

## Lesson 3 – Distributivity

### Starter

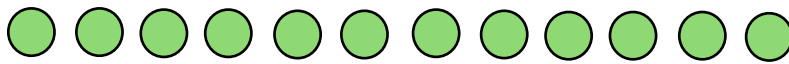
- 1)  $2 + 3 \times 4$
- 2)  $3 \times 2 + 4 \times 5$
- 3)  $2 \times 4^2 - 5$
- 4)  $(3 + 6) - 7 + 12$

### Starter Answers

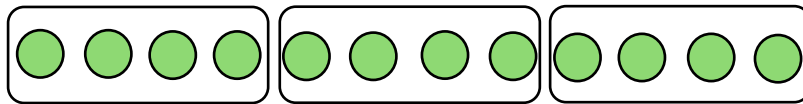
- 1) 14                      2) 26                      3) 27                      4) 14

In this lesson, we will have a look at another method to make calculations involving divisions easier to work out.

Imagine we have 12 counters.

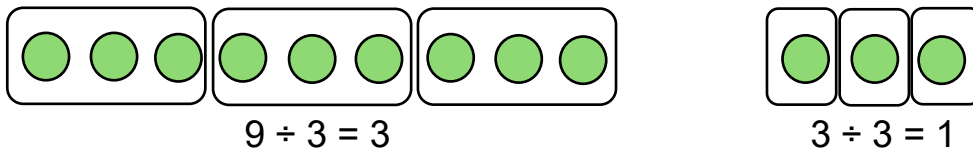


We want to divide these into three piles. This is the same as doing  $12 \div 3$ .



There would be four in each pile, so  $12 \div 3 = 4$

But, we could also split the 12 counters into separate piles first and then divide each pile by 3.



So,  $3 + 1 = 4$ . This is the same answer as  $12 \div 3$ .

Here, we have separated the dividend into 9 and 3 and then divided them separately.

### Example 1

Work out  $130 \div 5$

Split 130 into 2 parts where each part is easy to divide by 5:

$$130 = 100 + 30$$

Now divide each separate part by 5:

$$\begin{aligned} (100 \div 5) + (30 \div 5) &= 20 + 6 = 26 \\ &= 130 \div 5 = 26 \end{aligned}$$

### **Example 2**

Work out  $192 \div 8$

Think of two numbers that add to 192, where both numbers can easily be divided by 8.

$$192 = 160 + 32$$

$$(160 \div 8) + (32 \div 8)$$

$$= 20 + 4$$

$$= 24$$

### **Example 3**

Work out  $291 \div 3$

Think of two numbers that add to 291, where both numbers can easily be divided by 3.

$$291 = 270 + 21$$

$$(270 \div 3) + (21 \div 3)$$

$$= 90 + 7$$

$$= 97$$