

Fractions on a number line

Notes and guidance

Building on the work on scales, in this small step children explore how fractions can be represented on a number line. They have seen some examples of this earlier in the block, where bar models were used above number lines for support, but here they focus on number lines explicitly.

Children identify how many equal parts a number line has been split into. A common error here is counting the number of dividing lines rather than the number of intervals. Once children are confident identifying the number of intervals, they label each one with a fraction. For example, on a number line split into five equal parts, each interval is worth one fifth. At this point, children do not need to count up in fractions (for example, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$...), as this comes in the next step; they just need to label each interval as a unit fraction.

Things to look out for

- Children may count the number of divisions on the number line, rather than the number of intervals.
- Children may struggle to draw number lines with accurate intervals, so it is important to allow plenty of practice on this key skill.

Key questions

- What is an interval?
- Are all the intervals equal?
- How do you count the number of intervals?
- Why can you not just count the markers on the number line?
- What is the same and what is different about the number lines?
- What fraction of the whole number line is each interval worth?
- When marking intervals on a number line, where is a helpful place to start?

Possible sentence stems

- The number line has been split into _____ equal parts.
- Each interval is worth $\frac{1}{\square}$

National Curriculum links

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

Fractions on a number line

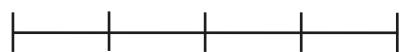
Key learning

- How many equal parts are shown on each number line?

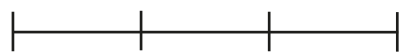
Kim has completed the first example.



5 parts



_____ parts



_____ parts

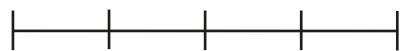


_____ parts

- Match the number lines to the number of intervals.



5



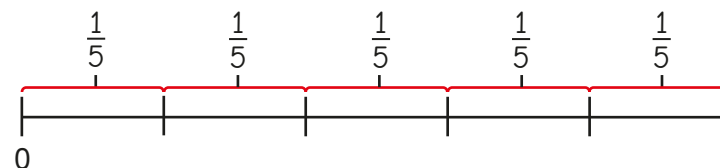
3



2

4

- Brett labels a number line to show fractions.

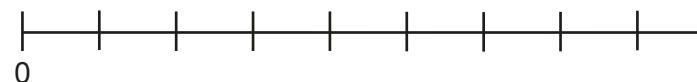


Complete the sentences.

The number line has been split into _____ equal parts.

Each interval is worth $\frac{\square}{\square}$

- Complete the number line and sentences.



The number line has been split into _____ equal parts.

Each interval is worth $\frac{\square}{\square}$

- Draw number lines split into the number of equal parts.

▶ 2 parts ▶ 4 parts ▶ 3 parts ▶ 8 parts

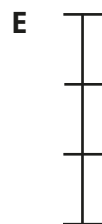
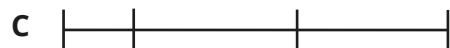
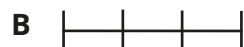
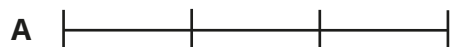
Which number lines were easiest to draw? Which were hardest?

What fraction is each interval worth? Label your number lines.

Fractions on a number line

Reasoning and problem solving

Which number line is the odd one out?



Explain your reasons.



multiple possible answers, e.g.

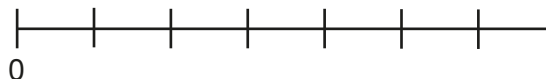
E is the only vertical number line.

B is shorter than the other lines.

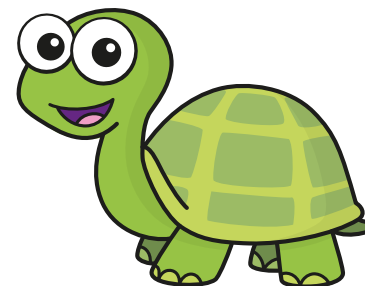
D has 4 intervals.

C has unequal parts.

Tiny is working out how many intervals there are on the number line.



There are eight intervals.



No

Do you agree with Tiny?

Explain your reasons.

