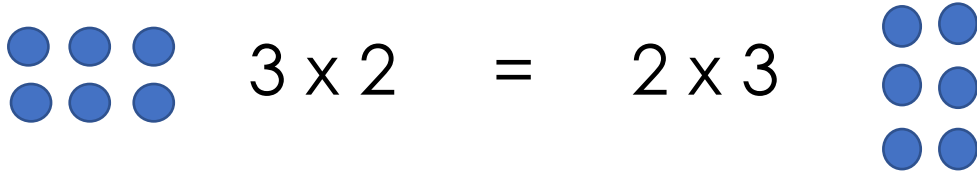


YEAR 4 – MULTIPLICATION AND DIVISION 5

Commutativity: when we multiply we can swap the numbers around and still get the same answer...



$$3 \times 2 = 2 \times 3$$

Associative law: when we multiply it doesn't matter how we group the numbers...

$$2 \times 4 \times 3 = (2 \times 4) \times 3 \quad \text{or} \quad (2 \times 3) \times 4$$

VOCABULARY

- associative law
- commutativity
- array
- efficiently
- factor
- pair
- product

Decide which groupings can be calculated most efficiently...

$$6 \times 4 \times 5 \quad (6 \times 5) \times 4 \text{ is easier to calculate than } (6 \times 4) \times 5$$

$$30 \times 4 \quad 24 \times 5$$

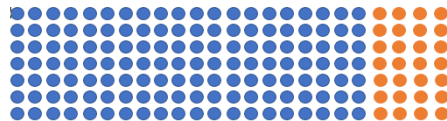
A **factor** is a whole number that when multiplied by another whole number makes a **product**

$$8 \times 4 = 32$$

factor x factor = product

Factor pairs are useful when multiplying mentally, e.g. 24×7

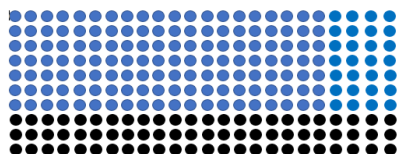
Method 1: $24 \times 7 = 20 \times 7 + 4 \times 7$



Method 2: $24 \times 7 = (3 \times 8) \times 7$



Method 3: $24 \times 7 = 24 \times 10 - 24 \times 3$



Method 4: $24 \times 7 = 48 \times 7 \div 2$

