

CAMBRIDGE PRIMARY Mathematics

Learner's Book



3



Cambridge
Primary
Maths

Cherri Moseley and Janet Rees

Completely **Cambridge**
Cambridge resources
for
Cambridge qualifications

CAMBRIDGE PRIMARY **Mathematics**

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University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781107667679

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First published 2014

Printed in the United Kingdom by Latimer Trend

A catalogue record for this publication is available from the British Library

ISBN 978-1-107-66767-9 Paperback

Cover artwork: Bill Bolton

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PHOTOGRAPHS

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Introduction

This Learner's Book is a supplementary resource that consolidates and reinforces mathematical learning alongside the *Cambridge Primary Mathematics Teacher's Resource 3* (9781107668898). It acts as a useful consolidation tool for the learners by providing points for discussion to develop problem-solving skills and support learning through discovery and discussion. Rote learning and drill exercises are avoided.

Ideally, a session should first be taught using the appropriate *Core activity* in the *Teacher's Resource 3*, and then the *Learner's Book* page is used at the end of the session, or set as homework, as a means of formative assessment. There is a single page corresponding to each *Core activity* in the *Teacher's Resource 3* printed book. The *Core activity* that the page relates to is indicated at the bottom of the page.

Hints and tips are provided throughout to support the learners. They will appear as follows:

Write a list of number pairs to help you



Please note that the *Learner's Book* on its own does not cover all of the Cambridge Primary mathematics curriculum framework for Stage 3. It needs to be used in conjunction with the *Teacher's Resource 3*.



This publication is part of the *Cambridge Primary Maths project*. *Cambridge Primary Maths* is an innovative combination of curriculum and resources designed to support teachers and learners to succeed in primary mathematics through best-practice international maths teaching and a problem-solving approach.

Cambridge Primary Maths brings together the world-class Cambridge Primary mathematics curriculum from Cambridge International Examinations, high-quality publishing from Cambridge University Press and expertise in engaging online enrichment materials for the mathematics curriculum from NRICH.

Teachers have access to an online tool that maps resources and links to materials offered through the primary mathematics curriculum, NRICH and Cambridge Primary mathematics textbooks and e-books. These resources include engaging online activities, best-practice guidance and examples of *Cambridge Primary Maths* in action.

The Cambridge curriculum is dedicated to helping schools develop learners who are confident, responsible, reflective, innovative and engaged. It is designed to give learners the skills to problem solve effectively, apply mathematical knowledge and develop a holistic understanding of the subject.

The *Cambridge Primary Maths* textbooks provide best-in-class support for this problem-solving approach, based on pedagogical practice found in successful schools across the world. The engaging NRICH online resources help develop mathematical thinking and problem-solving skills. To get involved visit www.cie.org.uk/cambridgeprimarymaths

The benefits of being part of *Cambridge Primary Maths* are:

- the opportunity to explore a maths curriculum founded on the values of the University of Cambridge and best practice in schools
- access to an innovative package of online and print resources that can help bring the Cambridge Primary mathematics curriculum to life in the classroom.

This series is arranged to ensure that the curriculum is covered whilst allowing teachers to use a flexible approach. The Scheme of Work for Stage 2 has been followed, though there are a few deviations.

The components are:

- Teacher's Resource 3 ISBN: 9781107668898 (printed book and CD-ROM).
- Learner's Book 3 ISBN: 9781107667679 (printed book)
- Games Book 3 ISBN: 9781107694019 (printed book and CD-ROM).

Number

Hundreds, tens and ones

Let's investigate

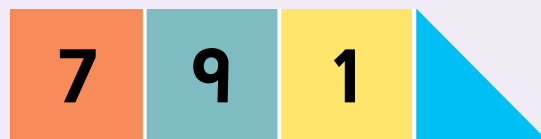
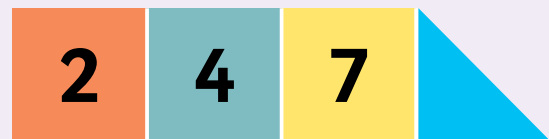
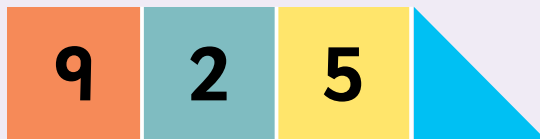
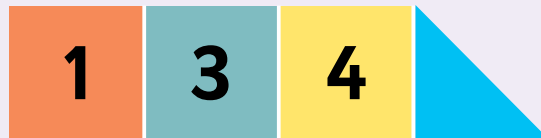
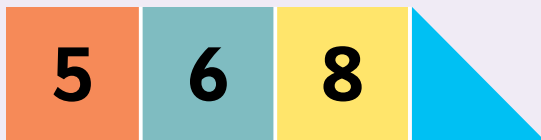
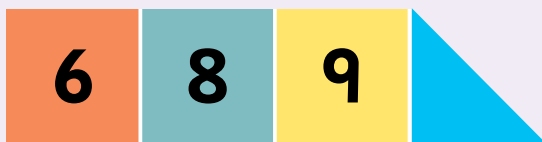
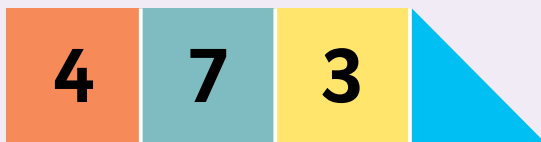
A set of place value cards has been used to make nine three-digit numbers. Here are seven of the numbers.

Use a set of place value cards to help you.



Which place value cards are missing?

How many different three-digit numbers can you make with the missing place value cards?



Does it matter which digit cards are the missing ones?

Will you always be able to make that many numbers? Why?

Use a set of place value cards to make nine three-digit numbers.

Show a friend seven of the numbers and challenge them to tell you the other two numbers. If the numbers are incorrect, but your friend has identified the correct cards, give them another try to guess your numbers.

- 1 What is the value of the 6 in each of these numbers?

263 613 216 609

- 2 Write the numbers which are 10 more, 10 less, 100 more and 100 less than the numbers in Question 1.
- 3 The value of the digit 6 did not change in one of the numbers. Which one? Why?
- 4 Take the following numbers:

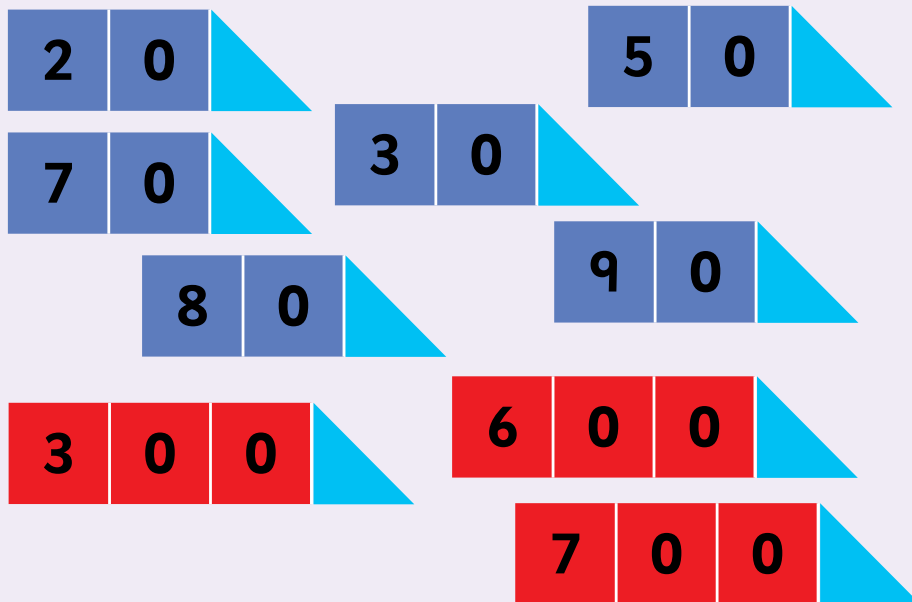
Hundreds	3 and 8
Tens	1 and 5
Ones	2 and 6

Use them to make as many three-digit numbers as you can.

Missing numbers

Let's investigate

The numbers have been correctly pegged on the number line below but these cards fell off.

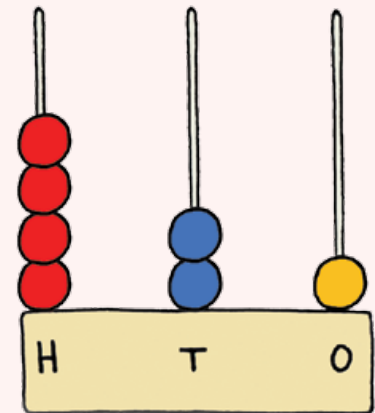


Sort out which card belongs with each number.

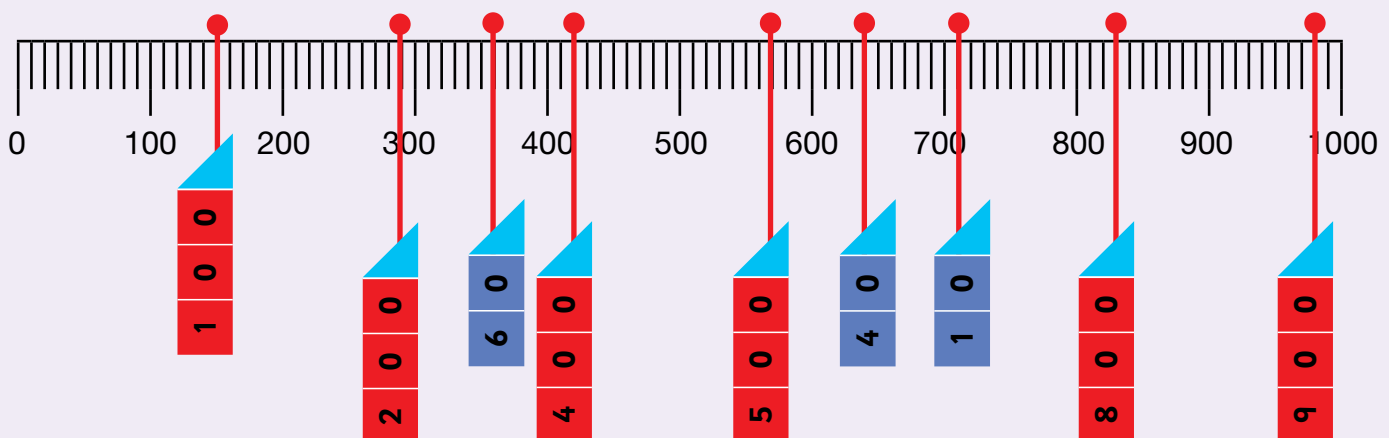
Write a list of the correct numbers and the matching missing cards.

Vocabulary

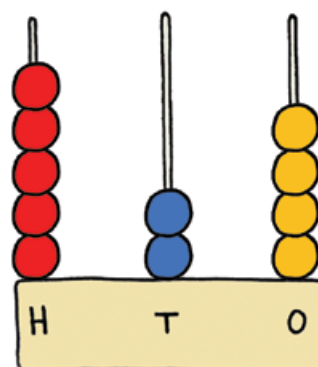
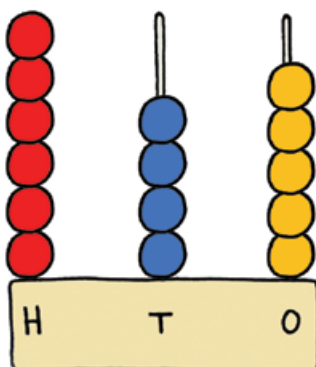
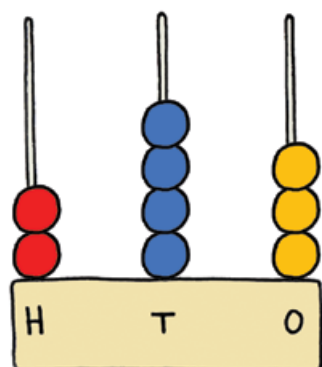
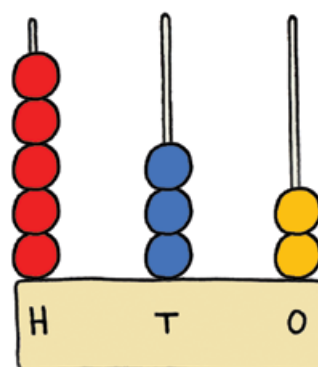
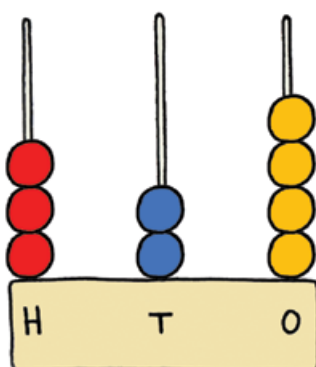
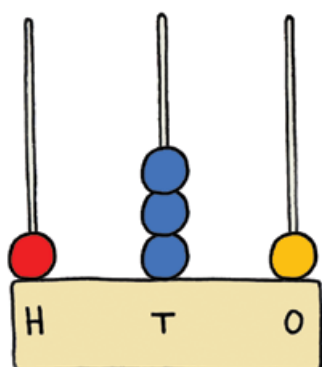
abacus: an abacus is used to show numbers and to calculate for example 421 can be shown as:



Look at where each number is pegged on the number line. What should the number be?



- 1 The number of beads in each tower of the abacus tells you how many hundreds, tens and ones in each number. Write a list of the numbers shown.



- 2 Put the numbers in order from the smallest to the largest.
- 3 Draw an abacus to show each of these numbers:
- 236, 437, 352, 628, 714, 541
- 4 Take the place value cards and put the hundreds in one pile, the tens in another and the ones in the third pile. Shuffle each pile. Turn over the top card from each pile to make a three-digit number. Draw the abacus and write the matching number. Repeat.

Work with a partner. Shuffle the cards again and take it in turns to read the number to your partner for them to draw.

Which game is which?

Let's investigate

Here are three unfinished HTO games. The learners were trying to make the lowest number, the highest number and the closest number to 500.

But which game is which?

How do you know?

Game 1

Player 1

5

7

Player 2

3

8

Game 2

Player 1

4

9

Player 2

7

2

Game 3

Player 1

5

1

Player 2

6

2

Play a round of HTO, stopping after four digit cards have been placed. Challenge some learners to tell you which game you were playing.

Look at where the digit cards have been placed. Where would you put each card if you were trying to make the lowest number? Or the highest number? Or the number closest to 500?



1 Here are four digits.

7 4 9 1

- (a) Make the biggest three-digit number you can with any three of these digits
 - (b) Make the smallest three-digit number you can with any three of the digits in question 1.
- 2
- (a) What is the largest three-digit number you can make with a set of digit cards?
 - (b) What is the largest three-digit number you can make with a set of hundreds, tens and ones place value cards?
- 3
- (a) What is the smallest three-digit number you can make with a set of digit cards?
 - (b) What is the smallest three-digit number you can make with a set of hundreds, tens and ones place value cards?
- 4 Which number needs to go in each box?
- (a) $\boxed{?} + 20 + 1 = 421$
 - (b) $100 + \boxed{?} + 8 = 148$
 - (c) $\boxed{?} + 70 + 7 = 777$
 - (d) $800 + \boxed{?} + 5 = 865$
- 5
- (a) Which is less, 4 hundreds or 44 tens? How do you know?
 - (b) Which is more, 8 hundreds or 88 tens? How do you know?
 - (c) Which is less, 2 tens and 3 ones or 3 tens and 2 ones? How do you know?

At the store

Let's investigate

Vocabulary

solve: find the answer.



Solve these word problems using addition or subtraction. Draw a picture or write a number sentence to show how you solved them.

Use place value cards or base ten equipment to help you.



- 1 The store has 21 packs of sweets left. 30 packs are delivered to the store. How many packs do they have now?
- 2 The store has 34 apples. 20 are sold. How many are left?
- 3 The baker made 248 cakes. 100 were bought for a party. How many cakes were left?
- 4 The store had 120 oranges. Another 100 were delivered. How many oranges does the store have now?
- 5 There were 84 newspapers delivered to the store this morning. 60 were sold before noon. How many were left to sell in the afternoon?
- 6 The store had 160 eggs but 40 had gone off. How many were left to sell?
- 7 The store had 107 packs of rice. 200 packs are delivered. How many packs does the store have now?
- 8 140 boxes of tea were delivered to the store. There were 37 left on the shelf. How many boxes of tea does the store have now?
- 9 Bags of potatoes come in three different sizes 3 kg, 5 kg and 10 kg. The store has five 3 kg bags, four 5 kg bags and two 10 kg bags. How many kg of potatoes does the store have?
- 10 Make up a story for these number sentences.

$$175 + 20 = 195$$

$$64 - 20 = 44$$

$$212 + 100 = 312$$

$$520 - 300 = 220$$

Tell one of your stories to a friend and listen to one of theirs.
Can you both tell which number sentence was used?

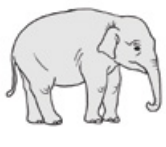
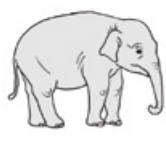
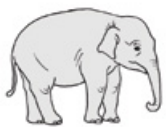
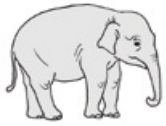
Wildlife puzzle

Let's investigate

What is the value of each animal?

How many legs in this puzzle?

How did you find out?

				= 22
				= 20
				= 22
				= 18
= 18	= 26	= 20	= 18	

Now solve these number sentences.

1  +  +  +  +  = ?

2 5  = ?

3 8  = ?

4 6  = ?