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Primary Mathematics

Learner's Book 1

Cherri Moseley & Janet Rees

Second edition

Cambridge Assessment International Education

Endorsed for full syllabus coverage

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Introduction

Welcome to Stage 1 of **Cambridge Primary Mathematics**. We hope this book will show you how interesting and exciting Mathematics can be.

Mathematics is everywhere. Everyone uses mathematics every day. Where have you noticed mathematics?

Have you ever wondered about any of these questions?

- Are the numbers we use when measuring the same as the numbers we count with?

- Why are the same 10 digits used to make all numbers (0, 1, 2, 3, 4, 5, 6, 7, 8 and 9)?

- What is the difference between 2D and 3D shapes?

- How do you describe a pattern?

- How do you measure the passage of time?

- How do you solve a mathematics problem?

You will work like a mathematician to find the answers to some of these questions. It is good to talk about the mathematics and share ideas as you explore. You will reflect on what you did and how you did it to think about whether you would do the same next time.

You will be able to practise new skills and check how you are doing and also challenge yourself to find out more. You will be able to make connections between what seem to be different areas of mathematics.

We hope you enjoy thinking and working like a mathematician.

Cherri Moseley and Janet Rees

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Contents

Contents

How to use this book ▶

In this book you will find lots of different features to help your learning:

Questions to find out what you know already.

> **Getting started**
>
> 1. This cookie is a whole.
>
>   How many parts is the cookie cut into?
>
>   Are they the same as each other? _____

What you will learn in the unit.

> **We are going to . . .**
> - **count sets of objects.**

Important words that you will use.

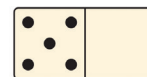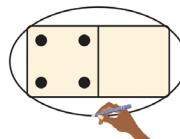> count   estimate   how many   line   set   total

Step-by-step examples showing a way to solve a problem.
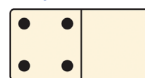
> **Worked example 1**
>
> Which domino has 4 spots?
>
> **Answer:**
>
> This one!

Questions to help you think about how you learn.

> What have you learned about sets and sorting?
> Write or draw one thing that you know now that you didn't know before.

There are often many different ways to solve a problem.

These questions will help you → develop your skills of thinking and working mathematically.
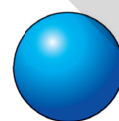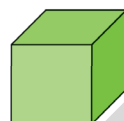
6 Write the number that comes **after**.

| 2 | | 5 | | 8 | |

An investigation to carry out → with a partner or in groups. This will help develop your skills of thinking and working mathematically.

Let's investigate

Work with a partner to build a tower.
You can use more than one of each shape.
Talk about your tower and the shapes you will use.
Use the words edge and face.

Which shape would be good to start with?
Which shape would be better at the top of the tower?

What you have learned in the unit. Tick the column to show how you feel about each thing. ————

Look what I can do!

- I can compare two sets of numbers.
- I can say which set has more or fewer (or less or greater).
- I can recognise when two sets have the same number of objects.

Questions that cover what you have learned in the unit. ———→

Check your progress

1 How many objects are there?
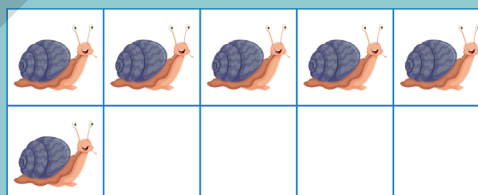
At the end of some units there is a project for you to carry out, ——→ using what you have learned. You might make something or solve a problem.

Snakes

Your first challenge is to make a snake!
You could use card, paper, dough, pipe cleaners, ribbon, glue, tape, cubes, blocks... anything that you can find.
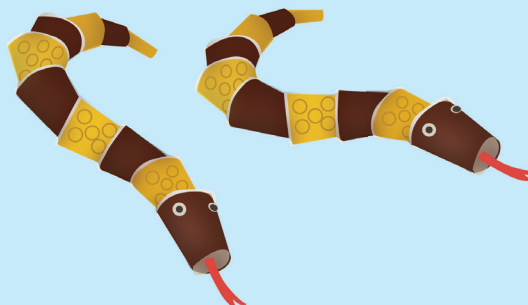
1   Numbers to 10

Getting started

1   How many hippos are there?

Draw a (ring) around the number that matches the set.
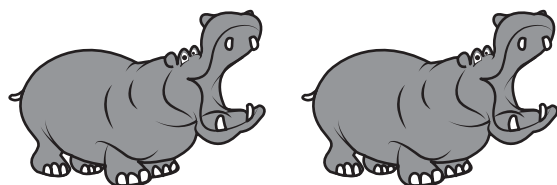
1	2	3

2   Count the toys and write the numbers.
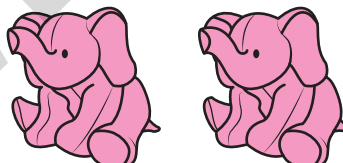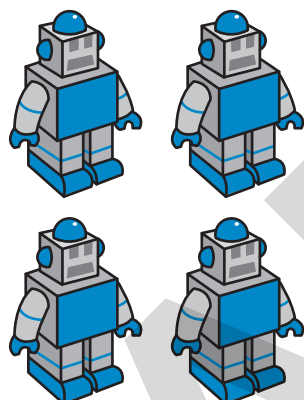
3   Write some numbers you know in the space below.

Tell your partner something about each of the numbers you wrote.

Numbers are all around us.

Sometimes a number is a label, like the number on a football shirt or the number on a bus.

We count to find out how many there are.

A pack of 2 T-shirts shows 2 on the pack.
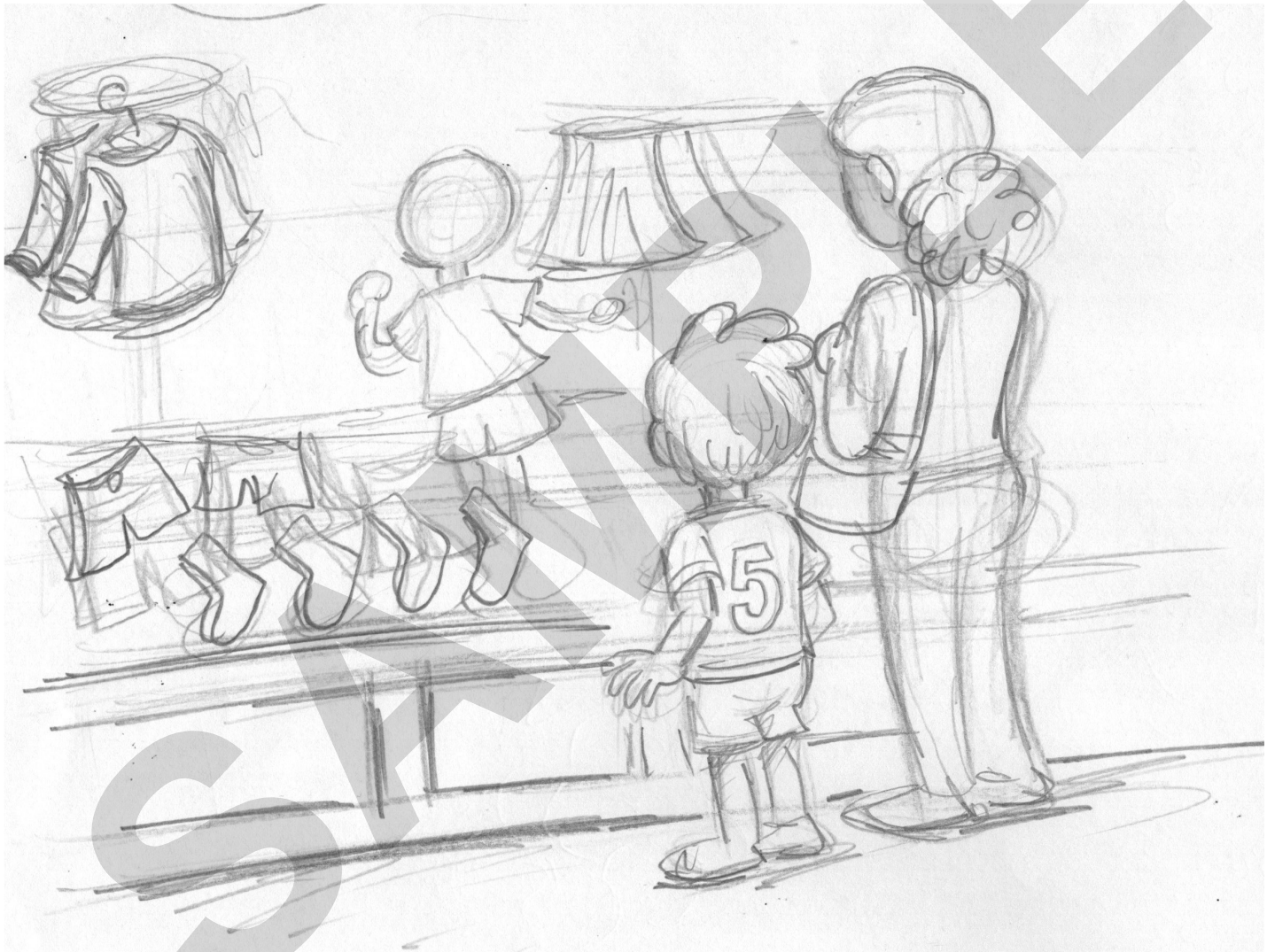
〉 1.1 Counting sets of objects

We are going to …

- **count sets of objects.**

You need to say the numbers in the correct order to count.

To count objects, start with 1 and say a number for each object.

The last number you say tells you how many objects there are.
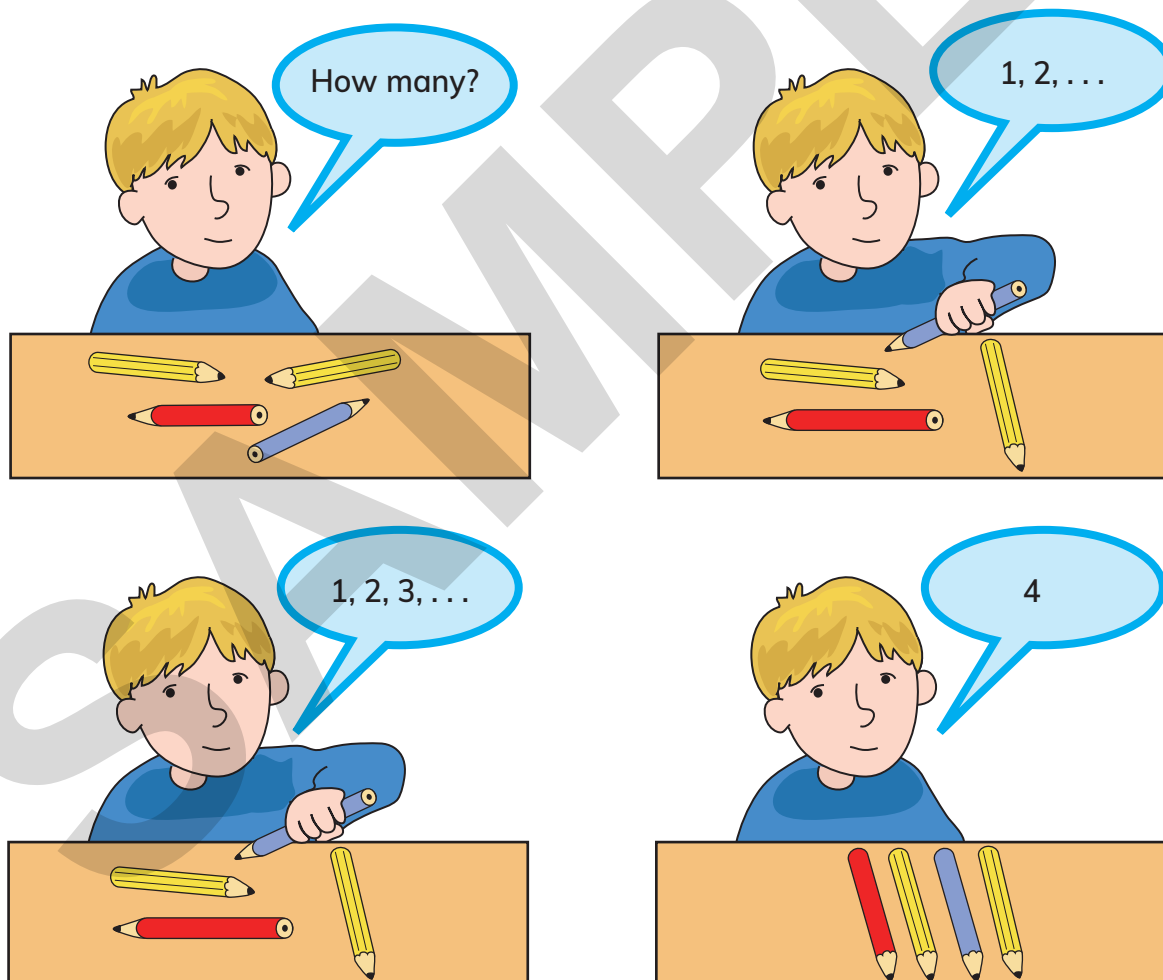
count　estimate　how many　line　set　total

Exercise 1.1

1 Count together.

1

2

3

4

5

6

7

8

9

10
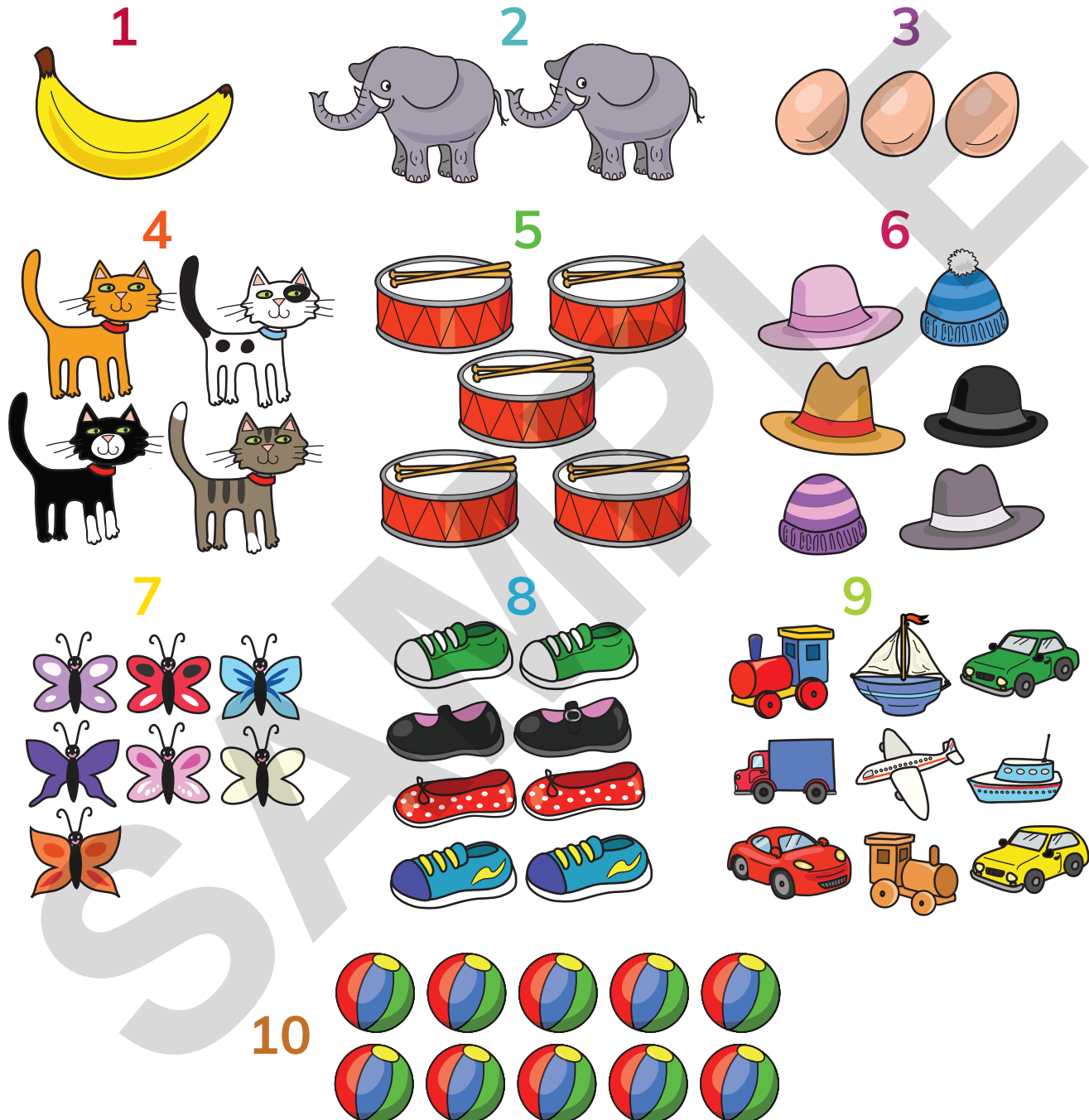
1	2	3	4	5	6	7	8	9	10

2   Put some objects in the box.

Count your set of objects.
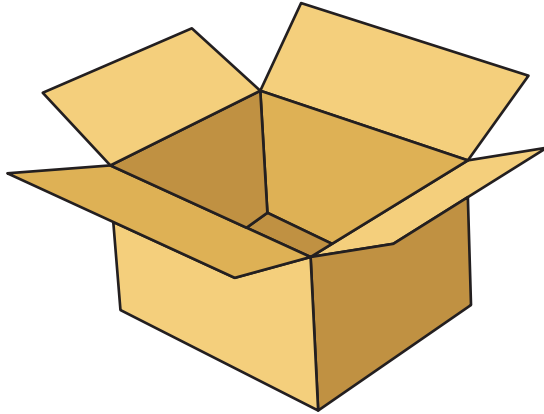
I counted to the same number each time!

Put your objects in a row. Count again.

3   Draw 3 counters ● on the ten frame below.

3

Draw 6 buttons ● in the ten frame below.

6

Draw 0 counters ● in the ten frame below.

0

We are working with Cambridge Assessment International Education towards endorsement of this title.

1.1 Counting sets of objects

Worked example 1

Which domino has 4 spots?
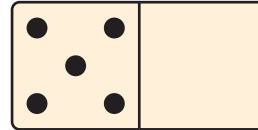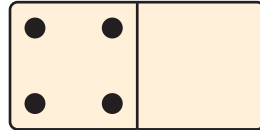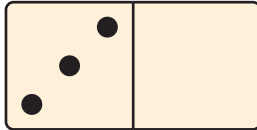
Answer:
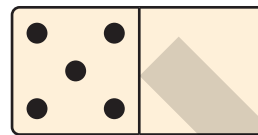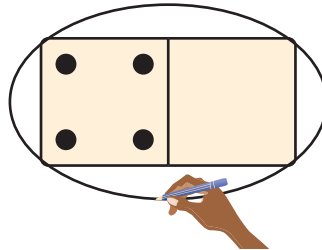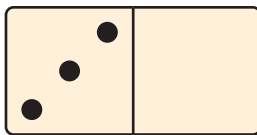
This one!

4   Which domino has 5 spots?

Draw a ring around the correct domino.
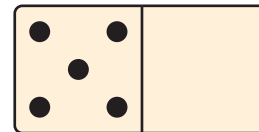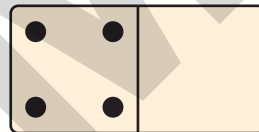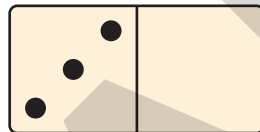
5   Which domino has 9 spots?

Draw a ring around the correct domino.
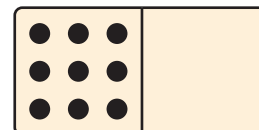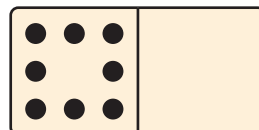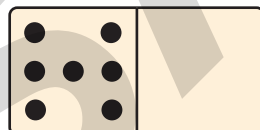
6   Match each picture to the correct number.
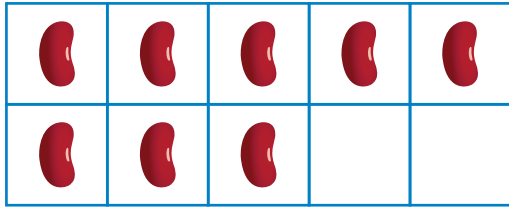
8

0

4

9

7

5

Ask your partner to show you how they got their answer.

7   Draw 7 bananas.

Make it easy to see how many there are.

Look at your answer to question 7.
How did you make it easy to see how many you drew?

Worked example 2

How many sunflowers are there? Estimate then count.

Answer:

	Estimate	Count
🌻	3	4

I am going to count the sunflowers to see if your estimate was close. 1, 2, 3, 4. There are 4. I estimated 3, so I was very close.

An estimate is a good guess. I estimate there are 3 sunflowers.

8   Look at the picture on the previous page.

Estimate then count. Write the numbers.

🦋	🐰	🐸	🌳	🐦
Estimate	Estimate	Estimate	Estimate	Estimate
Count	Count	Count	Count	Count

Let's investigate

Work with a partner.

Make a poster all about a number.

Talk about your poster with your class.
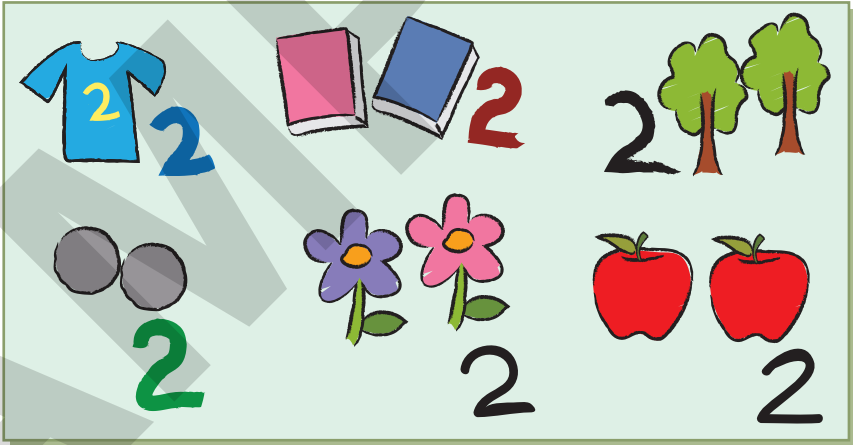
Look what I can do!

	😐	😊
• I can count objects and write the matching number.	○	○
• I can find or draw the correct number of objects.	○	○
• I can say how many objects are in some sets without counting.	○	○
• I can give a good estimate of how many objects there are.	○	○
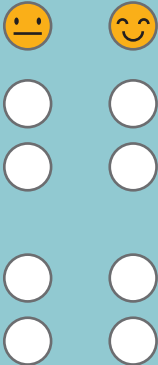
› 1.2 Say, read and write numbers to 10

We are going to …

- **say, read and write numbers and number words to 10.**

Saying the numbers in a number rhyme is a good way to learn the order of the numbers.

after   before   between
next   numbers   order
point   track

Exercise 1.2

1   Say this number rhyme together.

> 1, 2, 3, 4, 5,
> Once I caught a fish alive!
> 6, 7, 8, 9, 10,
> Then I let it go again!
> Why did you let it go?
> Because it bit my finger so.
> Which finger did it bite?
> This little finger on the right.
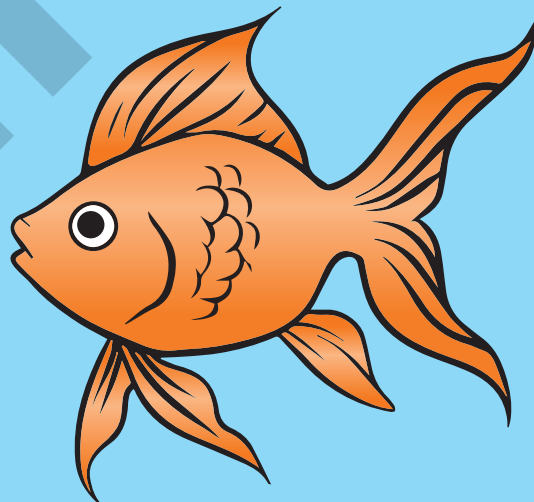
2   Say your favourite number rhyme to a partner.

3   Count to 10. Point to each number as you say it.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Worked example 3

Which number is missing?

| 1 | 2 | 3 | 4 | 5 | 6 | | 8 | 9 | 10 |

1, 2, 3, 4, 5, Once I caught a fish alive! 6, 7, . . . I said 6 then 7, so 7 is the missing number.

Answer:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

4   Count to 10. Which numbers are missing?

| 1 | 2 | | 4 | 5 | 6 | 7 | | 9 | 10 |

| 1 | | | 4 | 5 | 6 | 7 | | 9 | 10 |

5   Which numbers have been swapped in this number track?

Write the numbers in the box.

| 1 | 2 | 3 | 4 | 8 | 6 | 7 | 5 | 9 | 10 |

6 Write the number that comes **after.**

2	

5	

8	

7 Write the number that comes **before.**

	2

	5

	8

What do you do if you cannot remember a missing number?
Ask your partner to tell you what they do.

Look what I can do!

- I can count to 10 and find a missing number.
- I can say some number rhymes.
- I can read and write the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10.

⟩ 1.3 Comparing numbers

We are going to ...

- **compare sets of objects and numbers.**

You can compare different sets. You can find out which set has more, fewer or the same number of objects as another set.

Fewer means the same as **less**.
More means the same as **greater**.

> compare equal
> fewer more same

Exercise 1.3

Worked example 4

Compare the two sets. Look for what is the same or different.
Tick ✓ the set that has more objects.
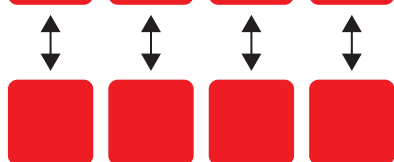
I can match each shape in one row with a shape in the other row.
There is no match for the last shape in the top row, so there are more shapes in the top row than in the bottom row. I need to tick the top row.

Answer:

✓

1   Compare the sets.

Tick ✓ the set that has fewer objects.

2   Compare the sets.

Tick ✓ the set that has fewer objects.

3   Compare the sets.

Tick ✓ the set that has more objects.

We are working with Cambridge Assessment International Education towards endorsement of this title.
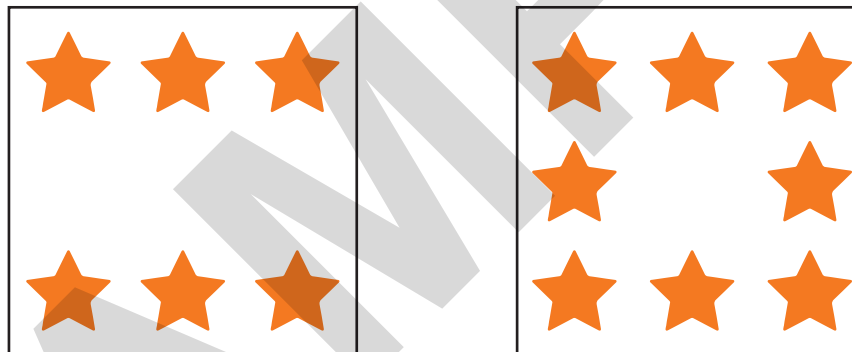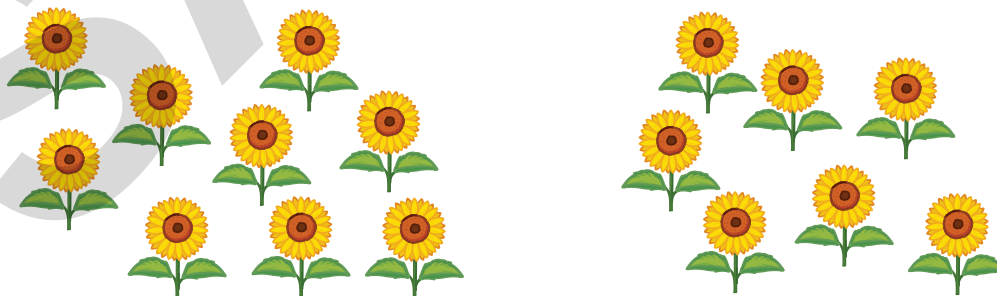
1 Numbers to 10

4   Compare the sets.

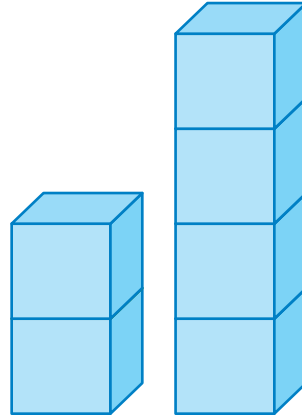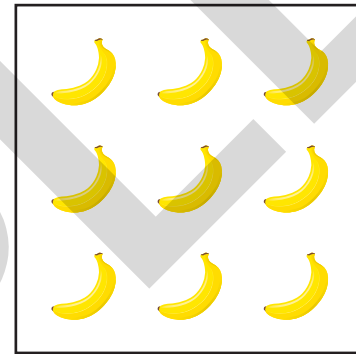Tick ✓ the sets that have the same number of objects.
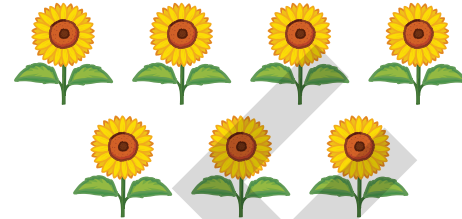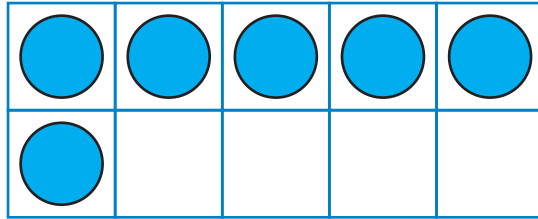
5   Compare the sets.

Complete the sentences.

There are _____ 🍌 . There are _____ 🍊 .

There are more _____ than _____ , so there are

fewer _____ than _____ .

6 Compare the sets.

Complete the sentences.
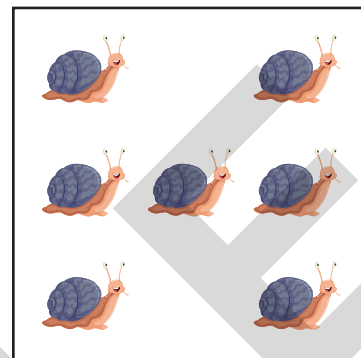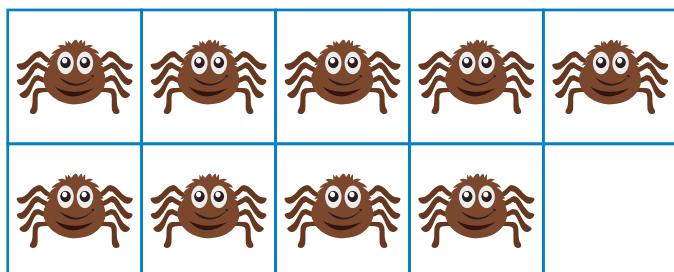
There are _____ 🕷.

There are _____ 🐌.

There are fewer _____ than _____ so there are more

_____ than _____ .

7 is less than 9.

Use the number track to help you answer questions 8 to 10.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

7 Look at question 6.

How many more spiders than snails? ☐

How many fewer snails than spiders? ☐

8 Write a number that is greater than 4. ☐

9 Write a number that is less than 5. ☐

10 Draw a ring around the correct number to complete each sentence.

To find a number that is **more** than a given number, look along the number track towards the **1 / 10**.

To find a number that is **fewer** than a given number, look along the number track towards the **1 / 10**.

Let's investigate

Work with a partner or on your own.

Take 3 objects.

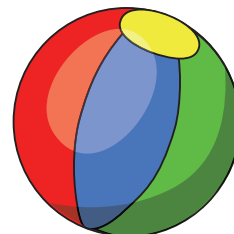Take 1 more.

How many do you have now? ☐

Take 1 more.

How many do you have now? ☐

Repeat until you have 10 objects. What do you notice?

You have 10 objects.

Put 1 back.

How many do you have now? ☐

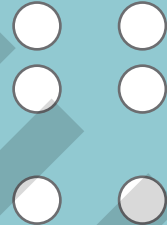Put another 1 back.

How many do you have now? ☐

Repeat until you have 0 objects left. What do you notice?

If you were going to start your investigation again, would you do anything differently?

Look what I can do!

- I can compare two sets of numbers.
- I can say which set has more or fewer (or less or greater).
- I can recognise when two sets have the same number of objects.

〉 1.4 Number words

We are going to ...

- **say, read and write numbers and number words to 10.**

We can write numbers in words.

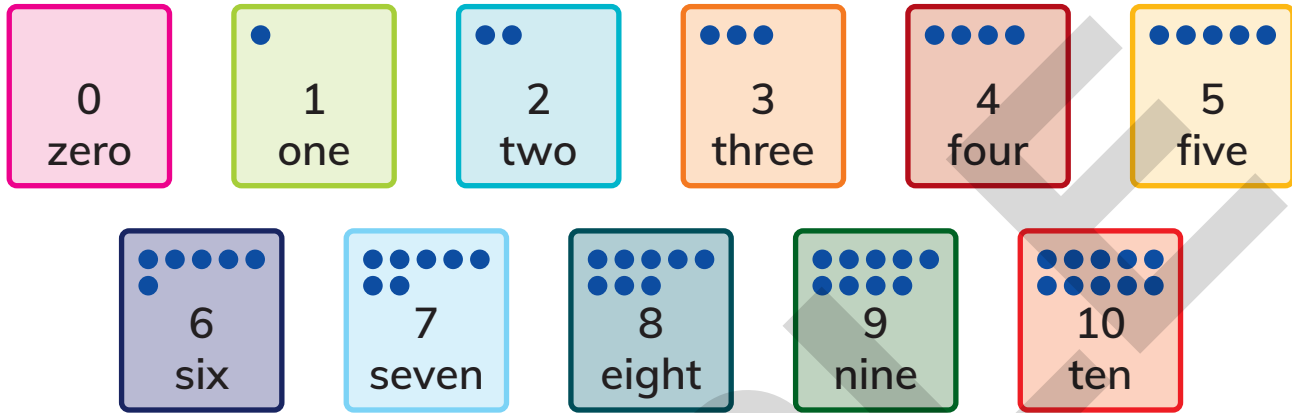Coins often have words instead of numbers on them.

One   Two   Five   Ten

We often use words instead of numbers in a story.

zero: 0   one: 1   two: 2   three: 3   four: 4   five: 5
six: 6   seven: 7   eight: 8   nine: 9   ten: 10

Exercise 1.4

1   Count the spots and read the number words.

| 0 zero | 1 one | 2 two | 3 three | 4 four | 5 five |

| 6 six | 7 seven | 8 eight | 9 nine | 10 ten |
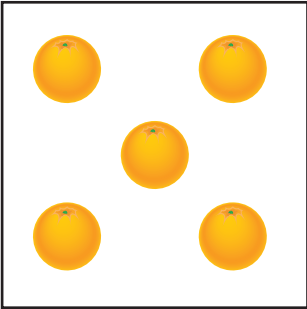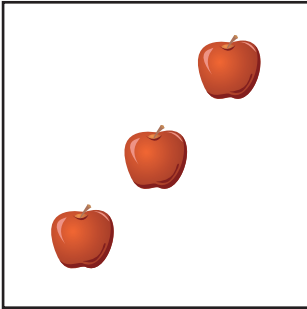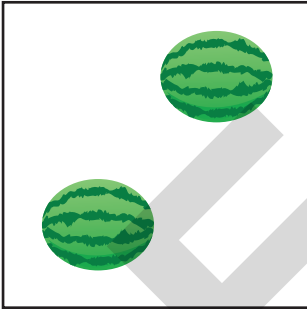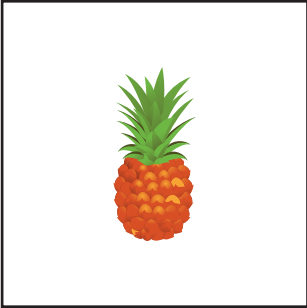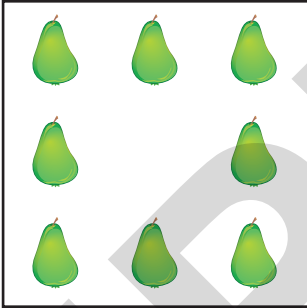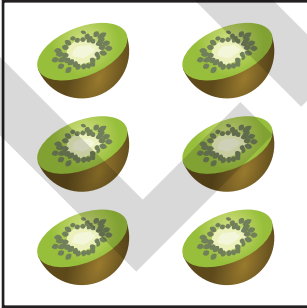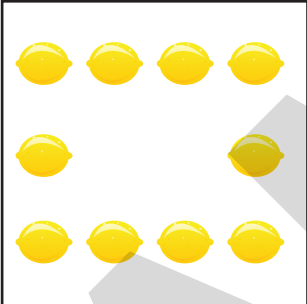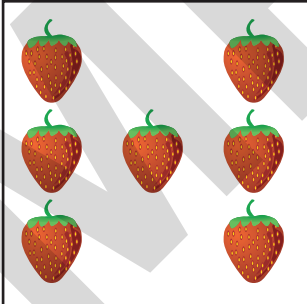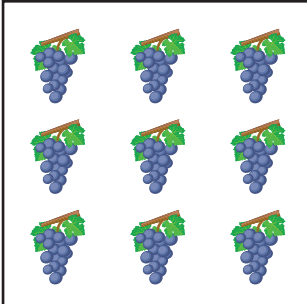
2   Write the missing word or number on each ten frame. The first one has been done for you.

1	2		4	
one		three		five
6	7		9	10
		eight		

3   Match the sets to the number words.

one

three

zero

two

five

four

six

seven

nine

eight

ten

Which words do not have a matching set of fruit? _____
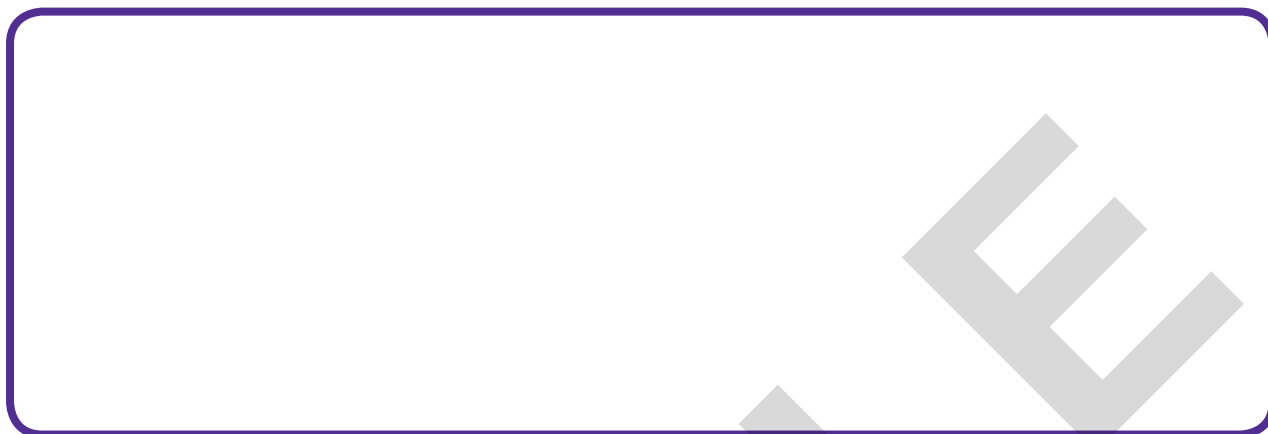
4   Draw eight apples.

Make it easy for others to quickly see how many there are.

5   Draw a basket with **zero** fruit in it.

6   Write the number word after.

| one | | | four | | | eight | |

7   Write the number word before.

| | one | | | four | | | eight |

Can you read and write all the number words correctly?

Do you find the word track, word ten frame or domino layouts with number words helpful? Explain why.

Let's investigate

All the number words from zero to ten have either 3, 4 or 5 letters in the word.

Work with a partner to find out which number words have 3 letters, 4 letters or 5 letters.

continued

How do you know you have checked all the number words?

Are there any number words that have the same number of letters as that number?

Look what I can do!

- I can read all the number words from zero to ten.
- I can write some number words from zero to ten.

› 1.5 Odd and even numbers

We are going to ...

- **find out about odd and even numbers.**

There are different kinds of numbers.

Some numbers are called even numbers. An even number of objects can be put into pairs with none left over.

even   odd   pair   pattern

Some numbers are called odd numbers. An odd number of objects always has 1 left over when the objects are put into pairs.

29 ›

Exercise 1.5

Worked example 5

Draw a ring around the correct word for 3.
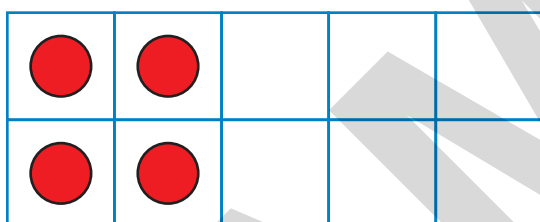
Use some cubes to help you.

odd / even

Answer: 1 pair and 1 left over. 3 is an (odd) number.

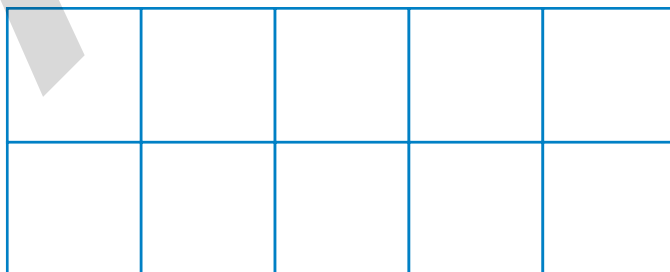1   Is each number odd or even? Draw a ring around the correct word.

odd / even

| 8 | **odd / even** |

| 1 | **odd / even** |

2   Draw an odd number of counters on the ten frame.

Make it easy to see that it is odd.

Do you need counters or other objects to find out if a number is odd or even?

Explain to your partner how you use the counters.

3   Colour the even numbers on the number track **red**.

Colour the odd numbers on the number track **blue**.

0	1	2	3	4	5	6	7	8	9	10

What pattern have you made?

_____

4   Is each number odd or even? Use the number track above to help you.

1	**odd / even**

7	**odd / even**

4	**odd / even**

10	**odd / even**

Worked example 6

6 is the answer.

What could the question be?

Answer:

Which number is
2 more than 4?

6

Which number is
4 fewer than 10?

What is the next
even number after 4?
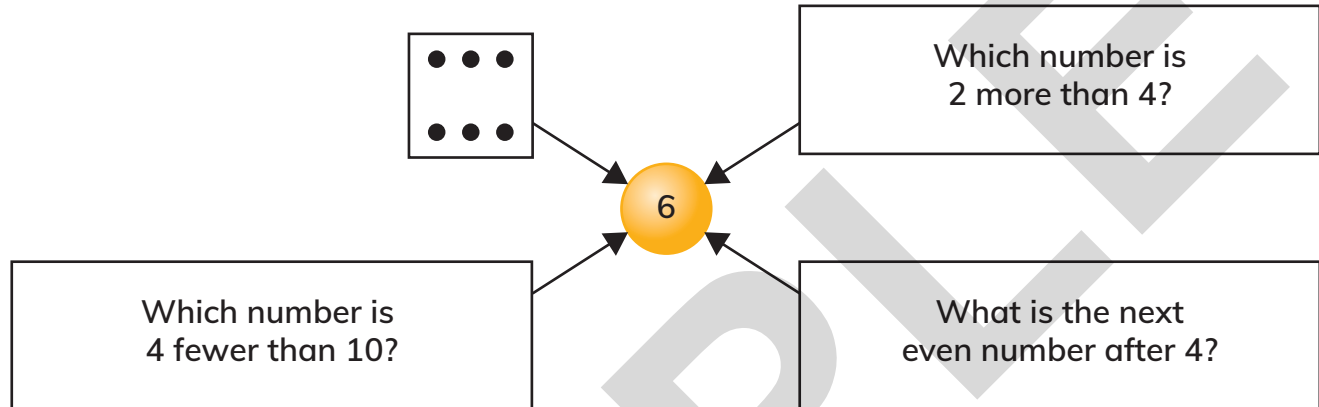
5   8 is the answer.
     What could the question be?
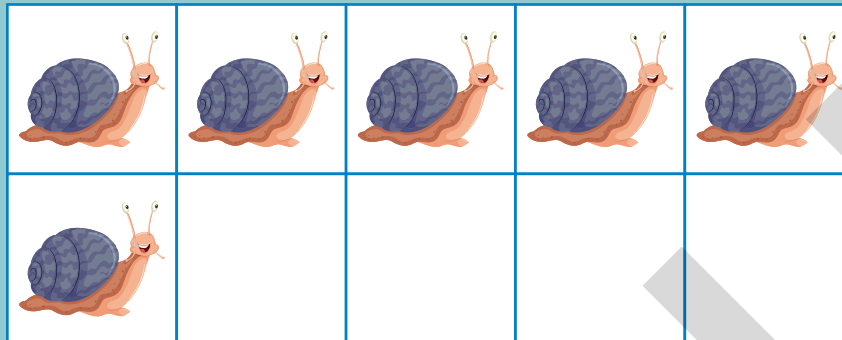
8
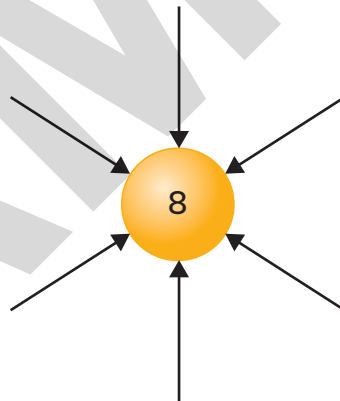
Look what I can do!

- I can find out if a number from one to ten is odd or even.
- I can remember some odd and even numbers.
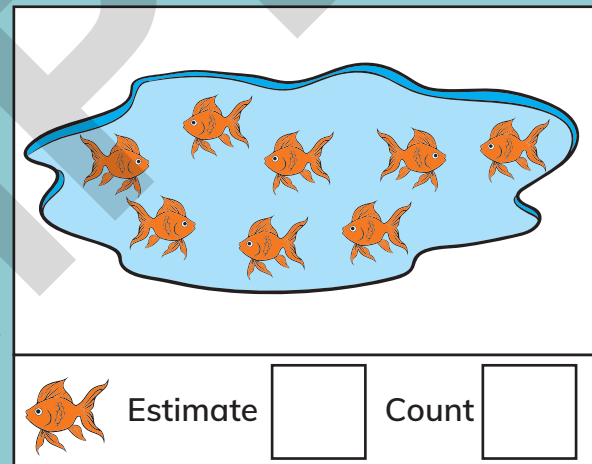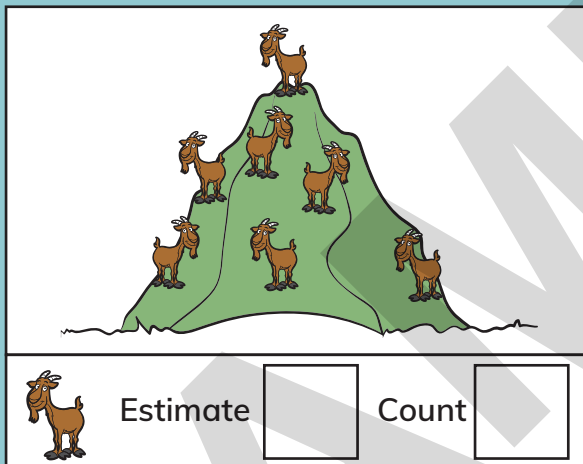- I can describe the pattern of odd and even numbers.

Check your progress

1   How many objects are there?

2   Estimate then count.

Estimate ☐   Count ☐

Estimate ☐   Count ☐

3   Draw a ring around the odd numbers.

7   2   6   9   1   8