



# 1

## How does the world change?

### Listening

- I can understand key information in recorded material.
- I can recognize how details relate to the main ideas.

### Reading

- I can find specific information using headings and captions.
- I can infer unstated information.

### Speaking

- I can talk about matters of personal interest.

### Writing

- I can provide facts or examples to support an opinion.



**1**  Look at the picture and discuss. Do you recognize any countries?

**2**  Think about your country. Discuss.

- 1** Is your country close to an ocean?
- 2** Which countries share a border with your country?
- 3** Could you travel to them overland or would you have to cross water?
- 4** How do you think the land of your country was formed?

**3**   Look at the video still and predict. What has happened?



**4**   Watch the video and check your answers from Activity 3. Then watch again and check (✓) the true sentences.

- There are thousands of tiny quakes every day.
- Earthquakes are caused by tectonic plates.
- The plates move quickly.
- Japan has about 1,500 earthquakes every year.
- Schools teach Japanese children to drop, cover, and run.

## Pre-reading 1

- 1**  Think. How many continents and oceans can you name? Where are the highest mountains in the world? Which continent is India in?



### Reading strategy

Use headings to find specific information in a text.

- 2** Read. Then choose and write a heading. When did India become part of Asia? What happened?

### Making mountains Moving toward Asia

When India finally crashed into Asia about 50 million years ago, the land of India went below the land of Asia and pushed it upwards. In that way, mountains started to form. Those mountains became bigger and bigger and are now the Himalayas, the highest mountains in the world.

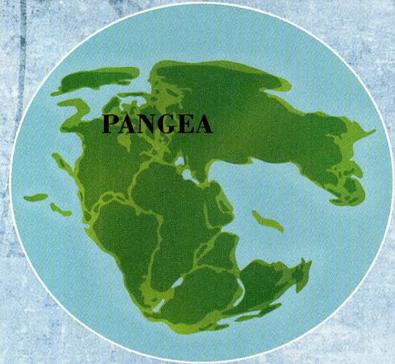


- 3**  **1-02** Read *Pangea: The Original Supercontinent*. What clues did scientists find? Which paragraphs have this information?

**6**

## Reading 1

### PANGEA: THE ORIGINAL SUPERCONTINENT



### THE WORLD IN THE PAST

This is a map of the world about 300 million years ago. There was one big continent, which we now call Pangea. Pangea is an Ancient Greek word which means *Whole Earth*. Around the land there was one ocean which we call Panthalassa. That means *Whole Sea*. In the days of Pangea there were no humans. There were only dinosaurs. Of course, dinosaurs couldn't draw maps! The very first human beings evolved about 3 million years ago. The first map was made about 4,000 years ago. So how do we know what the world looked like so far back in time? Geologists, scientists who study the earth, had a lot of clues to work from.



## AN AMAZING PUZZLE

Look at the two continents, **South America** and **Africa**. The **Eastern** coast of South America seems to fit, like a jigsaw puzzle, into the **Western** coast of Africa. Now look at the Eastern coast of **North America**. It looks as if it will fit into Greenland. The **Northern** coast of **Australia** fits into the **Southern** coast of **Antarctica**.

Geologists found the same rocks in Scotland and in New York. These clues made geologists think that those continents were once joined together.

## MAKING MOUNTAINS

Mountains form when the tectonic plates crash together. About 65 million years ago, India was a separate piece of land. Gradually it moved and crashed into **Asia**. That's when the **Himalayan Mountains** were formed. When the plates move from side to side, earthquakes happen. Sometimes they move apart from each other. This happens very slowly – the tectonic plates move about 10 cm a year.

## DETECTIVES OF FLORA AND FAUNA

Flora and fauna are scientific words. *Flora* means plants and *fauna* means animals. By looking at fossils (the bones and shapes in rocks of animals and plants which were once alive), scientists have discovered that the same creatures lived by the Eastern coast of South America and the Western coast of Africa. They've also found that the coasts of North America and **Europe** shared the same flora and fauna. These clues showed them that the continents were once part of the same land.

## THE OCEANS AND CONTINENTS NOW

When the tectonic plates move apart, water from the oceans sometimes comes into the gaps. That makes new seas and oceans. So, gradually, Panthalassa became a lot of different oceans. Now we've got the Pacific Ocean, the Atlantic Ocean, the Indian Ocean, the Arctic Ocean and the Southern Ocean. And we've got seven big continents.

## BREAKING UP

About 200 million years ago, Pangea started to break up into separate pieces of land. This didn't happen quickly – it took about 140 million years to happen.

## WILL THE WORLD STAY THE SAME NOW?

The tectonic plates of the Earth's crust are still moving. This means that some countries and continents are moving closer together and some are moving further apart. Scientists believe that in about 250 million years, the continents we know now will crash together again to make another enormous **supercontinent**.

They think it will look like this and they've already thought of a name for this new supercontinent: Pangea Ultima.



## INSIDE THE EARTH

Planet Earth has got a crust on the outside. The crust isn't one big piece – it's a lot of very large pieces called tectonic plates. The plates float. They don't float on water but on extremely hot melted rock. That hot rock is under the Earth's crust. Sometimes the plates go over each other, sometimes they go under each other, sometimes they crash together and sometimes they move from side to side.

**4**  What makes your country special? Think about the flora and fauna. Are there animals or plants in your country which aren't found anywhere else in the world? Discuss with a friend.



# Comprehension 1

**1** Where can you find information about these things? Write the heading of the paragraph.

- 1 Continents with similar shapes  
.....
- 2 When separate continents began to form  
.....
- 3 How fast tectonic plates move  
.....

**2** Read and circle **T** (true) or **F** (false).

- 1 Separate continents didn't exist 250 million years ago. **T F**
- 2 Scientists know what Pangea looked like from maps they found. **T F**
- 3 The eastern coasts of Africa and South America were once joined. **T F**
- 4 The Himalayas were part of Pangea. **T F**

**3**  In your notebook, draw a timeline using dates from *Pangea: The Original Supercontinent*. Write a fact for each date.



# Listening 1

**4** You're going to listen to someone talking about the effects of a volcano erupting. Which of these words do you think you'll hear? Check (✓).

create  destroy  islands  rocks

**5**  Listen and circle **T** (true) or **F** (false). 1-03

- 1 Lava can build villages. **T F**
- 2 Lava can change the course of a river. **T F**
- 3 We can use volcanic rock on our feet. **T F**
- 4 Volcanic ash can be good for the Earth. **T F**
- 5 Volcanoes are only found on land. **T F**

## Listening strategy

Use what you already know about familiar topics to help you learn new information.



**6**  Discuss with a friend. Has anything changed where you live? What happened? Think about rivers, beaches, rocks, trees, fields, and lakes.

# Vocabulary 1

## 1 Read and write the correct number.



- the northern coast of Asia  3
- Europe  Africa  Antarctica
- the southern coast of Australia
- the western coast of South America
- the eastern coast of North America
- About 300 million years ago, these continents fitted together to form a .....

## 2 Listen and say. Use words from Activity 1.

## 3 Where did scientists find fossils? Look and complete.



lizard reptiles (Mesosaurus)



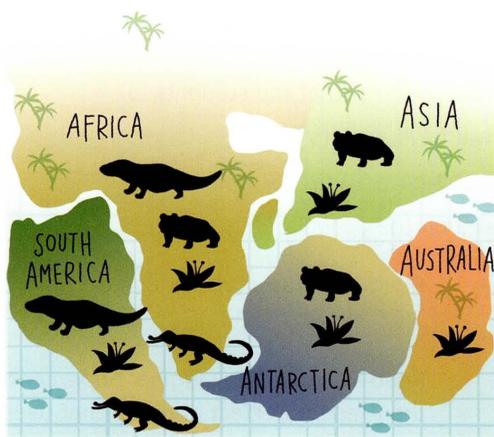
large reptiles (Cynognathus)



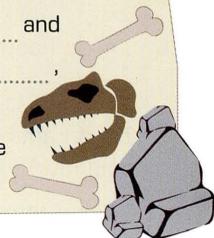
plants (Glossopteris)



small reptiles (Lysotrosaurus)



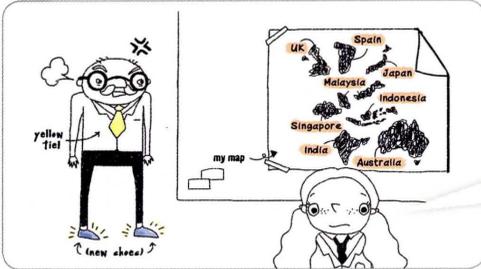
Geologists have discovered fossils of the same plants in <sup>1</sup> ....., <sup>2</sup> ....., <sup>3</sup> ....., <sup>4</sup> ....., and <sup>5</sup> .. They've found fossils of the Mesosaurus and the Cynognathus in <sup>6</sup> ..... and <sup>7</sup> .. They've also found fossils of the Lysotrosaurus in <sup>8</sup> ....., <sup>9</sup> .., and <sup>10</sup> .. Geologists know that the coast of Africa was joined to Asia and Antarctica, and that the coast of Australia was joined to Antarctica, too. Amazing!



## 4 Imagine you're a geologist. Where are you and what have you found? Discuss with a friend. Use words from Activity 1.

# Grammar 1

**1**   Watch Part 1 of the story video. Then read and complete.



I've ..... him look like that before. It isn't good!  
Emily ..... come to class. Where can she be?

**2**   Watch Part 1 of the story video again. Check (✓) the correct answers.

- Mr. Perkins and the geography teacher have decided that the students ...
- will have an Arts Show.
- won't have an Arts Show.
- will do the School Challenge.

**3** Read the grammar box and circle.

**4** Read *Pangea: The Original Supercontinent* again. Find and circle a fact that uses the Present Perfect and one that uses the Past Simple. Do we know when they happened?

**5** Read and complete. Use the verbs in the Present Perfect or the Past Simple.

- 1 I'm so happy! This is the first time I ..... a fossil! (find)
- 2 I ..... it about five minutes ago. (find)
- 3 It's an ammonite! These creatures ..... in the ocean about 100 million years ago! (live)
- 4 I know something about ammonites because I ..... just ..... them up on the internet. (look)
- 5 They ..... predators – that means they ..... other sea animals. (be) (eat)

## Grammar

### The Present Perfect and the Past Simple

- a** Oh, no! I can't get into our house.  
**I lost / I've lost** my key!
- b** **I lost / I've lost** my key last week and I couldn't get into the house.
- In **a / b**, the words *last week* tell us exactly when this happened. So we know we need to use the Past Simple.
- In **a / b**, we don't know exactly when it happened, but it's still important now.

## 6 Complete the text with the verbs from the box using the Present Perfect or the Past Simple.

be draw learn put remember tell understand

We're learning about the continents and oceans in our geography class.

We <sup>1</sup> ..... already .....  
 about the first supercontinent, Pangea. We  
<sup>2</sup> ..... maps of Pangea last week and  
 we <sup>3</sup> ..... them on the wall. Our teacher  
<sup>4</sup> ..... us about tectonic plates yesterday.  
 I <sup>5</sup> ..... really ..... everything  
 yet, but I <sup>6</sup> ..... the names of all the oceans  
 this morning. Our teacher <sup>7</sup> ..... very happy!



## Speaking 1

### 7 What has changed in your life? Discuss with a friend.



#### Speaking strategy

Encourage others to contribute.

get a new pet    make a new friend    move house  
 plant a tree    win a prize    write a story

Have you made a new friend this year?

Yes, I did, but I haven't won a prize this year.



No, I haven't, but I made a new friend last year.  
 Did you win a prize last year?

## Pre-reading 2

- 1  Think about the ocean. Does it change at different times? How do you think the ocean can change the land?



### Reading strategy

Look for and find points in a story when you can anticipate what might happen next.

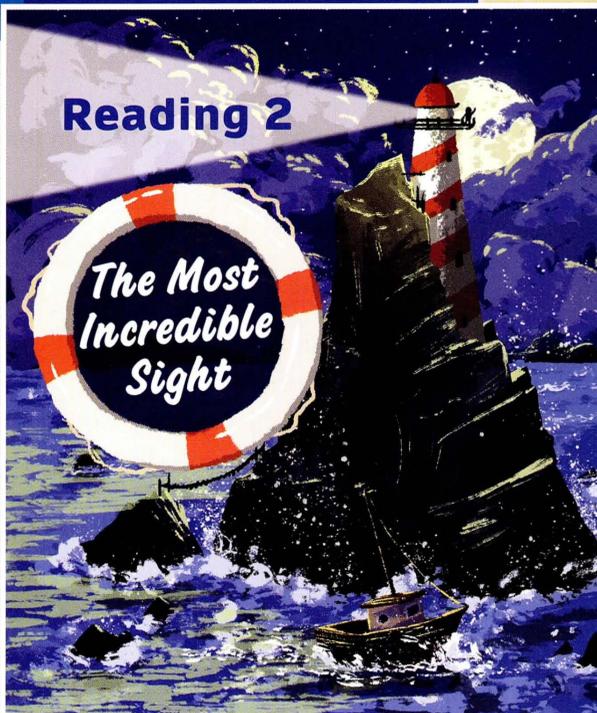
- 2  Read. Circle what you think might happen next. Then underline the sentence that gives you a clue.

My Uncle Liam is a fisherman and he has a small boat that he takes out most weekends. I join him whenever I can. Our favorite spot to go to is a small island about two kilometers offshore. There's never anyone else on the island and my uncle told me that it suddenly appeared one night out of nowhere. Our favorite time to fish is at night. When there's a full moon, you don't catch many fish so my uncle likes going when the moon is new and small. Of course, then you can't see very much. The night when the amazing thing happened was a night of a new moon.

- a They catch a lot of fish.  
b The island disappears.  
c They see a lot of people.

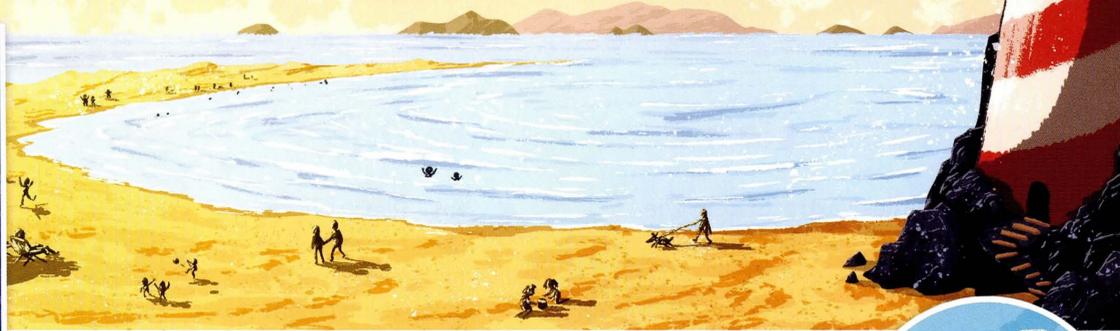
- 3  Read *The Most Incredible Sight*. What happened to the island?

## Reading 2



Can you believe my grandmother is a lighthouse keeper? It's a very unusual job. Most lighthouses nowadays are automatic, but my grandma has lived and worked in a lighthouse for over 40 years. Her job is to shine a **beacon**. A beacon is a strong light and it helps guide sailors away from danger and avoid crashing into rocks. My grandma's lighthouse is an **offshore** lighthouse – it stands on a small rocky island about 200 meters away from the **mainland**.

Sometimes I go and stay there, and I've seen all kinds of different weather conditions. I've seen the ocean calm and flat and I've seen huge storms with enormous waves that **batter** the rocks. My grandma says that the **coastline** has changed since she started working in the lighthouse. The power of the waves changes the shape of the coastline. But one day we witnessed the most incredible thing we have ever seen.



I've always liked the beach around the **bay** close to the lighthouse. It's rocky and there isn't any sand, but I like clambering over the rocks and discovering small sea animals in the rock pools. My grandma told me that when she was little, the beach was completely sandy and that it changed **overnight**. One day it was sandy and the next day the sand had disappeared. There was nothing but bare rocks!

It was March 21<sup>st</sup>, and that day is called the spring **equinox**. "Equinox" means the day and night are equal: 12 hours of day and 12 hours of night. During the spring equinox there are often powerful **tides** and strong **currents** in the ocean. That night it was high tide – the sea level was very high. I went to bed early, but Grandma stayed up – she knew the currents and tides might be dangerous for sailors that night.

When I woke up, Grandma was already by my bed, looking very excited.

"Morning, Eva! I've been waiting for you to wake up!" she said. "Come and see!"

I quickly dashed downstairs. Grandma flung open the door of the lighthouse and pointed dramatically towards the shore.

"Look!" she cried.

I looked, but I couldn't believe it. I rubbed my eyes and looked again. "Am I really awake, Grandma?" I said. "This can't be true! It must be a dream!"

"You're wide awake," laughed Grandma.

"But you're right – it does seem like a dream!"

The rocky beach was nowhere to be seen. Instead there were kilometers of beautiful golden sand stretching out all around the bay.

"Your sandy beach has come back!" I said.

"Yes!" said Grandma. "Overnight – just as it disappeared, it's reappeared overnight!"

"How? How did this happen?" I spluttered.

"It must be magic!"

Grandma laughed. "Not magic but the amazing forces of the natural world," she said. "The strong currents in the ocean stir up the **seabed**, the floor of the ocean. The sand must have been lying on the seabed and the high tide stirred it up and washed it back onto the beach. Seaweed helps **stabilize** the sand – the seaweed keeps the sand steady and in one place. But at this time of year, after the winter, there isn't much seaweed."

"So the sand escaped back to the beach!" I said.

"Something like that," laughed Grandma.

"Will it stay sandy?" I asked. "Will the beach ever be rocky again?"

"It might be," said Grandma. "You just never know what's going to happen in this incredible world."



What kind of beaches do you like: sandy or rocky? What do you think you might discover on a rocky beach? Why? Discuss with a friend.



## Comprehension 2

**1** Look at these extracts from *The Most Incredible Sight*. What did you anticipate when you read them? Circle.

- 1** The power of the waves changes the shape of the coastline. But one day we witnessed the most incredible thing we've ever seen.
- a** something to do with the coast
  - b** something to do with sailors
- 2** During the spring equinox there are often powerful tides and strong currents in the ocean. That night it was high tide – the sea level was very high.
- a** something big will happen
  - b** something funny will happen

**2** Read *The Most Incredible Sight* again and circle.

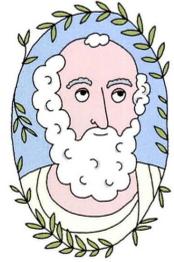
- 1** The lighthouse was **at the beach / on an island**.
- 2** Eva **lived / was staying** in the lighthouse.
- 3** On March 21<sup>st</sup>, the day and night are **of equal length / dangerous times**.
- 4** The rocky beach **won't reappear / might reappear**.

**3** Number the events in the order that they occurred.

- The sandy beach reappeared.
- The sandy beach disappeared overnight.  1
- The rocky beach disappeared.
- The sand lay on the seabed.
- The currents and tide moved the sand.

## Listening 2

**4**  Plato was an ancient Greek philosopher. In those days, how do you think people got information about the world and its changes?



### Listening strategy

Keep an open mind when deciding what you believe is truth or fiction.

**5**  Listen and answer. Did the city of Atlantis really exist? Does it exist now? Are you 100% sure of your answers?

**6**  Listen again and complete. Use the words from the box.

civilized   floods   greedy  
impressive   sank   smaller   war

The city of Atlantis was on an island. It was <sup>1</sup> ..... and the buildings were <sup>2</sup> ..... But the rulers of Atlantis became <sup>3</sup> ..... and started a <sup>4</sup> ..... The city of Athens was also powerful and, although it was <sup>5</sup> ....., it defeated Atlantis.

Then there were terrible <sup>6</sup> ..... and an enormous earthquake. Atlantis disappeared. It <sup>7</sup> ..... into the ocean and no one ever saw it again.

**7**  What do you think Plato was teaching us in this story? Do you think parts of the story might be true?

## Vocabulary 2

- 1** Find these words in *The Most Incredible Sight*. Circle words which are to do with the ocean. Underline words which are to do with the land.

batter bay beacon coastline current equinox  
mainland offshore overnight seabed stabilize tide

- 2** Read and write. Use words from Activity 1.

- 1** hit, crash ..... batter .....
- 2** equal day and night .....
- 3** a powerful light .....
- 4** the opposite of island .....
- 5** away from the shore .....
- 6** land around the edge of the ocean .....
- 7** the floor of the ocean .....
- 8** movement within the ocean .....
- 9** the ocean going in and out .....
- 10** part of the ocean where the coast is curved .....
- 11** in one night .....
- 12** make secure and steady .....

- 3** Sailors keep a record of their journeys in log books. Complete the information in **red** with your own ideas. Then circle the correct words in **blue**.

### Daily log entry

Date of departure: .....

Destination: .....

Date of arrival: .....

Tide / Equinox: High

Currents / Bay: Strong

Kilometers offshore / mainland: 20

Lighthouse beacon / seabed: Shining brightly

Overnight / Batter weather: Fine. Full moon

View of coastline / stabilize: Clear view

- 4**  Now work with a friend. Talk about the journey you recorded in the log book. Use words from Activity 1.

When did you depart?

On June 2<sup>nd</sup>.



Was it a low tide?

No, the tide was high.

## Grammar 2

1  1-3



Watch Part 2 of the story video and answer.



- 1 What has Emily changed?
- 2 Does Mr. Perkins like it?
- 3 Do you think Emily and Jade are rude to Mr. Perkins?

Mr. Perkins's face is red. He must be very angry!

2 Read the grammar box and complete with *angry* and *happy*.

### Grammar

*must / might / can't*

He's ..... I'm sure! Mr. Perkins **must** be .....

He **might** be ..... about Emily's hair. I'm not sure.

They aren't ..... I'm sure! Jade and Emily **can't** be .....

3 Find these sentences in *The Most Incredible Sight* and complete. Then write *a* or *b*.

**a This is the only explanation I can think of.**    **b This is a possibility.**

- 1 She knew the currents and tides ..... dangerous for sailors that night.  **b**
- 2 "This ..... true! It ..... a dream!"
- 3 "How did this happen?" I spluttered. "It ..... magic!"
- 4 "Will the beach ever be rocky again?" "It .....," said Grandma.

**4** Look and write. Use *might*, *must*, or *can't* and the words from the box.

a bird    ~~a dinosaur~~    old  
a painting    a plant    real

- I'm sure it's a dinosaur. It must be a dinosaur.
- I'm not sure if it's .....
- I'm not sure if it's .....
- I'm sure it isn't .....
- I'm sure it's .....
- I'm sure it isn't .....



## Speaking 2

**5** Think of clues for these things. Then ask and answer.

	What or who?	Clues
Nature	<i>The Sun</i>	<i>yellow / red / enormous</i>
Food		
Person		

It's yellow.

It might be a lemon.

It's sometimes red.

It can't be a lemon!

It's enormous and it heats the Earth.

It must be the Sun!

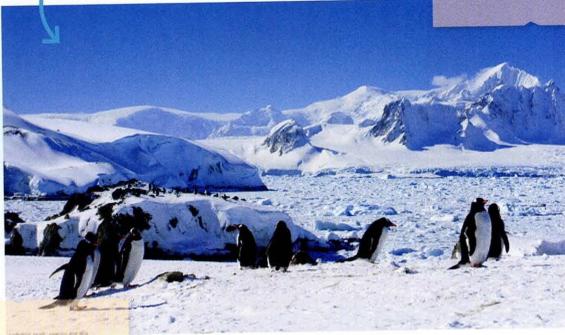


# Writing

**1** Look at Leon's poster. What's he presenting?

## ANTARTICA

This is Antarctica. It's a big continent in the Southern Hemisphere, but it wasn't always in the south. It was once joined to Africa and Australia, but tectonic plates under the Earth's crust made it move.



Antarctica is a very cold and icy continent. Some of the ice in Antarctica has melted, but when it snows, new ice is made again!

It doesn't rain much in Antarctica so it's a desert - an ice desert! There are volcanoes in Antarctica. The highest one is Mount Sidley, which hasn't erupted for millions of years!



Seals and penguins live there, but not many people do because the climate is treacherous. Scientists go there to do research and get information.

**2** Read Leon's poster. What did you learn? Complete the chart.

**I didn't know this**




### Writing strategy

Collect information and make notes before you write. Finding some new and unusual information can make your writing really interesting.

**3** **WB** Find a picture of a continent. Then go to the Workbook to do the writing activity.

## Now I Know

- 1**  How does the world change? Look back through Unit 1. Remember what you learned and write.



The world changes in many different ways. Some changes happen inside the Earth. ....

.....

.....

- 2** Choose a project.



### Make a picture story of somewhere in your area.

- 1** Take pictures of a place you like to go to.
- 2** Write some notes about it.
- 3** Ask older people what they remember about that area.
- 4** Find old pictures or draw what they tell you.
- 5** Write about the changes and describe them to the class.

or



### Make a plant and animal map of the world.

- 1** Draw the seven continents.
- 2** Research which plants and animals are similar across each continent.
- 3** Draw them on the map.
- 4** Write a sentence for each to explain any patterns you have found.
- 5** Present to the class how plants and animals reveal changes to the continents.

## Self-assessment

Check (✓) or cross (x).

- x I can't do this yet.     ✓ I can do this.     ✓✓ I liked doing this.

I can understand key information in recorded material.

I can recognize how details relate to the main ideas.

I can find specific information using headings and captions.

I can infer unstated information.

I can talk about matters of personal interest.

I can provide facts or examples to support an opinion.