

ADDITION

A DEFINITION

Definition Addition

Addition means combining quantities to find a total.

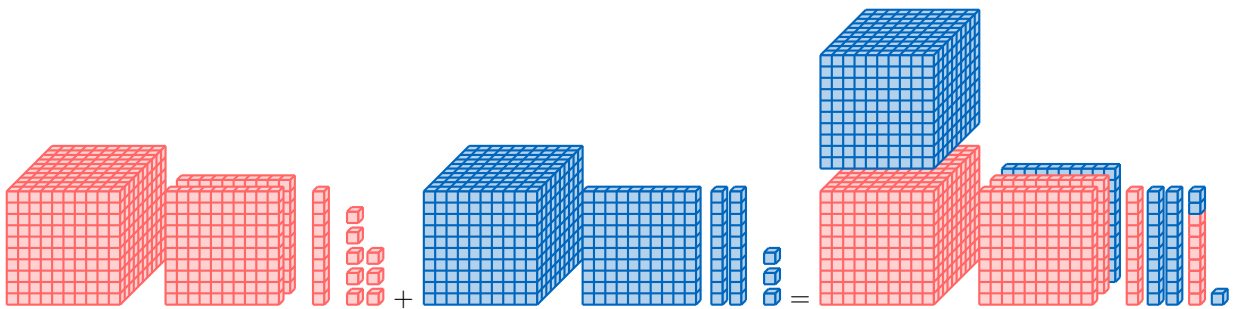
- The $+$ symbol means "add."
- The $=$ symbol shows equality on both sides.

Addition can be represented as:

- **Numbers:**

$$1218 + 1123 = 2341$$

- **Cubes:**



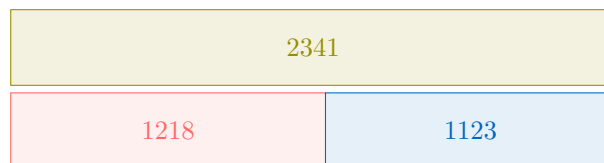
- **Words:**

one thousand two hundred eighteen plus one thousand one hundred twenty-three equals two thousand three hundred forty-one

- **Column Addition:**

$$\begin{array}{r} 1 \\ 1218 \\ + 1123 \\ \hline 2341 \end{array}$$

- **Part-whole model:**



B ADDING USING COLUMNS

Method Column Addition with Carrying

To calculate:

$$288 + 545$$

- **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, hundreds under hundreds).

$$\begin{array}{r} 288 \\ + 545 \\ \hline \end{array}$$

• **Step 2: Add the ones**

$$8 \text{ ones} + 5 \text{ ones} = 13 \text{ ones} = 1 \text{ ten} + 3 \text{ ones}$$

Write the 3 in the ones place of the result and carry the 1 ten to the top of the tens column.

$$\begin{array}{r} 1 \\ 288 \\ + 545 \\ \hline 3 \end{array}$$

• **Step 3: Add the tens**

$$1 \text{ ten (carried)} + 8 \text{ tens} + 4 \text{ tens} = 13 \text{ tens} = 1 \text{ hundred} + 3 \text{ tens}$$

Write the 3 in the tens place of the result and carry the 1 hundred to the top of the hundreds column.

$$\begin{array}{r} 11 \\ 288 \\ + 545 \\ \hline 33 \end{array}$$

• **Step 4: Add the hundreds**

$$1 \text{ hundred (carried)} + 2 \text{ hundreds} + 5 \text{ hundreds} = 8 \text{ hundreds}$$

Write the 8 in the hundreds place of the result.

$$\begin{array}{r} 111 \\ 288 \\ + 545 \\ \hline 833 \end{array}$$

• **Result:**

$$288 + 545 = 833$$

