Equivalent fractions

Equivalent fractions are fractions that are equal in value to each other.

$$\frac{1}{2} \quad = \quad \frac{2}{4}$$
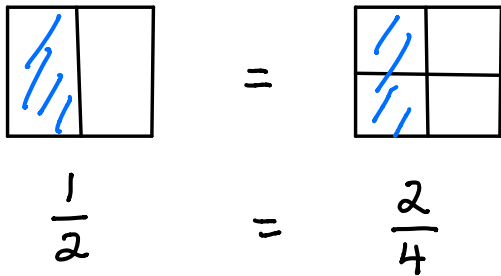
As we do not always have pictures to help us work out equivalent fractions, we need to understand how to : (1) create equivalent fractions; and (2) find the missing value in a set of equivalent fractions.

Creating Equivalent Fractions

Take the fraction you have and multiply both the numerator and the denominator by the same number.

$$\frac{1}{2} \, ^{\times 2}_{\times 2} = \frac{2}{4}$$

$$\frac{1}{2} \, ^{\times 4}_{\times 4} = \frac{4}{8}$$

$$\frac{4}{9} \, ^{\times 3}_{\times 3} = \frac{12}{27}$$

Find the missing value

To find the missing value in an equivalent fraction expression, you need to go through a few steps:

(1) Look at the side which has the complete fraction and then think whether you are multiplying or dividing to get the value you see on the other side of the equal sign.

$$\frac{4}{6} = \frac{?}{12}$$

Complete fraction

Ask yourself what you would do to 6 to get 12 (multiply or divide)?

(2) Once you have decided whether you are multiplying or dividing, then always do the same operation to the denominator as well as the numerator.

$$\frac{4}{6} = \frac{}{12}$$ × 2

So, $$\frac{4}{6} = \frac{8}{12}$$ × 2   × 2

✻ note that the arrow goes <u>toward</u> the fraction with the missing value

Practice :

a) $\dfrac{}{54} = \dfrac{2}{6}$

b) $\dfrac{3}{} = \dfrac{9}{21}$