

Tenths on a number line

Notes and guidance

In this small step, children extend their understanding of tenths by exploring them on a number line.

Number lines help children to see the relationship between tenths and whole numbers. They find missing decimal numbers in a sequence, deepening their understanding of the value of 1 tenth. The sequences initially go up and down in steps of 1 tenth and then in varying intervals, including crossing the whole. Seeing this modelled on a number line helps children with their understanding.

From their learning in the fractions block earlier in Year 4, children should be able to see fractions greater than 1 as mixed numbers, but for this step the numbers will be kept as decimals.

Things to look out for

- Children may assume each interval is 0.1 without checking other numbers on the number line to see if the interval is greater than 0.1
- When counting past the whole in 0.1s, children may say “0.9, 0.10, 0.11 ...”
- When crossing the whole, children may miss out the whole number, for example 0.8, 0.9, 1.1, 1.2 ...

Key questions

- How can you show these numbers on a number line?
- If there are 10 intervals between two whole numbers, what is each interval worth?
- How can you work out the missing number in the sequence?
- What intervals does the number line go up in?
- How do you count in 0.1s past a whole number?

Possible sentence stems

- The start point is _____
The end point is _____
The number line is counting up in _____
- The missing number is _____ because ...

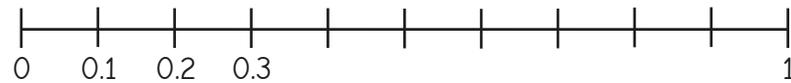
National Curriculum links

- Recognise and write decimal equivalents of any number of tenths or hundredths
- Compare numbers with the same number of decimal places up to 2 decimal places

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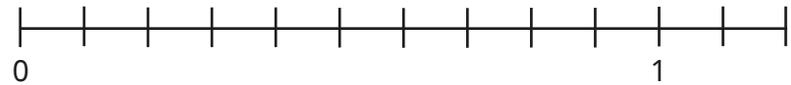
Key learning

- Dani is counting in tenths on a number line.

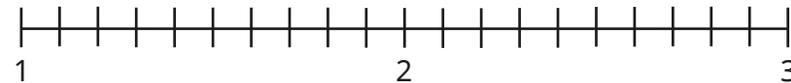


Finish labelling Dani's number line.

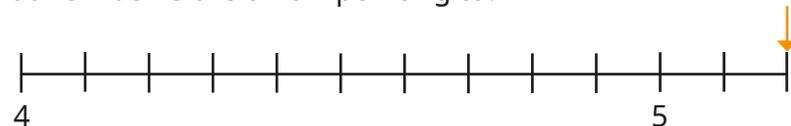
- Label the numbers on the number line.



- Complete the number line.



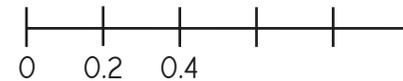
- What number is the arrow pointing to?



- How long is the ribbon?



- Brett has drawn this number line.



- Complete the sentences to describe Brett's number line.

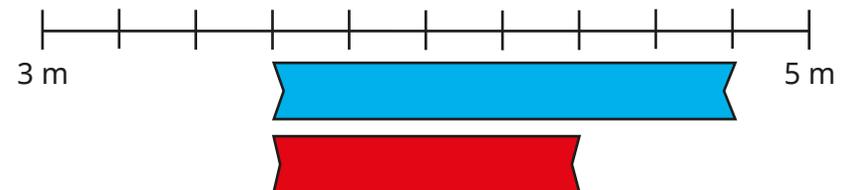
The start point is _____

The end point is _____

The number line is counting up in _____

- Label the missing numbers on the number line.

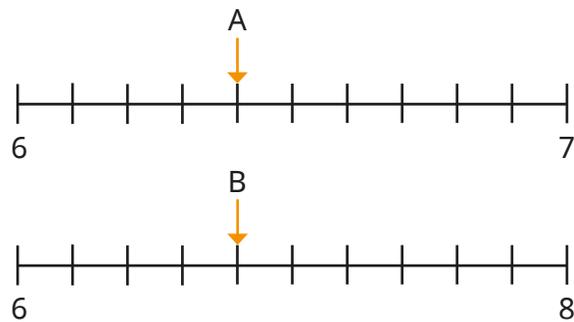
- How much longer is the blue ribbon than the red ribbon?



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Reasoning and problem solving

Tiny has drawn arrows to two numbers, A and B, on two number lines.



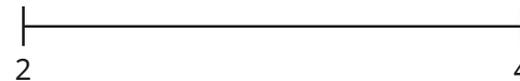
A and B are equal, because the arrows are pointing to the same place.



Do you agree with Tiny?
Explain your answer.

No

Estimate the positions of the numbers on the number line.



Talk about your method with a partner.

In which order did you place your numbers on the number line?

arrows pointing approximately to the correct positions