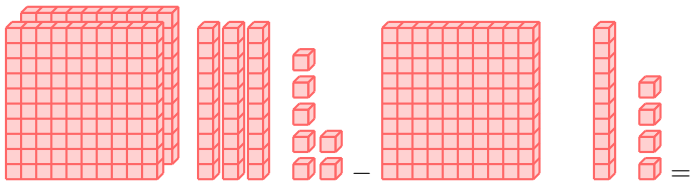
SUBTRACTION WITHIN 1000

A DEFINITIONS

Discover: Have you ever given away some of your toys or candies to a friend? When you do that, you're subtracting! Let's see: if you have 237 cubes, and you give 114 cubes to your friend, how many cubes do you have left?

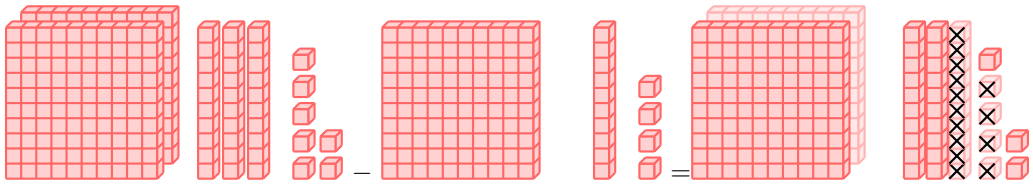


Answer: Counting each cube individually would be quite cumbersome, especially with larger numbers. In such cases, column subtraction is a more efficient method.

$$\begin{array}{r} 2\ 3\ 7 \\ -\ 1\ 1\ 4 \\ \hline 1\ 2\ 3 \end{array}$$

Now you have 123 cubes left!

$$237 - 114 = 123$$



Definition **Subtraction**

Subtraction means taking something away. When we subtract, we find out how many are left.

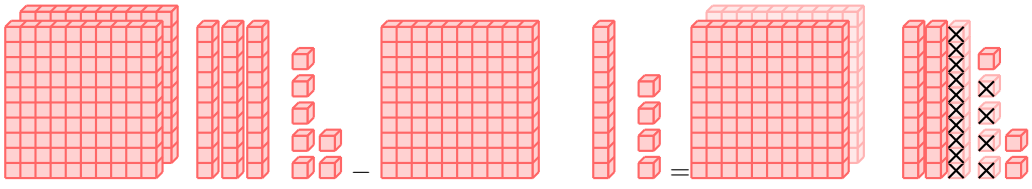
- The $-$ symbol means "subtract."
- The $=$ symbol shows that the two sides are the same.

We can represent subtraction as:

- **Numbers**:

$$237 - 114 = 123$$

- **Cubes**:



- **Words**:

two hundred thirty-seven minus one hundred fourteen equals one hundred twenty-three

- **Subtraction Using Columns** :

$$\begin{array}{r} 2\ 3\ 7 \\ -\ 1\ 1\ 4 \\ \hline 1\ 2\ 3 \end{array}$$

B SUBTRACTION USING COLUMNS

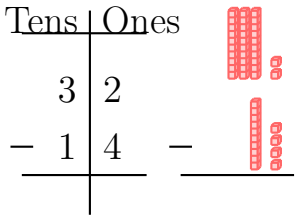
Discover: You have learned how to perform column subtraction using the borrowing method. This involves "borrowing" a ten from the neighboring column when the digit on top is smaller than the digit below. But today, we will discover another method: the compensation method.
The compensation method is based on the following principle: if the same number is added to or subtracted from both terms of a subtraction, the difference remains unchanged. This property allows us to simplify the calculation by transforming the numbers to make the subtraction easier.

Method **Subtraction in Columns with Compensation**

To calculate:

$$32 - 14$$

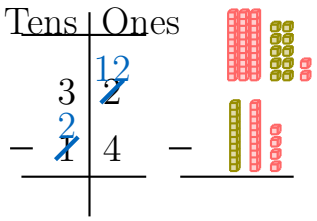
- **Step 1: Set up the subtraction**



- **Step 2: Compensate 1 Ten**

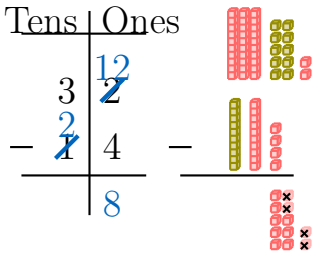
$$2 \text{ ones} - 4 \text{ ones}$$

There are not enough ones. You regroup 10 ones to make it 12. You compensate by adding 1 ten to 14, which makes it 2 tens.



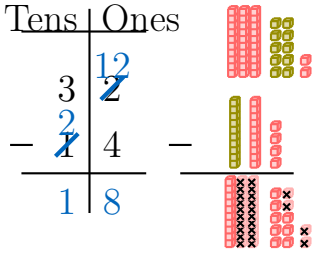
- **Step 3: Subtract the ones**

$$12 \text{ ones} - 4 \text{ ones} = 8 \text{ ones}$$



- **Step 4: Subtract the tens**

$$3 \text{ tens (from 32)} - 1 \text{ ten (from 14)} - 1 \text{ ten (compensation)} = 1 \text{ ten}$$



- **Result**: There is 1 ten and 8 ones. So,

$$32 - 14 = 18$$