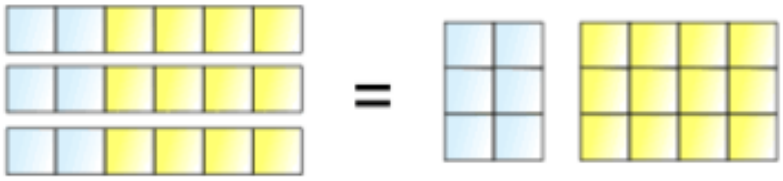
Distributive Law

The distributive law allows us to distribute (break up) larger numbers into sums, differences and products to help with calculations.

For example:

$$5 \times 32 = 5 \times (30 + 2)$$
$$= 5 \times 30 + 5 \times 2$$
$$= 150 + 10$$
$$= 160$$



3 x (2+4) = 3x2 + 3x4

3 lots of **(2+4)** is the same as **3 lots of 2** plus **3 lots of 4**

USES:

Sometimes it is easier to break up a difficult multiplication:

Example: What is 6 × 204 ?

$6 \times 204 = 6 \times 200 + 6 \times 4 = 1{,}200 + 24 = 1{,}224$

Or to combine:

Example: What is 16 × 6 + 16 × 4?

$16 \times 6 + 16 \times 4 = 16 \times (6+4) = 16 \times 10 = 160$

We can use it in subtraction too:

Example: 26×3 - 24×3

$26 \times 3 - 24 \times 3 = (26 - 24) \times 3 = 2 \times 3 = 6$

We could use it for a long list of additions, too:

Example: 6×7 + 2×7 + 3×7 + 5×7 + 4×7

$6 \times 7 + 2 \times 7 + 3 \times 7 + 5 \times 7 + 4 \times 7 = (6+2+3+5+4) \times 7 = 20 \times 7 = 140$