

ADDITION WITHIN 100

A DEFINITION

Definition Addition

Addition means putting things together. When we add, we find how many we have in total.

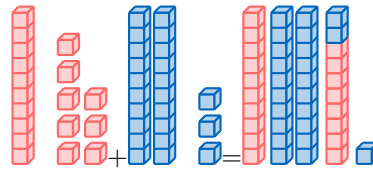
- The $+$ symbol means "add."
- The $=$ symbol shows that the two sides are the same.

We can represent addition as:

- **Numbers:**

$$18 + 23 = 41$$

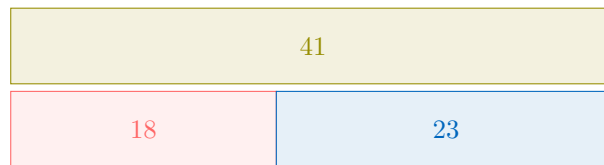
- **Cubes:**



- **Words:**

eighteen plus twenty-three equals forty-one

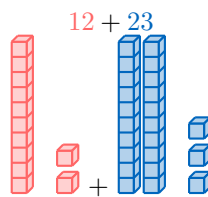
- **Part-whole model:**



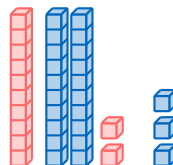
B ADDING ONES THEN ADDING TENS

Method Adding Ones Then Tens Using Cubes

To calculate :



- **Step 1: Group the tens and ones**



- **Step 2: Add the ones**

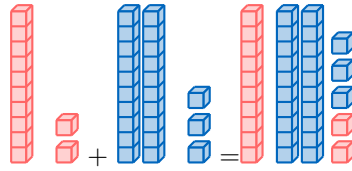
$$2 \text{ ones} + 3 \text{ ones} = 5 \text{ ones}$$

- **Step 3: Add the tens**

$$1 \text{ ten} + 2 \text{ tens} = 3 \text{ tens}$$

- **Result:** There are 3 tens and 5 ones. So,

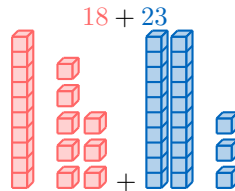
$$12 + 23 = 35$$



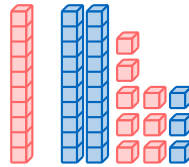
Now, let's calculate $18 + 23$. This time, when we add the ones, we get a number greater than 9. This means we'll need to regroup the ones into a new ten. Let's see how this works.

Method Adding Ones Then Tens with Regrouping

To calculate:

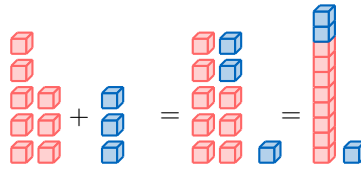


- **Step 1: Group the tens and ones**



- **Step 2: Add the ones**

$$8 \text{ ones} + 3 \text{ ones} = 11 \text{ ones} = 1 \text{ ten} + 1 \text{ one}$$

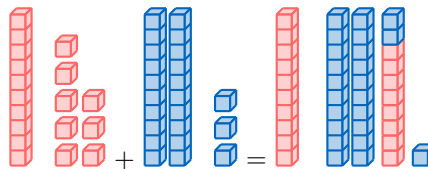


- **Step 3: Add the tens**

$$1 \text{ ten} + 2 \text{ tens} + 1 \text{ ten (regrouped)} = 4 \text{ tens}$$

- **Result:** There are 4 tens and 1 one. So,

$$18 + 23 = 41$$



C ADDING USING COLUMNS

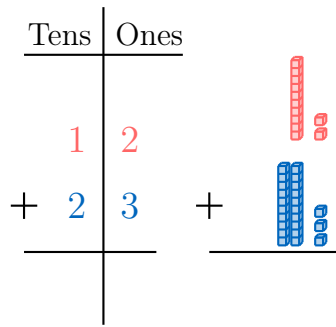
Method Adding in Columns

To calculate:

$$12 + 23$$

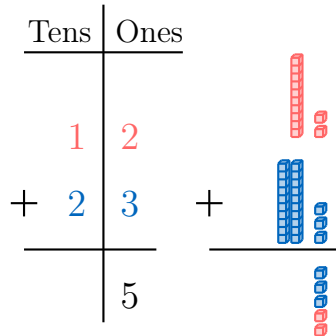
- **Step 1: Set up the addition**

Write the numbers in a vertical column, making sure the digits line up by place value (ones under ones, tens under tens).



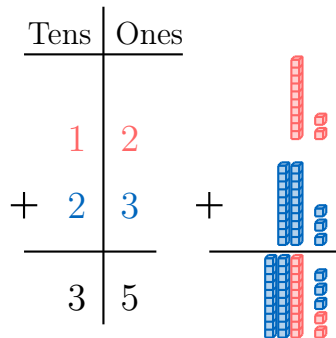
- **Step 2: Add the ones**

$$2 \text{ ones} + 3 \text{ ones} = 5 \text{ ones}$$



- **Step 3: Add the tens**

$$1 \text{ ten} + 2 \text{ tens} = 3 \text{ tens}$$



- **Result:** There are 3 tens and 5 ones. So,

$$12 + 23 = 35$$

Let's add $18 + 23$ together! This time, when we add the ones, we'll get a number bigger than 9. We'll need to regroup the ones into a new ten. We move (or **carry**) a group of ten to the tens place.

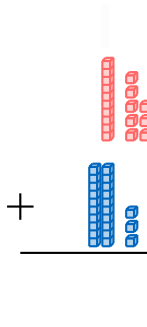
Method Adding in Columns with Carrying

To calculate:

$$18 + 23$$

- **Step 1: Set up the addition**

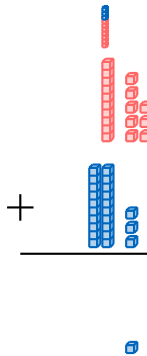
Write the numbers in a vertical column, making sure the digits line up by place value (ones under ones, tens under tens).

Tens	Ones	
1	8	
+ 2	3	+
		

• **Step 2: Add the ones**

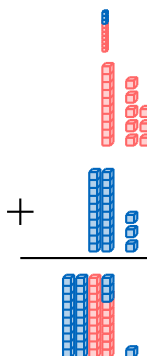
$$8 \text{ ones} + 3 \text{ ones} = 11 \text{ ones} = 1 \text{ ten} + 1 \text{ one}$$

Write the 1 in the ones place and carry the 1 ten to the top of the tens column.

Tens	Ones	
1	8	
+ 2	3	+
		
	1	

• **Step 3: Add the tens**

$$1 \text{ ten} + 2 \text{ tens} + 1 \text{ ten (regrouped)} = 4 \text{ tens}$$

Tens	Ones	
1	8	
+ 2	3	+
		
4	1	

• **Result:**

$$18 + 23 = 41$$