Hundredths as decimals

Notes and guidance

Now that children have an understanding of hundredths as fractions, in this small step they explore hundredths as decimals.

Representations such as hundred squares, Rekenreks and bead strings continue to be used to help understanding, and in this step 0.01 decimal place value counters are also introduced. Children explore the idea that ten 0.01s are equivalent to 0.1, meaning that decimal numbers can be partitioned into tenths and hundredths, for example 0.12 = 0.1 + 0.02. When confident with this, they also explore flexible partitioning of numbers, for example 0.23 = 0.2 + 0.03 or 0.1 + 0.13. Encourage children to think back to the learning from the previous step and to make links between hundredths as fractions and hundredths as decimals.

Things to look out for

- Children may confuse tenths and hundredths by missing out a zero from their decimal number, e.g. $\frac{3}{100}$ = 0.3

- Children may think that a larger number of hundredths is greater than a smaller number of tenths, e.g. 0.06 > 0.1

- Children may confuse the words "hundred" and "hundredth".

Key questions

- How is a decimal similar to/different from a fraction?

- How many hundredths are there in 1 whole?

- How can you write 1 hundredth as a decimal number?

- Are $\frac{1}{100}$ and 0.01 the same or different?

- Is _____ greater or smaller than _____?

- How many hundredths are equivalent to 1 tenth?

Possible sentence stems

- _____ hundredths as a decimal is _____

- There are _____ hundredths in 1 tenth.

- _____ hundredths can be partitioned into _____ tenths and _____ hundredths.

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

Hundredths as decimals

Key learning

- Dexter makes a number using place value counters.

0.01 0.01

My number is 0.02 or $\frac{2}{100}$

  ▶ What do these place value counters represent?

0.01 0.01 0.01 0.01

  Give your answer as a fraction and as a decimal.

  ▶ Make a number using hundredth place value counters for a partner to write as a decimal and as a fraction.

- Annie makes 0.23 using place value counters.

0.1 0.1 0.01 0.01 0.01

  What numbers do these counters represent?

  ▶ 0.1 0.1 0.1 0.01

  ▶ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$

  Give your answers as decimals.

- Complete the table.

Picture	Words	Fraction	Decimal
	fifty-six hundredths		
		$\frac{17}{100}$	

- Dani uses a bead string to partition 0.34 into 0.3 and 0.04

0.3   0.04

  She can also partition 0.34 into 0.2 and 0.14

0.2   0.14
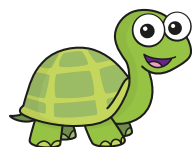
  Find different ways to partition the numbers.

  0.24   0.59   0.48

  Compare answers with a partner.

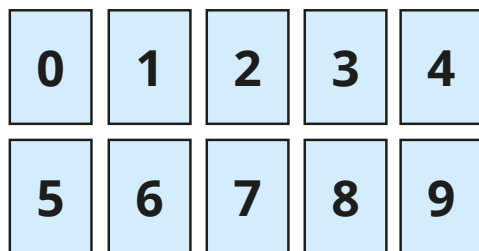# Hundredths as decimals

Reasoning and problem solving

8 hundredths is the same as 800
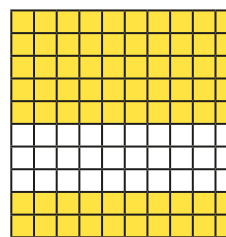
Do you agree with Tiny?

Explain your answer.

No

| 0 | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 |

0.8 [ ] < 0. [ ] 5

Which of the digit cards can be used to make this statement correct?

multiple possible answers, e.g.
7 and 9
3 and 8

Alex and Amir have been asked what decimal is shown on the hundred square.

The square shows 0.70

Alex

The square shows 0.7

Amir

Who do you agree with?

Explain your answer.

They are both correct, but the zero is not needed as a placeholder in the hundredths column.