

**Key Vocabulary**

Ratio	Comparative value of two or more amounts
Proportion	A part to a whole comparison
Simplify $\frac{1}{2} = \frac{6}{12}$	To reduce a fraction or ratio to its lowest terms by cancelling to the lowest common factor for both numerator and denominator
Multiplier	A number doing the multiplying
Unitary method	Method of working out proportion by first working out 1 unit.
Unit of measure	Standard amount or quantity
Notation	Written symbols used to represent numbers or amounts.

**Key facts / Diagrams**

Ratios are written like this. A:B or 3:7

Write the ratio for the fact that there are 3 blue bicycles for every 7 red bicycles.

BLUE bicycles = 3 } **Ratio = 3 : 7**  
 RED bicycles = 7

30 metres divided into the ratio 2:3

**Simplifying ratios:**

When simplifying ratios we can do it the same as fractions by dividing each part by the **same** highest common factor

Fraction:  $\frac{6}{8} \div 2 = \frac{3}{4}$

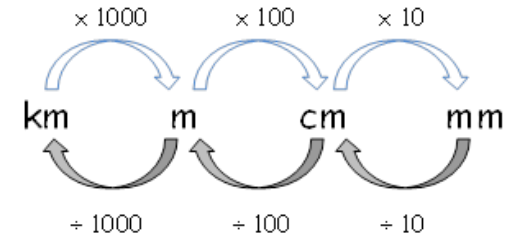
Ratio:  $\begin{matrix} \div 2 & \leftarrow & 6 : 8 & \rightarrow & \div 2 \\ & \leftarrow & 3 : 4 & \rightarrow & \end{matrix}$

**Common misconceptions**

- Some pupils may think that a:b always means part:part
- Some pupils may try to simplify a ratio without first ensuring that the units of each part are the same
- Many pupils will want to identify an additive relationship between two quantities that are in proportion and apply this to other quantities in order to find missing amounts

**Worked examples**

Converting units of measurement



Find the ratio to mix purple paint when given the total parts.  
 I use 4 parts blue and *some* red. The total parts for the mixture is 7.

**BLUE = 4**  
**RED = ?**  
 Total parts = 7

Ratio = 4 : ?  
 Total parts = 7  
 $7 - 4 = 3$   
**Ratio = 4 : 3**