



## Eleven Plus Maths How To Do - Common Denominators

Example  $\frac{5}{8} + \frac{7}{12}$

It is possible to add two improper fractions. However it is not possible to add eighths to twelfths. The fractions must be made into like fractions. They must have the same denominator for each fraction.

A denominator which may be used for both  $\frac{5}{8}$  and  $\frac{7}{12}$  is called a common denominator.

This is one way of finding it. Write down the multiples of each denominator and stop when you find one which is a multiple of both denominators.

$$8 \quad 12 \quad 16 \quad 24$$

24 is common to both denominators. The fractions can now be written with new denominators.

$$\frac{5}{8} \times 3 = \frac{15}{24} \quad \frac{7}{12} \times 2 = \frac{14}{24}$$

$$\frac{5}{8} + \frac{7}{12}$$

$$= \frac{15}{24} + \frac{14}{24}$$

$$= \frac{29}{24}$$

$$= 1 \frac{5}{24}$$

The common denominator is needed not only for addition of fractions, but for subtraction too.

When you compare fractions to find the greater or lesser fraction the common denominator is necessary.

For example: Is  $\frac{5}{6}$  greater or less than  $\frac{7}{9}$ ?

$$6 \quad 9 \quad 12 \quad 18$$

18 is the common denominator

$$\frac{5}{6} = \frac{15}{18} \quad \frac{7}{9} = \frac{14}{18}$$

$$\frac{5}{6} \text{ is greater than } \frac{7}{9}$$