# Percentages as fractions

## Notes and guidance

In this small step, children continue to explore percentages by comparing them to fractions.

In the previous step, children saw that a percentage was a number of parts per hundred. This links to seeing a percentage as a fraction with a denominator of 100. This learning extends to 10% being equivalent to $\frac{1}{10}$ and therefore 20% equivalent to $\frac{2}{10}$ and so on. Children use a fraction wall to split 100% into different-sized groups and so work out the percentage equivalents of fractions, for example $\frac{1}{4}$ is 100% split into 4 groups, 100 ÷ 4 = 25, so $\frac{1}{4}$ = 25%.

The focus of this step is percentages and fractions within 1 whole only. Decimal equivalents will be introduced in the next step.

## Things to look out for

- Children may think that the numerator of any fraction is the same as the percentage, for example $\frac{9}{10}$ = 9%.
- Not knowing common equivalent fractions to those with a denominator of 100 will make finding those percentages hard, for example not knowing $\frac{1}{4} = \frac{25}{100}$ will make finding $\frac{1}{4}$ = 25% difficult.

## Key questions

- What is a percentage?
- If the whole is split into 100 equal parts, then what percentage is _____ parts equivalent to?
- How are percentages and fractions similar? How are they different?
- What is 100 divided by 2/4/5/10?
- What is _____ as a percentage?
- What is one half of 100? What is $\frac{1}{2}$ as a percentage?

## Possible sentence stems

- _____% is equivalent to $\frac{\square}{100}$
- The fraction _____ is equivalent to _____%.

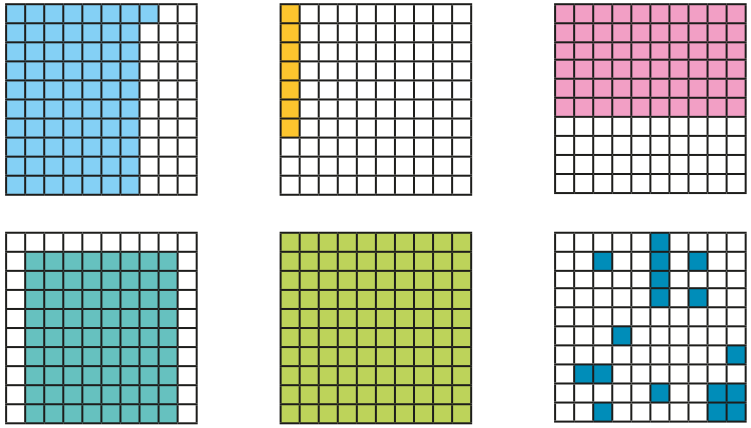
## National Curriculum links

- Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction
- Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25

# Percentages as fractions

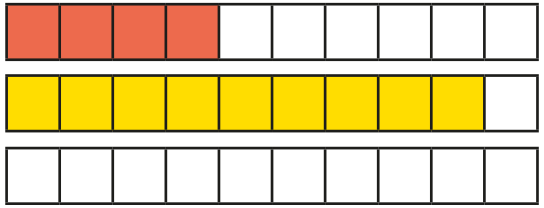
## Key learning

- Complete the sentence to find what fraction and what percentage of each hundred square has been shaded.

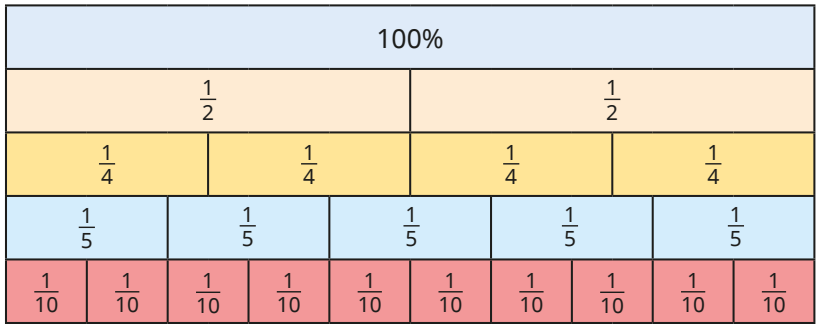


_____ parts out of 100 = $\frac{\square}{100}$ = _____%

- Complete the sentence to find what fraction and what percentage of each bar model has been shaded.



_____ parts out of 10 = $\frac{\square}{10}$ = _____%

- 


Complete the sentences to convert each fraction to a percentage.

Use the fraction wall to help you.

▸ $\frac{1}{2}$ ▸ $\frac{1}{4}$ ▸ $\frac{1}{5}$ ▸ $\frac{1}{10}$

$\frac{\square}{\square}$ = 100% split into _____ equal groups.

100 ÷ _____ = _____

So $\frac{\square}{\square}$ = _____%

- $\frac{1}{5}$ is equal to 20%.

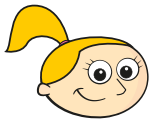
This means that $\frac{2}{5}$ is equal to 40%.

Complete the statements.

▸ $\frac{3}{5}$ = _____% ▸ $\frac{\square}{4}$ = 75% ▸ $\frac{7}{10}$ = _____% ▸ $\frac{\square}{5}$ = 80%

# Percentages as fractions

## Reasoning and problem solving



To convert a fraction to a percentage, you just need to put a per cent sign next to the numerator.

Is Eva correct?

Explain your answer.

No

This only works when the denominator is 100, because "per cent" means parts per hundred.

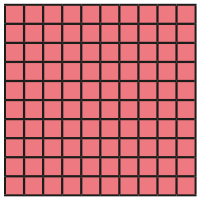
At a cinema, $\frac{4}{10}$ of the audience are adults.

The rest of the audience is made up of boys and girls.

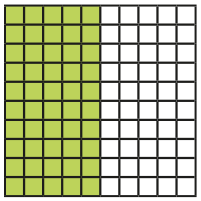
There are twice as many girls as boys.

What percentage of the audience are girls?

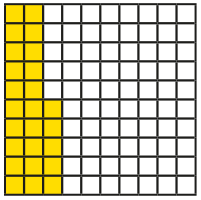
40%



100% = 1



50% = $\frac{1}{2}$



25% = $\frac{1}{4}$

$\frac{1}{8}$ cannot convert to a percentage because 8 is not a factor of 100

Do you agree with Teddy?

Explain your answer.

No