and the tens under the tens.
2. Add the ones first. If the answer is 10 or more, write the ones digit and carry the ten.
3. Add the tens, including any ten you carried.

	Tens	Ones
	4	7
+	2	8
	7	5

Worked example 4

Work out 47 + 28 using columns.

Ones: 7 + 8 = 15. Write 5 and carry 1 ten. Tens: 4 + 2 + 1 = 7. The answer is **75**.

Subtracting

Definition: subtraction and difference

Subtraction means taking away. It also means finding the **difference** between two numbers, which is how far apart they are on a number line.

Method: subtracting by counting back

1. Start with the bigger number.
2. Take away the tens first, by counting back in tens.
3. Take away the ones. Bridge back through a ten if you need to.

Worked example 5

Work out 76 − 23.

Take away 20: 76 − 20 = 56. Take away 3: 56 − 3 = **53**.

Worked example 6

Work out 62 − 7.

Count back to 60 first: 62 − 2 = 60. Then 60 − 5 = **55**. That is 7 altogether, because 2 + 5 = 7.

Key fact: finding the difference

To find the difference between 58 and 43, count up from 43 to 58. 43 to 50 is 7 and 50 to 58 is 8. The difference is 7 + 8 = 15.

Inverse operations

Rule: inverse operations

Addition and subtraction are **inverse** operations: one undoes the other. If 34 + 25 = 59, then 59 − 25 = 34 and 59 − 34 = 25. You can use the inverse to check your answer.

Watch out

Addition can be done in any order, so 25 + 34 = 34 + 25. Subtraction cannot! 59 − 25 is not the same as 25 − 59. Always start with the bigger number when you subtract. Also remember to carry the ten in column addition.

Word problems

Method: solving a word problem

1. Read the story and underline the numbers.
2. Decide whether to add (put together, more) or subtract (take away, difference).
3. Write the number sentence, work it out and check with the inverse.
4. Answer in a sentence with the unit.

Worked example 7

A shop has 83 red balloons. It sells 38. How many are left?

The balloons are sold, so we subtract. 83 − 38: take away 30 to get 53, then take away 8 by going back to 50 (3) and then 5 more. 53 − 8 = **45 balloons**. Check: 45 + 38 = 83.

Did you know?

The Romans did sums on a counting board called an abacus. They moved small stones in rows to add and subtract. The word "calculate" comes from the Latin word for a small stone, "calculus".

Otto's tip

Always make an estimate first. 48 + 31 is close to 50 + 30 = 80, so the answer should be a little under 80. If you get 129, something went wrong. Check with the inverse too!