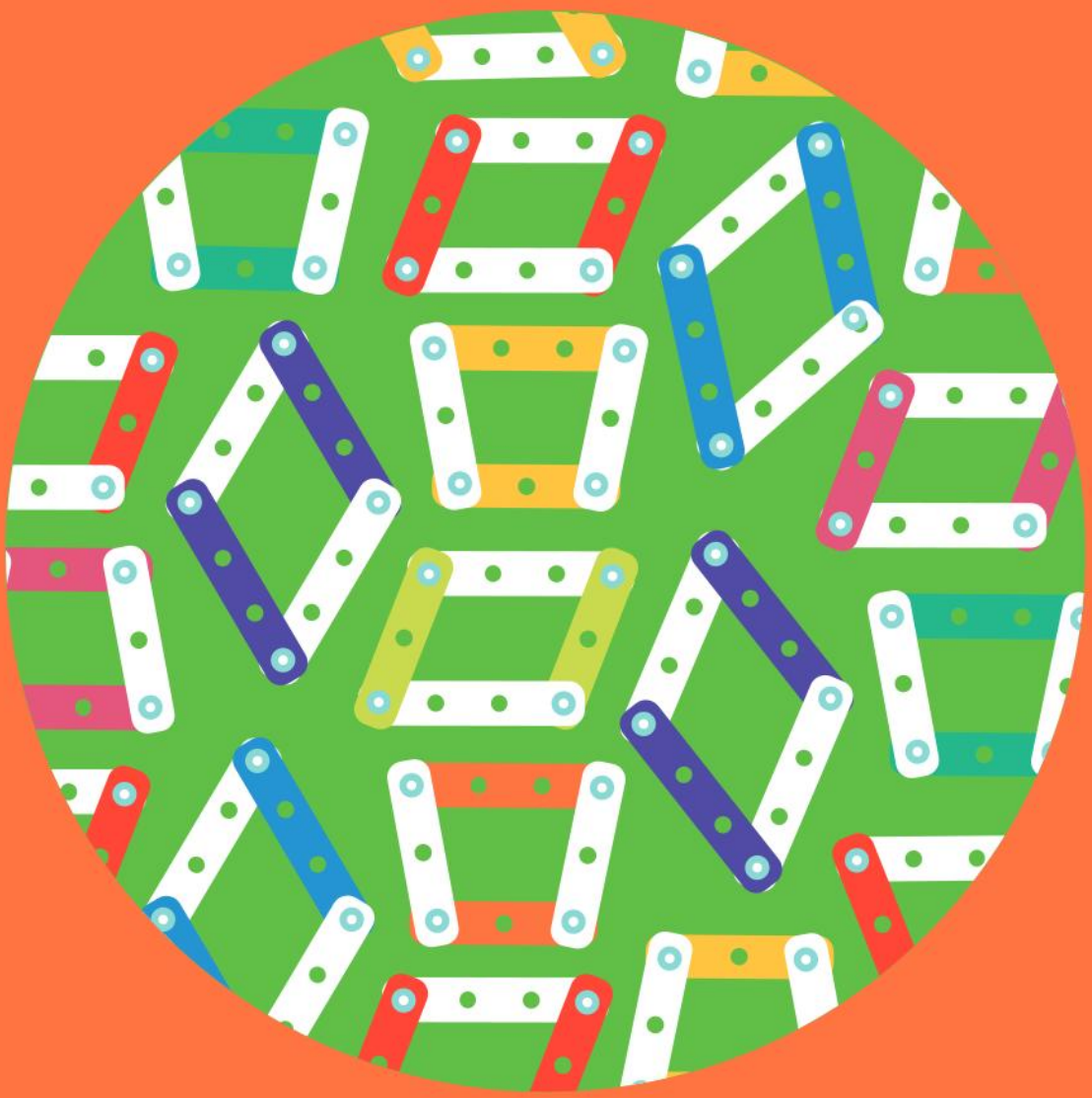
Oxford International Primary

4

Maths

Student Book



Second edition

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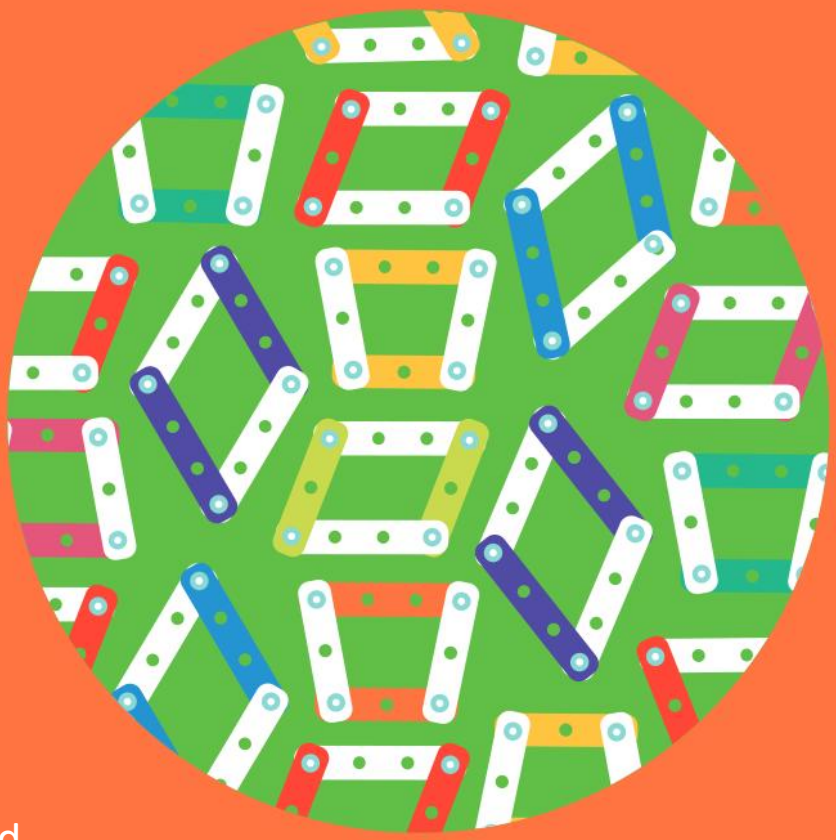

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Contents

How to use this book

The Student Book for *Oxford International Primary Maths* forms part of your mathematics lessons for this year. Your teacher will introduce the ideas through whole-class activities, then you will explore them in more depth using this book, before all coming back together to discuss what you have learned. Find out more at: www.oxfordprimary.com/international-maths

Structure of the book

This book is divided into 10 units. Each unit covers a different strand of mathematics.

What you will find in each unit

There are five types of lessons:

Engage introduces the unit's mathematical ideas.
It tells you what you will learn in the unit and includes the big question.

Discover introduces mathematical skills and concepts.

In **Explore** you practise the skills you learned in Discover.

Connect helps you make links between the different areas of mathematics in the unit.

In **Review** you show your teacher what you have learned in the unit.

What you will find in the lessons

Although each lesson is unique, they have common features:

Discover / **Explore** The lesson type tells you whether you are discovering new mathematical concepts or exploring concepts you have already been introduced to.

This box gives the key words for the lesson.

This challenges you to take your learning further.


In the speech bubbles, you will find useful hints, examples of how to complete a question, or extra questions to get you thinking about the mathematics you are doing.

Additional features


This shows you where you can practise the key vocabulary, either by writing the words or through a discussion.


This shows you where you can practise your mental maths skills such as your times tables or other key number facts.


This shows you where you need to record your work in a notebook.

Key words are listed in a picture glossary at the end of the book. You can write your own definition for each word.

Teacher's Guides

The Teacher's Guide that accompanies this book provides lesson notes for each page.

Practice Book

At the bottom of each page in this book, there is a link to the Practice Book, where you can find extra practice to do in your lesson or at home.

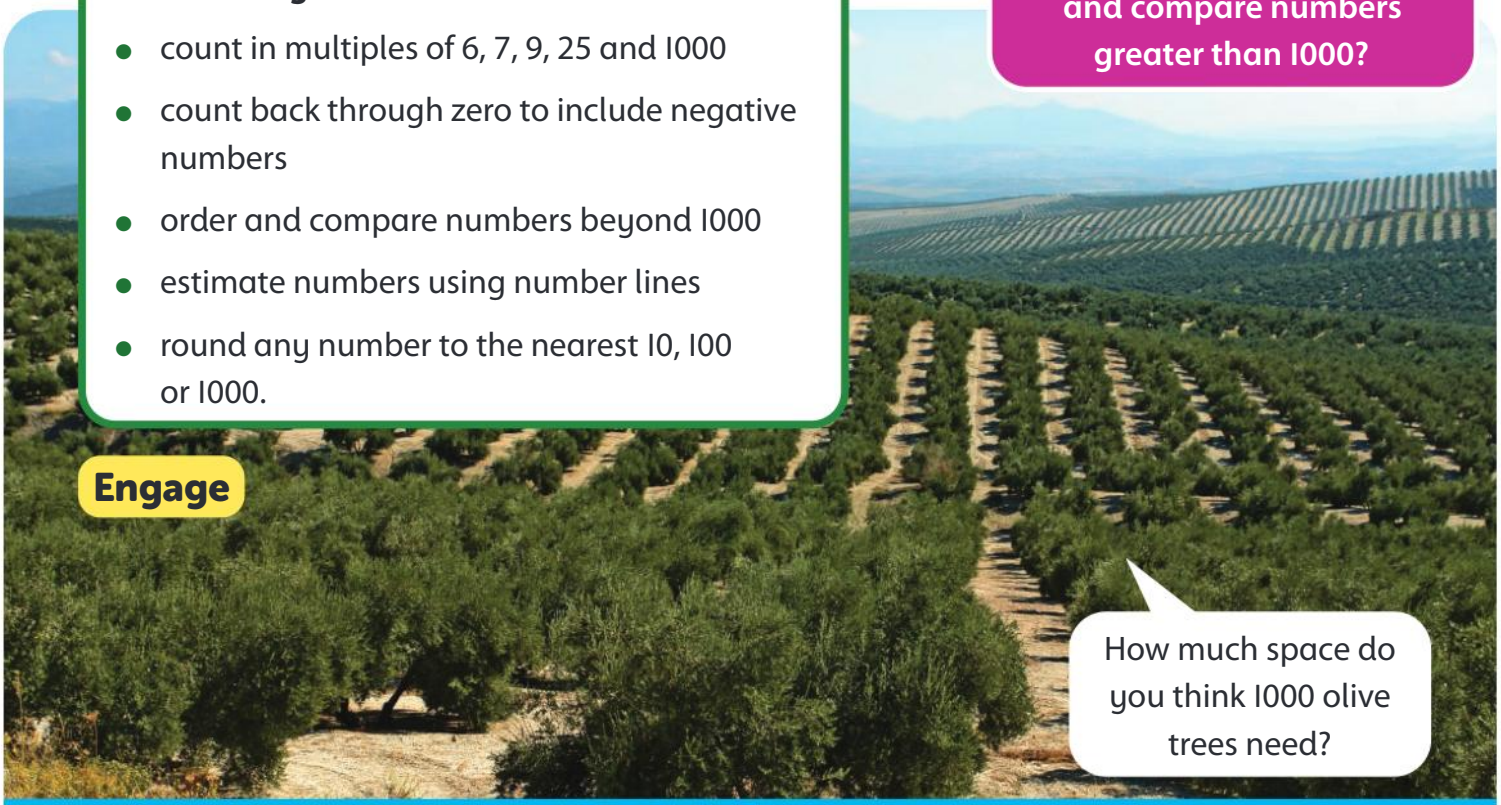
1 Number and place value

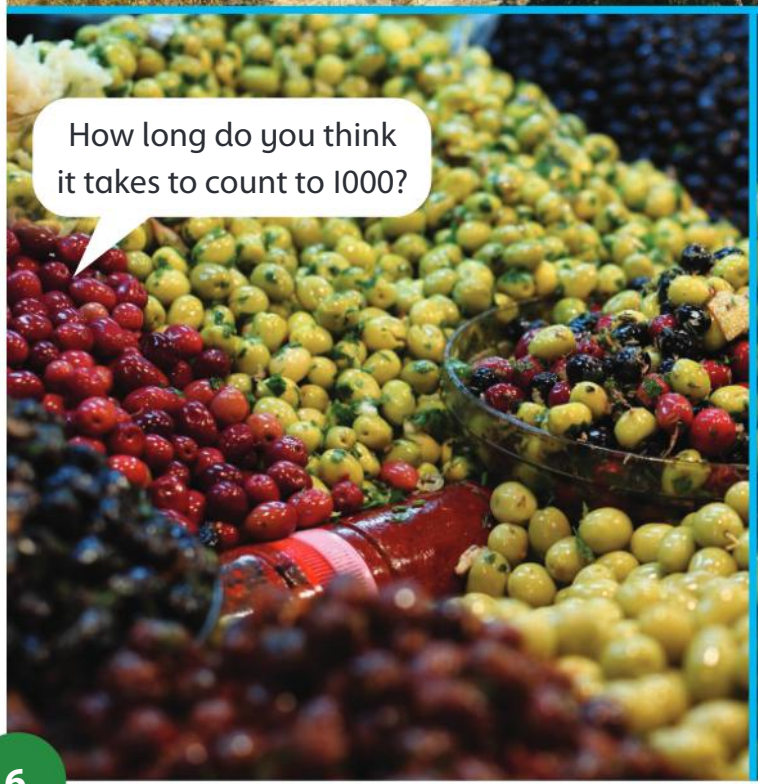
How can I use my knowledge of counting to 100 to order and compare numbers greater than 1000?

In this unit you will:

- count in multiples of 6, 7, 9, 25 and 1000
- count back through zero to include negative numbers
- order and compare numbers beyond 1000
- estimate numbers using number lines
- round any number to the nearest 10, 100 or 1000.

Engage





1A Place value and partitioning

Discover

Key words
- 4-digit number
- thousands
- partitioning

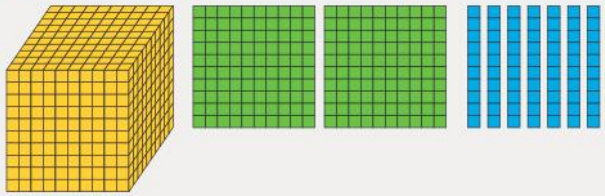
Write numbers

Think back

The place or position of a digit in a number tells you its size or value.

In words, the number below is one thousand two hundred and seventy-four.

Thousands	Hundreds	Tens	Ones
1	2	7	4
Represents 1000	Represents 200	Represents 70	Represents 4 ones



When one of the places has no value we use a zero as a placeholder.

For example, in the number 3045, the zero shows that there are no hundreds.

In words, this number is three thousand and forty-five.

1 Write these numbers in numerals. The first one is done for you.

a Four thousand six hundred and thirty-four — 4634

b One thousand three hundred and twelve

c Three thousand and sixty-nine

d Eight thousand three hundred and two

Can you think of a 4-digit number that has two zeros?

2 Write these numbers in words. The first one is done for you.

a 7169 Seven thousand one hundred and sixty-nine

b 4372 _____

c 3097 _____

d 5009 _____

1A Place value and partitioning

Discover (continued)

3 Use these four digits to make:

7	4	9	1

a the largest number possible

b the largest even number possible

c the smallest number possible

d the smallest even number possible.

Check your answers with a partner.

4 Partition these numbers.

a 1857 = 1000 + ☐ + ☐ + 7

b 6382 = ☐ + 300 + ☐ + 2

c 9174 = ☐ + ☐ + 70 + ☐

d 7813 = ☐ + ☐ + ☐ + ☐

When you know the value of the digits, you can **partition** a number.
I can partition 2135:
2000 + 100 + 30 + 5

5 Partition these numbers.

a 1526 = ☐

b 4837 = ☐

c 3054 = ☐

d 7303 = ☐

Stretch zone

Can you explain to a partner how to partition 6007 and 8070?

■ For more practice, go to Practice Book 4, page 14.

1A Place value and partitioning

Explore

Write and round numbers

1 Estimate where each 4-digit number goes on the number line. Mark and label the number on the number line.

- Write the value of the digit that is underlined.

a 4268

The underlined digit has a value of

_____

b 3279

The underlined digit has a value of

_____

c 6705

The underlined digit has a value of

_____

d 2541

The underlined digit has a value of

_____

e 7043

The underlined digit has a value of

_____

Key words

- value
- round
- the nearest 10
- the nearest 100

In 4268, the underlined digit has a value of 4 thousands.

Can you think of a number that has the same number of tens and thousands? Can you think of a number that has the same number of ones and hundreds?

1A Place value and partitioning

Explore (continued)

2 Use these numbers to make three 3-digit numbers.

400	300	70	2	100	8	90	7	800

- Mark and label your numbers on this number line.

3 Round your numbers to the nearest 10.

378	is	380	to the nearest 10.
	is		to the nearest 10.
	is		to the nearest 10.
	is		to the nearest 10.

4 Use these numbers to make three 4-digit numbers.

2000	60	300	4	80	7	500	3
8000	50	5	5000				

- Mark and label your numbers on this number line.

5 Round your numbers to the nearest 100.

2567	is	2600	to the nearest 100.
	is		to the nearest 100.
	is		to the nearest 100.
	is		to the nearest 100.

I made 300 + 70 + 8 = 378.

Remember: if a number ends in 5, round it up to the next multiple of 10.

I made 2000 + 500 + 60 + 7 = 2567.

If a number ends in 50, round it up to the next multiple of 100.

Stretch zone

Write a number that is 3500 to the nearest 100 and 3450 to the nearest 10.

■ For more practice, go to Practice Book 4, page 15.

1B Counting on and back

Discover

Use place value to count on and back

Key words
- count on
- count back

Think back

You can use place value to count on and count back in ones, tens, hundreds and thousands.

For example: 5642 + **100** = 5742 5742 + **1000** = 6742

6742 – **1** = 6741 6741 + **10** = 6751

Use the answer to each calculation as the start number in the next calculation.

1 Complete these steps.

a 2574 – **1000** = ☐ ☐ + **100** = ☐ ☐ + **10** = ☐ ☐ – **1** = ☐

b 1099 + **1** = ☐ ☐ + **1000** = ☐ ☐ + **100** = ☐ ☐ – **10** = ☐

2 Look at the numbers in the middle column of the table.

- Count on and back to complete both sides of the table. The first row is done for you.

	–1000	–100	–10	–1	Number	+1	+10	+100	+1000
	123	1123	1223	1233	**1234**	1235	1245	1345	2345
a					**3261**				
b					**4075**				
c					**2189**				
d					**5075**				
e					**5375**				

Stretch zone

What changes and what stays the same when you count on in 100s?
What changes and what stays the same when you count on in 1000s?

■ For more practice, go to Practice Book 4, page 16.

1B Counting on and back

Key words

- multiples of 10
- multiples of 100
- multiples of 1000

Explore

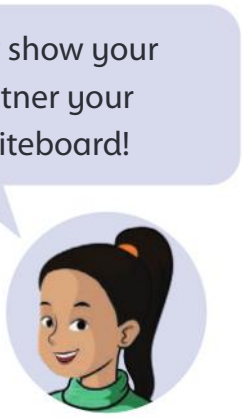
A number journey

1 Work with a partner.

- Choose a 3-digit number.
- Each of you write this number on your whiteboard. Then follow this number journey:
  - Add 2000
  - Take away 2
  - Add 200
  - Take away 10.
- Check your final answer with your partner. Did you both get the same number?

2 Write your own number journey using a 4-digit number. Make sure that every digit changes during your journey.

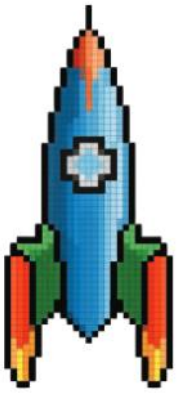
- Give your 4-digit number and the instructions for the number journey to your partner. Then check their answer.



3 The table shows some computer game scores.

Work out the difference between each start score and the new score.

Start score	New score	Difference
4560	4660	
2913	3113	
7521	9521	
1309	1349	
3189	4289	



Stretch zone

Write three different pairs of numbers with a difference of 200.

■ For more practice, go to Practice Book 4, page 17.

1C Counting in multiples

Discover

Key words
- multiple
- number sequence

Number sequences

1 Write the next four numbers in each sequence. The first number in each sequence is 1.

a The rule is 'add 6'.

1				

b The rule is 'add 7'.

1				

c The rule is 'add 9.

1				

d The rule is 'add 25.

1				

e The rule is 'add 1000.

1				

If the rule is 'add 3', the sequence is 1, 4, 7, 10, 13.

2 Pick three cards from a set of digit cards 1–9.

- Use the digits to make a 3-digit start number.
- Write the number in the first box in each sequence.
- Then write the next four numbers in each sequence.

I picked 3, 6 and 8. I made the number 683.

a (add 6)

b (add 7)

c (add 9)

d (add 25)

e (add 1000)

Stretch zone

Write a sequence of five numbers that starts with 1 and ends with a number between 40 and 50. You must add the same number each time.

■ For more practice, go to Practice Book 4, page 18.

1C Counting in multiples

Key words
- multiple
- number sequence

Explore

Complete number sequences

1 Write four number sequences.

- You must count on or back in multiples of 6, 7, 9, 25 or 1000.
- Use any start number. Write the first five numbers in each sequence.
- Do not write the rule yet!

	Sequence	Rule
a		The rule is:
b		The rule is:
c		The rule is:
d		The rule is:

I chose 154 as my start number. My sequence is 154, 163, 172, 181, 190. Can you guess my rule?

I think your rule is 'add 9'. The next two numbers are 199 and 208.

2 Swap your number sequences with a partner.

- Write the rule for your partner's sequences. Then write the next two numbers in each sequence.

Stretch zone

Write a sequence that counts on in multiples of 25. Choose a start number between 50 and 75. Continue until you finish with a number between 550 and 575. How many numbers are there in your sequence?

■ For more practice, go to Practice Book 4, page 19.

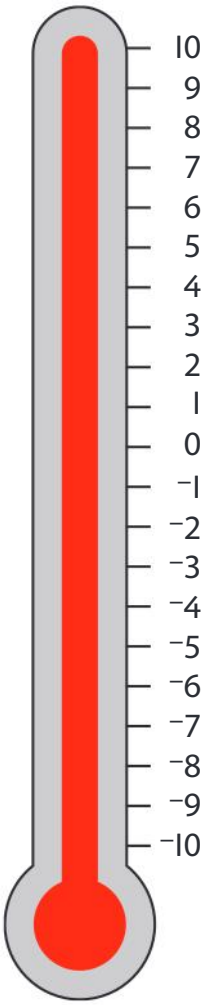
1D Negative numbers

Key words
- negative number
- positive number
- thermometer
- temperature

Discover

Thermometer numbers

Look at the thermometer. The temperatures below zero are negative numbers.



1 **a** Talk to a partner about what you notice.

b Write three things about the thermometer.

- _____
- _____
- _____

2 Count back in ones from 10 to $^{-}10$. Say the numbers aloud.

3 Use the thermometer to help you complete these sequences.

a (Count back in twos)

8 6 ☐ 2 ☐ $^{-}2$ $^{-}4$ ☐

b (Count back in threes)

8 5 ☐ $^{-}1$ ☐ $^{-}7$ ☐

c (Count back in fours)

10 ☐ 2 ☐ ☐ $^{-}10$

d (Count on in 3s)

$^{-}12$ ☐ $^{-}6$ ☐ ☐ 3

Stretch zone

Write two counting-back sequences that start with 8 and end with $^{-}10$.

■ For more practice, go to Practice Book 4, page 20.

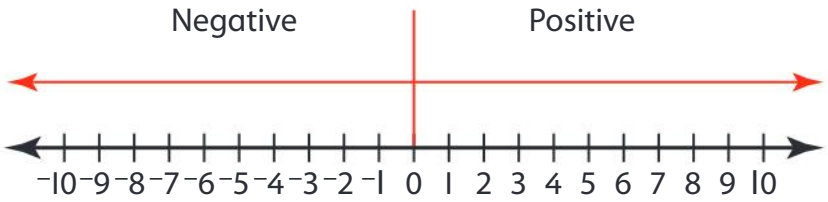
1D Negative numbers

Explore

The answer is negative

Repeat these steps 10 times and complete the table below.

- Pick two cards from a set of digit cards 1–9.
- The smaller number is your start number.
- Subtract the larger number from your start number.



Start number	Subtract	Finish on
4	9	−5

Key words

- negative number
- positive number

I picked 4 and 9. My start number was 4. I subtracted 9. I finished on −5 (negative 5).

Stretch zone

I count back 7 and finish on a negative number. Find a possible start number. What number did I finish on? How many different start and finish numbers can you find?

■ For more practice, go to Practice Book 4, page 21.

1E Roman numerals

Discover

Key word
- Roman numerals

Introducing Roman numerals

Did you know?

- We can use Roman numerals to write numbers. Roman numerals used these symbols:

  I, V, X, L, C, D and M.
- Roman numerals are sometimes used at the end of a TV programme or a film to show the date the programme was made.
- We sometimes see Roman numerals on clock faces.

How to read Roman numerals

Rules:

1. If a smaller numeral comes *after* a larger numeral, add the smaller numeral to the larger numeral. For example, XI: X + I is II
2. If a smaller numeral comes *before* a larger numeral, subtract the smaller numeral from the larger numeral. For example, IX: X – I is 9
3. Do not use the same numeral more than three times in a row. For example, VIII is 8 but IX is 9 (not VIIII).

Clues:

- The year 2020 in Roman numerals is MMXX.
- I am 61 years old today. My age in Roman numerals is LXI.
- The Roman Empire lasted for 507 years. This is DVII in Roman numerals.
- The maximum score in a game of darts is 180. This is CLXXX.

Use the rules and clues above to work out the value of these symbols.

1 I ☐ **2** V ☐ **3** X ☐ **4** L ☐ **5** C ☐

Stretch zone

Some numbers have the same number of Roman numerals as digits 0–9. For example, 2020 is MMXX – both use 4 numerals or digits. Find three more numbers that have the same number of Roman numerals as digits 0–9.

■ For more practice, go to Practice Book 4, page 22.

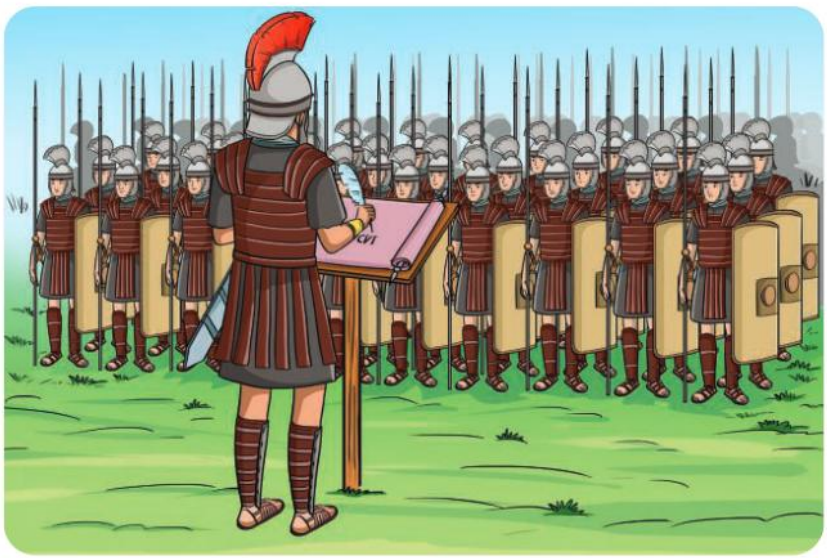
1E Roman numerals

Explore

Write Roman numerals

Key word
- Roman numerals

1 What numbers do these Roman numerals represent?



a	II	**f**	XIX
b	IV	**g**	LXIX
c	IX	**h**	CLXIX
d	XIV	**i**	DCLXIX
e	XVIII	**j**	MDCLXIX

Look back at the rules and clues on page 17 to help you.

2 Write these numbers in Roman numerals.

a Your age

b The number of students in your class

c The number of students in your school

To write the Roman numerals for numbers bigger than 1000, you draw a horizontal bar over a numeral. This multiplies the value by 1000. For example, 100 000 is:

$\overline{C}$

Stretch zone

Use Roman numerals to write the population of your town or city and the population of your country.

■ For more practice, go to Practice Book 4, page 23.