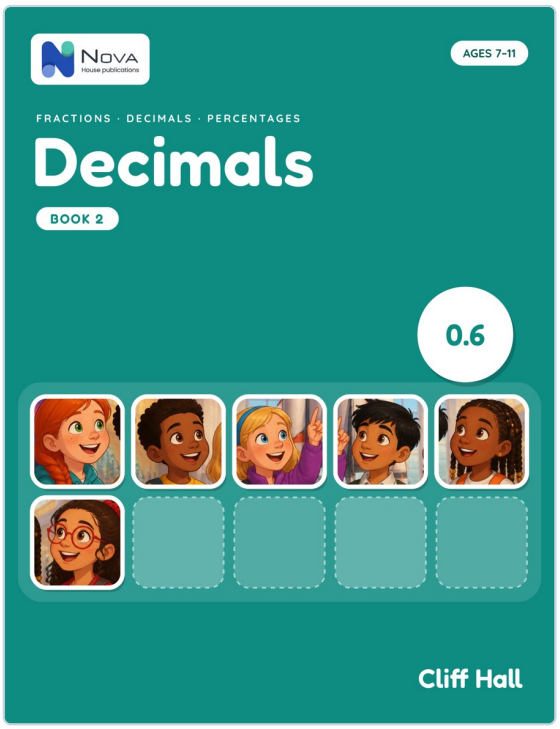
FREE SAMPLE PAGES

Fractions, Decimals and Percentages

Book 2: Decimals

Unit 1: Introduction to Decimals



Inside this sample

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p. 7	Answers for the whole unit, from Teacher's Guide 2

1 **Print**

Print on A4 at home. Every page fits the sheet, so choose "Fit to page" if your printer asks.

2 **Have a go**

Read the story and the teaching pages together, then let your child try the activities. Allow 30 to 40 minutes.

3 **Check together**

Use the answers on page 7 and talk through anything that was tricky.

About the book

Decimals are everywhere: in race times, prices and measurements. This friendly workbook builds understanding step by step: children start with tenths and hundredths and finish calculating with decimals, linking them to fractions and solving real problems with money and measures. For ages 7 to 11.

Find out more about the full book at novaeducation.uk

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Unit 1

Introduction to Decimals

Meet the decimal point and use it to write ones and tenths.

Ones		Tenths
5	.	3



It is sports day, and Ava is racing in the 100 metres. Omar is in charge of the stopwatch. Ava crosses the line in 15 whole seconds and 3 tenths of a second, so Omar writes her time as 15.3 seconds. That small dot is called the decimal point, and it is the key to this whole book.

In Book 1 you met tenths as fractions: $\frac{1}{10}$, $\frac{3}{10}$, $\frac{7}{10}$. A **decimal** is another way to write the same amounts.

What Is a Decimal Point?

The **decimal point** is a small dot that separates the whole number from the part that is less than one. Digits to the left of the point are whole numbers. Digits to the right are parts of a whole.

Ones		Tenths
5	.	3

5.3 means 5 ones and 3 tenths.

Ones		Tenths
0	.	8

0.8 means 0 ones and 8 tenths.

Picturing Tenths

Split one whole into 10 equal parts. Each part is one tenth, which we write as 0.1.



3 tenths = 0.3



7 tenths = 0.7

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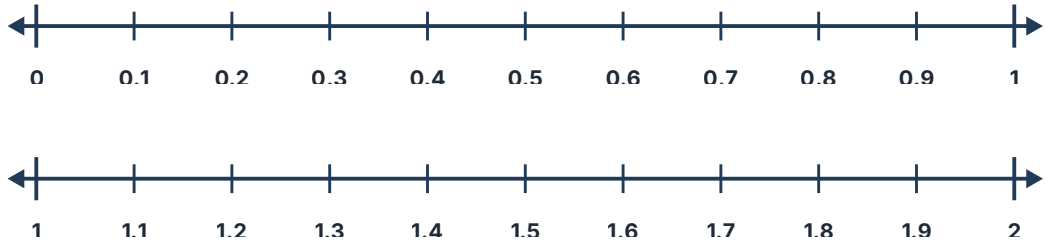
$\frac{1}{10}$ = 0.1. The first digit after the decimal point shows tenths: $\frac{4}{10}$ = 0.4 and $\frac{9}{10}$ = 0.9.

Reading Decimals

5.3 can be read as "five point three" or as "five and three tenths". Both are correct. For a number less than one, always write a zero before the point: 0.4, never .4.

Decimals on a Number Line

Count in tenths from 0 to 1, then keep going past 1.



KEY WORDS

decimal point	the dot that separates whole numbers from parts of a whole
tenth	one of 10 equal parts: $\frac{1}{10}$ = 0.1
place value	the value a digit has because of where it sits
digit	one of the symbols 0 to 9

How To

Write $\frac{4}{10}$ as a decimal.

Step 1 The denominator is 10, so this is 4 tenths.

Step 2 Write 0 ones, then the decimal point, then 4 in the tenths place.

Answer: $\frac{4}{10}$ = 0.4

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How To

Write 0.9 as a fraction.

Step 1 The 9 is in the tenths place.

Step 2 So 0.9 is 9 tenths.

Answer: $0.9 = \frac{9}{10}$

How To

Omar's seedling is 5 cm and 3 tenths of a centimetre tall. Write its height as a decimal.

Step 1 Write the ones digit: 5.

Step 2 Add the decimal point: 5.

Step 3 Write the tenths digit: 3.

Answer: 5.3 cm



Try It With Help ## Your Turn

Use the steps from the How To boxes.

1. $\frac{6}{10} =$ ☐
2. 2 ones and 8 tenths = ☐
3. $0.7 = \frac{\square}{\square}$

Activity 1 ## Reading Decimals

Write each decimal in words. The first one is done for you.

1. 0.5 zero point five
2. 4.7 ☐
3. 0.2 ☐
4. 9.8 ☐
5. 6.4 ☐

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Activity 2 Ones and Tenths

Write the ones digit and the tenths digit of each number.

1. 3.6 ones ☐ tenths ☐
2. 0.9 ones ☐ tenths ☐
3. 7.2 ones ☐ tenths ☐
4. 5.8 ones ☐ tenths ☐
5. 0.4 ones ☐ tenths ☐
6. 8.1 ones ☐ tenths ☐

Activity 3 Shaded Bars

Write the shaded part of each bar as a decimal.

1.  ☐
2.  ☐
3.  ☐
4.  ☐

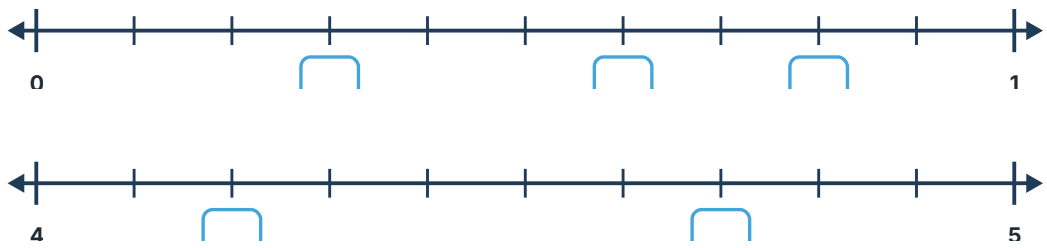
Activity 4 Fractions and Decimals

Write each fraction as a decimal, and each decimal as a fraction.

1. $\frac{3}{10}$ = ☐
2. $\frac{7}{10}$ = ☐
3. $\frac{1}{10}$ = ☐
4. 0.6 = $\frac{\square}{\square}$
5. 0.8 = $\frac{\square}{\square}$
6. 0.3 = $\frac{\square}{\square}$

Activity 5 Decimals on a Number Line

Write the decimal that belongs in each box.



First line, from left to right: ☐ ☐ ☐ Second line: ☐ ☐

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Activity 6 Writing Decimals

Write each number as a decimal.

1. 2 ones and 5 tenths = ☐
2. 0 ones and 7 tenths = ☐
3. 6 ones and 3 tenths = ☐
4. 9 ones and 1 tenth = ☐
5. 4 tenths = ☐
6. 5 ones and 8 tenths = ☐

Activity 7 True or False

Circle TRUE or FALSE for each sentence.

1. 0.5 is the same as $\frac{5}{10}$. TRUE FALSE
2. The decimal point separates the ones from the tenths. TRUE FALSE
3. 3.7 means 3 tenths and 7 ones. TRUE FALSE
4. $\frac{9}{10}$ is the same as 0.9. TRUE FALSE
5. You can read 4.2 as "four and two tenths". TRUE FALSE

Activity 8 Think Harder CHALLENGE

Think carefully about tenths.

1. Ava runs 100 m in 15.3 seconds and Omar runs it in 16.1 seconds. Who is faster? ☐ By how many tenths of a second? ☐
2. Write a decimal between 3 and 4 that has 7 tenths. ☐
3. How many tenths are there in 2.4 altogether? ☐

Next: Unit 2 · Tenths and Hundredths

★ ★ ★

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Answers Unit 1: Introduction to Decimals

For the adult checking this work. These answers come from Teacher's Guide 2: Decimals, which shows every pupil page with its answers beside it, plus short teaching notes for every unit.

Try It With Help

1. 0.6
2. 2.8
3. $\frac{7}{10}$

Activity 1

1. zero point five (given)
2. four point seven
3. zero point two
4. nine point eight
5. six point four

Activity 2

1. 3 ones, 6 tenths
2. 0 ones, 9 tenths
3. 7 ones, 2 tenths
4. 5 ones, 8 tenths
5. 0 ones, 4 tenths
6. 8 ones, 1 tenth

Activity 3

1. 0.2
2. 0.5
3. 0.9
4. 0.4

Activity 4

1. 0.3
2. 0.7
3. 0.1
4. $\frac{6}{10}$ ($\frac{3}{5}$)
5. $\frac{8}{10}$ ($\frac{4}{5}$)
6. $\frac{3}{10}$

Activity 5

First line: 0.3, 0.6, 0.8; second line: 4.2, 4.7

Activity 6

1. 2.5
2. 0.7
3. 6.3
4. 9.1
5. 0.4
6. 5.8

Activity 7

1. TRUE
2. TRUE
3. FALSE (3 ones and 7 tenths)
4. TRUE
5. TRUE

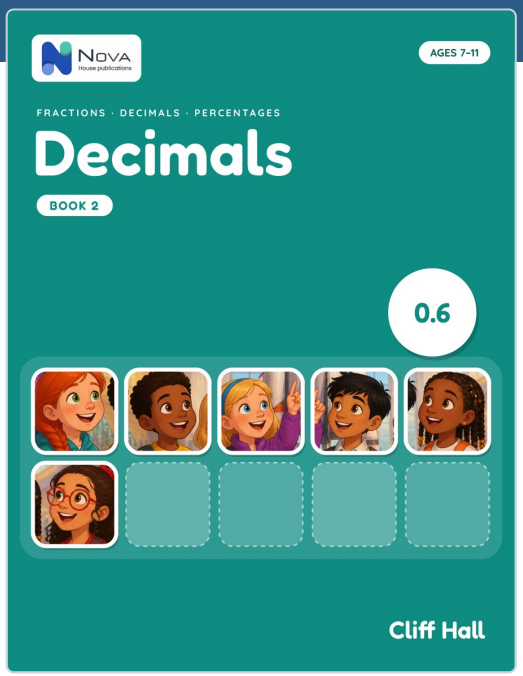
Activity 8

1. Ava, by 8 tenths of a second
2. 3.7
3. 24 tenths

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