

Family
and
Friends **5**

To the Rescue



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By Mary McIntosh

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To the Rescue

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این مجموعه با لوگوی مرجع زبان ایرانیان
به صورت نشر برخط و حامل به ثبت رسیده است.
کپی برداری از آن خلاف قانون، شرع و اخلاق است و شامل پیگرد خواهد شد.

Activities

Before reading

1 Match the words with the definitions.

earthquake

~~eruption~~

explosion

flood

oil spill

tsunami

- 1 When burning rocks, hot liquid and smoke come out of a volcano: eruption
- 2 A very large wave that goes over the land and destroys things: _____
- 3 When oil accidentally goes out of a ship: _____
- 4 A sudden violent shaking of part of the earth: _____
- 5 When something bursts suddenly with a very loud noise: _____
- 6 When a lot of water covers somewhere that is usually dry: _____

2 Use the words in Exercise 1. Answer the questions.

- 1 Which of these things have happened in your country since you were born?

- 2 Which of these things happened in your country a long time ago?

3 Do you think these sentences are true (T) or false (F)?

- 1 The eruption of Vesuvius destroyed the city of London.
- 2 The Asian tsunami went as far as the east coast of Africa.
- 3 In 1995 there was an oil spill in the Japanese city of Kobe.
- 4 The explosion at the Chernobyl power station was in 2009.
- 5 After Hurricane Katrina there were floods in New Orleans.

INTRODUCTION **Can we survive?**

Stephen Hawking, a famous British scientist, recently asked, 'How can people survive the next 100 years?' In two days 16,000 people sent him their answers.

Behind Stephen Hawking's question is the idea that our way of life is leading us towards disaster – a disaster so big that people will no longer be able to live on the Earth 100 years from now.

So what kind of disaster does Stephen Hawking think will happen? What is wrong with the way we live? Is he worried about how we use energy, and how we look after the Earth's environment? Is it going to be a natural disaster or a man-made disaster?

Some natural disasters (like volcanoes and earthquakes) are beyond our control because the causes lie deep inside the Earth. Natural disasters usually happen very suddenly, and they often cause a lot of suffering to the people living nearby. But there are other disasters – man-made disasters – which are caused by people. A good example is the *Titanic* disaster, when that great ship sank to the bottom of the dark waters of the Atlantic Ocean.

In this book you will read about many kinds of disasters. No one can answer all the questions about why disasters happen – not even very clever people like Stephen Hawking. However, we can think about ways of rescuing people and ways of helping people with the big changes that disasters bring to their lives. We can also think about what we can learn from disasters and how to prevent them from happening in the future.

disaster something terrible that happens

beyond far away from

suffering pain, sadness or illness caused by a problem

prevent to stop something from happening

CHAPTER 1 Vesuvius

Today one million people live and work in the crowded, noisy city of Naples in Italy. People are busy, and many of them probably do not look up at Vesuvius, the great volcano, which is nearly 1,300 metres high and lies to the east of the city.

In the year 79 AD, nearly 2,000 years ago, the people of the busy town of Pompeii were hurrying about their lives. Pompeii is twenty kilometres south-east of Naples, and it is only ten kilometres from the great volcano. At that time Pompeii was a rich town of 20,000 people with a busy port and market. All around the town were the beautiful homes of rich men and their families.

Then on 24th August everything changed for ever. In the middle of the morning the ground began to shake. Cups and plates fell off tables, and suddenly there were holes in the ground. People remembered the disastrous earthquake that hit Pompeii seventeen years before. Was this the beginning of another earthquake?

Dogs started to bark loudly, birds flew away, and then a strange silence fell over the town. At midday a great cloud of grey ash rose up from Vesuvius and into the air. That afternoon, with a terrible noise a thousand times louder than thunder, the top of the volcano was blown twenty kilometres into the air, and flames lit up the darkened sky. Vesuvius was erupting!

A south-east wind quickly blew the cloud of ash towards the town of Pompeii. People were frightened and tried to escape. But for many it was too late. In two days the town was covered in four metres of ash and stones. About 2,000 people were killed by the cloud of hot gases and ash.

AD the time after the year 0. 1986 and 2010 are AD years.

shake to move a lot

ash the grey powder that remains after a fire

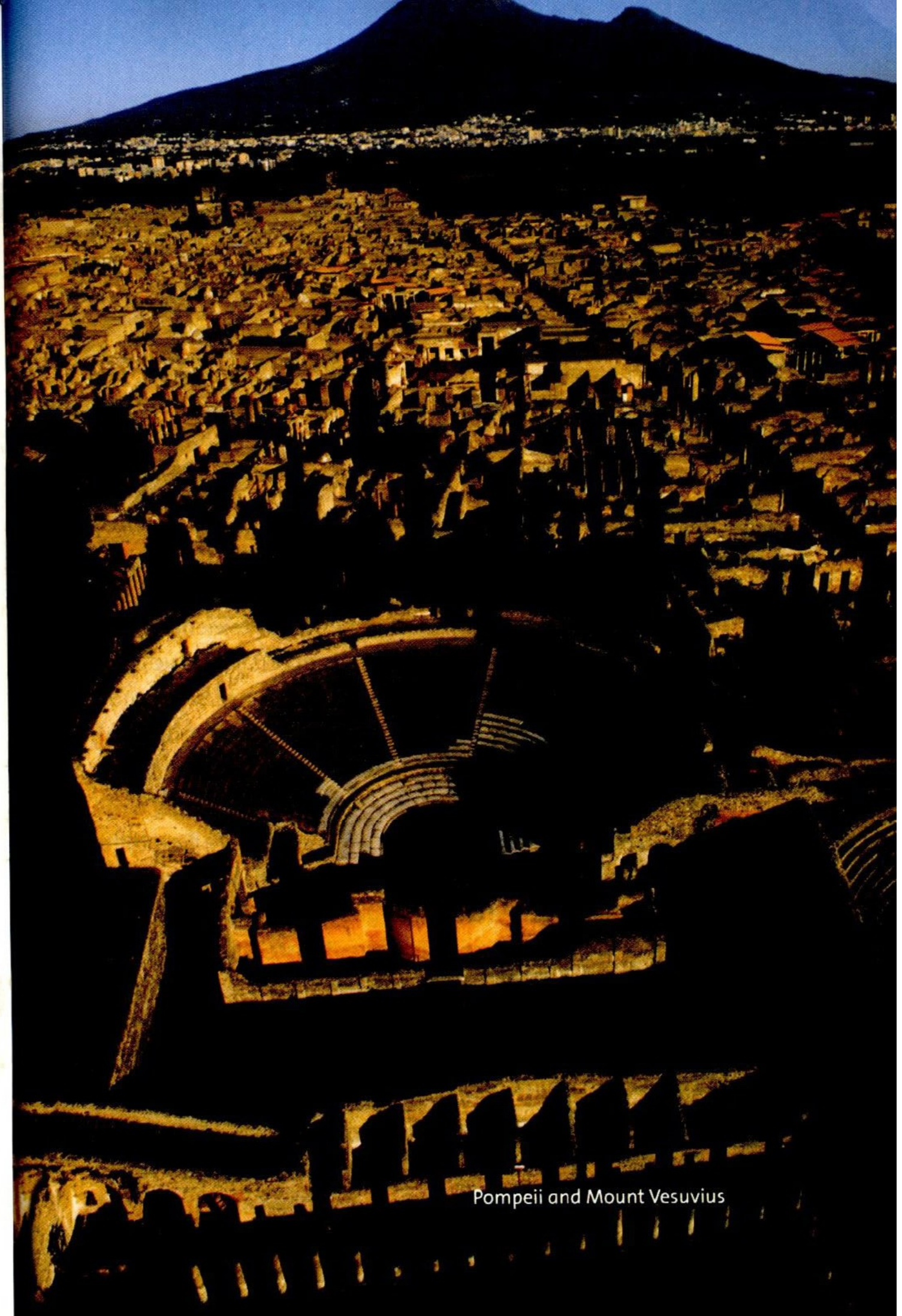
rise (*past rose, risen*) to go up or get up

erupt when a volcano erupts, it throws out burning rocks, smoke and ash

escape to get away from danger

cover to go over something

gas air that comes out of a volcano



Pompeii and Mount Vesuvius

Others were buried in a mountain of hot, wet mud and died immediately.

The small town of Herculaneum, which lies between Vesuvius and the sea, was also hit by the volcano. After the first eruption of Vesuvius many people left Herculaneum. Some people stayed, thinking that it was safe because the wind was not blowing the ash and smoke towards them.

But they were wrong. One day after the first eruption Herculaneum was suddenly covered by a river of hot ash and mud. In a few hours the town was buried under twenty metres of hardened rock from the volcano.

In some ways this eruption of Vesuvius was just like any other disaster caused by volcanoes. Lots of people died, and the families and survivors had to learn to make new lives for themselves. So why do we remember this eruption of Vesuvius? Let us think about how we have come to know about life in Italy at that time.

In 79 AD Pompeii and Herculaneum were controlled by the great city of Rome. We know a lot about Rome and its people through books written in the Latin language. Virgil and Pliny were famous writers of that time. In fact there were two writers named Pliny, and both of them were caught in the eruption. Pliny the Younger survived and wrote a detailed diary about the disaster, but his uncle, Pliny the Elder, was killed. We have more than just books, however, to tell us about the Romans at that time.

The eruption of Vesuvius killed people suddenly in the middle of a very normal day. Then the mud covered their bodies and buried them for many centuries. This had a surprising result: today Pompeii and Herculaneum show us how life was in these two Roman towns nearly 2,000 years ago.

bury to put a person or thing under the ground

control to decide how people should live

diary a book where you write what happens every day

century a hundred years



A wall painting in Pompeii

By digging down through the mud, people have discovered the houses and streets of the two towns, with their shops, street signs, paintings and mosaics. They have also found the theatres, the kitchens and the town baths. From these places and from the things found there many interesting facts have been discovered about life in Roman times. For example, in the theatre of Pompeii the bones of dead gladiators have been discovered. Gladiators fought animals and each other – and often died – while crowds of people watched and enjoyed themselves.

In the two towns today you can see the plates, cups, coins, rings and bracelets that people used and wore on that day long ago. There is also graffiti – writing on the walls – which tells us what people were feeling and thinking, just as graffiti does today. Maybe the people of Roman times were really quite similar to us!

So the disaster which hit the people of Pompeii and Herculaneum in 79 AD has given us a very real and meaningful lesson in the history of Italy and the Roman people.

discover to find or learn something new

mosaic picture made from lots of small pieces of coloured stone

meaningful full of meaning

Activities

1 Correct the mistakes in these sentences.

Naples

- 1 Vesuvius is near the city of ~~Milan~~.
- 2 The eruptions happened in August 379 AD.
- 3 Pompeii was a poor town of 20,000 people.
- 4 Herculaneum was slowly covered by hot ash and rock.
- 5 Pliny the Younger wrote a letter about the disaster.
- 6 Pompeii and Herculaneum tell us a lot about Greek life 2,000 years ago.

2 Choose the correct words to complete the sentences.

- 1 People cannot prevent / cover natural disasters like eruptions.
- 2 A disaster causes *shaking* / *suffering* that is beyond our control.
- 3 A volcano *erupts* / *escapes*.
- 4 *Wind* / *Flames* blew ash towards Pompeii.
- 5 In Pompeii and Herculaneum people were *prevented* / *buried* in the ash.
- 6 People were killed by hot *ashes* / *flames*.
- 7 Writing on the wall is called *mosaics* / *graffiti*.
- 8 In the theatre of Pompeii the bones of *gladiators* / *animals* have been discovered.

3 Match the words with the definitions.

shake

discover

gas

suffering

~~disaster~~

beyond

mosaics

- 1 Something terrible that happens: disaster
- 2 To move a lot: _____
- 3 To find or learn something new: _____
- 4 Far away from: _____
- 5 Pain, sadness or illness caused by a problem: _____
- 6 Air that comes out of a volcano: _____
- 7 Pictures made of lots of small pieces of coloured stone: _____

4 Find words in the word snake to complete the sentences.

century caused shake control escapes survived

- 1 If you are alive after a disaster, you have survived.
- 2 People cannot _____ volcanoes or earthquakes.
- 3 Man-made disasters are _____ by people.
- 4 In an earthquake the ground starts to _____.
- 5 People in Pompeii tried to _____ when they saw the cloud of ash coming nearer.
- 6 We are living in the twenty-first _____.

CHAPTER 2 Earthquakes

In a London museum many tourists like to visit a special 'earthquake machine'. You stand in a room which looks like a supermarket, then suddenly you see the room shaking, hear the shelves trembling and feel the floor moving up and down. It is almost like being in a real earthquake.

A tourist may feel excited when the ground moves and tins fall off shelves. But an earthquake machine cannot match the horror of a real earthquake – the horror of seeing your normal world disappear. Yet that is what has happened to thousands of earthquake victims.

In the next chapter you can read about the earthquake that caused the 2004 tsunami, which flooded many countries near the Indian Ocean. But we begin with the worst earthquake disaster of the twentieth century, which hit the city of Tangshan, north-east China, in 1976.

Tangshan, 1976

China has a long history of earthquakes. In fact the first machine to measure earthquakes was made by a Chinese scientist in the second century AD. Scientists now use the Richter scale to measure earthquakes, and this gives earthquakes a number from 0 to 10. Every day in the world there are about 1,000 small earthquakes at level 2 that people do not notice. At the other end of the scale the strongest earthquake in the history of the world, which happened in Chile in 1960, measured 9.5 on the Richter scale.

Tangshan is about 200 kilometres east of Beijing, the capital city of China. For several weeks in the summer of 1976 strange signs were reported in and around this

victim someone who is hurt or killed in a crime, accident or disaster

measure to see how big something is

notice to see

sign something that shows you that something important will happen

busy city of 1.5 million people. In some of the deep wells around Tangshan water levels rose and fell several times, and other wells began to smell of gas.

During the first weeks of July that year animals started behaving strangely too. One family noticed that their chickens ran around wildly and refused to eat. A father reported that his family's goldfish jumped out of its bowl. When the children put the fish back in its bowl it jumped out again! Maybe animals have special ways of knowing about danger. Towards the end of July people reported that the sky was full of lights brighter than lightning and noises louder than thunder.

However, none of these signs prepared the people of Tangshan for the disaster that hit them in the early morning of 28th July 1976.

The earthquake started 11 kilometres under the city and measured 8.2 on the Richter scale. It lasted only 15 seconds, but it killed thousands of people who were

well a deep hole in the ground from which people get water

behave to do things in a particular way

Chengli Bridge, Tangshan 1976



sleeping peacefully in their beds. Just a few hours later there was another earthquake. This one measured 7.1 on the Richter scale – smaller than the first, but very deadly. It hit the city as the survivors were beginning to pull themselves from under the rocks and stones that used to be their homes. The rescuers who were trying to help the first victims became victims of the second earthquake.

In those short moments the city of Tangshan was completely destroyed. The earthquake was 400 times more powerful than the nuclear bomb that hit the Japanese city of Hiroshima in World War Two. People even died 200 kilometres away in Beijing.

The Tangshan earthquake was the worst earthquake disaster of the twentieth century. The Chinese government reported that a quarter of a million people died, but other reports say that the true number of victims was about half a million. The truth is difficult to know. In the city with no fresh water, no electricity and no food there was great danger of disease from the thousands of dead bodies. So there was no time to find the names or count the true numbers of all the victims before the bodies were buried. This has caused a lot of sadness to many families, who like to remember their loved ones at the Chinese festival of Qing Ming.

However, there were some good stories, too. One is from Qinglong, which is 115 kilometres from Tangshan. Government workers who received scientific warnings of a possible earthquake organized tents for 200,000 people, and that is where they slept on the night of the disaster. Although 180,000 buildings were destroyed in Qinglong, not a single person died because of the earthquake.

Another story comes from a man called Ming Jiahua.

destroy to break every part of something

nuclear using or making nuclear energy

government the people who control a country

truth things that are true

disease something that makes people ill

When the earthquake hit, he and his friends were working deep under the ground. Frightened for their lives, they came up for air as quickly as possible. There were 15,000 people working underground on that terrible night, but only thirteen men died.

training special
classes and
practice

Kobe, 1995

Like China, Japan has always had earthquakes. To give Japanese people a better chance of surviving these disasters they have training in school, and new homes in Japan must keep people safe during earthquakes. Some Japanese children also play earthquake computer games, which give them the feeling of what an earthquake is like, so they are prepared for a real earthquake.

Japanese school children preparing for an earthquake exercise



On 1st September 1923 there was a very big earthquake in Tokyo, which killed 143,000 people. Japanese people still remember 1st September as National Disaster Prevention Day. But thoughts about that disaster were not enough to help the people of Kobe when an earthquake hit their city in southern Japan.

At 5.45 a.m. on Tuesday 17th January 1995, when many people were still asleep, the ground began to shake. Roofs fell in, roads suddenly disappeared, and cars and houses were destroyed. An earthquake measuring 7.2 on the Richter scale hit the city of Kobe.

The destruction was unbelievable. One train station fell into pieces, destroying many cars in its car park. A huge road simply fell down to one side. The railway lines of the high-speed 'bullet train' broke in eight places.

About 310,000 people – one fifth of the city's population – were left homeless, 6,440 buildings were destroyed, and 6,000 people were killed.

There were a lot of problems for the survivors and the rescuers. Many parts of the city had no water, and because a lot of roads were destroyed it was impossible at first to move around the city to get food, water and help to injured people.

To make things worse, the weather was cold. Although people were freezing with cold in some places, there were fires in other places. Fire spread through many parts of the city, and destroyed as much as the actual earthquake.

There were a lot of sad stories. People heard the voice of a little girl who was trapped under a house. 'Okaasan, okaasan (Mother, mother),' she called. But the calling stopped at seven o'clock in the evening: the rescuers did not arrive in time.

prevention action to stop something from happening

destruction when something is destroyed

homeless without anywhere to live

injured hurt

trapped unable to escape



Kobe 1995: Fire destroyed as much as the earthquake

About one hour after the earthquake one man was standing at a bus stop, waiting for a bus to go to work. Maybe he was hoping that if he did a normal day's work, then life would return to normal. But the bus never arrived.

In the late twentieth century the Japanese people started to believe that scientists could always warn them when an earthquake was going to hit Japan. People also felt that after the experience of so many earthquakes they were better prepared for disaster. In fact scientists can never fully protect people from earthquakes and their destruction. No one can control nature.

warn to tell people that something bad will happen

protect to make sure that somebody or something is not hurt or damaged

Activities

1 Choose the correct words to complete the sentences. Tick the boxes.

- 1 A ... scientist made the first machine to measure earthquakes.
a Japanese b Chinese c Chilean
- 2 Before the Tangshan earthquake ... behaved strangely.
a babies b children c animals
- 3 The first earthquake in Tangshan lasted ...
a 15 seconds. b 50 seconds. c 15 minutes.
- 4 ... of the city of Tangshan was destroyed.
a A lot b Most c All
- 5 The Kobe earthquake started when many people were ...
a in bed. b at work. c on holiday.
- 6 After the earthquake a fifth of Kobe's population had no ...
a water. b food. c homes.
- 7 In Kobe ... did as much damage as the actual earthquake.
a fire b water c gas explosions

2 Are these sentences about Tangshan or Kobe? Tick the boxes.

	Tangshan	Kobe
1 The earthquake measured 8.2 on the Richter scale.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 The earthquake happened in winter.	<input type="checkbox"/>	<input type="checkbox"/>
3 A quarter of a million people died.	<input type="checkbox"/>	<input type="checkbox"/>
4 It happened 200 kilometres east of Beijing.	<input type="checkbox"/>	<input type="checkbox"/>
5 It happened in 1995.	<input type="checkbox"/>	<input type="checkbox"/>
6 There were fires all over the city.	<input type="checkbox"/>	<input type="checkbox"/>

3 Rewrite these words from Chapter 2. Then complete each sentence with one word.

- | | | | |
|---|-----------|---|---------------|
| 1 | otncie | n | <u>notice</u> |
| 2 | ehbvae | b | _____ |
| 3 | eramuse | m | _____ |
| 4 | nrtiaign | t | _____ |
| 5 | gnsi | s | _____ |
| 6 | lhemosse | h | _____ |
| 7 | hturt | t | _____ |
| 8 | sdteryode | d | _____ |

- 1 A Chinese scientist made a machine to _____ earthquakes.
- 2 People sometimes do not notice small earthquakes.
- 3 Why do these wells smell of gas? Is it a _____ of an earthquake?
- 4 Sometimes animals _____ strangely before something dangerous happens.
- 5 The earthquake completely _____ the city of Tangshan.
- 6 Japanese children are given _____ in school so that they know what to do in an earthquake.
- 7 Tell me the _____ about what happened.
- 8 When people lose their homes, they are _____.

CHAPTER 3 The Asian tsunami

Until recently only the Japanese (and people who study natural disasters) knew that a tsunami is a huge wave caused by an earthquake under the sea. Then on 26th December 2004 the word 'tsunami' became known all around the world.

The Asian tsunami was caused by an earthquake measuring 9.3 on the Richter scale – the second largest ever known in the history of the world. It started 30 kilometres under the Indian Ocean and 160 kilometres west of Sumatra, one of the islands of Indonesia. Just before eight o'clock on the morning of 26th December the earthquake sent waves through the Indian Ocean. At first those waves were not very big, so no tsunami warning was given. In fact there was a delay of several hours before the waves hit the coast. In many places the waves were twenty metres high and they travelled at speeds of 800 kilometres per hour.

Can you imagine a wall of water higher than a house, moving faster than an aeroplane, destroying everything in its path – trees, cars, houses and people? Can you imagine how it feels when that wall of water hits you?

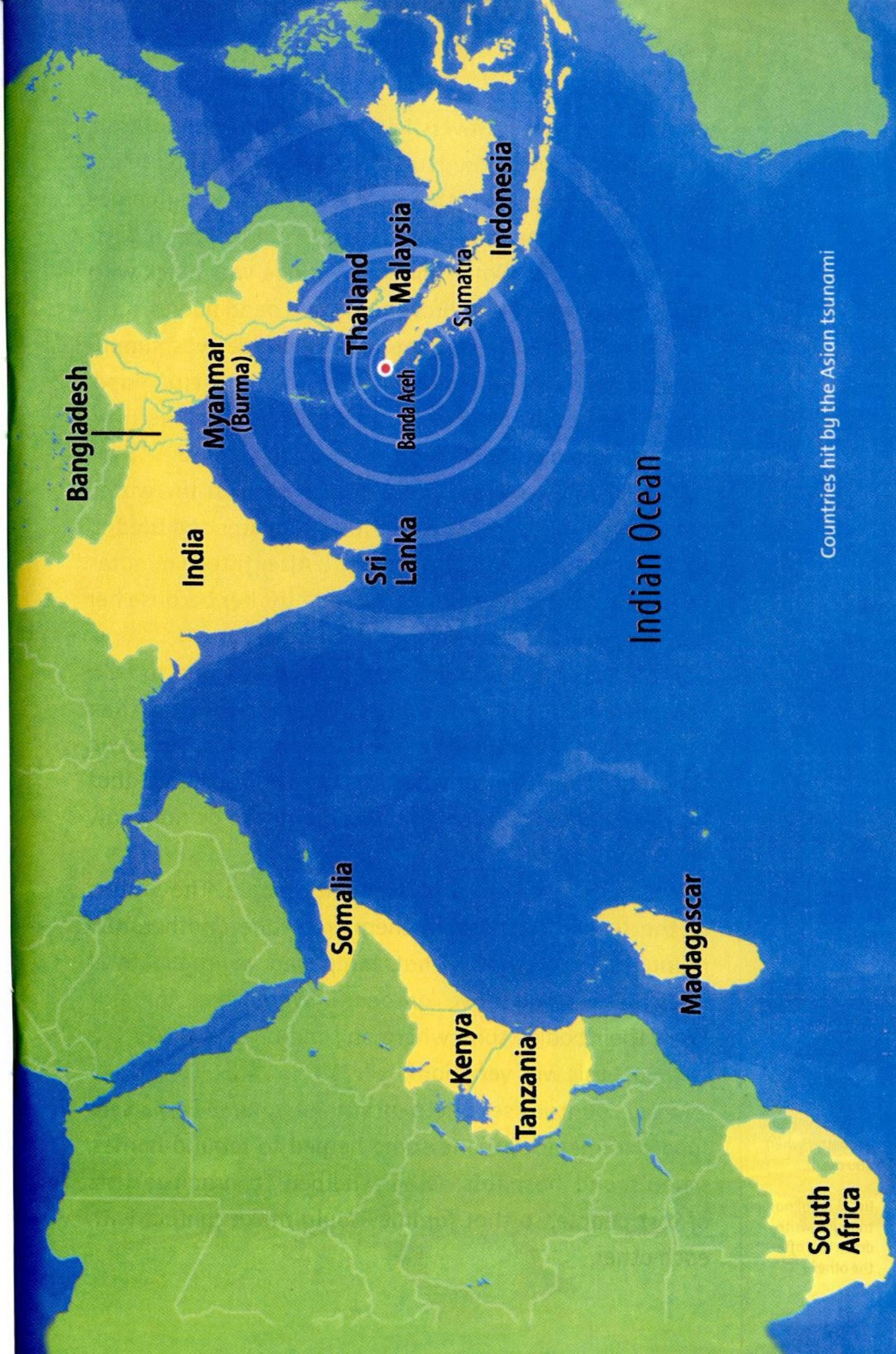
That is what happened to many people on the coasts of Indonesia, Thailand, Sri Lanka and India. The tsunami even hit the east coast of Africa as far away as Somalia and South Africa. Not surprisingly hundreds of thousands of people lost their lives, and more than a million people lost their homes. The Asian tsunami was the worst tsunami in history.

There are lots of stories about what happened during and after the tsunami. Before the disaster a young man

island a piece of land that has sea all around it

delay time when something goes slower or you have to wait

coast land near or next to the sea



Bangladesh

India

Myanmar
(Burma)

Somalia

Sri
Lanka

Thailand

Malaysia

Banda Aceh

Kenya

Tanzania

Sumatra

Indonesia

Madagascar

South
Africa

Indian Ocean

Countries hit by the Asian tsunami

named Erwin sold flowers in the market at Banda Aceh, in Indonesia. When the tsunami hit, he was riding home on his motorbike. Like other people he found a high place which gave some safety – a small bridge over a fast-moving river. The water under the bridge was black with mud, and it was full of broken cars and dead bodies.

At that moment, everyone on the bridge was simply glad to be alive. But suddenly they heard a cry, 'Papa, papa!' There was a little girl in the middle of the river, holding onto a piece of wood.

Most people were too frightened to go near the water, but Erwin jumped into the fast-moving water and tried to make his way towards the little girl. After fifteen minutes he finally reached her, but he couldn't lift her because her foot was trapped, and she was in great pain.

In the end another man, Heru Kurniwan, came to help Erwin. He held the child's hand, while Erwin kept their heads above the water. The little girl was saved, but Erwin returned to his own private disaster. He discovered that his five-year-old son died in the tsunami. We do not know what happened to Heru.

And that is the story of so many people. The waters of the tsunami separated them from one another, and many did not know what happened to their loved ones. Were they alive or dead? Were they injured? Were their bodies somewhere on land or at sea? For the survivors this was very hard.

Many countries sent help after the tsunami. Some sent food and medicines, and some helped to rebuild homes, schools and hospitals. Others helped to organize lists of lost people, so that families could make contact with each other.

save to take someone or something away from danger

separate to divide, so that you can't see each other any more

survivor a person who escapes from a disaster

medicine something that you can eat or drink to help you get better when you are ill

list a lot of names that you write down one after the other





Many countries sent food and medicines

مرجع زبان ایرانیان

Here is another story from Banda Aceh. Muhammad Ali said goodbye to his daughter Sri Handayani a few weeks before the tsunami as she left to visit some relatives. When the tsunami hit their home, Muhammad Ali had no idea where his daughter was. For six long months he heard nothing, and he thought that she must be dead. Then he saw a list of people who were looking for their families. His daughter's name was there! Sri Handayani was alive! Once they knew the good news the whole family hurried to be together again. 'I thought you were dead!' cried Sri Handayani. 'I thought *you* were dead!' said Muhammad Ali.

Sri Handayani has now decided that she wants to be a policewoman, so that she can help other people.

relative a member of your family, such as your cousin, aunt or uncle

After the tsunami there were many stories of bravery in the face of disaster. One of them is about Cut, Neneh, Nur, Nuraida and Suastri: five women who lost children and grandchildren, brothers and sisters, husbands and friends on that terrible day. After the tsunami they lived for nearly two months in tents. They lost their homes, but they still dreamed of being back in their village. They lost everything except hope.

When the five women returned to their village, there was no electricity and no clean water. But rescue workers from other countries found out that these women were strong and hard-working. They gave them tents to live in and helped them to get electricity and water. In the end the women were able to make money by helping to clean up the village. With that money they could begin their lives again, set up small businesses and help the village to make a new start.

In the middle of a disaster we sometimes hear surprising stories. The tsunami hit many poor people, but it also hit a large number of tourists. Tilly Smith, aged ten, was on holiday with her family in Thailand. Before she went on holiday she learned about tsunamis in her geography lessons at school in England. When she saw that the sea was moving quickly back from the beach, she immediately recognized the signs of danger. So she warned her family and other tourists, and they all left the beach and went to higher land just in time.

One year later Tilly and her family went back to Thailand to a special event remembering the tsunami. Tilly spoke to thousands of people, and her message was simple: even in the middle of a terrible disaster, people can show enormous bravery, kindness and love.

hope a wish that something you want will happen

set up to begin

recognize to see something and understand it

Activities

1 Correct the underlined words in these sentences.

- 1 The earthquake that caused the Asian tsunami measured 9.3 on the Tichter scale. Richter
- 2 The earthquake started west of Sumatra, one of the Irelands of Indonesia.

- 3 The land next to the sea is called the boast. _____
- 4 There were many brave people who paved others. _____
- 5 The only thing people had left was hose that things would get better.

- 6 People who lost their homes lived in tests. _____
- 7 A large number of tourers were hit by the tsunami as well. _____

2 Complete the sentences with these words.

December

~~earthquake~~

hours

Indian Ocean

lives

Thailand

survivors

waves

The Asian tsunami was caused by an earthquake thirty kilometres under the _____ on the morning of 26th _____ 2004. There was a delay of several _____ before high _____ began to hit the coasts of Indonesia, _____ and many other countries. Hundreds of thousands of people lost their _____. Many of the _____ were separated from their families.

3 Choose the correct answer.

- 1 How large was the earthquake that caused the Asian tsunami?
 - a It was the largest earthquake ever known.
 - b It was the second largest earthquake ever known.

- 2 How big were the tsunami waves?
 - a twenty metres high
 - b thirty metres high

- 3 What was Erwin doing when the tsunami hit?
 - a Erwin was selling flowers.
 - b Erwin was riding home on his motorbike.

- 4 Who did Erwin and Heru help?
 - a a little girl in the middle of the river
 - b the little girl's father

- 5 How many people lost their homes?
 - a a hundred thousand people
 - b more than a million people

- 6 What did other countries do to help the tsunami victims?
 - a They sent food and medicines.
 - b They made new laws about how to be safe.

- 7 How did Muhammad Ali find his daughter?
 - a A friend told him where she was.
 - b He saw her name on a list of people.

- 8 How did Tilly Smith recognize the signs of a tsunami?
 - a The sea was moving quickly back from the beach.
 - b Lots of people were moving to higher land.

CHAPTER 4 Hurricane Katrina

Imagine sitting at home, looking out of your window and seeing ships moving along a river above your head.

That may seem strange, but that is what people may really see any day in the city of New Orleans, in the southern USA. This is because people in New Orleans live about two metres below sea level. Their city has water on three sides. To the east lies Lake Borgne, to the north lies Lake Pontchartrain, and to the south lies the Mississippi River. The city is also only 100 kilometres north of the Gulf of Mexico, where huge storms and hurricane winds are part of normal life.

Over more than 200 years, the people of New Orleans have developed a system of walls – called levees – which control the water that flows in and around their city. The 560 kilometres of levees help to protect the city from floods, but they often need to be repaired.

In recent years there have been a lot of big storms in the Gulf of Mexico, and for a long time city planners discussed the need to make the system better. But nothing actually happened. Then suddenly Hurricane Katrina arrived in August 2005.

Hurricane Katrina started over the sea in the Gulf of Mexico on 23rd August. A few days later it hit the coast of the southern USA with winds of 240 kilometres per hour. Many towns and cities suffered from the effects of the hurricane, but no city was more badly hit than New Orleans.

Two bridges and three of the levees which protect that great city were damaged by Hurricane Katrina. Suddenly water was flooding into homes and offices, and nearly

below lower than

effect something that happens because of something else

eighty per cent of the city was under water. Michael Homan, a university teacher, reports that he swam to his office at the university, and then he swam home again. He was waiting for the water around his house to go down – but it didn't.

The immediate effect of so much water was that there was no electricity, very little drinking water and very little food. Most roads were under water, and most phones did not work. Hospital patients had no food, and some died as a result. Some old people drowned in their homes.

Family and friends, the police, the army – lots of people wanted to help. Helicopters picked people up from the roofs of their houses, neighbours filled boats with food to give to friends in need, and music-lovers organized music festivals to make money for the victims.

drown to die because you are unable to swim

roof the top of a house



A helicopter rescuing flood victims

But the disaster also brought out the worst in some people. Criminals broke shop windows and stole everything. Some walked through the city, showing everyone their stolen jewellery, watches and clothes. But even worse than this was the way some government workers and some rich people behaved towards poor people.

New Orleans is famous as the home of jazz music. It is sometimes called the 'Big Easy' because people see it as a city of easy fun, good music and a happy way of living. But there are also a lot of poor people in the city, and they suffered most from Hurricane Katrina because they did not get enough help.

One of the worst stories came from the New Orleans Superdome. Normally people go to this huge building to watch games of American football, but after Hurricane Katrina 25,000 people lived there for weeks in unhealthy conditions, without food, water or toilets. Many of them had nowhere else to go. The smell there was so bad that doctors covered their faces as they walked about. In the end the people in the Superdome were moved to other cities, but a lot of people died or became ill before they could move.

Every death caused by a disaster is sad, and 1,836 people lost their lives during Hurricane Katrina. But it is also important to remember that nearly 500,000 people lost their homes, and it cost \$81.2 billion to repair the damage. Katrina was the most expensive natural disaster in American history.

It is easy to be clever after a disaster and to say, 'Why didn't they do this, why didn't they do that?' But what lessons can we learn from a disaster like Hurricane Katrina in one of the richest countries of the world?

bring (*past brought*) out the worst in people to make people behave badly



Waiting for help outside the Superdome

Firstly, there was a need for better plans to rescue people and move them away from the disaster: stronger and better roads and railways.

Secondly, it is clear that the earth walls in New Orleans – the levees – need to be repaired more carefully and more often.

Some people think that New Orleans should be rebuilt in a different, safer place, far away from the floods that have so often brought danger and destruction to the Big Easy and its fun-loving, musical people. But a new city could never have the same character as the first city of New Orleans.

Activities

1 Complete the sentences with these words.

August

Mexico

levees

USA

homes

~~hurricane~~

days

Hurricane Katrina started over the sea in the Gulf of _____ on 23rd _____ 2005. It hit the coast of the _____ a few _____ later and damaged three of the _____ which protect the city of New Orleans. Nearly eighty per cent of the city became flooded, and nearly 500,000 people lost their _____.

2 Match the two halves of the sentences.

- | | |
|--|--|
| 1 People in New Orleans might see ships moving above their heads because ... <input checked="" type="checkbox"/> e | a and waited for helicopters to rescue them. |
| 2 Hurricane Katrina damaged two bridges and three levees so ... <input type="checkbox"/> | b filled boats with food for their friends who were hungry. |
| 3 Some people climbed on their roofs ... <input type="checkbox"/> | c water flooded the city. |
| 4 There wasn't much food so some people ... <input type="checkbox"/> | d and stole jewellery, watches and clothes. |
| 5 Some criminals broke shop windows ... <input type="checkbox"/> | e New Orleans is two metres below sea level. |
| 6 Lots of people went to the Superdome because ... <input type="checkbox"/> | f people see it as a city of easy fun and a happy way of living. |
| 7 New Orleans is sometimes called the 'Big Easy' because ... <input type="checkbox"/> | g repair the levees carefully and more often. |
| 8 Now people know that it is important to ... <input type="checkbox"/> | h they were poor and had nowhere else to go. |

3 Are these sentences true (T) or false (F)? Correct the false sentences.

- 1 New Orleans is a city in the ~~west~~ ^{south} of the USA. F
- 2 New Orleans has water on two sides.
- 3 In the Gulf of Mexico there are lots of big storms and hurricane winds.
- 4 After Hurricane Katrina most roads were above water.
- 5 Many towns suffered from the effects of Hurricane Katrina.
- 6 Some old people drowned in their homes.
- 7 It cost \$81.2 thousand to repair the damage.

4 Find the words from the letters in brackets. Complete the sentences.

- 1 City planners talked about making the system of levees better. (tsemys)
- 2 Lots of people helped during the floods: family, friends, the police and the . (rmay)
- 3 Some people organized music to make money for the victims. (fveistlas)
- 4 New Orleans is famous as the home of music. (azjz)
- 5 Normally people go to the Superdome to watch games of American . (toobfla)
- 6 Poor people lived in the Superdome in conditions. (heunyathl)
- 7 Some people think New Orleans should be in a safer place. (buerlit)

CHAPTER 5 Human error

Days, weeks, months or years after a disaster it is often easy to look back and see where things went wrong. This is maybe especially true of disasters that are caused by human error – usually small mistakes with very big results.

The Great Fire of London

The Great Fire of London started as a small kitchen fire, but its effects changed the city of London for ever. In the seventeenth century London was a city full of rats: rats in the streets, rats in the houses, rats in the shops. In the year 1665 thousands of people in London died from a terrible disease carried by rats. Nobody felt safe from disease and death.

The next year, 1666, there was a long hot summer. People were glad to enjoy the sunshine, and they felt that it probably helped the city to get rid of disease. But in fact the disease was finally destroyed by something much more powerful: fire.

It was two o'clock in the morning on Sunday 2nd September 1666. Thomas Farynor, who made bread for King Charles the Second, was asleep above his shop near the River Thames and London Bridge. It was time for his men to start preparing bread for the king's breakfast; the king liked fresh bread in the morning.

One of Mr Farynor's men woke up and went to light the kitchen fires. Mr Farynor kept a lot of wood in his kitchen, ready to cook the bread every day. That morning the man discovered that some wood was on fire, and the kitchen was beginning to burn!

human of people

error a mistake, something that is wrong

rat an animal like a big mouse; it is dirty and can carry disease

get rid of to make something go away

Quickly the man woke Mr Farynor and shouted, 'Fire! Fire!' Soon the whole house was awake, and people were running everywhere, trying to escape. Mr Farynor escaped by climbing onto the roof of the next house.

In a short time the fire spread to other houses, and a strong wind blew the flames towards the west. The fire moved quickly through the old city. The houses were made of wood and were built very close together in narrow streets. As the fire spread it destroyed everything in its way, but it could not cross the River Thames. There was panic everywhere as people tried to save their possessions.

We have some very good descriptions of the fire that night. Samuel Pepys was an important man in the government of King Charles, and every day he wrote a

spread to move from one house to another

panic doing silly or dangerous things because they are frightened



People trying to escape with their possessions

diary about his life in London at that time. He wrote that one of the women in his house 'called us up about three in the morning, to tell us of a great fire in the city. So I rose . . . and went to her window . . . I thought it far enough away and so went to bed again to sleep.'

By the time Pepys woke up again, three hundred houses in London were destroyed in the fire. He went to King Charles to tell him that the fire was really serious.

The Lord Mayor of London, Sir Thomas Bludworth, was one of the most important men in the city. He thought that the fire could be put out easily, so he tried to organize the firefighting. But he soon realized that the job was very difficult, and he left the city in a panic. It was then that King Charles and his brother James decided to try and help.

The king soon realized that the fire was out of control. He called a meeting of the Privy Council – a group of important men who could help and advise him. Together they decided to make some 'fire posts' in the city, where the firefighters were given everything they needed to fight the fire. King Charles led the fight, and he gave a coin to every helper. He worked for thirty hours without sleep, and he was much loved for his bravery.

King Charles and his men decided to pull down some houses in part of the city, so that the fire had nothing to burn there. This stopped the fire, and by Wednesday 5th September 1666 the fire was finally under control.

The Great Fire of London had several important results. It finally stopped the disease which killed so many people in 1665. It destroyed 87 churches, but it also burnt down about 13,000 wooden houses, which were unhealthy places to live in at that time. After the Great Fire more

mayor people choose this person to be in control of a town

lead (past led) to do something first so that other people follow

result what happens in the end

houses were built of stone, so London became a cleaner, healthier city.

The *Titanic*

The sinking of the *Titanic* was another disaster caused by human error and people being very confident that nothing could go wrong.

'Unsinkable!' 'It will never go down!' 'The safest ship in the world!' 'A palace on water!' Those were some of the words used to describe the *Titanic* before she sailed on her first journey on 10th April 1912. She had more than 2,220 people on board when she left Southampton in England for New York in the USA.

The *Titanic* was indeed a special ship. Her rich first-class passengers enjoyed furniture and rooms that were like those in a palace. There were libraries, restaurants, sitting rooms, reading rooms and a swimming pool on board. Like all big passenger ships the *Titanic* had radio, which was used by Captain Edward Smith and the crew to keep in contact with people on the land. Later in the journey, radio helped to save hundreds of lives when it was used to contact other ships.

Not all the *Titanic's* passengers were rich. A lot of second-class and third-class passengers wanted to start a new and better life in the USA. The poor third-class passengers had very small rooms deep down in the ship, and their living conditions were very basic.

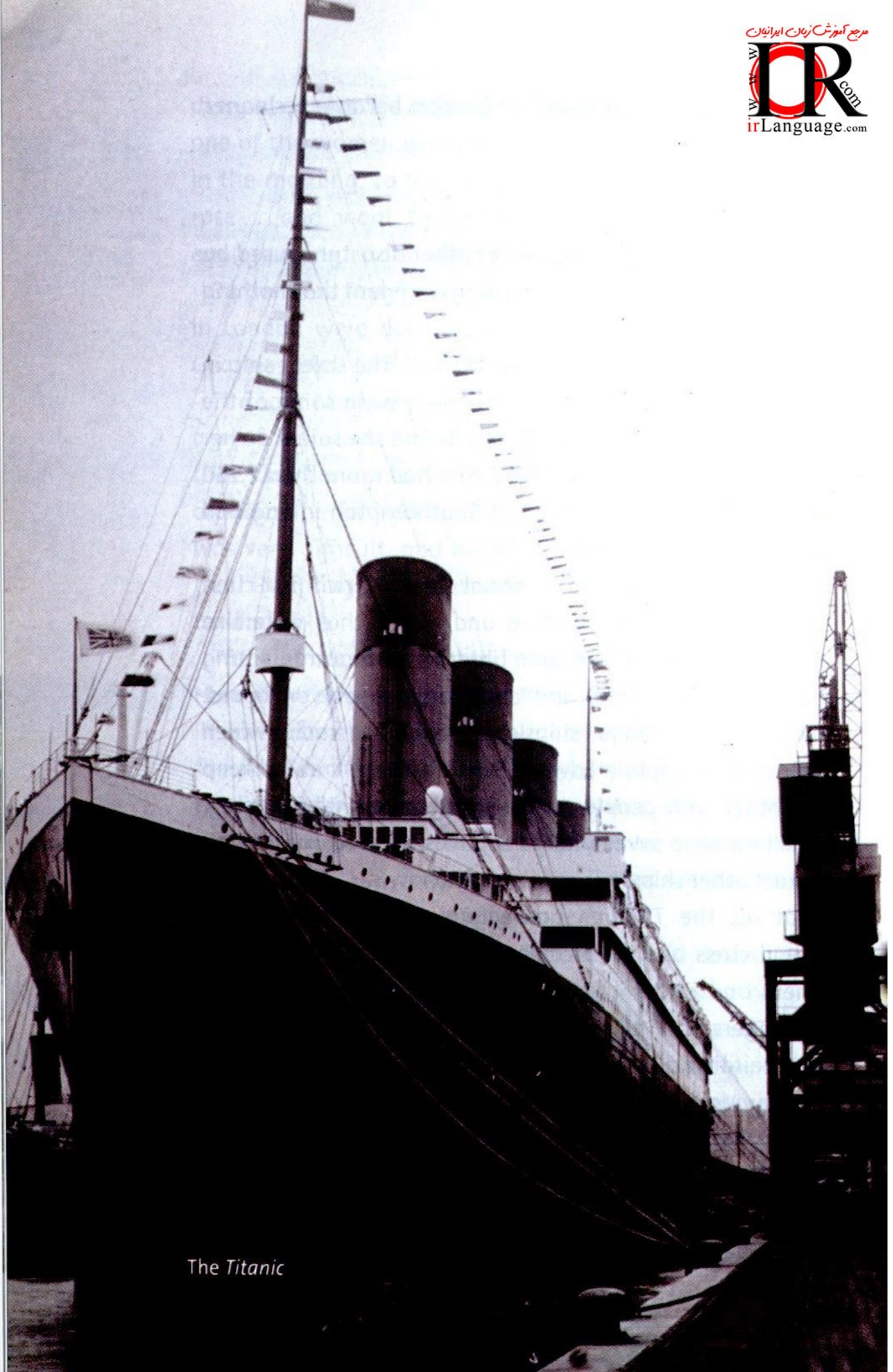
On Sunday 14th April, after five days at sea, the *Titanic* was in the freezing north Atlantic about 2,000 kilometres east of New York. It was springtime, and Captain Smith knew that ice sometimes appeared in the sea at this time of year. But he was confident that ice was not a real

confident sure about something

on board on a ship, bus or train

crew the people working on a ship

basic simple



The Titanic

danger. After all, the *Titanic* was unsinkable!

During that cold evening the *Titanic* received seven radio messages warning of the danger of ice. The captain heard at least one of the warnings, but he decided to go straight towards New York.

Later that night the look-out boy saw an iceberg – a great mountain of ice in the sea. He rang the alarm bell, and at last the captain and the crew took the warning of ice seriously. The captain immediately tried to turn the ship away from danger. Too late! The *Titanic* was huge and heavy: 268 metres long, thirty-two metres high, and over 60,000 tonnes in weight. There was not enough time to turn the ship and move away from the iceberg.

A few minutes before midnight the *Titanic* hit the iceberg, and it made a hole ninety metres long in the ship's side. When the captain saw water entering the ship, he immediately told the crew to get the lifeboats ready – although he knew that there were only enough lifeboats to save just over half the people on board. At 12.15 a.m. the first radio messages went out, asking for help.

When the lifeboats were ready, women and children were told to get in first. A lot of families were separated, and some children never saw their fathers again.

Edith Brown, aged fifteen, was with her rich parents, Thomas and Elizabeth Brown, who wanted to start a new life in the USA. Before the journey her father had a bad dream about the idea, but her mother decided that they must go. Thomas Brown's face was white as he boarded the *Titanic* at Southampton, and again he looked white when he entered the family's room that cold night. He told Edith and Elizabeth to put on warm clothes because the ship was sinking after hitting an iceberg. The family

weight how heavy something is

lifeboat a small boat that rescues people if the ship sinks

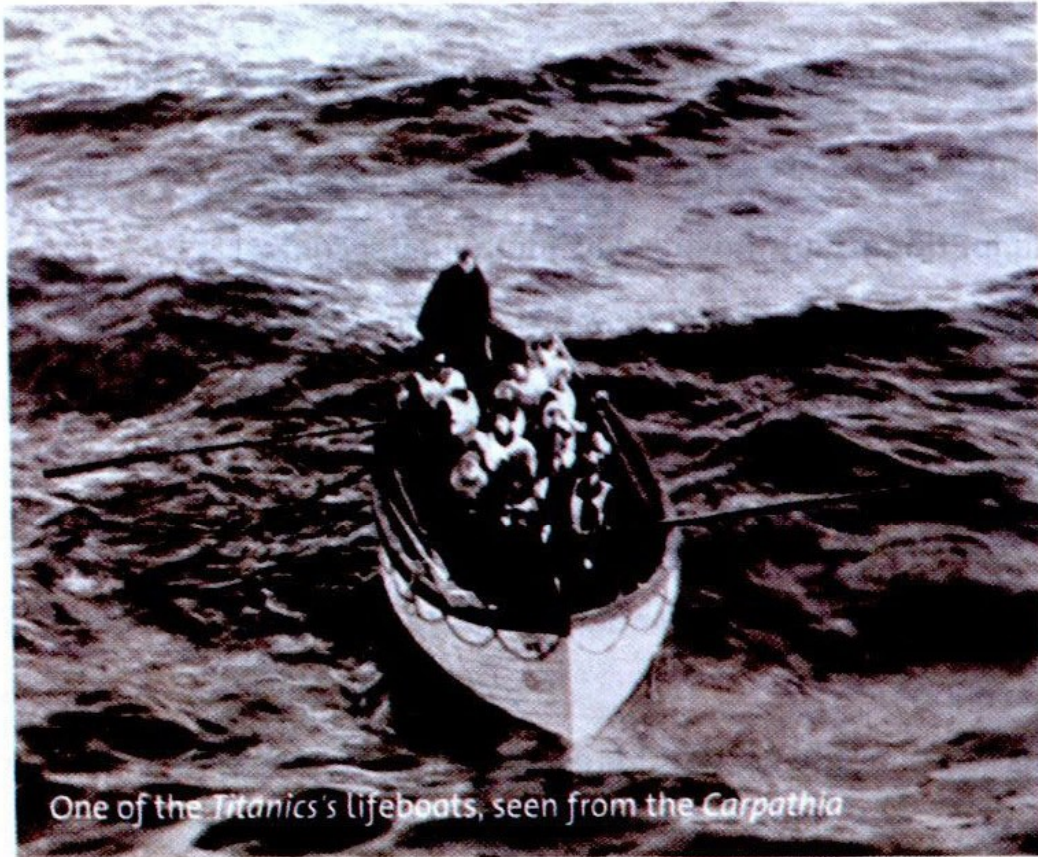
left all their things on the ship. 'I'll see you in New York,' Thomas said as Edith and her mother escaped to a lifeboat, but Edith never saw her father again.

From their lifeboat Edith Brown saw one end of the ship sink into the freezing water. Suddenly all the lights went out, and they could hear screams in the darkness.

As the sun rose the next morning Edith, her mother and the other survivors saw a sea full of bodies and icebergs. She and her mother were rescued by the *Carpathia*, the ship that received the *Titanic's* radio calls for help. In the early morning of 15th April the *Carpathia* rescued 705 people from the cold Atlantic waters.

Edith Brown's experience of the *Titanic* disaster changed her life for ever. For a long time she had terrible dreams about that night in the Atlantic. Five years after the disaster she married Frederick Haisman, and together they had ten children. At the age of ninety-nine she travelled by ship with one of her daughters to the place where the *Titanic* sank, and she dropped a rose into the water as she remembered her father. She died in 1997, aged 100.

No survivors of the *Titanic* ever forgot their experience of the disaster. Five-year-old Lillian Asplund was travelling with her parents and her four brothers. They were in third class, where only twenty-three out of seventy-six children survived. When they reached the top of the ship, most of the lifeboats were full, so the family decided to die together. However, one of the crew separated them, and he threw Lillian and her smallest brother into a lifeboat. Lillian's father pushed his wife in with them, but then the lifeboat was lowered into the water. When Lillian's mother looked around, she only saw Lillian and her young son. She never saw the rest of the family again.



One of the *Titanic's* lifeboats, seen from the *Carpathia*

Lillian, her little brother and her mother stayed together for the rest of their lives. Her mother died on 15th April 1964, exactly fifty-two years after the *Titanic* sank in 1912.

Over 1,500 people died in the *Titanic* disaster. A lot of women and children survived, but a lot of men died, both passengers and crew. Among the dead passengers were three American millionaires. Together their fortunes were worth \$600 million in 1912!

Captain Smith was among those who died. After the disaster people said that Captain Smith was too confident and not prepared for danger. A few years later an international organization was started so that ships could get better information about icebergs. And after the *Titanic* disaster all ships had to carry enough lifeboats to save all the people on board.

Activities

1 Put these sentences about the Great Fire of London in the correct order.

- a Sir Thomas Bludworth panicked and left the city.
- b After burning for three days the fire was finally under control.
- c London became a cleaner city and there were no more rats.
- d Mr Farynor escaped from his house by climbing on the roof.
- e King Charles led the fight against the fire.
- f The fire started in a baker's kitchen early in the morning.
- g The King and some men pulled down some houses in parts of the city.
- h Samuel Pepys saw that the fire was far away and went back to bed.

2 Choose the correct words to complete the sentences about the *Titanic* disaster.

- 1 The *Titanic* sailed from Southampton in 1902 / 1912.
- 2 The ship received *seven* / *ten* radio messages about the ice.
- 3 On 14th April the *captain* / *look-out boy* saw a big iceberg.
- 4 The iceberg made a hole that was *nine* / *ninety* metres long.
- 5 There were enough lifeboats for *all* / *just over half* the passengers.
- 6 Many children never saw their *mothers* / *fathers* again.
- 7 Three famous *millionaires* / *film stars* died in the disaster.
- 8 Edith Brown went to the place where the *Titanic* sank when she was *ninety-nine* / *a hundred*.

3 Complete the sentences with these words.

iceberg

separated

diary

~~error~~

lifeboats

Mayor

board

spread

- 1 The Great Fire of London and the sinking of the *Titanic* were caused by human error.
- 2 A strong wind helped the fire to _____.
- 3 There are descriptions of the fire in Samuel Pepys's _____.
- 4 Sir Thomas Bludworth was Lord _____ of London at that time.
- 5 There were more than 2,220 people on _____ the *Titanic*.
- 6 The ship crashed into a huge _____.
- 7 There were not enough _____ for all the passengers.
- 8 A lot of families were _____.

4 Correct the underlined words in these sentences.

- 1 Thomas Farynor made board for King Charles the Second. bread
- 2 King Charles gave a coil to everyone who helped to fight the fire.

- 3 The fire finally got rod of a terrible disease. _____
- 4 People were confiding nothing could go wrong on the *Titanic*. _____
- 5 Captain Smith and his drew used radio to keep in contact with land.

- 6 People who are alive after a disaster are survivals. _____

CHAPTER 6 Environmental disasters

People make mistakes, and human error can have terrible effects, not just on the people in the disaster, but on the whole environment around the disaster – the plants, the animal life and local people.

The *Exxon Valdez*

Alaska is a faraway land in the frozen north-west of America. It is a land of clear seas and skies and great natural beauty. This rich land makes its money from four things: fishing, forests, the tourist industry and oil. On the south coast of Alaska is the port of Valdez, and from here most of Alaska's oil is taken by sea in big tankers to California and other parts of the USA.

On 24th March 1989 Captain Jeff Hazelwood was in command of an oil tanker which was owned by the Exxon oil company, called the *Exxon Valdez*. Captain Hazelwood was a good seaman, and when he was thirty-two he became the youngest man to take command of an Exxon oil tanker.

The sea off the coast of Alaska is always dangerous because it is full of small islands and rocks, some hidden under the water. In the late evening of 24th March 1989 the *Exxon Valdez* started on its normal journey from Alaska. At first Captain Hazelwood was in control of the tanker, but later he left the ship under the control of Third Officer Gregory Cousins.

Just after midnight, when the *Exxon Valdez* entered a part of the sea called Prince William Sound, the tanker suddenly hit a group of rocks. The *Exxon Valdez* had five holes in its side, and one of them was two metres wide by

forest a place with lots of trees

tourist a person who travels to visit another city or country

tanker a very large ship that carries oil

in command being the person to tell the crew what to do



The *Exxon Valdez* in Prince William Sound

six metres long. The captain sent a message: 'We're losing some oil, and we're going to be here for a while.' That was only a small part of the truth. In fact 50 million litres of oil were already in the sea.

Unfortunately work to stop the oil spill did not begin immediately. A special boat that was kept in Valdez for emergencies was damaged by a storm and could not be used. So the clean-up began fifteen hours after Captain Hazelwood first reported the oil spill. The first two days after the spill the sea was calm and still; but it took two days to get all machinery ready, and the weather turned stormy. Strong winds quickly moved the oil to other parts of the sea, and the head of the Exxon oil company told the newspaper and television reporters that the company had a really huge problem.

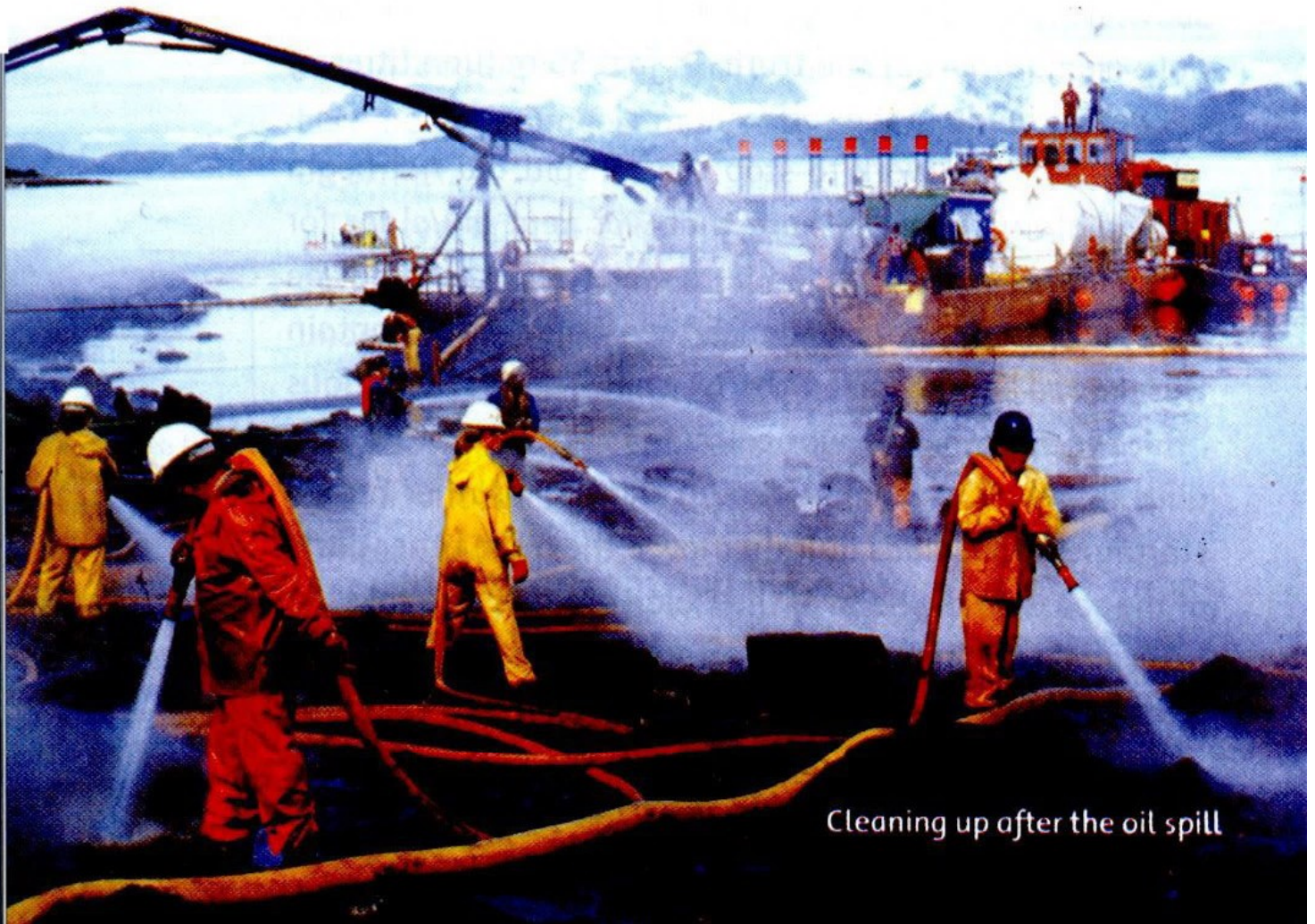
The oil from the *Exxon Valdez* disaster spread across

oil spill when oil goes into the sea

emergency an event that needs help immediately

nearly 1,700 kilometres of Alaska's coast, and it covered 4,800 square kilometres of water. It was one of the worst environmental disasters in American history: millions of fish, 300,000 sea birds and thousands of sea animals died. Some animals and birds died of cold because when the oil covered their bodies they could not keep warm. Others died of hunger since twenty five per cent of the plankton in the sea were destroyed in the disaster. (Plankton are very small plants and animals which live in the sea. They are an important part of the food chain: small fish eat the plankton and are then eaten by bigger fish, which are eaten by people.)

However, the disaster did not only have an effect on animals; it also changed the lives of the people living in villages near Prince William Sound.



Cleaning up after the oil spill

Chief Walter Meganack, the head of a village near Prince William Sound, explained how people in the villages in Alaska feel about their way of life: 'We are a part of nature. We don't need a calendar or clock to tell us what time it is . . . The birds returning from their winter holiday tell us, the daylight tells us. The roots of our lives grow deep into the water and land. That is who we are. The land and the water are our sources of life.'

All that changed because of the *Exxon Valdez* disaster. The people of Alaska describe it as 'the day the water died'. Chief Meganack said, 'What we see now is death, death not of each other, but of a source of life, the water.'

It is easy to blame Captain Hazelwood for the *Exxon Valdez* disaster because he was in command of the tanker at the time of the disaster. But it is also true that mistakes made by different people in the oil industry played a part in the disaster. Many businessmen used to say, 'There has never been a disaster, so a disaster will never happen.' So people were not well prepared for the oil spill, and as a result there was a lot of unnecessary damage.

In fact there have been other serious oil spills since 1989, but the *Exxon Valdez* remains in people's minds because it has become a sign of the world's hunger for oil, at any cost.

Chernobyl

In the springtime of 1986 the city of Pripyat was full of people. New industry moved to that part of Ukraine, which is very near to Belarus and Russia. A nuclear power station at the nearby town of Chernobyl made electricity for millions of homes and thousands of industries.

In those days Hanna Kozlova was a young mother with

source the place where something comes from or starts

industry people and activities involved in producing goods and services

power station a building where electricity is produced

a son and a daughter. They really enjoyed watching the workers in Pripyat build a new funfair with a big wheel. It was going to open on 1st May.

In the first months of 1986 some of the scientists at the Chernobyl power station decided to try an experiment. The power station consisted of four reactors – huge buildings which can be seen from many kilometres away. When a nuclear power station is working normally, the reactors get extremely hot, so they have a special cooling system to cool them down.

Very late at night on Friday 25th April 1986 the scientists began their experiment in reactor number four, and this caused the temperature to rise. Then suddenly it began to rise higher and higher, completely out of control, until at 1.23 a.m. there was a huge explosion. Flames shot into the sky. Broken walls, roofs and ceilings hung in the air above the red-hot reactor. Then there were more explosions. The building surrounding the reactor was blown hundreds of metres into the air. From the hole where the building was, a blue-white light shot upwards into the sky – dangerous radiation from the heart of the nuclear power station.

Twenty people were working at reactor number four that night. Engineer Alexander Yuvchenko went to the door of the reactor with another worker. 'There was just a wall and a door left. We were looking into open space,' he said. The first person to die was another of the workers, Valeri Khodemchuk. His body has never been found.

Two minutes after the first explosion the alarm sounded at a fire station in Chernobyl. A team of brave firemen tried to fight the fire with water, but their job was hopeless. They were taken to hospital and lived for two terrible weeks. Their bodies were so radioactive that everyone

reactor a large building used for producing nuclear electricity

explosion the sudden and loud noise when something explodes

radiation a mixture of chemicals in the air that damage human and animal bodies

radioactive sending out harmful radiation

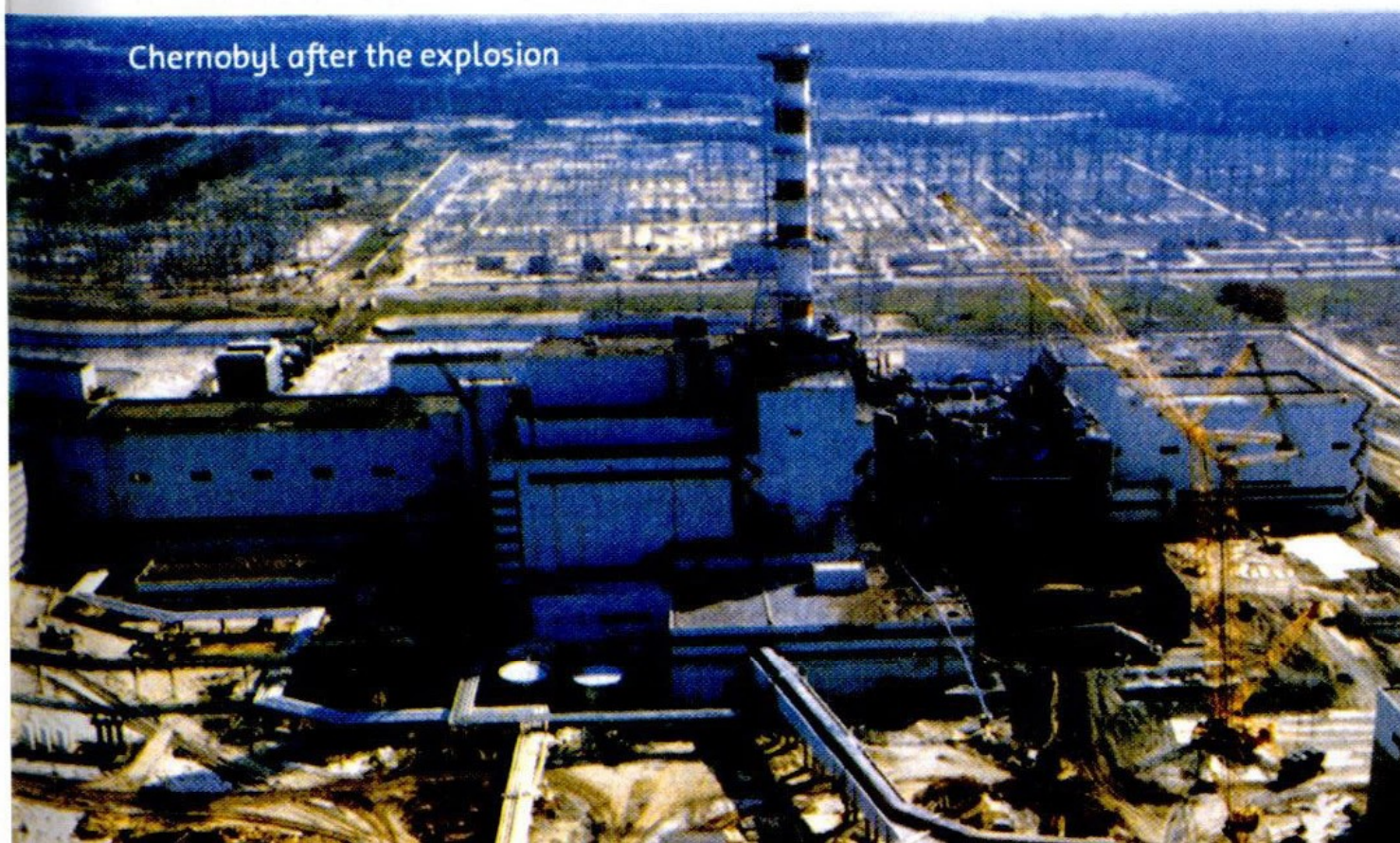
was afraid to be near them. Nobody even wanted to bury the dead. There were 186 firemen fighting the fires at Chernobyl; many died there, and most survivors became ill later.

The world beyond Ukraine did not hear about the accident straight away. In Sweden at the Forsmark nuclear power station scientists reported a dangerous rise in radiation levels. Similar frightening reports came from Denmark and Norway. The scientists of Western Europe finally realized that the radiation was coming from Ukraine.

On 1st May 1986 all of the top people in Ukraine's government went to a festival in Kiev, but they said nothing at all about the explosions and fires at Chernobyl.

However, after 2nd May 1986 the government agreed that the air, food and water around Chernobyl were radioactive, and that it was dangerous for people to stay there. So over 1,200 buses from Kiev and other cities were sent to Chernobyl to take people to safer places.

Chernobyl after the explosion



On 12th May, just as the fire was finally coming under control, the president told the people about the disaster. That meant that the clean-up could really start. It was too dangerous to touch dead bodies and machinery, so they were left exactly where they lay.

After the explosions people in Pripyat began to feel unwell. They were suffering from radiation sickness. Hanna Kozlova's son, Viktor, was one of them. The Ukrainian doctors said there was nothing they could do, but Hanna decided to find help. She wrote letters to hospitals all over the world. In the end Viktor had an operation in Paris that saved his life.

A lot of children born of parents who cleaned up after the Chernobyl accident have died very young. There was radioactivity in mothers' milk, the children suffered from cancer, they had useless arms and legs or they had weak hearts. Most received no medical help because the doctors did not know what to do or did not have the right medicines.

The government reported that 299 people were taken to hospital after the Chernobyl disaster, and that by 5th June 1986 twenty-four people died from radiation. But the local people, the local doctors and nuclear scientists do not believe that these are the true figures.

The United Nations believes that levels of radiation will be high all over Europe for many, many years. And tens of thousands of square kilometres of farmland in Ukraine, Belarus and Russia still cannot be used.

Pripyat has become a ghost city – no one lives there now. The funfair was never opened and the clock above the city's swimming pool remains frozen at six minutes to twelve. Grass grows up through the roads, and trees grow



The Pripyat funfair

out of broken buildings. The 500 square kilometres around Chernobyl are guarded by government soldiers.

There is no doubt that the Chernobyl disaster was caused by human mistakes. The power station was not safe, and the experiments that scientists were doing there were dangerous. To make matters worse the workers at the power station did not know what to do in an emergency, and the government was extremely secretive.

Above all the Chernobyl disaster was an environmental disaster. However it had a huge effect on the electricity industry everywhere in the world. A lot of people said that nuclear power stations were dangerous. This was the first really big accident that proved their warnings were right. Suddenly governments had to think seriously about other ways of making electricity. That is one reason why there is now so much interest in new kinds of energy.

The Chernobyl disaster was many years ago now, but its effects are still with us today.

prove to make people see that something is true

CONCLUSION Preventing more disasters

During the twentieth and twenty-first centuries there have been many successful developments in science and medicine. We live longer. Computers and mobile phones give us easy contact with people in different countries. We can travel quickly all over the world and beyond. Some of the scientific developments have given us new ways of preventing disasters – for example, warning systems for earthquakes and volcanoes. We also have new ways of helping people after disasters – for example, better medicines and better emergency foods.

As we consider these developments, let us return to the question that Stephen Hawking asked: how can people survive the next 100 years?

Stephen Hawking gave some of his own answers. He talked about the possibility of a nuclear disaster, for example, caused either by war or by the search for energy.

He also talked about another problem: the changes in our weather, or climate change. Many scientists believe that our hunger for electricity and other kinds of energy is responsible for climate change, and this is causing more hurricanes and floods. Many people believe that climate change is a disaster that will change the way we spend money, travel and live. Some people even believe that climate change could destroy human life.

We know that in the middle of disasters people help each other in extraordinary ways. Let us hope that in reality we will be able to use the scientific developments of the twenty-first century to help each other and to prevent the kinds of disasters that we have seen in this book.

climate

pattern of weather conditions

extraordinary

unusual, very special

1 Match the two halves of the sentences about the Exxon Valdez oil spill.

- | | |
|--|---|
| 1 The Exxon Valdez hit some rocks when ... <input checked="" type="checkbox"/> | a some machinery wasn't ready. |
| 2 They could not prevent the oil spill because ... <input type="checkbox"/> | b their food source was destroyed. |
| 3 The clean-up work was stopped by ... <input type="checkbox"/> | c it entered Prince William Sound. |
| 4 Some animals and birds died of cold because ... <input type="checkbox"/> | d stormy weather. |
| 5 Other animals died of hunger because ... <input type="checkbox"/> | e but also on the people living in that area. |
| 6 The disaster not only had a terrible effect on wildlife ... <input type="checkbox"/> | f they were covered in oil. |

2 Complete the sentences about Chernobyl with these words.

proved

~~Ukraine~~

funfair

reactor

ghost

industries

radioactive

- The city of Pripjat is in Ukraine.
- The nuclear power station at Chernobyl made electricity for homes and _____.
- A new _____ with a big wheel was going to open on 1st May.
- After the explosion the _____ was red-hot.
- The bodies of the firemen who died were _____.
- No one lives in Pripjat now – it has become a _____ city.
- People said that nuclear power stations were dangerous, and this accident _____ that they were right.

Activities

3 Put these sentences about Chernobyl in the correct order.

- a The temperature of reactor number four began to rise quickly.
- b The president told the people about the disaster.
- c A team of firemen came to fight the fire with water.
- d Scientists did an experiment at Chernobyl power station.
- e Many children whose parents helped to clean up after the disaster died young.
- f The world heard about the terrible accident from Sweden.
- g There were sudden explosions and a big fire.

4 Find fifteen words from this book in the word square.

z	e	r	u	p	t	f	j	w	l	r
i	q	m	w	a	r	n	v	e	n	e
n	b	o	s	z	u	s	c	l	v	a
j	c	s	a	a	h	i	y	l	j	c
u	k	a	v	s	w	g	g	a	s	t
r	r	i	e	h	p	n	x	u	m	o
e	a	c	n	u	c	l	e	a	r	r
d	t	i	n	d	u	s	t	r	y	l
z	p	k	y	b	e	s	c	a	p	e
d	e	s	t	r	u	c	t	i	o	n

5 Here are newspaper headlines for some of the disasters in the book. Which headlines go with which disasters?

1 SWEDISH SCIENTISTS QUESTION RADIATION MYSTERY e

a Tangshan

2 HUGE EARTHQUAKE DESTROYS CITY

b Hurricane Katrina

3 'UNSINKABLE' PALACE LOST WITH MANY MISSING

c The Asian tsunami

4 THE DAY THE WATER DIED

d *The Titanic*

5 SUPERDOME – WHO WILL HELP THE VICTIMS?

e Chernobyl

6 MORE THAN A MILLION HOMELESS AFTER WAVES HIT

f *The Exxon Valdez*

6 Do you agree (A) or disagree (D) with these sentences?

1 It is often poor people who suffer most in disasters.

2 In a disaster people must help poor people before they help rich people.

3 In the next 100 years there will be more disasters because of climate change.

4 Scientific developments can help to prevent disasters from happening.

5 If people live more simply, using less energy, some disasters can be prevented.

Project

1 The sentences below are about two young survivors of disasters: Edith Brown and Tilly Smith. Put the sentences into two groups. Tick the boxes.

Edith Tilly

- | | | |
|--|--------------------------|-------------------------------------|
| 1 One day she was on the beach. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2 On 10th April 1912 Edith Brown and her parents, Thomas and Elizabeth, left England on the <i>Titanic</i> . | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 Poor Thomas died in the water along with many other people. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 She knew this was the sign of a tsunami. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 She returned to Thailand a year later. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 They wanted to start a new life in the USA. | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 In December 2004 Tilly Smith and her family went on holiday to Thailand. | <input type="checkbox"/> | <input type="checkbox"/> |
| 8 Sadly there weren't enough places for everybody. | <input type="checkbox"/> | <input type="checkbox"/> |
| 9 She spoke to thousands of people about kindness and bravery. | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 Elizabeth and her daughter found seats in a lifeboat. | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 She immediately warned her family and other tourists about the danger. | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 The <i>Titanic</i> suddenly hit an iceberg on the night of 14th April. | <input type="checkbox"/> | <input type="checkbox"/> |
| 13 They stayed in a hotel on the coast. | <input type="checkbox"/> | <input type="checkbox"/> |
| 14 Edith never saw her father again. | <input type="checkbox"/> | <input type="checkbox"/> |
| 15 She saw the sea was moving back very quickly from the land. | <input type="checkbox"/> | <input type="checkbox"/> |
| 16 Thomas immediately ran to his family and told them to put on warm clothes. | <input type="checkbox"/> | <input type="checkbox"/> |

2 Put the sentences in the correct order.

Edith	<input type="checkbox"/> 2	<input type="checkbox"/> 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tilly	<input type="checkbox"/> 7	<input type="checkbox"/> 13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3 Now use the linking words to join together sentences to make a story about each girl.

Edith

and because but so

On 10th April 1912 Edith Brown and her parents, Thomas and Elizabeth, left England on the Titanic because they wanted to start a new life in the USA.

Tilly

so when and where

In December 2004 Tilly Smith and her family went on holiday to Thailand, where they stayed in a hotel on the coast.

Family and Friends

Family and Friends readers have been carefully graded to match the syllabus of the *Family and Friends* series and provide extra reading practice. They can either be used in the classroom or to support learning at home.

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