



CAMBRIDGE
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CAMBRIDGE Primary Mathematics

Workbook 6

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How to use this book

This workbook provides questions for you to practise what you have learned in class. There is a unit to match each unit in your Learner's Book. Each exercise is divided into three parts:

- **Focus:** these questions help you to master the basics
- **Practice:** these questions help you to become more confident in using what you have learned
- **Challenge:** these questions will make you think more deeply.

You might not need to work on all three parts. Your teacher will tell you which parts to do.

You will also find these features:

Important words that you will use.

bisect decompose
diagonal justify
parallel trapezia

Step-by-step examples showing a way to solve a problem.



There are often many different ways to solve a problem.

Worked example 2

Reflect this triangle in the diagonal mirror line.

Take one vertex of the triangle at a time. Draw arrows (black) to the mirror line, then draw the same length arrows (grey) the other side of the mirror line. Join the vertices with straight lines to complete the reflected triangle.

These questions will help you to develop your skills of thinking and working mathematically.

- 13 Emma uses small cubes to make a larger cube. She uses 16 cubes to make the base of her cube. How many small cubes does Emma use to make the larger cube? How do you know?

Thinking and Working Mathematically

There are some important skills that you will develop as you learn mathematics.



Specialising is when I choose an example and check to see if it satisfies or does not satisfy specific mathematical criteria.

Characterising is when I identify and describe the mathematical properties of an object.

Generalising is when I recognise an underlying pattern by identifying many examples that satisfy the same mathematical criteria.

Classifying is when I organise objects into groups according to their mathematical properties.



Critiquing is when I compare and evaluate mathematical ideas, representations or solutions to identify advantages and disadvantages.

Improving is when I refine mathematical ideas or representations to develop a more effective approach or solution.

Conjecturing is when I form mathematical questions or ideas.

Convincing is when I present evidence to justify or challenge a mathematical idea or solution.



1 The number system

> 1.1 Place value

Worked example 1

Paulo is thinking of a number.

He says, 'If I divide my number by 10 and then by 100, the answer is 0.375.'

What number is Paulo thinking of?

$$0.375 \times 100 \times 10$$

100	10	1	0.1	0.01	0.001
		0	3	7	5
0	3	7	5		
3	7	5			

× 100
× 10

$$0.375 \times 100 \times 10 = 375$$

Answer: Paulo is thinking of 375.

compose numbers decimal point
decompose digit hundredth
place value regroup tenth
thousandth

To find Paulo's number, reverse the operations.

You could replace $\times 100 \times 10$ by $\times 1000$.

Exercise 1.1

Focus

- 1 Draw a ring around the expression that is equivalent to 0.67.

$$\frac{6}{10} + \frac{7}{10}$$

$$\frac{60}{10} + \frac{7}{100}$$

$$\frac{6}{10} + \frac{7}{100}$$

$$\frac{60}{100} + \frac{70}{100}$$

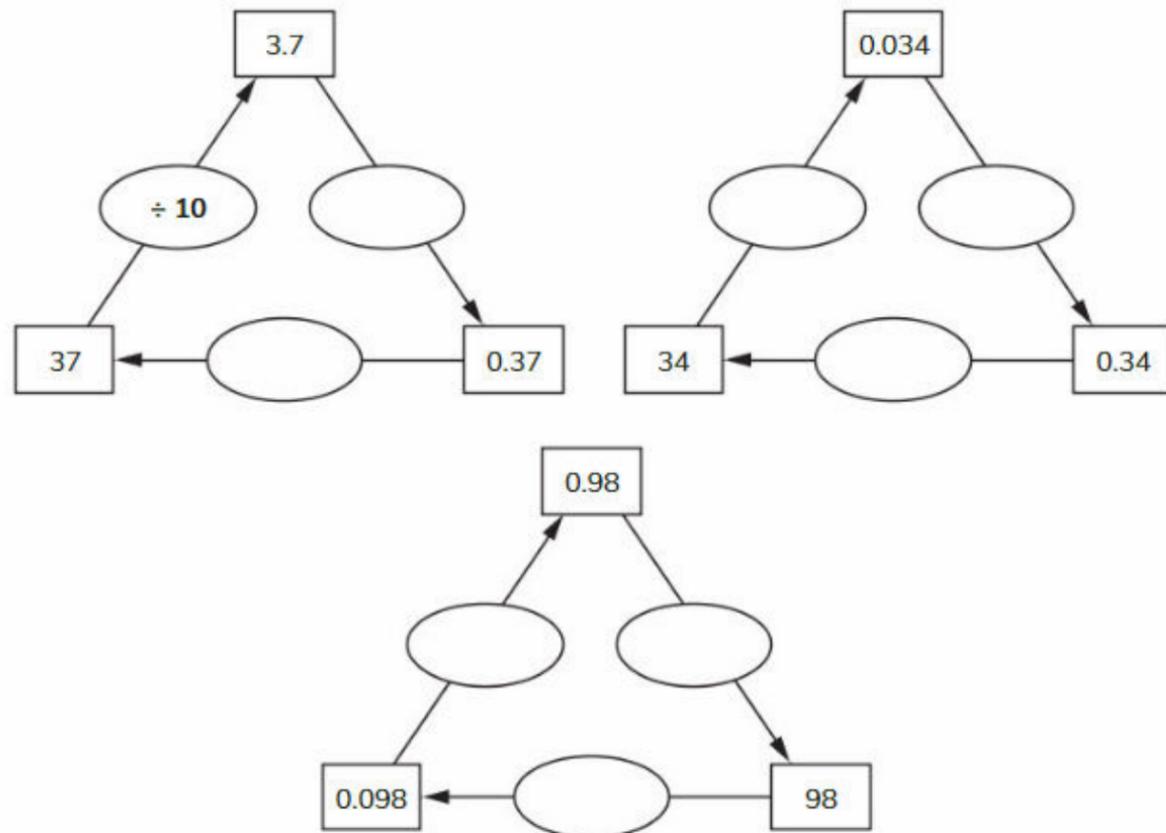
- 2 What does the digit 5 in 3.065 represent?

- 3 Magda regroups 56.079 in different ways but two of her answers are wrong. Which answers are wrong?

- A 5607 tenths + 9 thousandths
B 56 ones and 79 thousandths
C $56 + 0.79$
D $50 + 6.079$
E $50 + 6 + 0.07 + 0.009$



4 Write the operations to complete these multiplication and division loops.



5 Complete the place value diagram.



6 Write the number six tenths, four hundredths and five thousandths as a decimal.

Practice

7 Complete the table to show what the digits in the number 47.506 represent.

4	tens
5	
6	
7	

8 Find the missing numbers.

a $5.6 \times 100 =$

b $0.88 \times 1000 =$

c $41.28 \times 10 =$

d $670 \div 1000 =$

e $191 \div 100 =$

f $6.3 \div 10 =$

9 Draw a ring around the expression that is equivalent to 4.063.

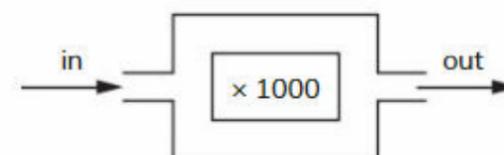
A $4 + 0.6 + 0.3$

B $4 + 0.6 + 0.03$

C $4 + 0.06 + 0.03$

D $4 + 0.06 + 0.003$

10 Petra puts some numbers into a function machine.



Complete the table to show her results.

in	out
1.5	1500
	937
16.24	
	490
0.07	

11 Write the decimal number that is represented by

$$-4 - 20 - \frac{7}{100} - \frac{6}{1000} - \frac{9}{10}$$

Challenge

12 Ingrid says, 'I can multiply by 100 by adding two zeros.'
Explain why Ingrid is wrong.

13 Filipe multiplies a number by 10, then again by 10 and again by 10.
His answer is 7.

What number did he start with?

14 Four students Anton, Ben, Kasinda and Anya each think of a number.
The numbers are 45, 4.5, 0.45 and 0.045.

Use these clues to work out which number each student is thinking of.

- Ben's number is a thousand times smaller than Kasinda's number.
- Anton's number is ten times smaller than Kasinda's number.
- Anya's number is ten times bigger than Ben's number.

Anton's number is Ben's number is

Kasinda's number is Anya's number is

15 Leila says, 'The number represented in this place value grid is the largest number that can be made with nine counters.'

Do you agree?

Explain your reasoning.

10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s	$\frac{1}{1000}$ s
● ● ● ● ●	●	●	●	●

> 1.2 Rounding decimal numbers

Worked example 2

Neve has four number cards.



She chooses two cards.

She adds the numbers on the cards together.

She rounds the result to the nearest whole number.

Her answer is 4.

Which two cards did she choose?

$0.25 + 0.25 = 0.5$
0.5 rounds up to 1

Look for two numbers that total 3.5 because
3.5 rounds up to 4.

1.25 and 2.25

or

0.25 and 3.25

You could choose 1.25 and 2.25 or 0.25 and 3.25.

You are **specialising** when you choose two numbers and check if the total rounds to 4.

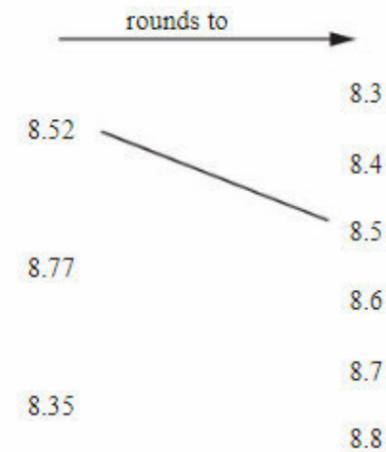
nearest
round

Exercise 1.2

Focus

- 1 Draw lines to show each number rounded to the nearest tenth.

The first one has been done for you.



- 2 Draw a ring around all the numbers which equal 10 when rounded to the nearest whole number.

10.53	10.5	10.35	9.55
10.05	9.5	9.05	9.35

- 3 a Round 7.81 to the nearest tenth.

- b Round 7.81 to the nearest whole number.

Tip

Remember the numbers could be less than 10 or more than 10.

