Contents

Term 2

Term 3

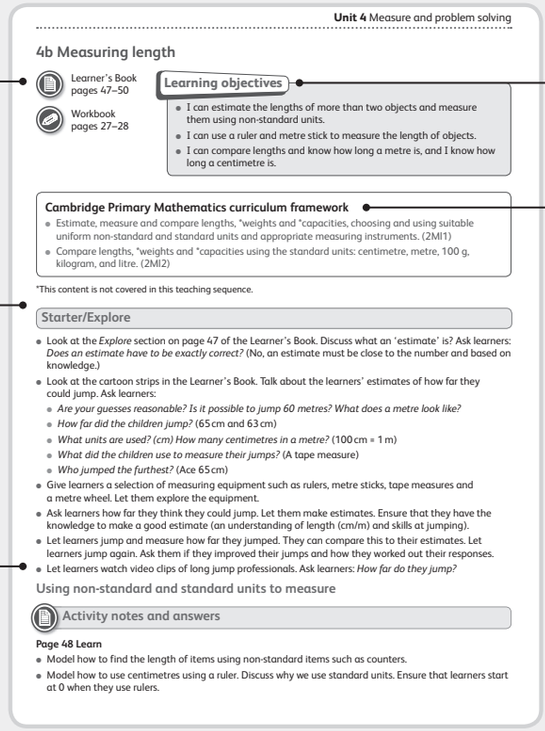
How to use this book

This Teacher's Resource Pack accompanies the *Hodder Cambridge Mathematics* Stage 2 Learner's Book, Workbook and Digital Resource Pack.

Icons indicate which components to use in each teaching sequence.

The *Starter* activity introduces the topic and activates the learners' prior knowledge.

Activity notes and answers include useful teaching tips and answers for the *Practise* activities.



Unit 4 Measure and problem solving

4b Measuring length

Learner's Book pages 47–50

Workbook pages 27–28

Learning objectives

- I can estimate the lengths of more than two objects and measure them using non-standard units.
- I can use a ruler and metre stick to measure the length of objects.
- I can compare lengths and know how long a metre is, and I know how long a centimetre is.

Cambridge Primary Mathematics curriculum framework

- Estimate, measure and compare lengths, *weights and *capacities, choosing and using suitable uniform non-standard and standard units and appropriate measuring instruments. (2MI1)
- Compare lengths, *weights and *capacities using the standard units: centimetre, metre, 100 g, kilogram, and litre. (2MI2)

*This content is not covered in this teaching sequence.

Starter/Explore

- Look at the *Explore* section on page 47 of the Learner's Book. Discuss what an 'estimate' is? Ask learners: *Does an estimate have to be exactly correct?* (No, an estimate must be close to the number and based on knowledge.)
- Look at the cartoon strips in the Learner's Book. Talk about the learners' estimates of how far they could jump. Ask learners:
  - *Are your guesses reasonable? Is it possible to jump 60 metres? What does a metre look like?*
  - *How far did the children jump?* (65 cm and 63 cm)
  - *What units are used? (cm) How many centimetres in a metre?* (100 cm = 1 m)
  - *What did the children use to measure their jumps?* (A tape measure)
  - *Who jumped the furthest?* (Ace 65 cm)
- Give learners a selection of measuring equipment such as rulers, metre sticks, tape measures and a metre wheel. Let them explore the equipment.
- Ask learners how far they think they could jump. Let them make estimates. Ensure that they have the knowledge to make a good estimate (an understanding of length (cm/m) and skills at jumping).
- Let learners jump and measure how far they jumped. They can compare this to their estimates. Let learners jump again. Ask them if they improved their jumps and how they worked out their responses.
- Let learners watch video clips of long jump professionals. Ask learners: *How far do they jump?*

Using non-standard and standard units to measure

Activity notes and answers

Page 48 Learn

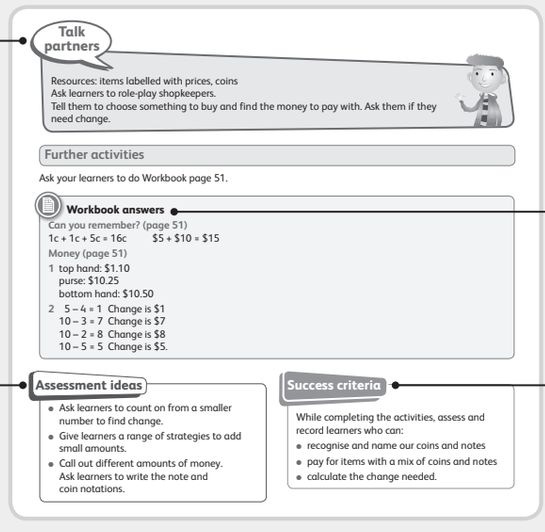
- Model how to find the length of items using non-standard items such as counters.
- Model how to use centimetres using a ruler. Discuss why we use standard units. Ensure that learners start at 0 when they use rulers.

Learning objectives are the specific expected outcomes for the teaching sequence, written as 'I can' type objectives to share with the learners.

Curriculum objectives (and codes) from the *Cambridge Primary Mathematics curriculum framework*. These indicate the focus area, with the objectives partly covered for each teaching sequence as they are revisited a number of times through the year to ensure coverage in depth.

The *Talk partners* feature gives ideas for how learners can learn from engaging with one another.

Assessment ideas contain ideas for assessment questions.



Talk partners

Resources: items labelled with prices, coins
Ask learners to role-play shopkeepers.
Tell them to choose something to buy and find the money to pay with. Ask them if they need change.

Further activities

Ask your learners to do Workbook page 51.

Workbook answers

Can you remember? (page 51)
1c + 1c + 5c = 16c $5 + $10 = $15

Money (page 51)
1 top hand: $1.10
purse: $10.25
bottom hand: $10.50
2 5 – 4 = 1 Change is $1
10 – 3 = 7 Change is $7
10 – 2 = 8 Change is $8
10 – 5 = 5 Change is $5.

Assessment ideas

- Ask learners to count on from a smaller number to find change.
- Give learners a range of strategies to add small amounts.
- Call out different amounts of money. Ask learners to write the note and coin notations.

Success criteria

While completing the activities, assess and record learners who can:

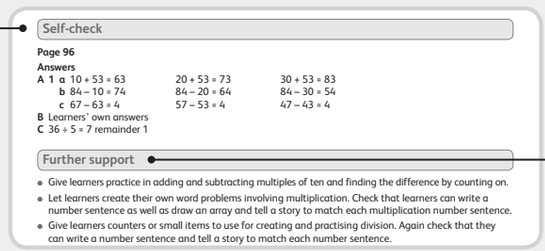
- recognise and name our coins and notes
- pay for items with a mix of coins and notes
- calculate the change needed.

Further activities indicate how to use the Workbook for extra practice.

Success criteria are assessment criteria based on the objectives to help identify what a learner should be able to do, know or understand by the end of the teaching sequence.

The *Self-check* section gives answers to the *Self-check* activities in the Learner's Book.

Further support gives teaching ideas for learners who need to learn Mathematics in a different way.



Self-check

Page 96

Answers

A **1** **a** 10 + 53 = 63 20 + 53 = 73 30 + 53 = 83
b 84 – 10 = 74 84 – 20 = 64 84 – 30 = 54
c 67 – 63 = 4 57 – 53 = 4 47 – 43 = 4
B Learners' own answers
C 36 ÷ 5 = 7 remainder 1

Further support

- Give learners practice in adding and subtracting multiples of ten and finding the difference by counting on.
- Let learners create their own word problems involving multiplication. Check that learners can write a number sentence as well as draw an array and tell a story to match each multiplication number sentence.
- Give learners counters or small items to use for creating and practising division. Again check that they can write a number sentence and tell a story to match each number sentence.

Introduction

About the series

Hodder Cambridge Primary Mathematics is a series written by experienced authors and primary practitioners to reflect the mastery approach used to teach the Cambridge Primary Mathematics curriculum framework. It has a high-quality textbook at its core as a teaching and learning tool, supported by a write-in workbook to provide additional practice through variation, as well as a Teacher's Pack and a Digital Resource Pack to aid modelling of key mathematical ideas.

This series provides schools with the opportunity to build fluency and mathematical reasoning skills by exploring, clarifying, practising, and then extending concepts to ensure learners master mathematical ideas and secure a deep conceptual understanding of the subject. Problem solving is woven throughout to enhance learners' ability to apply their skills and solve non-routine mathematical problems.

> 'A high-quality mathematics textbook is an educational resource that can be used by pupils in lessons and independently, and that also provides both subject knowledge and pedagogy support to teachers of mathematics. It is a comprehensive learning tool, providing support for the development of both procedural fluency and conceptual understanding in mathematics.'
>
> Taken from *Guidance on Mathematics Textbook Design* (NCETM, January 2015)

Components

Hodder Cambridge Primary Mathematics includes a wealth of resources for learners and teachers. The learners' materials include a full-colour textbook and a single-colour, write-in Workbook.

For teachers, the course offers valuable guidance contained within this Teacher's Pack, as well as additional materials available separately in the Digital Resource Pack.

The content for each of these components is summarised below.

Learner's Book

The Learner's Book develops learners' mathematical fluency, problem-solving and reasoning skills. The Learner's Book:

- introduces topics through *Explore* starter activities
- develops mathematical language with *Key words* and worked examples
- builds fluency and mathematical reasoning skills by exploring, clarifying, practising and then extending concepts to ensure that learners master mathematical ideas
- supports learners of all abilities with support hints and *Try this* extension challenges
- secures knowledge with problem solving integrated throughout the book
- incorporates assessment for learning through *Self-assessment* activities at the end of each unit.

Workbook

The Workbook consolidates learning, deepens conceptual understanding and develops problem-solving skills through practice questions that are ideal for independent practice, homework or extension activities. It also:

- supports and builds on knowledge gained from the Learner's Book with *Practise* exercises
- provides additional 'intelligent practice' through variation
- challenges learners to deepen and extend their understanding.

Teacher's Pack

The Teacher's Pack ensures full coverage of learning objectives with concise teaching notes and assessment support, built on a mastery approach to embed mathematical understanding. In addition, it:

- ensures clarity about the mastery approach with clear background information
- provides teaching activities and ideas to ensure that all learners master the concepts required
- assists formative and summative assessment with essential guidance
- allows flexibility and freedom to adapt ideas to the needs of the class
- provides answers to Workbook questions and Learner's Book activities.

Digital Resource Pack

To accompany *Hodder Cambridge Primary Mathematics*, a Digital Resource Pack is available online as part of Dynamic Learning and also on CD-ROM. The Digital Resource Pack supports teachers as they introduce and explore mathematical concepts in the classroom.
The Digital Resource Pack enables teachers to:

- model key concepts to the whole class or small groups using the digital toolkit. Tools include a calculator, a protractor, number grids, clocks and many more that can be deployed easily on the whiteboard
- access a range of versatile, time-saving, ready-to-go resources including place value grids and number cards for everyday use in classroom activities
- assist with the explanation and pronunciation of mathematical vocabulary by using the audio glossary.

Furthermore, teachers can enhance their own professional development and inform their practice through short CPD videos. The videos, originally created for UK primary teachers, are written and presented by experienced practitioners; they contain helpful examples of ways to explore a variety of topics and concepts in any classroom. It should be noted that the videos were designed to accompany the National Curriculum for England and Wales and, as such, they may not directly reflect the coverage of the Cambridge International Examinations curriculum framework. However, they may still be used as reference material by teachers for their insightful content.

Model of learning and pedagogy

Hodder Cambridge Primary Mathematics takes a **mastery** approach so that the majority of learners are expected and are able to attain the age-related expectations for the curriculum.

> 'A mastery approach includes a set of principles that includes a belief that all pupils are capable of understanding and doing mathematics, given sufficient time. With good teaching, appropriate resources, effort and a 'can do' attitude, all children can achieve in and enjoy mathematics.'
> Taken from *Teaching for Mastery: Questions, tasks and activities to support assessment* (NCETM 2015)

Mastery involves helping learners to develop a deep understanding of mathematical ideas and concepts, in order to make connections between different areas of Mathematics. While fluency with procedures such as calculation skills is important, learners who have mastered a particular aspect of Mathematics fully, are able to apply what they have learnt to solve unfamiliar problems. These learners would go beyond simply replicating processes that have been modelled by the teacher, and reason about how to solve the problem.

This approach has proved highly successful in jurisdictions such as Singapore and Shanghai. It involves spending enough time to ensure the understanding of a mathematical concept is fully embedded and secure before moving on to the next topic. By securing the understanding of content as it is met, concepts can be built on without some learners having gaps in their knowledge and falling behind in each new topic.

Practice and variation

Intelligent practice underpins the mastery approach. 'Intelligent practice' is a term used to describe practice that develops procedural fluency, but also exposes mathematical structures, patterns and relationships. This deepens conceptual understanding. Intelligent practice is clearly structured and incorporates carefully designed variations. These variations may be conceptual or procedural.

- Procedural variation can be introduced by extending a problem (e.g. varying the number, the unknown or the context), varying the processes of solving a problem or varying the application of a method (e.g. applying the same method to a group of similar problems).
- Conceptual variation can be introduced by varying the representation of a problem.

The practice in *Hodder Cambridge Primary Mathematics* is based on the principles of intelligent practice.

- The *Practise* sections in the Learner's Book make use of models and images to support understanding. They include decontextualised exercises with procedural variation, practice using a variety of contexts, and open-ended, investigative practice. While developing their understanding of the concepts covered in the *Learn* section, learners will also build procedural fluency across a range of question types and in a range of contexts.
- The corresponding *Practise* pages in the Teacher's Pack extend the opportunities for conceptual variation by suggesting a range of physical and pictorial representations that teachers may want to use to support the learning.
- The Workbook offers further practice exercises. These exercises have been planned to encourage learners to reason and spot patterns. They include structured variation of a number or unknown (procedural variation), a range of representations and open questions (e.g. *What do you notice?*).

Differentiation

To achieve mastery effectively means less differentiation by splitting learners into perceived ability groups or providing easier work to some learners. Instead, it means providing different types of support to meet learners' needs so that learners can all access the same curriculum. Learners who grasp concepts quickly are challenged to think more deeply about the content, focusing on making connections, spotting patterns or making generalisations. Learners who take longer to understand ideas may need extra enabling intervention support to help them keep up.

Key strategies for differentiation include:

- careful and strategic use of concrete, pictorial and abstract representations
- skilful questioning within lessons to help conceptual understanding
- identifying misconceptions that arise and acting upon them quickly
- challenging those learners who grasp concepts rapidly through problem solving, rather than any acceleration through new content.

Growth mind-set and problem solving

When assessing learners' mastery, assessors must check that learners are able to solve non-routine problems and explain the reasoning behind key ideas. One of the key principles is that learners should be encouraged to have a growth mind-set, and that teachers should start from the belief that it is possible for all learners to be successful in Mathematics, rather than assuming that some learners are simply more capable, mathematically, than others. With this approach, problem solving can be a starting point, not the end-point. Learning can happen through problem solving and learners don't have to learn the concepts first and then apply them. Problem solving is central to a mastery approach, not simply the end goal.

Representation

Concrete-Pictorial-Abstract (CPA)

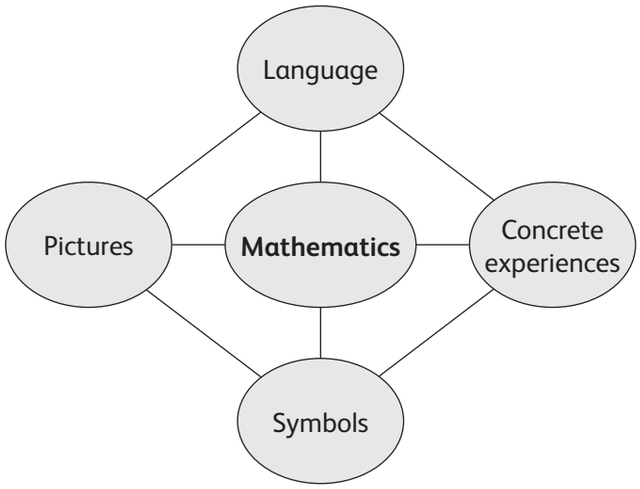
Hodder Cambridge Primary Mathematics is based on the belief that mathematical understanding is developed through using **concrete, pictorial and abstract** (or symbolic) representations.

Practical resources and diagrammatic representations are used throughout, rather than being seen as a progression where only younger learners use materials/visual images.

A variety of representations is used throughout *Hodder Cambridge Primary Mathematics*. These are for teachers and learners to use and make sense of a concept or a particular problem. Learners need to explore the various representations for themselves and be allowed to choose which representations they use for a particular activity.

Mathematical language

Language is another important element of representation. The connections between language, concrete experiences, pictures and symbols help learners make sense of the mathematics. This means that using accurate mathematical language in the classroom is very important, in order to share ideas, address misconceptions and develop reasoning skills.



Learners should be encouraged to explain what they are doing and why they are doing it, through probing questioning from the teacher if necessary. Examples of questions that allow learners to talk, explain and show their understanding are included in the Learner's Book, Workbook and Teacher's Pack.
For example:

- *What do you notice?*
- *Can you see a pattern?*
- *What have you discovered?*
- *How did you find that out?*
- *Why do you think that?*
- *Have we found all the possibilities?*
- *Can you explain your reasoning?*

Teachers also need to plan the introduction of key words, as listed in the Learner's Book, into lessons and provide opportunities for learners to rehearse and use the words on a regular basis.

Talk partners

This feature appears regularly throughout each unit to encourage learners to talk about their learning. As they articulate their ideas, they listen to each other, and where appropriate, change what they are thinking and saying. The role of the teacher is to move around the classroom, listening to what the partners are saying. The teacher can then provide support or offer new challenges.

Assessment

Formative assessment

Ongoing, formative assessment is central to teaching and learning for mastery, particularly in ensuring that learners have achieved more than a superficial understanding and to avoid moving on too quickly. Teachers and learners are continually reflecting on how the learning is moving forward and, where necessary, you can work with learners to support any issues in learning that emerge, during the lesson. If core ideas have not been mastered fully, they should be re-taught in different ways.

Formative assessment should be used to inform the next steps in learning, and may influence changes in planning and therefore the next lessons. Formative assessment is a cycle: finding out what learners know, moving learning forward, finding out how that learning has changed (what they know now) and planning the next steps. Where you find that learners are still unsure, stop and take some time to revisit an idea or skill, change the activity or context and then move on to new learning when learning is secure. Assessment is about you (and learners) continually reflecting on learning and ensuring that teaching is in line with learning.

Throughout each unit, there are continual opportunities for assessment. Teachers will probe conceptual and procedural understanding through questioning and observation as they model and teach. The way learners respond to the modelling and teaching provides the teacher with valuable information on what to spend a little more time on and what to move through quickly, as well as information on individual needs.

Eliciting learners' prior understanding and misconceptions

Each teaching sequence provides the opportunity for teachers to check existing understanding through the opening *Explore* activity. Discussions around what learners can see, how they interpret what they see and their response to questions will reveal their current level of understanding.

Learning objectives and Success criteria

An overview of all of the Cambridge Primary Mathematics curriculum framework objectives with their codes is provided at the beginning of each teaching sequence in the Teacher's Pack. These indicate the focus area, with the objectives partly covered for each teaching sequence as they are revisited a number of times through the year to ensure coverage in depth. The **Learning objectives** are the specific objectives for each teaching sequence. It is good practice to share these objectives with the learners at the beginning of each teaching sequence in learner-friendly language so that they are clear on the focus of each activity and what they are expected to learn.

In the teaching notes, suggestions for **Success criteria** are given. The Success criteria match the Learning objectives and are used to assess the outcome of the learning that has taken place. They are, in effect, what the successful learning will 'look' like once the Learning objectives have been met. At the end of each lesson, ask learners to reflect on what they have learned and check each learner's understanding against the Success criteria. Short, simple assessment ideas are also provided for the teacher to use to help assess the learner's understanding.

Learners may not have mastered all of the elements, so the teacher can work alongside the learners in making these assessments, going through any questions they have found challenging, and revisiting the *Learn* panels in more detail. If further support is required, teachers can use material from the Workbook, or the learners can work with other learners for peer support.

Self-assessment

The *Self-check* activity at the end of each unit gives learners the opportunity to demonstrate what they know and the concepts they have mastered. Thus, while the success criteria provide opportunities for ongoing assessment throughout the unit, the *Self-assessment* activity provides a summative assessment at the end of each unit.

The *Self-check* does not cover every Learning objective in the unit, yet the questions give an opportunity for the teacher to probe further for evidence of deep understanding. Specific questions can be displayed at the beginning of a lesson so the class knows what they will be learning, then revisited at the end of the lesson to review and embed that learning.

Structure, scope and sequence

The structure and content of the Learner's Books are based on the Cambridge Primary Mathematics curriculum framework for each stage. A spiral curriculum model is used to make sure there is both curriculum coverage and careful progression of concepts and skills over the stage and between years. One complete stage covers one academic year.

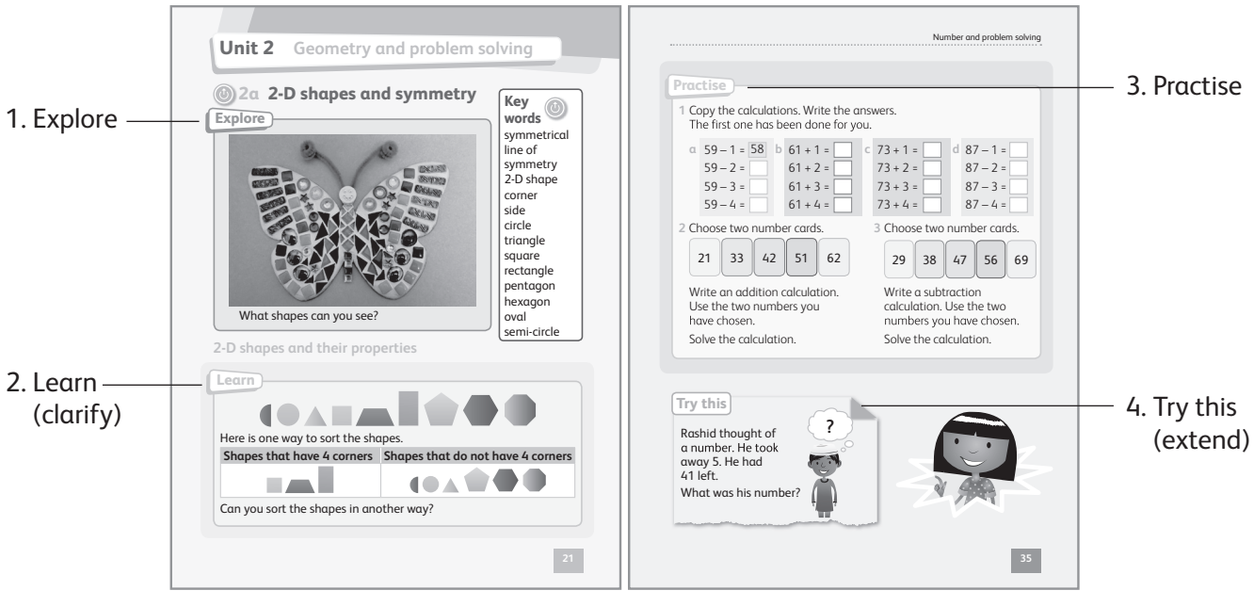
Each stage is divided into three terms and each term contains five units:

- Two number units per term
- Two non-number units (i.e. Measures, Geometry or Handling data)
- One problem-solving unit where knowledge/skills learned are applied to non-routine problems to show mastery.

Although there are separate problem solving units, in fact the whole book integrates problem solving into every unit, and even into every lesson. The learners are required to make decisions and discuss and explain their methods regularly, and have to apply knowledge and skills to solve puzzles and problems in interesting contexts throughout.

The teaching sequence

Each unit is broken into teaching sequences, which are expected to run over a number of lessons to ensure depth of learning. Each teaching sequence has a sub-heading to share with learners as the teaching focus for a particular lesson. The lesson structure uses a teaching sequence with the following elements:



1. Explore

This is a practical exploration, problem, challenge, picture or puzzle to engage and give a 'hook' to the lesson. It involves discussion, reasoning, looking for patterns and rules, or trying to solve a problem as a class or in groups.

2. Learn (clarify)

In this section, we teach, model, explain and help learners to understand. There is a sharp focus on a skill, procedure or concept. Use this section as a teaching point as misconceptions and gaps arise and ask learners to demonstrate and share understanding.

3. Practise

The *Practise* activity consolidates the *Learn* session. It is a short set of questions or a practical activity to give time to embed the learning. The activity makes use of procedural and conceptual variation, using what the learners know about mathematical structures and patterns to help their learning.
Practise activities always follow a *Learn* (clarify) section in the Learner's Book, but they are flexible in the number of revisits – a teacher may decide to go back to clarify a point after a *Practise* activity.

4. Try this (extend)

Try this and the problem-solving units allow for the application of skills and concepts learnt.
They also provide opportunities for reasoning and problem solving.

Other resources

Visual representations, manipulatives and concrete resources are hugely important in helping learners to develop a conceptual understanding of what they are learning.
The following key manipulatives are included in this series:

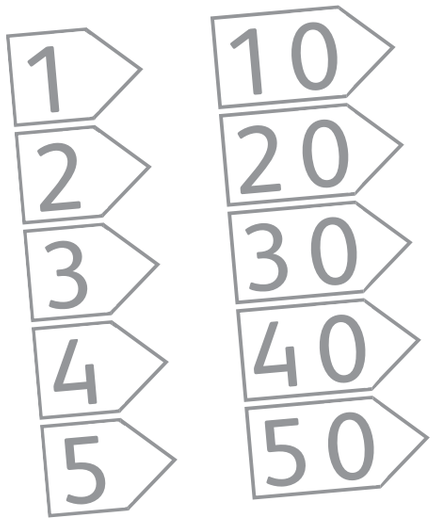
- Straws
- Place-value counters
- Number rods
- Coins
- Interlocking cubes
- 2-D shapes
- Clock faces
- 1–10 spinners
- Base 10 apparatus
- Place-value arrow cards
- Digit cards
- Counting sticks
- Coloured counters
- 3-D shapes
- 1–6 spinners
- Number cards

The following key visual representations are included in this series:

- number tracks
- ten frames
- 100 squares
- number lines
- bar models
- place-value grids
- Gattegno charts

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20



Unit 1 Number and problem solving

1a Number to 100

Learner's Book
pages 6–10

Workbook
pages 4–5

Digital resources for Unit 1
Whiteboard resources: Explore number to 100
Maths tools: Counters, numerals and symbols, 100 square, place value and abacus, number line
CPD videos: Key ideas 1 – Place value; Resources and representations
Resource sheets: Number lines; Round it!

Learning objectives

- I can read and write two-digit numbers.
- I can count up to 100 objects.
- I can count on and back in ones and tens.
- I can count in twos, fives and tens and show the jumps along a number line.
- I know the odd and even numbers to 20.

Cambridge Primary Mathematics curriculum framework

- Count, read and write numbers to at least 100 and back again. (2Nn1)
- Count up to 100 objects, e.g. beads on a bead bar. (2Nn2)
- Count on in ones and tens from single- and two-digit numbers and back again. (2Nn3)
- Count in twos, fives and tens and use grouping in twos, fives or tens to count larger groups of numbers. (2Nn4)
- Understand even and odd numbers and recognise these up to at least 20. (2Nn14)

Starter

Look at the *Explore* on page 6 of the Learner's Book. Talk about the football field.

Count objects

- Let learners work in pairs to discuss the objects they could count.
- Ask learners: *How many people are watching? How many football boots are there? How many bags are there?*

Count in twos and tens

- *How can we count the people watching the match? How many rows are there?*
- Model counting the people in tens.
- Use a 100 square to provide visual support.
- Practise counting in tens with learners. Use different voices to make it fun, for example, count in tens from 0–100 using a high, squeaky voice, a whisper or a deep, grumpy voice. Ask learners: *How quickly can you count in tens? Can you count in tens slowly?*
- Ask learners: *How many boots are there? How can we count them quickly?* Now ask learners to count in twos as you point to each person: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, and 22. Write the numbers for the learners to see and ask questions: *What do you notice about the numbers?* Check that learners can see that the numbers are all even. Ask them if they saw any patterns.

Odd and even numbers

- Ask learners to look at the players' numbers and find an even number less than 20. They may choose 10, 12 or 16. Ask learners: *How do you know your number is even?* Tell learners to turn to their talk partners and think of a way they could prove that the number is even.
- Discuss the methods the learners chose to prove a number is even. Reinforce putting objects in pairs and counting in twos to make an even number. Ask learners if they could use a similar method to prove if a number is odd.
- Write the numbers 2, 4, 6, 8, 10, 12, 14, 16, 18 and 20 on the board. Ask learners what they notice about the ones digits. Repeat for odd numbers.

Count on and back in ones and tens

Activity notes and answers

Page 7 Learn

- Discuss the picture of the rocket. Zara is counting down to lift off. Point out that Zara is counting backwards. Now count backwards with the learners as a group. Let learners pretend to be rockets and jump into the air when they reach 0/lift off!
- Ask learners to count backwards in tens. Use a 100 square as a visual aid or write the numbers for learners to see: 100, 90, 80, 70, 60, 50, 40, 30, 20, 10, lift off!
- First practise as a class. Then ask learners to practise in pairs, taking turns to say each number, for example, 100, **90**, 80, **70**, 60, **50**, 40, **30**, 20, **10**. (Model this activity with a learner/helper.)
- Look at the number track with the learners. Ask if the numbers are getting bigger or smaller. Explain that when we count forwards, the numbers get bigger, and when we count backwards, the numbers get smaller.
- Discuss which numbers are missing. Ask learners: *How do you know which numbers are missing?* Show learners that they can look at the numbers next to the missing numbers and count on or back.

Page 7 Practise

Resources: 100 square or number tracks

1 Learners write the missing numbers in their books or on paper. Make sure that learners check if the numbers are increasing/decreasing and if they are counting in ones or tens for each number track.

2 Let learners work in pairs to choose a two-digit number. Ask them to say the numbers aloud so you can check they are saying the numbers correctly. Check that learners can count on in ones and that they can write the next three numbers.

Answers

1 **a** 42, 46 **b** 53, 55, 57 **c** 90, 60, 10

2 Learners' own answers

Page 8 Try this

Ask learners to look at the picture of the penguins. Ask them: *How quickly can you count the penguins? Count in twos. Count in fives. Count in tens.* Show learners that it is quicker to count in tens, especially when there are large numbers.

Talk partners

Resources: a counter, a completed 100 square

Tell learners to work in pairs. One learner places a counter over a number on a 100 square. Can their partner identify which number is covered? Discuss how they worked it out. Repeat with the learners taking turns to cover and identify the number.

Count in twos, fives and tens

Activity notes and answers

Page 8 Learn

- Look at the image of counters. Ask learners: *How many counters are there?* Show learners it is easier to count them in twos.
- Give each pair a pile of 20 counters. Can learners arrange them in groups of 2 like the image? Practise counting together aloud 2, 4, 6, 8, 10, 12, 14, 16, 18, and 20. Reinforce the fact that these are all even numbers to 20. Ask learners how they know this.
- Look at the number line. Explain that the number line shows counting in twos to 20. Ask learners what they notice. They should recognise these as even numbers. Talk about the numbers that are not circled. Ask them how they could prove to a talk partner that these are odd numbers.
- Using their 20 counters, tell learners to arrange them in groups of 5. Practise counting together aloud: 5, 10, 15, and 20. Model how to show this on a number line. Draw a blank number line from 1–20 so that learners can see and mark on jumps of 5. Point out that there are still 20 counters. No matter how you count the counters, the total does not change.
- Let learners arrange their 20 counters in groups of 10. Practise counting together aloud: 10, 20. Model how to show this on a number line. Draw a blank number line so that learners can see and mark the jumps of 10.
- Practise counting aloud in twos, fives and tens as a class.

Page 9 Practise

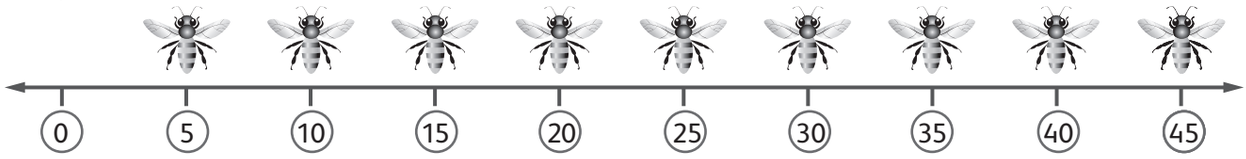
Let learners move their fingers along the number line to show the jumps. Encourage them to count aloud in twos, fives or tens, depending on the question.

Answers

1 a 20, 22, 24, 26, 28, 30
b 30, 35, 40, 45, 50, 55, 60
c 0, 10, 20, 30, 40, 50
d 50, 60, 70, 80, 90, 100

Page 10 Try this

Learners count the bees in fives to work out the number of eyes. They can draw pictures to help solve the questions.



Answers

45 eyes altogether
8 bees = 40 eyes
7 bees = 35 eyes
6 bees = 30 eyes
5 bees = 25 eyes

Further activities

Ask your learners to do Workbook pages 4–5.

Workbook answers

Can you remember? (page 4)

a One less than 6 is **5**.
b Ten less than 32 is **22**.
c One more than 14 is **15**.
d Ten more than 8 is **18**.

Number to 100 (pages 4–5)

1 fourteen – 14; twenty-five – 25; thirty-six – 36; forty-seven – 47
2 8, 12, 25, 30, 37, 44, 51, 56, 70, 74, 85, 88, 93
3 Answers depend on how many counters learners have.
4 a 40 42 44 46 48 50 b 60 65 70 75 80 c 30 40 50 60 70 80

Assessment ideas

- Call out a two-digit number. Ask learners to write the number on pieces of paper or individual whiteboards to hold up to show you.
- Call out a two-digit number. Ask learners to write the next number on pieces of paper or individual whiteboards to hold up to show you.
- Ask learners to write the words **odd** and **even** on either side of a piece of paper or card. Call out a number to 20. Ask learners to hold up their cards to show you whether the number is odd or even. Repeat for numbers beyond 20.

Success criteria

While completing the activities, assess and record learners who can:

- record any two-digit number
- add and subtract 1 and 10 to two-digit numbers to continue a sequence
- count objects in groups of two, five and ten
- mark jumps of two, five and ten along a number line
- recognise whether a number is odd or even.

1b Comparing and rounding numbers

Learner's Book pages 11–15

Workbook pages 6–7

Digital resource

Learning objectives

- I can put a number in the correct place on a number line.
- I can use ordinal numbers.
- I can round numbers to the nearest multiple of ten.

Cambridge Primary Mathematics curriculum framework

- Say a number between any given neighbouring pairs of multiples of 10, e.g. 40 and 50. (2Nn9)
- Place a two-digit number on a number line marked off in multiples of 10. (2Nn10)
- Recognise and use ordinal numbers up to at least the 10th number and beyond. (2Nn11)
- Round two-digit numbers to the nearest multiple of ten. (2Nn8)

Starter

Ordinal numbers

- Look at the *Explore* section on page 11 of the Learner's Book. Ask learners: *Who has been in a race or a competition before? In which position did you come?*
- If you have rosettes or medals with ordinal numbers, show them to the learners. Ask them to bring any medals they have at home to show the class. Ask learners if they remember how to write ordinal numbers. Model how to write ordinal numbers if necessary: 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th.
- Discuss the picture with the learners. Ask learners: *Who came first in the race? Who came second/third/fourth? Which position comes after fourth? In which position did _____ come?*
- Encourage learners to write their answers on individual whiteboards or pieces of paper. They can hold them up to show you.
- If time allows, let learners make their own rosettes and participate in a running/hopping/skipping race. Hold an awards ceremony to hand out the rosettes or medals with the ordinal numbers written on them.

Rounding numbers

- Ask learners if they can spot any multiples of 10. (60)
- Look at a 100 square and count in tens with the learners.
- Point to number 68 in the *Explore* picture. Ask learners to find the number 68 on the 100 square. Ask learners: *Which multiple of ten is 68 nearest to?* (70)
- Draw a number line on the board labelled 60 at the beginning and 70 at the end. Ask learners where 68 would go. Repeat with other numbers. Then ask learners to choose a number from the *Explore* picture. Draw a number line with the multiples of 10. Can the learners put their numbers on the number line? Ask learners: *Which multiple of ten is your number closest to?* Explain that if the number ends in 5, we round up to the nearest multiple. For example, 65 is nearest to 70.