

# Tenths as fractions

## Notes and guidance

In Year 3, children were introduced to unit and non-unit fractions and learnt to compare and order these. They also explored dividing 100 into 10 equal parts on a number line, so they should already be familiar with the idea of tenths. In this small step, children explore the idea of a tenth as a fraction.

Children explore tenths through different representations of 1 whole split into ten equal parts, including place value counters, straws, counters on a ten frame and bead strings. Number lines are another useful representation of tenths as fractions, and are covered again in a later step.

At this stage, children explore tenths as fractions only – the concept of tenths as decimals is introduced later in the block.

## Things to look out for

- Children may see the pattern of  $\frac{1}{10}$ ,  $\frac{2}{10}$ ,  $\frac{3}{10}$  ... without understanding each part's worth and how it fits in with the whole.
- Seeing one-tenth in an unfamiliar place can confuse children, for example a bar split into 10 with the 9th bar shaded. Children may see this as  $\frac{9}{10}$

## Key questions

- What is a fraction?
- What is a tenth?
- If a whole is divided into 10 equal parts, what is the value of each part?
- How can you represent the fraction \_\_\_\_\_ using a model?
- When you are counting up in tenths, what comes before/after \_\_\_\_\_?
- When you are counting up in tenths, what comes after  $\frac{9}{10}$ ?
- How are tenths similar to ones?

## Possible sentence stems

- When a whole is split into \_\_\_\_\_ equal parts, one of those parts is worth \_\_\_\_\_
- When counting in tenths, the number before/after \_\_\_\_\_ is \_\_\_\_\_

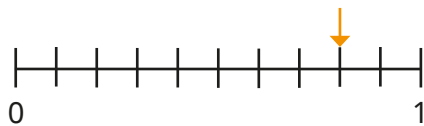
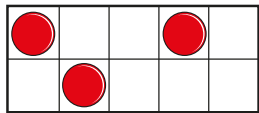
## National Curriculum links

- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10 (Y3)

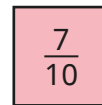
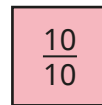
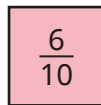
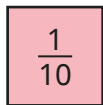
# Tenths as fractions

## Key learning

- What fraction does each picture show?



- Draw pictures to show the fractions.



Compare drawings with a partner.

- Scott is counting up in tenths.



Continue Scott's counting until you reach 1

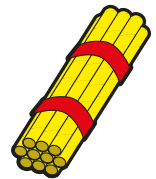
With a partner, count back from 1 to 0 in tenths.

- Dora has a bundle of 10 straws.

She says that this bundle represents 1 whole.

She gives 3 straws to Kim and 1 straw to Tommy.

What fraction of the straws does Dora have left?



- Mo is counting up in  $\frac{2}{10}$ s.



Mo

$\frac{2}{10}, \frac{4}{10} \dots$

What will be the next three fractions he says?

- Annie is counting down in  $\frac{3}{10}$ s.



Annie

$\frac{10}{10}, \frac{7}{10} \dots$

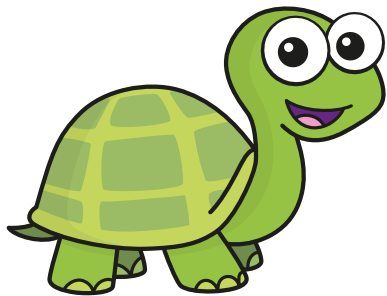
What will be the next two fractions she says?

# Tenths as fractions

## Reasoning and problem solving

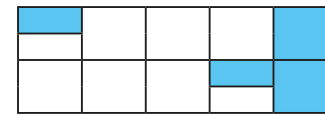


The bar model shows  $\frac{8}{10}$  because the 8th part is shaded.



Do you agree with Tiny?  
Explain your answer.

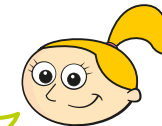
No



Amir

$\frac{2}{10}$  of the shape is shaded, because only 2 parts out of 10 are fully shaded.

$\frac{4}{10}$  of the shape is shaded, because 4 parts are shaded.



Eva

Dexter



Dexter

$\frac{3}{10}$  of the shape is shaded, because altogether 3 full parts out of 10 are shaded.

Who do you agree with?

Explain your answer.