

Key vocabulary

Percentage, hundredth, quantity, scale factor, enlarge, proportion

Calculating percentages

Percentage = 'out of one hundred'

To find a percentage of an amount, find 1% first by dividing by 100, then multiply the answer by the percentage required.

E.g., to find 21% of 230: $230 \div 100 = 2.3$, which is 1%. $2.3 \times 21 = 48.3$, which is 21%.

Percentage	Fraction	Division calculation	Multiplication calculation
1%	$\frac{1}{100}$	$\div 100$	$\times 0.01$
5%	$\frac{1}{20}$	$\div 20$	$\times 0.05$
10%	$\frac{1}{10}$	$\div 10$	$\times 0.1$
20%	$\frac{1}{5}$	$\div 5$	$\times 0.2$
25%	$\frac{1}{4}$	$\div 4$	$\times 0.25$
50%	$\frac{1}{2}$	$\div 2$	$\times 0.5$
75%	$\frac{3}{4}$	$\div 4, \times 3$	$\times 0.75$
100%	1	$\div 1$	$\times 1$

You could also combine the quantities above to find a percentage.

E.g. to find 60%, find 50% ($\div 2$), then 10% ($\div 10$), then add the answers together.

Relative sizes of two quantities and unequal sharing and grouping

To find missing quantities, multiply both values by the same amount.

In all diagrams below, the ratio of strawberries to oranges is 2:1.

We can also say, the ratio of oranges to strawberries is 1:2. The order is important.



For every 1 orange, there are 2 strawberries.

For every 2 strawberries, there is 1 orange.

Multiply both values by 2.



For every 2 oranges, there are 4 strawberries.

For every 4 strawberries, there are 2 oranges.

Scale factor

When you enlarge a shape and each side is multiplied by the same number, this number is called the scale factor.

The yellow shape below has been enlarged by a scale factor of 2 to become the red shape.

