Tenths as decimals

Notes and guidance

Now that children have an understanding of tenths as fractions, they move on to looking at them as decimals.

This is the first time that children have encountered decimal numbers and the decimal point. Model making, drawing and writing decimal numbers, showing that the decimal point is used to separate whole numbers from decimals.

Children look at a variety of representations of tenths as decimals, up to the value of 1 whole. This leads to adding the tenths column to a place value chart for children to see how tenths fit with the rest of the number system and to understand the need for the decimal point. This will be developed further in the next step, which explores decimal numbers beyond 1 whole.

Things to look out for

- Children may forget to include the decimal point.

- If the number of tenths reaches 10, children may call this "zero point ten" and write 0.10 rather than exchanging for 1 one.

- Children may confuse the words "tens" and "tenths".

Key questions

- What is a decimal?

- 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 decimal _____ using a model?

- How are decimals similar to fractions?

- How can you convert between tenths as fractions and tenths as decimals?

- How is $\frac{1}{10}$ similar to 0.1? How is it different?

Possible sentence stems

- If a whole is split into 10 equal parts, then each part is worth _____

- Zero point _____ is equal to _____ tenths.
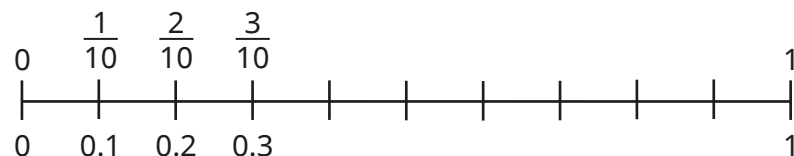
- _____ as a fraction/decimal is _____

National Curriculum links

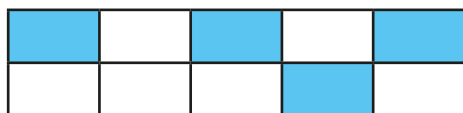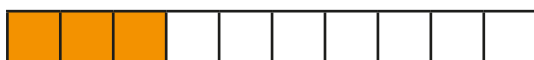- Recognise and write decimal equivalents of any number of tenths or hundredths

Tenths as decimals

Key learning

- Complete the number line counting in tenths.

- What decimal numbers are shown by each picture?

- Draw a picture to show each number.

| 0.4 | 0.8 | 0.2 | 0.7 |

- Complete the table.

Picture	Words	Fraction	Decimal
	one tenth	$\frac{1}{10}$	0.1
			0.9

- What number is shown on the place value chart?

Ones	Tenths
	0.1 0.1 0.1

Use a place value chart to show the numbers.

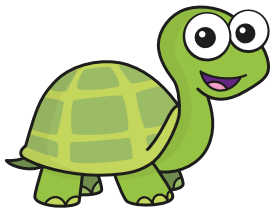| 0.6 | $\frac{7}{10}$ | 0.5 | $\frac{1}{10}$ |

- Esther puts 10 tenths into the tenths column of a place value chart.

  What number has she made?

  What does she need to do?

Tenths as decimals

Reasoning and problem solving

Tiny is counting up in 0.1s.

> 0.8, 0.9, 0.10

Do you agree with Tiny?
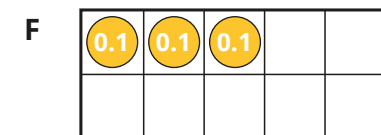
Explain your answer.
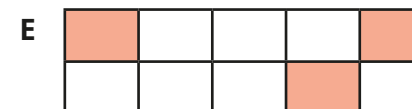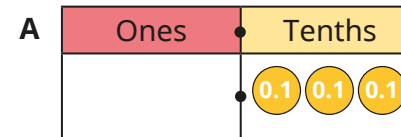
No

Rosie thinks of a number.

$\frac{1}{10}$ more than her number is $\frac{7}{10}$

What is Rosie's number?

Give your answer as a decimal.

0.6

Which is the odd one out?

A

Ones	Tenths
	0.1 0.1 0.1

B

C

D

E

F

| 0.1 | 0.1 | 0.1 | | |

Explain your answer.

D