

# Count in fractions on a number line

## Notes and guidance

In this small step, children build on their understanding from the previous two steps to count fractions on a number line.

Children count both forwards and backwards in fractions and use this to support them in labelling missing fractions on a number line. None of the fractions that children see in this step exceed 1 whole. Particular attention should be drawn to the fact that these number lines always begin at zero, as a common error is to begin the count at  $\frac{1}{\square}$  on the first division. It is important to explore with children how they can label the end point of the number lines in two ways: as 1 or as a fraction where the numerator is equal to the denominator. When confident with labelling number lines, children may begin to estimate the positions of fractions on a blank number line.

## Things to look out for

- Children may count the number of divisions rather than the number of intervals, resulting in an incorrect denominator.
- Children may struggle to recognise fractions on a number line, even if they are confident showing fractions as part of a whole in other representations.

## Key questions

- What fraction comes next in the count? How do you know?
- What fraction comes before \_\_\_\_? How do you know?
- What do you notice about the start of each number line?
- What do you notice about the end of each number line?
- What is the denominator going to be? How do you know?
- Which fraction is easiest/hardest to estimate? Why?

## Possible sentence stems

- The number line starts at \_\_\_\_ and ends at \_\_\_\_
- The number line has been split into \_\_\_\_ equal parts.

This means that the number line is counting in  $\frac{\square}{\square}$ s.

- $\frac{\square}{\square}$  is greater/less than  $\frac{1}{2}$  so  $\frac{\square}{\square}$  will be to the right/left of halfway on the number line.

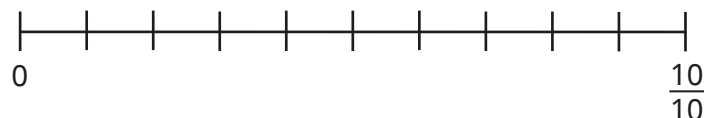
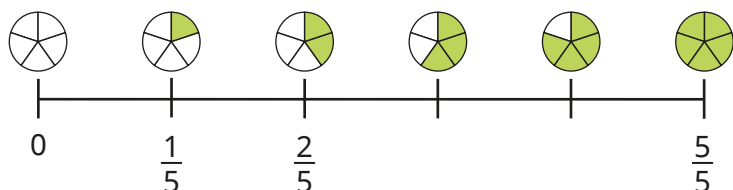
## National Curriculum links

- Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators

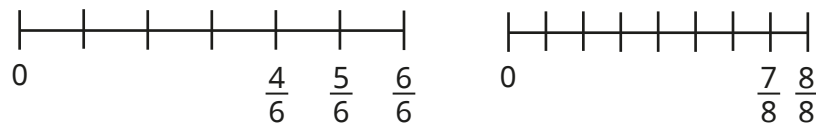
# Count in fractions on a number line

## Key learning

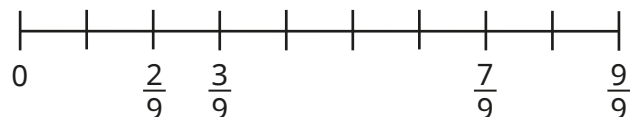
- Count forwards to complete the number lines.



- Count backwards to complete the number lines.

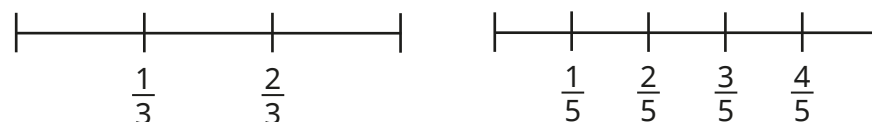
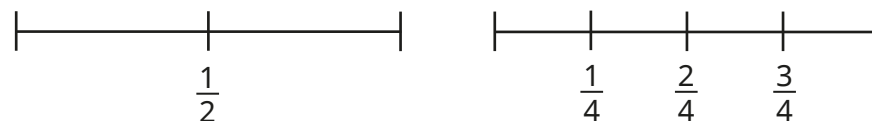


- Fill in the missing fractions.



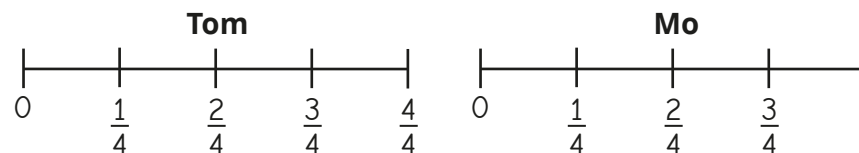
How did you work out each missing fraction?

- Complete the number lines.



What do you notice?

- Tom and Mo have both correctly labelled the same number line.



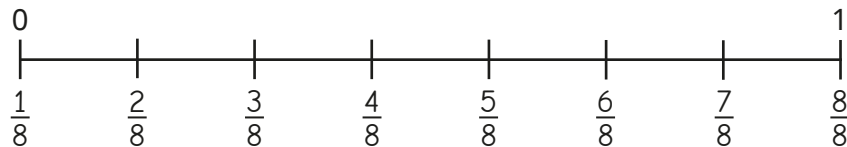
What is the same about their number lines? What is different?

- Draw a number line counting in sixths.  
Label each interval.

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## Reasoning and problem solving

Tiny is labelling fractions on a number line from 0 to 1



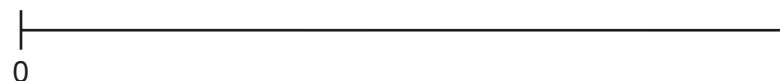
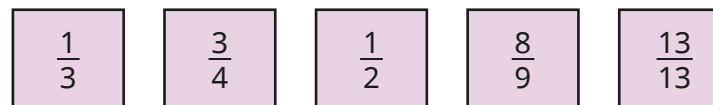
What mistake has Tiny made?

What should the labels be?

Tiny has counted the number of divisions rather than the number of intervals.

0,  $\frac{1}{7}$ ,  $\frac{2}{7}$ ,  $\frac{3}{7}$ ,  $\frac{4}{7}$ ,  $\frac{5}{7}$ ,  $\frac{6}{7}$ ,  $\frac{7}{7}$  (or 1)

Estimate where the fractions belong on the number line.



How did you decide?

Talk about it with a partner.

