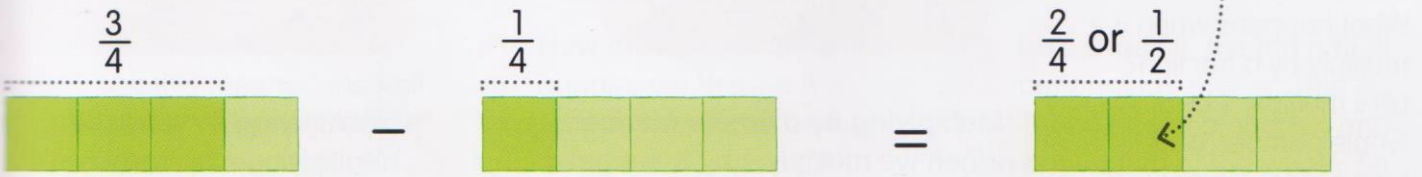
Subtracting fractions

To subtract fractions, first we check they have the same denominators. Then we just subtract one numerator from the other.

Subtracting fractions that have the same denominator

To subtract fractions with the same denominator, we simply subtract the numerators. So, if we subtract 1/4 from 3/4, we get 2/4, or 1/2.



Subtracting fractions that have different denominators

1 Let's try the calculation $3\frac{1}{2} - \frac{2}{5}$. As with adding fractions, first we need to change the mixed number and make the fractions' denominators the same.

$$3\frac{1}{2} - \frac{2}{5} = ?$$

2 We change $3\frac{1}{2}$ to an improper fraction by multiplying the whole number by 2, the fraction's denominator, then adding 1, its numerator, to make $\frac{7}{2}$.

$$3\frac{1}{2} = \frac{3 \times 2 + 1}{2} = \frac{7}{2}$$

3 Now we rewrite the fractions so they have the same denominator. The lowest common denominator of $\frac{7}{2}$ and $\frac{2}{5}$ is 10, so we change our two fractions into tenths.

$$\frac{7}{2} \overset{\times 5}{=} \frac{35}{10} \qquad \frac{2}{5} \overset{\times 2}{=} \frac{4}{10}$$

2 goes into 10 five times, so the numerator and denominator are multiplied by 5

5 goes into 10 twice, so we multiply by 2

4 We can now subtract one numerator from the other like this: $\frac{35}{10} - \frac{4}{10} = \frac{31}{10}$. We finish by changing $\frac{31}{10}$ back into a mixed number.

$$\frac{35}{10} - \frac{4}{10} = \frac{31}{10} \quad \text{so} \quad 3\frac{1}{2} - \frac{2}{5} = 3\frac{1}{10}$$