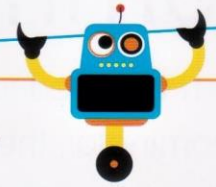


Adding fractions

We add fractions together by adding their numerators, but first we have to make sure they have the same denominator.

To add fractions, we add the numerators and write the total over the common denominator.



Adding fractions that have the same denominator

To add fractions that already have the same denominator, we just add the numerators. So, if we add $\frac{2}{5}$ to $\frac{1}{5}$, we get $\frac{3}{5}$.

Adding two-fifths to one-fifth makes three-fifths



Adding fractions that have different denominators

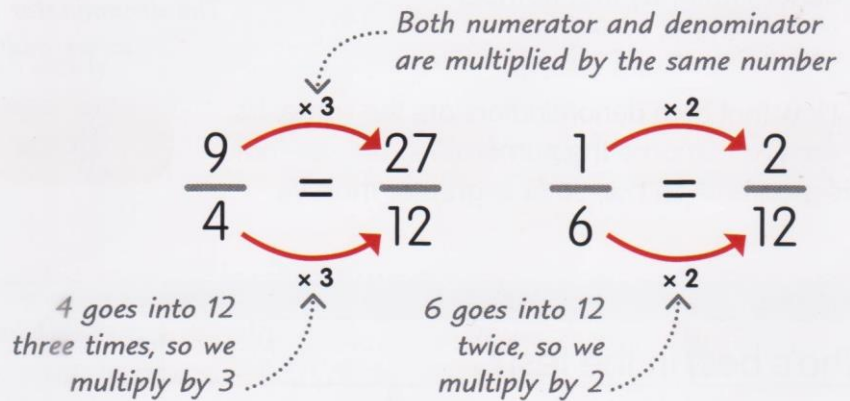
1 Let's try the calculation $2\frac{1}{4} + \frac{1}{6}$. First, we have to change the mixed number into an improper fraction.

$$2\frac{1}{4} + \frac{1}{6} = ?$$

2 We change $2\frac{1}{4}$ to an improper fraction by multiplying 2, the whole number, by 4, the fraction's denominator. Then we add 1, its numerator, to make $\frac{9}{4}$. Now we can write our calculation $\frac{9}{4} + \frac{1}{6}$.

$$2\frac{1}{4} = \frac{2 \times 4 + 1}{4} = \frac{9}{4}$$

3 Next, we give our two fractions the same denominators. Their lowest common denominator is 12, so we make the fractions into twelfths, as we learned on page 51.



4 Now we add the numerators of the fractions to make $\frac{29}{12}$. Lastly, we change our answer to a mixed number.

$$\frac{27}{12} + \frac{2}{12} = \frac{29}{12}$$

$$\text{so } 2\frac{1}{4} + \frac{1}{6} = 2\frac{5}{12}$$

The improper fraction $\frac{29}{12}$ is changed to a mixed number