

Understand the whole

Notes and guidance

In this small step, children explore the whole in relation to fractions. They use diagrams and other representations to develop their understanding that when the numerator of a fraction is equal to its denominator, then the fraction is equivalent to 1 whole.

Once this understanding is secure, children move on to “making the whole”. Children start by using diagrams to identify how many equal parts a shape has been split into and how many are shaded, before thinking about how many more parts need shading to make the whole. This will be investigated further when adding and subtracting fractions is covered later in Year 3

Things to look out for

- Children may think that the numerator of a fraction is not allowed to be equal to the denominator.
- Children may not recognise when a whole has not been split into equal parts.
- Children may not utilise their knowledge of number bonds because they do not recognise the connection. For example, they may know that $3 + 4 = 7$, but not use this knowledge to support them when working out $\frac{3}{7} + \frac{?}{7} = 1$

Key questions

- Is the whole split into equal parts?
- How many equal parts has the whole been split into?
- What fraction is shaded?
- How many more parts do you need to shade to make 1 whole?
- What do you notice about the two numerators?
- What do you notice about the numerator and the denominator when the whole is shaded?

Possible sentence stems

- The whole is split into _____ equal parts.
_____ of the parts are shaded.
I need to shade _____ more parts to make the whole.
- When the numerator is equal to the denominator, the fraction is equal to _____

National Curriculum links

- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators

Understand the whole

Key learning

- Complete the sentences for each shape.



The whole is split into _____ equal parts.

_____ parts are shaded.

$\frac{\square}{\square}$ of the shape is shaded.

- What fraction of each shape is shaded?



- Shade each shape to complete the whole.
- What fraction of each shape did you need to shade?
- Complete the sentences for each shape.

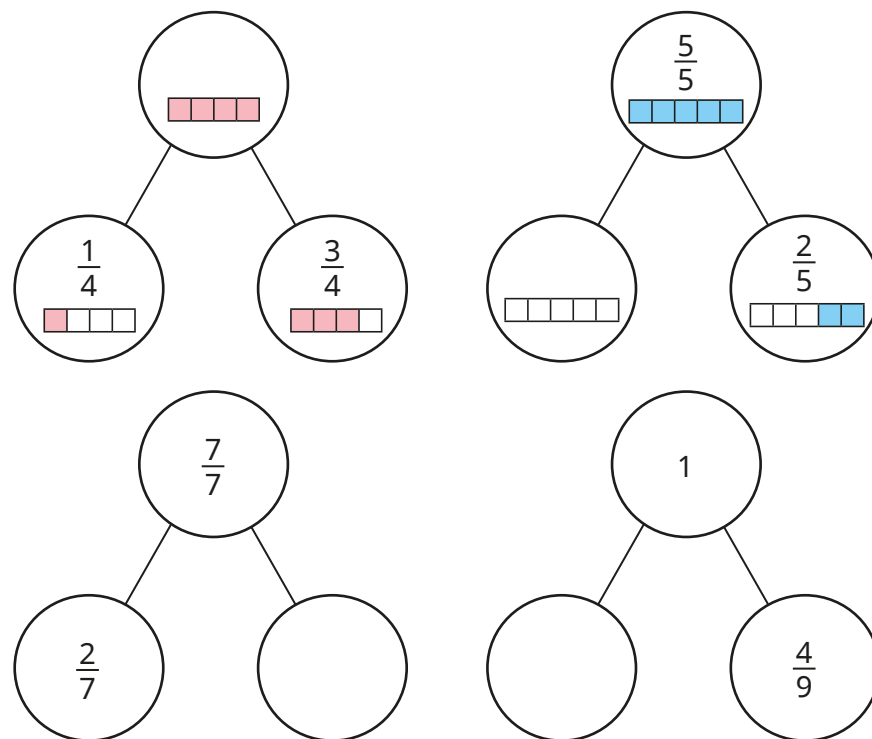
$\frac{\square}{\square}$ of the shape is shaded.

$\frac{\square}{\square}$ more needs to be shaded to complete the whole.

- Complete each fraction so that it is equal to 1 whole.

$$\frac{6}{\square} \quad \frac{\square}{7} \quad \frac{10}{\square} \quad \frac{\square}{11} \quad \frac{100}{\square}$$

- Complete the part-whole models.



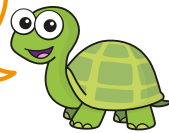
Understand the whole

Reasoning and problem solving

Tiny is drawing a bar model.



I need
to shade another
 $\frac{2}{3}$ and then I will have
shaded the whole.



Do you agree with Tiny?
Explain your answer.



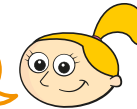
No

Whitney and Eva are looking at this
bar model.



Whitney

This is $\frac{4}{4}$



Eva

This is
1 whole.

Both

Who do you agree with?
Explain your answer.



Jo and Max are running in
the same race.

Jo has run $\frac{3}{4}$ of the race.

Max has run $\frac{5}{6}$ of the race.

Who has further left to run?

How do you know?



Jo

Dexter is thinking of a fraction.

$\frac{3}{8}$ more than Dexter's fraction is
1 whole.

What fraction is Dexter thinking of?

How do you know?



$\frac{5}{8}$

