

Percy Shelley – *Ozymandias*

1 Complete the text about Percy Shelley using the words in the box.

chapters masterpieces pamphlet poetry prose Romantic stanzas



PERCY BYSSHE SHELLEY (1792–1822) was born in Field Place, the family home in Sussex, and educated at the **exclusive** Eton College, where he was frequently bullied. His father was a Member of Parliament. In 1810 he entered University College Oxford, where he often preferred to read books of his own choice rather than attend lectures, and was **expelled** in 1811 after publishing a ¹ _____ entitled *The Necessity of Atheism*.

He then **eloped** with 16-year-old Harriet Westbrook and for the next three years engaged in radical politics and lived in various parts of Britain. His marriage to Harriet caused a serious **rift** with his family, particularly his father, who refused all contact with Percy and ended his **allowance**. Partly as a consequence of this he would always have financial difficulties, as even his finest ² _____ was not widely read during his lifetime.

In 1813 Percy privately distributed his first major poem, *Queen Mab*, in which he expressed many of his strongest feelings, including his commitment to vegetarianism and his indignation about **tyranny** in the world. Before long Shelley, together with John Keats and Lord Byron, was to become one of the most notable of the 19th century British ³ _____ Poets, who placed great importance on freedom, imagination, idealism, emotions and passions, as well as a love of both nature and the supernatural.

In 1814 he met and eloped with Mary Godwin, daughter of the feminist author Mary Wollstonecraft and the left-wing philosopher William Godwin. They married shortly after Harriet's suicide in 1816, and in that year Mary began writing the first ⁴ _____ of her famous novel *Frankenstein*, which was published two years later.

In 1816 Shelley and Mary spent time with Byron in Geneva and visited the Alps, a visit which **inspired** Shelley's poem *Mont Blanc*. In 1818 Shelley published his longest poem, *The Revolt of Islam*, consisting of over 500 nine-line ⁵ _____. Later that year he and Mary left England **for good** and moved to Italy, living in various cities and towns including Rome, Florence and Pisa, and spending more time with Byron. In Italy Shelley wrote a series of ⁶ _____ including *Prometheus Unbound*, *Julian and Maddalo*, *Epipsychidion* and *Adonais*; shorter poems such as *To a Skylark* and *Ode to the West Wind*; and his greatest ⁷ _____ work, the essay *A Defence of Poetry*.

Tragically, Percy Shelley **drowned** off the Italian coast shortly before his 30th birthday while sailing from Livorno to Lerici. His body was cremated and his ashes buried in the Protestant Cemetery, Rome. Despite his fiercely **anti-establishment** beliefs, Shelley was eventually given a memorial in Poet's Corner at Westminster Abbey.

2 Read the text to check your answers.

3 Match the bold words in the text with definitions a–j.

- a forever
- b ran away secretly to get married
- c died in the water because it was impossible to breathe
- d the cruel and unfair use of power
- e money given regularly
- f disagreement that harms a relationship
- g forced to leave
- h against the people in power in a country
- i expensive and only for rich or upper-class people
- j gave someone the idea of creating something

4 Answer the questions about the text.

- 1 What happened to Shelley at school?
- 2 Why do you think he had to leave university?
- 3 Why did he have money problems as an adult?
- 4 In what ways did *Queen Mab* reflect the values of the Romantic Poets?
- 5 What is Mary Shelley best known for nowadays?
- 6 In which country did Percy write many of his best works?
- 7 How did he die and at what age?
- 8 Where is Shelley's grave?

5 Read Shelley's poem *Ozymandias*. Then answer the questions.

- 1 What is the theme of the poem?
- 2 There are 14 lines in the poem. How many lines does the first part have? How many are there in the second part? What kind of poem always has this form?
- 3 What is the rhyme scheme of this poem? Which words form half-rhymes, e.g. 'stone' with 'frown'?

6 Read the poem again and answer the questions.

- 1 Has the poet actually seen the sculpture of Ozymandias? Which words tell you?
- 2 What does the face of the statue tell us about the king's character?
- 3 What does the writing on the pedestal tell us about him?
- 4 Explain the irony in the line 'Look on my works, ye Mighty, and despair!'
- 5 What do we learn about the sculptor?
- 6 What does *Ozymandias* say about the nature of power and powerful individuals?
- 7 What does the poem say about the nature of art?
- 8 What does the last line seem to be saying about powerful people after they die?

7 Choose the correct meaning of these words from the poem.

- | | | |
|---------------------|--------------------|----------------------|
| 1 antique | a modern | b very old |
| 2 shattered | a broken | b handsome |
| 3 visage | a face | b message |
| 4 frown | a smile | b annoyed look |
| 5 wrinkled | a with small lines | b smooth |
| 6 sneer | a look of respect | b look of no respect |
| 7 mocked | a made fun of | b admired |
| 8 mighty | a ordinary people | b powerful people |
| 9 despair | a feel happy | b lose all hope |
| 10 decay | a slow destruction | b rebuilding |
| 11 wreck | a wonderful object | b ruined object |
| 12 boundless | a without end | b beautiful |

8 Find examples of the following in the poem.

- 1 *Assonance* – the repeated use of the same vowel sound in stressed syllables that are close to each other.
- 2 *Alliteration* – the repeated use of the same letter and sound, especially at the beginning of words.
- 3 *Sibilance* – the repetition of soft consonant sounds, especially /s/ or /ʃ/ to give a hissing effect.

What do you think?

- Is it ever possible for one person to use great power wisely and fairly? Why? / Why not?
- Which present-day leaders should read this poem? Why?
- How would you like people to remember you in the future?

Ozymandias



I met a traveller from an antique land
 Who said: "Two vast and trunkless legs of stone
 Stand in the desert. Near them, on the sand,
 Half sunk, a shattered visage lies, whose frown,
 And wrinkled lip, and sneer of cold command,
 Tell that its sculptor well those passions read
 Which yet survive, stamped on these lifeless things,
 The hand that mocked them and the heart that fed:
 And on the pedestal these words appear:
 'My name is Ozymandias, king of kings:
 Look on my works, ye Mighty, and despair!
 Nothing beside remains. Round the decay
 Of that colossal wreck, boundless and bare
 The lone and level sands stretch far away."



PROJECT

Think of someone from history who had complete power over their country. Write a brief FactFile about that person, including how they used that power, how they treated their people and how he or she is remembered today. Use the Internet and/or books to help you.

Sir Arthur Conan Doyle – *The Hound of the Baskervilles*

- 1 Work in pairs. Write a list of famous detectives in fiction, the cinema or on television. Compare your list with your partner.
- 2 Read the text about Sir Arthur Conan Doyle. What were Conan Doyle's other interests apart from writing Sherlock Holmes stories?
- 3 Find the words 1–10 in the text and match them to their definitions a–j.

1 historical novels		6 subscription	
2 science fiction		7 set	
3 non-fiction		8 miscarriages of justice	
4 main characters		9 translated	
5 serial		10 adapted	

- a the money you pay every year to receive copies of a magazine
 - b when courts find innocent people guilty
 - c books about real people and events
 - d rewritten in a different language
 - e stories written in a period in the past
 - f a story published in different parts
 - g changed so that it works as a film
 - h with the action taking place in a particular place and time
 - i the most important people in the story
 - j stories about life in the future
- 4 Read the text again. Are these sentences True (T) or False (F)? Correct the false sentences.
 - 1 Conan Doyle wrote short stories at school.
 - 2 *A Study in Scarlet* was his first novel.
 - 3 Conan Doyle found great success as a doctor.
 - 4 Conan Doyle stopped writing Sherlock Holmes stories because he wanted to concentrate on medicine.
 - 5 Conan Doyle tried to become a politician.
 - 6 Sherlock Holmes managed to release two men from prison.
 - 7 Conan Doyle's most famous line is 'Elementary, my dear Watson!'.

Elementary, my dear Watson!

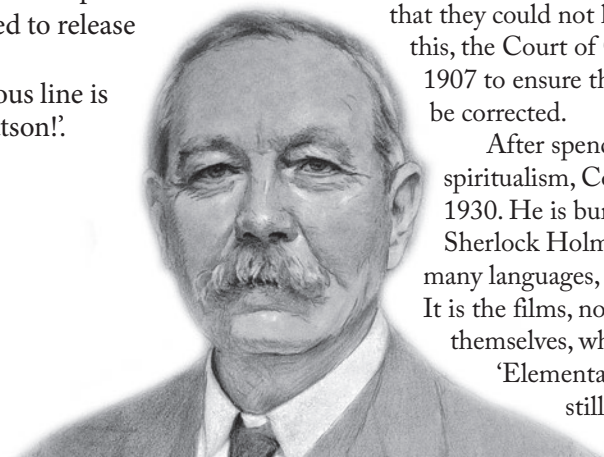
Sir Arthur Ignatius Conan Doyle was a Scottish writer who wrote detective stories, plays, historical novels, science fiction, and non-fiction. He was born in Edinburgh, Scotland, on 22nd May 1859. He attended boarding school in England, and although he was unhappy there, he was very popular with the other students because of his talent for telling amazing stories. After leaving school in 1875, he studied medicine at Edinburgh University, where he began writing short stories. After university he became a ship's doctor and travelled to the West African coast. In 1882, he returned to the United Kingdom and worked as a doctor in Plymouth before setting up his own medical practice in Southsea.

At the same time, Conan Doyle began to establish himself as a writer. He wrote several historical novels, but it was with the detective novel *A Study in Scarlet*, whose two main characters were Sherlock Holmes and his assistant Dr Watson, that he found his greatest success. When he moved his medical practice to London, not a single patient entered his consulting room, and he used the time to write a series of short stories featuring Sherlock Holmes. The stories were first published as a serial in *The Strand Magazine*, and were hugely popular. However, Conan Doyle felt that he should be writing more serious literature, and decided to kill off Sherlock Holmes, saying that, 'he takes my mind from better things'. In 1893, in the story *The Final Problem*, Sherlock Holmes and his enemy Professor Moriarty both died in Switzerland. Sherlock Holmes fans were furious, and 20,000 readers cancelled their subscription to the magazine.

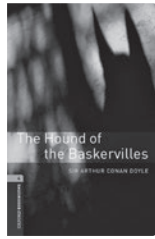
After an unsuccessful attempt to enter politics, Conan Doyle decided to write one more Sherlock Holmes story, which was set in an earlier period than *The Final Problem*, and this became *The Hound of the Baskervilles*, which was a great success. After being knighted by King Edward VII, who was a Sherlock Holmes fan, Conan Doyle brought his character back to life and wrote a new series of stories for *The Strand Magazine*, called *The Return of Sherlock Holmes*.

As well as writing detective fiction, Conan Doyle took an interest in real cases of injustice, and two men were released from prison because he proved, in a Sherlock Holmes style, that they could not have committed the crimes. After this, the Court of Criminal Appeal was established in 1907 to ensure that other miscarriages of justice could be corrected.

After spending the last part of his life studying spiritualism, Conan Doyle died aged 71 on 7th July 1930. He is buried in Hampshire, England. The Sherlock Holmes stories have been translated into many languages, and adapted for theatre and film. It is the films, not the Sherlock Holmes stories themselves, which produced the famous line 'Elementary, my dear Watson!', which people still sometimes say when they think a problem is easy to solve.



- 5 *The Hound of the Baskervilles* is set on the moors of Dartmoor, near where Conan Doyle was a doctor in Plymouth. It was originally a serial in *The Strand Magazine* from 1901 to 1902. In the story, Sherlock Holmes and Dr Watson are called to investigate a *curse over the house of the Baskerville family. Read an extract from the story. What have people seen on the moor?



* a word or phrase that has the power to make bad things happen

- 6 Find words in the extract which mean ...
- open, rough, windy land, usually on hills and without trees
 - a kind of dog used for catching wild animals
 - the spirit of a person or animal that appears after they have died
 - a large country house
 - to pull something into pieces
 - marks on the ground made by feet or shoes
 - people who are qualified to advise people about the law
 - the front part of the neck, which food goes down
 - practical and rational
- 7 Read the extract again and answer the questions.
- Why was Sherlock Holmes angry?
 - Why are the people frightened?
 - Why does Sherlock Holmes think the animal isn't a ghost?
 - Who is Sir Henry?
 - Why has Dr Mortimer asked Sherlock Holmes for help?
 - What does Sherlock Holmes suggest?

What do you think?

- Do you like detective stories? Why/Why not? Why do you think they are so popular?
- Who is your favourite detective in fiction?
- What is the typical sequence of events in a classic detective story?

PROJECT

Write a review in about 150 words for a website selling books and DVDs, of a detective story you have read, or a TV series or film featuring a detective.

Include information about:

- the author
- the characters
- the plot
- the setting
- the detective

The Problem

'Sir Charles had left his footprints all over that little bit of the path where he was standing. I couldn't see any other prints.'

Sherlock Holmes hit his knee with his hand angrily. 'I like to look closely at these things myself,' he said. 'Oh, Dr Mortimer, why didn't you call me immediately?'

'Mr Holmes, the best detective in the world can't help with some things,' said Mortimer.

'You mean things that are outside the laws of nature – supernatural things?' asked Holmes.

'I didn't say so exactly,' replied Mortimer. 'But since Sir Charles died, I have heard about a number of things that seem to be supernatural. Several people have seen an animal on the moor that looks like an enormous hound. They all agree that it was a huge creature, which shone with a strange light like a ghost. I have questioned these people carefully. They are all sensible people. They all tell the same story. Although they have only seen the creature far away, it is exactly like the hell-hound of the Baskerville story. The people are very frightened, and only the bravest man will cross the moor at night.'

'And you, a man of science, believe that the creature is supernatural – something from another world?' asked Holmes.

'I don't know what to believe,' said Dr Mortimer.

'But you must agree that the footprints were made by a living creature, not a ghost?'

'When the hound first appeared two hundred and fifty years ago, it was real enough to tear out Sir Hugo's throat ... But it was a supernatural hell-hound,' said Dr Mortimer.

'If you think that Sir Charles' death was caused by something supernatural, my detective work can't help you,' said Holmes, rather coldly.

'Perhaps,' said Mortimer. 'But you can help me by advising me what to do for Sir Henry Baskerville. He arrives in London by train in exactly', Dr Mortimer looked at his watch, 'one hour and a quarter.'

'Sir Henry is now head of the Baskerville family?' asked Holmes.

'Yes,' said Dr Mortimer. 'He is the last of the Baskervilles. The family lawyers contacted him in the USA. He has come to England immediately by ship. He landed this morning. Now, Mr Holmes, what do you advise me to do with him?'

'Why should he not go to the family home?' asked Holmes.

'Because so many Baskervilles who go there die horrible deaths. But Sir Charles' good work must go on. If it doesn't, all the people on the Baskerville lands will be much poorer. If the Baskerville family leaves the Hall, that is what will happen. I don't know what to do. This is why I came to you for advice.'

Holmes thought for a little while. Then he said: 'You think it is too dangerous for any Baskerville to live at the Hall because of this supernatural hell-hound. Well, I think you should go and meet Sir Henry Baskerville. Say nothing to him about this. I shall give you my advice in twenty-four hours. At ten o'clock tomorrow morning, Dr Mortimer, I would like you to bring Sir Henry Baskerville here.'

[Extract taken from: Oxford Bookworms stage 4, *The Hound of the Baskervilles*]

The fascinating diary of Samuel Pepys

1 Do you or does anyone you know keep a diary? What things do you / they write in it? Do you think these diaries will be interesting for historians to read in 400 years' time?

2 Between 1660 and 1669, Samuel Pepys wrote a unique diary that brings to life the great events of that time in London. Read his biography. Find words or phrases in the text that mean 1–5 below.

- 1 regularly wrote
- 2 wrote down
- 3 a secret way of writing information
- 4 a description of an event by someone who saw it
- 5 the section of one particular day in a diary

3 Read the text again and answer the questions.

- 1 What did Pepys do to see the king's execution?
- 2 When did Pepys write his diary?
- 3 What was the Restoration period in England?
- 4 Name some historical events that Pepys wrote about in his diary.
- 5 When did Pepys stop writing the diary? Why?
- 6 Why did it take so long to publish a full version of the diary?
- 7 Where is Pepys' diary now?

4 Look at the entries from Samuel Pepys' diaries on p2. Read them. Which entries A–D refer to ... ?

- 1 the Great Plague (x2)
- 2 his daily life
- 3 the Great Fire of London

5 Match the words from the diary entries with their definitions.

1 maid	a throwing something in a careless way
2 presently	b attempting to do something
3 infinite	c an officer in the army or navy
4 Lieutenant	d a female servant in a house or a hotel
5 endeavouring	e in a short time
6 flinging	f moving with difficulty, using your hands and feet
7 clambering	g without limits

6 Read the entries again and answer the questions.

- 1 What time did Pepys go to bed in entry A?
- 2 What sign did people put on their door to show they had the plague?
- 3 How many people in London died of the plague during the week of 31st August 1665?
- 4 Where did Pepys go to watch the fire of London?
- 5 Where did the Great Fire of London start?
- 6 What did Londoners do to try and escape from the fire?



Samuel Pepys

Samuel Pepys (pronounced /pi:ps/) was born in London in 1633, and was the son of a tailor. At the age of 15, he and some friends played truant from school to watch the public beheading of King Charles I. After graduating from Cambridge University in 1654 he went on to become Chief Secretary to the Admiralty under King James II.

He is famous for the very detailed private diary he kept during the years 1660–1669. In some ways it is a very ordinary diary – he recorded details of his daily life, work and relationships with women, which is probably why the diary is written in a code that included the use of Spanish, French and Italian words. But it is also an important historical document about the Restoration period in England (when the monarchy was restored, after a period of republican rule under the military leader Oliver Cromwell). He includes fascinating eyewitness accounts of events in 17th Century England, for

example the Great Plague in 1665 (also known as the Black Death, which killed thousands of people), and the Great Fire of London in 1666.

He wrote the last entry in his diary on 31st May 1669, because he could no longer see properly. Pepys died in 1703, leaving strict instructions that all his writings were to be kept in the library at Magdalene College, Cambridge. There the diary remained until the 19th century, when an attempt was made to decode it without the key. Eventually the key was discovered and parts of the diary were published, but many of the details of Pepys' private life were considered too shocking for Victorian readers and it was not until the 1970s – three centuries after it was written – that a complete edition came out. The original diary of Samuel Pepys is still housed at Magdalene College, and it can also be read in the form of a daily blog at pepysdiary.com.

THE DIARY OF SAMUEL PEPYS

A

1660 January 16th

... we went towards Westminster on foot, and at the Golden Lion, near Charing Cross, we went in and drank a pint of wine, and so parted; and *thence home, where I found my wife and maid a-washing. I *staid up till the bell-man came by with his bell, just under my window as I was writing of this very line, and cried, "Past one of the clock, and a cold, frosty, windy morning." I then went to bed and left my wife and the maid a-washing still.

* thence – then * staid – old spelling of 'stayed'

B

1665 June 7th

This day, much against my will, I did in Drury Lane see two or three houses marked with a red cross upon the doors, and "Lord have mercy upon us" *write there; which was a sad sight to me, being the first of the kind that, to my remembrance, I ever saw.

* write – written

C

1665 August 31st

In the City died this week 7,496 and of them 6,102 of the plague. But it is feared that the true number of the dead this week is near 10,000; partly from the poor that cannot be taken notice of through the greatness of the number, and partly from the *Quakers and others that will not have *nay bell ring for them.

* Quakers – a Christian religious group * nay – (not) any

D

1666 September 2nd (Lord's day).

By and by Jane comes and tells me that she hears that above 300 houses have been burned down to-night by the fire we saw, and that it is now burning down all Fish-street, by London Bridge. So I made myself ready presently, and walked to the Tower, and there got up upon one of the high places, Sir J. Robinson's little son going up with me; and there I did see the houses at that end of the bridge all on fire, and an infinite great fire on this and the other side the end of the bridge ... So down, with my heart full of trouble, to the Lieutenant of the Tower, who tells me that it begun this morning in the King's baker's house in Pudding-lane, and that it *hath burned St. Magnus's Church and most part of Fish-street already. So I down to the water-side, and there got a boat and through bridge, and there saw a *lamentable fire. ... Everybody endeavouring to remove their goods, and flinging into the river or bringing them into *lighters that *lay off; poor people staying in their houses as long as till the very fire touched them, and then running into boats, or clambering from one pair of stairs by the water-side to another.

* hath – has * lamentable – terrible * lighters – small, flat boats

* lay off – were nearby

- 7 Read the text about the Great Fire of London. In what ways was the fire a disaster? What were the fire's positive effects for London? Do you think these outweigh the harm done at the time? Why / Why not?



The Great Fire of London

started in a bakery in 1666 in Pudding Lane near London Bridge. Eighty per cent of the City of London was destroyed in the fire, including 13,000 houses and 87 churches. The fire lasted for three days, but amazingly only nine people died in it! One good thing that came out of the fire of London was that it eliminated London's brown rat population, which carried the Great Plague that had killed about 100,000 Londoners in 1665. The first insurance company in the world (Lloyds of London) was started after the Great Fire, as people began to realize the importance of insurance against natural disaster. The Great Fire burnt down all of London's medieval wooden buildings and gave the King, Charles II, the opportunity to build new, safer stone buildings.

In 1677, to remember the Great Fire of London, Sir Christopher Wren, a famous English architect designed the Monument. It is a column of stone which is 202ft (61.57m) high. When it was built, it was the tallest stone column in the world. It is situated near to London Bridge, very close to where the fire started. There are 311 stairs and visitors who climb up the Monument are given a certificate on their way out to show they reached the top!

What do you think?

- What effect might seeing a public execution have on a 15-year-old?
- Pepys wrote his diary in code so that anyone who found it would find it difficult to read. If you found a diary belonging to a family member or a friend, would you read some of the entries? Why / Why not?

PROJECT

Does your town or a town near where you live have a monument to an event in history? Write a tourist factfile about it. Include the following information.

- Where is it exactly?
- Why was it built?
- When was it built?
- What does it look like?
- Who built it?

Queen Elizabeth I

¹ Elizabeth I was Queen of England in the late 16th century. She was one of the Tudors, a family that ruled England and Wales for 118 years. Do you know anything about her? What was happening in your country at that time?



Elizabeth I

¹ **ELIZABETH I**, the last Tudor monarch, was born at Greenwich on 7 September 1533, the daughter of Henry VIII and his second wife, Anne Boleyn, who was executed three years later.

² Her early life was full of uncertainties, and her chances of succeeding to the throne seemed very slight once her half-brother Edward was born in 1537. She was then third in line behind her Catholic half-sister, Mary. Edward became king in 1547, aged 9 (he was known as 'The Boy King'), but died in 1553, leaving Elizabeth second in line to the throne when Mary became queen. Catholics always mistrusted Elizabeth, and she only narrowly escaped execution following a failed rebellion in 1554 against Queen Mary, who had become very unpopular after marrying King Philip of Spain.

³ Elizabeth succeeded to the throne on her half-sister's death in November 1558. She was very well-educated (fluent in six languages), and had inherited intelligence and determination from both parents.

⁴ During her reign, a secure Church of England was established. Most of her subjects accepted a compromise between Catholicism and Protestantism as the basis of their faith, and this probably saved England from the kind of religious wars that France suffered from in the second half of the 16th century.

⁵ Elizabeth's reign also saw many brave voyages of discovery, including those of Francis Drake, Walter Raleigh and Humphrey Gilbert, particularly to the Americas. These expeditions prepared England for an age of colonization and trade expansion.

⁶ The arts flourished, too. Country houses such as Longleat and Hardwick Hall were built and theatres thrived – Queen Elizabeth attended the first performance of Shakespeare's *A Midsummer Night's Dream*.

⁷ The image of Elizabeth's reign is one of triumph and success. The Queen herself was often called 'Gloriana', 'Good Queen Bess' and 'The Virgin Queen'. With her expensive clothes and jewellery (to look the part, like all sovereigns of the day), she cultivated this image by touring the country, often riding on horseback rather than by carriage. Elizabeth made at least 25 such tours during her reign.

⁸ However, Elizabeth's reign was one of danger and difficulty for many, with threats of invasion from Spain

through Ireland, and from France through Scotland.

Much of northern England was in rebellion in 1569–70, and she passed harsh laws against Catholics after plots against her life were discovered.

⁹ One such plot involved her cousin Mary, Queen of Scots. As a likely successor to Elizabeth, Mary spent 19 years as Elizabeth's prisoner because Mary was the focus for rebellion and possible assassination plots. Mary was also a temptation for potential invaders such as Philip II of Spain, and in 1587 Mary was tried, found guilty and executed.

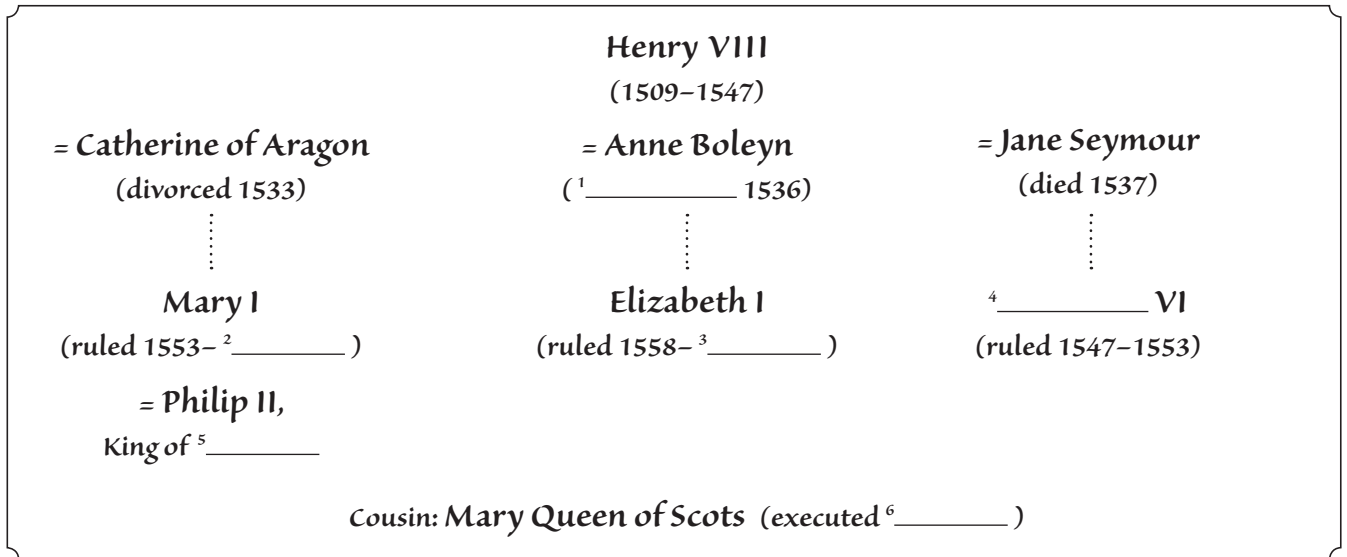
¹⁰ In 1588, aided by bad weather, the English navy scored a great victory over the Spanish invasion fleet of around 130 ships – the 'Armada'. The Armada's aim had been to overthrow the Queen and re-establish Catholicism by conquest, as Philip II believed he had a claim to the English throne through his marriage to Queen Mary I.

¹¹ During Elizabeth's long reign, the nation also suffered from high prices and severe economic depression. Wars in France and against Spain, which included support for rebels against Philip II in the Spanish Netherlands (comprising much of modern Holland, Belgium and Luxembourg), were very costly. Elizabeth left large debts to her successor, James I.

¹² Elizabeth used her marriage prospects as a political tool, both nationally and internationally, but she chose never to marry. If she had chosen a foreign prince, he would have drawn England into foreign policies for his own advantages (as in her sister Mary's marriage to Philip of Spain); marrying a fellow countryman could have drawn the Queen into disputes between powerful groups.

¹³ As a result, the 'Virgin Queen' was seen as a selfless woman who sacrificed personal happiness for the good of the nation, to which she was, in a way, 'married'. She seems to have been very popular with the majority of her subjects and, overall, Elizabeth's leadership brought successes during a period of great danger both at home and abroad. She died at Richmond Palace on 24 March 1603, having become a legend in her lifetime. The date of her accession was a national holiday for two hundred years. The number of films made about her life in recent years show that she has become a modern icon too, especially for women seeking to gain power at the highest levels of society.

2 Read the text and complete this extract from the royal family tree.



3 Match the beginnings and the endings of the sentences.

1 Elizabeth seemed unlikely ever to become Queen	a because lands had been discovered during Elizabeth's reign.
2 She eventually became Queen of England	b because some people wanted to use her against Elizabeth.
3 In 16th century England there were no wars of religion	c because Mary I had been his wife.
4 England later began to establish colonies	d because both Edward VI and Mary I had died.
5 She travelled around dressed like a queen	e because Elizabeth had spent a lot on wars.
6 Elizabeth was sometimes cruel to Catholics	f because she was the youngest of three children.
7 Mary, Queen of Scots, was kept in prison	g because she wanted to impress her subjects.
8 The King of Spain said he was also King of England	h because few people were totally against the new faith.
9 The next English king had serious money problems	i because having a husband could have been disastrous for her country.
10 Elizabeth decided to remain single all her life	j because supporters of Philip II were trying to kill her.

4 Find words or phrases in the text that mean the following. The paragraph numbers are in brackets.

- 1 king or queen (1)
- 2 put to death (1)
- 3 becoming the next king or queen (2)
- 4 a fight against authority (2)
- 5 people of a country that has a king or queen (4)
- 6 kings or queens (7)
- 7 vehicle pulled by horses (7)
- 8 very hard or strict (8)
- 9 secret plans to kill somebody powerful (9)
- 10 remove a leader by force (10)
- 11 arguments (12)
- 12 becoming the king or queen (13)

What do you think?

- Do you think it was right for monarchs in those days to have so much power? What role does the royal family in your country have today? Do you think they are relevant to 21st century society? What are the advantages and disadvantages of having a royal family?

PROJECT

Look at the quote from Elizabeth I.

'I know I have the body of a weak, feeble woman; but I have the heart and stomach of a king ~ and of a King of England too.'

From a speech by Elizabeth I to her army at Tilbury (near London) on the eve of the battle against the Spanish Armada, 1588.

Choose another woman who had a powerful impact on history and find out as much as you can about her. Write an article for a history website about her background and achievements, saying why you think she should be included in their list of 'the top five female figures in history'.

The American Revolution

- How much do you know about the early history of the United States of America? Choose the correct alternative.
 - Britain established its first colony in North America in the *17th / 18th Century*.
 - The American War of Independence started in *1775 / 1785*.
 - Twelve / Thirteen* colonies originally formed the United States of America.
 - Independence Day is celebrated on *June 4th / July 4th*.
 - The first American president was *Thomas Jefferson / George Washington*.
- Read the text about the American Revolution and check your answers.

THE AMERICAN REVOLUTION

Britain established several colonies in North America during the 17th Century, starting with Virginia in 1607, and in the mid-18th Century the British government decided to tax its American colonies more strictly. The problem for many American colonists was not that taxes were high, but that the colonies were not consulted about them, as they had no representation in Parliament. The popular slogan 'No taxation without representation!' reflected growing unrest amongst the people, and there were many political debates about the role of democracy and republican values in society.

In 1773, the British government passed the Tea Act, which made it easier for the British East India Tea company to import cheaper tea into America, using their own agents and **cutting out** the local American agents completely. When three British ships carrying tea docked in Boston harbour in December of that year, about 150 Americans, poorly disguised as Native Americans, **boarded** the ships and threw all 342 chests of their precious cargo into the sea – an event now referred to as 'The Boston Tea Party'.

From that point on, many Americans came to see tea drinking as unpatriotic and turned to coffee instead. Today, visitors to the floating Tea Party Museum in Boston can explore **replicas** of two of the original ships, see one of the actual tea chests – and throw tea overboard.

As protests and violence escalated further around Boston, groups of local **militia** began to form, and British soldiers were

sent to nearby Lexington to **confiscate** a store of weapons. As British soldiers faced the colonial rebels, the 'shot heard around the world' was fired on April 19th 1775, and the American War of Independence had begun. The thirteen colonies involved formed a provisional government called 'The United Colonies of America', and formed their own 'Continental Army' under the leadership of George Washington. They declared their independence on July 4th 1776, a date which is still celebrated with a national holiday every year on the 4th July, Independence Day.

The Declaration of Independence, written by Thomas Jefferson, was influenced by the Enlightenment philosophy that had come out of Europe, and shows the desire for a new, more **egalitarian** society. Its opening lines have become famous: *We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain inalienable Rights, that among these are Life, Liberty and the pursuit of Happiness.*

The British suffered some surprise defeats at the hands of the Continental Army, but returned to the war with reinforcements (25% of them German mercenaries). The Americans formed an alliance with France in 1778, and the French helped them with money, weapons and ships. Among the many French soldiers who fought for the Americans was the Marquis de Lafayette, promoted to the rank of Major General at the age of just 19. The war ended with the Treaty of Paris in 1783 and the United States became a sovereign state, with George Washington as its first President.

- Match the words from the text to their definitions.

1 consulted	a given natural possession of
2 representation	b free to govern itself
3 cargo	c that cannot be taken away
4 escalated	d equal
5 provisional	e became more serious
6 egalitarian	f not permanent
7 endowed	g the goods carried on a ship
8 inalienable	h asked for an opinion
9 mercenaries	i people to speak for you
10 sovereign	j soldiers who will fight for anyone who pays

- Work out the meaning of the bold words in the text from their context.

- cutting out
- boarded
- replicas
- militia
- confiscate
- egalitarian

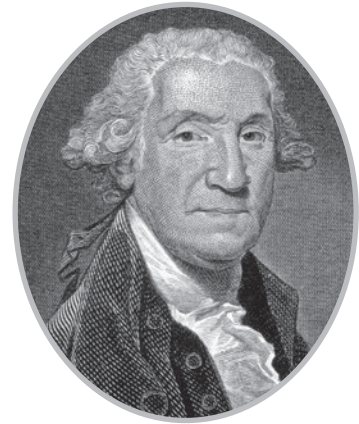
5 Read the text again and answer the questions.

- 1 Why did Britain decide to tax its American colonies more strictly?
- 2 Why were the taxes so unpopular with the American colonies?
- 3 When did the Boston Tea Party take place?
- 4 Why did the British soldiers go to Lexington?
- 5 Who declared their independence on July 4th 1776?
- 6 In what way was the Declaration of Independence both very modern and very old-fashioned?
- 7 How did France help the Americans during the American War of Independence?
- 8 When did the American War of Independence end?



6 Read these paragraphs about the first and the 45th US Presidents. What differences and similarities are there between the two men?

George Washington was born to a prosperous family in 1732 in what was then the British colony of Virginia. He was an experienced soldier and led the Americans to victory in the War of Independence. He was the first President of the United States from 1789–1797, the only President to ever receive 100% of the electoral votes. Washington laid down the foundations of many important values and principles, although – like many rich landowners of the time – he also owned African-American slaves. He made sure that America did not interfere in European politics and that other countries did not influence domestic affairs. Washington DC, the capital city of the USA, is named after him.



Donald Trump, whose father was a wealthy property developer, was born in New York City in 1946. As a teenager he attended the New York Military Academy but was not drafted during the Vietnam War. He extended his father's property business, becoming a billionaire in the process, and was the star of the TV show *The Apprentice*. In 2016 he unexpectedly became the 45th President of the United States by obtaining 57% of the electoral votes, despite losing the popular vote to Hillary Clinton. During the campaign he was widely criticized for his comments about women and ethnic minorities, but also received support for his promises to reduce the United States' international commitments and to 'Make America Great Again'.

What do you think?

- Do you know the names of the two US presidents before Donald Trump? What is each of them remembered for?
- Do you think recent Presidents of the United States have followed George Washington's thinking about involvement in international affairs? Why / Why not?
- In what ways has America colonized the rest of the world culturally?

PROJECT

Write a paragraph with a description of the American flag, the Stars and Stripes, for a guide to American culture. Use the Internet to help you. Include information on:

- the colour and design
- what the stars and stripes represent
- when it was adopted

- 1 Work with a partner. Match the battles and wars with a date.

Crimean War	1859
First World War	1861–1865
American Civil War	1854–1856
Battle of Solferino	1914–1918

- 2 Read the introductions to the texts about Florence Nightingale and Clara Barton on p2. What do the two women have in common?

- 3 Work in two groups.

Group A Read about **Florence Nightingale**.

Group B Read about **Clara Barton**.

Answer the questions about your heroine.

- When and where was she born?
- Why is she remembered?
- What did people call her? Why?
- What difficulties did she face? How did she overcome them?
- How long did she live?

Work with a student from the other group.
Compare the two heroines.



British cavalry, Crimean War, 1854

- 4 Find the underlined words in the texts about the heroines on p2. Work out their meaning. Match them to the definitions below.

- a person who has been trained to help women give birth _____
- a type of work or a way of life that is especially suitable _____
- injured by a weapon, for example in a war or a fight _____
- the systems that keep places clean, especially by removing waste _____
- a person who has been ill for a long time and needs to be looked after _____
- a hospital _____
- long pieces of white material that you tie around a wound or an injury _____
- someone in hospital, or attending a doctor's surgery _____
- regarded as equal under the law _____
- helping victims of a terrible natural event, like a flood or volcano _____
- someone who is hurt in an accident, war, or crime _____

What do you think?

- In what ways do you think Florence Nightingale and Clara Barton helped improve the situation of women in the workplace? Give examples.

PROJECT

During the Battle of Solferino in 1859, 40,000 Austrian, French and Italian soldiers died. Jean Henri Dunant, a Swiss businessman, witnessed the battle and was so horrified by what he saw that he founded the International Red Cross.

Write an article for a school magazine (150 words) about the International Red Cross. Use the Internet or magazines to help you. Include the following information:

- what the International Red Cross is
- how it helps people today
- what its aims are

FLORENCE NIGHTINGALE

– *The Lady with the Lamp* –

The founder of the modern nursing profession, she is remembered as the person who introduced hospital sanitation, first into the battlefield hospitals of the Crimean War (1854–56) and then throughout Britain.

Florence Nightingale was born on 12th May 1820. Her interest in nursing began when she was a girl and cared for sick workers on her father's estate. She refused many offers of marriage so she could be a nurse and help others. Her family was unhappy with this decision because nursing was not considered a respectable profession for women. In 1845 Nightingale decided to become a nurse. In 1851 she went to Kaiserswerth in Germany to study nursing and here she decided she would make it a highly respected vocation for ladies.



Nightingale returned to London and entered nursing. She got her first job as a superintendent of the Hospital for Invalid Gentlewomen in 1853. She mentored other nurses to care for the poor in workhouse infirmaries and improved the conditions for the inmates. Nightingale's most famous contribution to nursing came during the Crimean War (1854–56) This was the first war in which the European public were able to follow events as they happened due to the invention of the telegraph. Nightingale was upset by the reports she read about the horrific conditions for the wounded and wanted to help. In 1854 the British Minister of War asked her to take a team of 38 nurses to the military hospital in Scutari, in Turkey. The hospital was a filthy barracks and wounded soldiers often died from infections they caught there. Nightingale improved conditions in the barracks by cleaning the hospital and equipment thoroughly and reorganizing patient care. The patients called her the *Lady with the Lamp* as she used to walk around the hospital beds at night with her lamp.

She returned to England a heroine and worked on sanitation design and the administrative organization of hospitals. Nightingale wrote a 1,000-page report, which led to the establishment of an army medical school and army medical records. In 1860, Nightingale established a training school for nurses and the first trained Nightingale nurses began to work in 1865 at the Liverpool Workhouse Infirmery. Her *Notes on Nursing* is still considered a classic introduction to nursing. On 13th August 1910 Florence died, aged 90 years old.

CLARA BARTON

– *The Angel of the Battlefield* –

Best known as the founder of the American Red Cross, as a nurse she helped thousands of wounded soldiers on the battlefields of the American Civil War.

Clarissa Harlowe Barton was born on 25th December 1821 in Oxford, Massachusetts. Clara, as she was known, was educated at home. From an early age Barton was interested in nursing, she loved listening to stories about her great-aunt Martha, who was a midwife. Her first patient was her younger brother, David, who fell from the roof of the barn. Barton nursed him back to health for two years. When she was still a teenager, she became a teacher. After that, she worked as a clerk in the Patent Office in Washington D.C. Barton was a believer in real equality, and when the Patent Office wanted to pay her less money because she was a woman, she insisted that they pay her the same as the men. She won!

When the American Civil War started in 1861, Barton wanted to help the soldiers. She started an agency to obtain and distribute food and bandages to wounded soldiers. Barton travelled in army ambulances and provided comfort to the soldiers, nursing them back to health. Soldiers called her the *Angel of the Battlefield*. In 1864, she was appointed the 'lady in charge' of the hospitals at the front-line. After the war she also helped families find missing soldiers.

Barton had worked hard during the war, and was physically and mentally exhausted when it came to an end. Her doctor recommended that she went to Europe to rest. In 1870, while she was travelling in Europe, she saw the work of the International Committee of the Red Cross, which had been established in 1863 in Switzerland. Clara came back to the United States and founded the American Red Cross. At first the Red Cross only served soldiers, but Clara realized that other people needed help and so it began to provide disaster relief too. In 1884, for example, Clara and the Red Cross helped the flood victims of the Ohio River Valley to rebuild their lives. This new concept was called 'First Aid' and continues to be an important part of the work of the Red Cross. Clara died in 1912, at the age of 90.

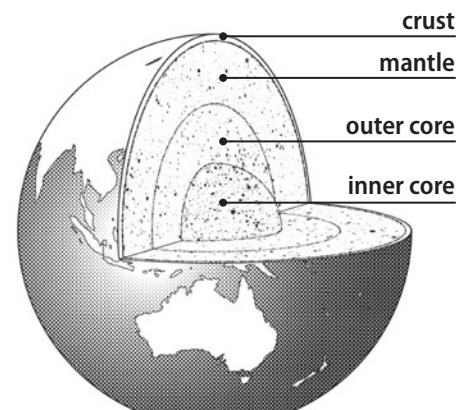


Plate tectonics and earthquakes

- 1 Work with a partner. Have you ever experienced an earthquake? What did you do? How did you feel?
- 2 Look at the advice on what to do in an earthquake. Can you add any ideas?
 - If you are outside, move to an open space away from any buildings.
 - If you are inside, don't stand near a window, take cover in a doorway.
- 3 Read the first paragraph of the encyclopaedia entry *Plate Tectonics*. Look at the diagram showing a cross-section of the Earth. Use the diagram labels to complete the paragraph.

Plate Tectonics

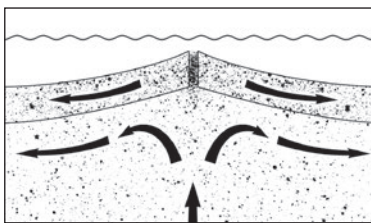
The earth is made up of four layers: the crust, the mantle, the outer core, and the inner core. The ¹ _____ is the centre of the Earth and it is made of solid iron, with some nickel and small amounts of other elements. It is the hottest part of the Earth with temperatures of up to 7000°C. The ² _____ is liquid iron and nickel at a temperature of about 5,500°C. The largest section of the earth is the ³ _____, which is made up of semi-molten rock called magma. The temperature here is about 4000°C. The ⁴ _____ is the thinnest layer of the Earth and is made up of sections of solid rock called tectonic plates, which move or float on the mantle.



The layers of the Earth

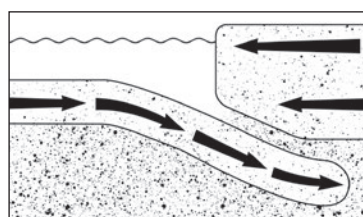
As heat rises and falls in the mantle, currents called *convection currents* are created. It is these currents which cause the tectonic plates to move. This movement is known as *tectonic activity*. There are over 50 tectonic plates on the Earth, and they move in different directions. A *plate boundary* is the point where two plates meet. There are three main types of plate boundary.

1 PLATE BOUNDARIES

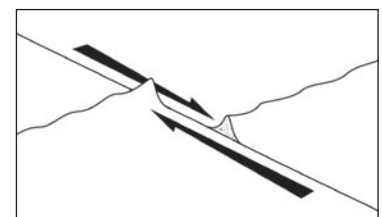


These are also known as *divergent plate boundaries* or *mid-ocean ridges*. This is where two plates move apart from each other. Magma rises through the gap in the Earth's crust and cools down to form a new crust. They are called *constructive plates* because this is where plates are created, and they are often under the sea. The most famous example on land is the Great Rift Valley in East Africa.

2 DESTRUCTIVE PLATE BOUNDARIES, or convergent plate boundaries, are where two plates move towards each other, and where plates are destroyed. One plate slides under the other and melts into the mantle. The other plate is pushed up to form mountain ranges and volcanoes. This is where major earthquakes and volcanic activity occur, and the most famous is the 'Ring of Fire' on the bed of the Pacific Ocean.



3 CONSERVATIVE PLATE BOUNDARIES



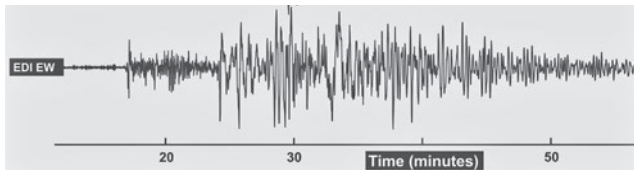
These are where two adjacent plates move past each other, or slide roughly past one another. A plate movement like this is known as a *slip fault*. It is usually violent and can cause severe earthquakes. Pressure builds up and sudden movement along the boundary, known as a *strike-slip fault*, causes major earthquakes. The most famous fault line of this type is the San Andreas fault in California.

4 Read the whole entry on plate tectonics. Answer the questions.

- 1 What do convection currents do?
- 2 What is a tectonic plate? Why are they important?
- 3 How many tectonic plates are there?
- 4 Along what sort of plate boundaries do earthquakes take place?
- 5 What is the name of the plate boundary where two plates slide past each other?

5 Work in small groups. What causes earthquakes? How are they measured?

Earthquakes – Why the Earth moves



Earthquakes are caused by the movement of the Earth's plates. These plates move very slowly, either converging, where one goes under another, or moving alongside each other in different directions. ¹_____ do not move smoothly and if they become locked together, the build up of pressure causes an ²_____ to occur. The point below the Earth's surface at which the pressure is released is called the focus, while the point on the Earth's surface directly above this is called the ³_____.

During an earthquake shock waves are produced called ⁴_____. They are strongest at the epicentre – the point where most damage is caused, but gradually lose energy as they travel outwards and away.

The strength of an earthquake is recorded using an instrument called a ⁵_____. This is a highly sensitive device which measures the movement of the Earth. During an earthquake it produces a record of the strength of the Earth's movements, sometimes called a seismograph. The strength or magnitude of an earthquake, i.e. the amount of energy released during the earthquake, is measured using the ⁶_____. The intensity or the strength of shaking is measured by the Mercalli Scale which records the effect it has on the Earth's surface, on natural (mountains, cliffs, etc.) or man-made structures, and on human beings.



6 Read and complete the encyclopaedia entry *Earthquakes – Why the Earth moves* with the words in the box.

seismic waves	plates	earthquake
seismometer	Richter scale	epicentre

Use the information in the entry to check your answers to exercise 5.

PROJECT

In May 2008 over 50,000 people died in an earthquake in Sichuan province in China. Write a newspaper article (150 words) about this earthquake and the devastation it caused. Use the Internet, or newspapers, and magazines to find out:

- where the earthquake took place
- what destruction was caused
- why so many people died
- the after-effects

- Which of these things do you think are made from petroleum? Use the Internet to check your answers.
- Read the text about petroleum, what does the writer mean by the text's title *The bottom of the barrel*?



PETROLEUM – The bottom of the barrel?

Petroleum has been used in one form or another for thousands of years. In ancient times, people used it in construction and for medicinal and lighting purposes. Records show the Chinese drilled the first oil wells in the fourth century AD, or possibly earlier. However, it is only relatively recently that oil has become the world's most important fuel. It is now the source of much global discussion and conflict.

The world is now producing about 85 million barrels of oil a day. The main oil-producing countries are: Saudi Arabia, Russia, and the USA. Approximately 90% of the world's transport depends on oil, not to mention all the other things we use oil for, including plastics, pesticides, and pharmaceuticals.

Some experts believe oil production will peak in 2020, after which there will be a decline in supply. Worldwide demand for oil may outstrip supply so the price of oil could rise dramatically, which would greatly affect our everyday lives. We could no longer afford to drive our cars, take cheap flights, or heat our houses, and the rising cost of transporting food would push up food prices.

People are looking for alternative forms of energy, for example, biofuels. However, these are not without negative consequences. In countries like Brazil, the rainforests are being cleared at an alarming rate to make way for biofuel crops. As more crops are grown to provide biofuels, fewer are available for food, again pushing up food prices.



We need to start planning for the post-oil age and looking for realistic energy alternatives. What are these alternatives and how can we survive without oil? It is difficult to tell. Life will certainly be different, but in the past we have managed without oil, and we will manage again.

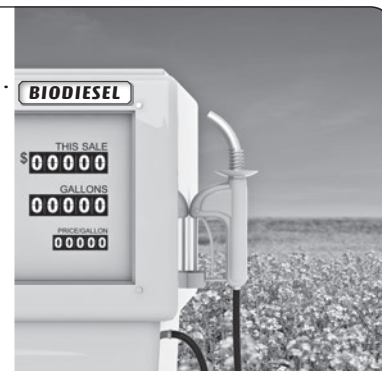
- Read the text again. Answer the questions.
 - Who drilled the first oil wells?
 - What do some experts think may happen in 2020?
 - What might happen to the demand and supply of oil after 2020?
 - How would the high price of oil affect our everyday lives?
 - What are two of the disadvantages of biofuels?
- Match the underlined words or phrases from the text with their meanings.
 - to reach the highest point or value _____
 - to have enough money to be able to buy or do something _____
 - a continuous decrease in the number, quantity, or value of something _____
 - to become larger or more important than something _____
 - a unit of measurement in the oil industry equal to between 120 and 159 litres _____
 - a hole that is made deep in the ground or under the sea in order to obtain oil _____
 - mineral oil that is produced by living matter, such as plants or waste matter from animals _____

5 Read *What are biofuels?*

- 1 What can be used to make biofuels?
- 2 What is the main difference between ethanol and biodiesel?

What are biofuels?

Biofuels are renewable fuels which are made from biological matter. They can be used to replace or supplement traditional petroleum-based transport fuels. They can also be used for heating and electricity production. The two most common kinds of liquid biofuels are ethanol and biodiesel. Ethanol is made by fermenting the sugar or starch found in plants such as sugar cane or maize. Biodiesel is made from plant oils like soya bean, coconut, and palm. Waste cooking oil can also be converted to biodiesel.

6 Read *Biofuels: the solution to a post-oil age?* and complete the text using the words and phrases in the box.

reducing global warming deforestation an alternative and so less goes to make food
algae increase in demand famine petroleum

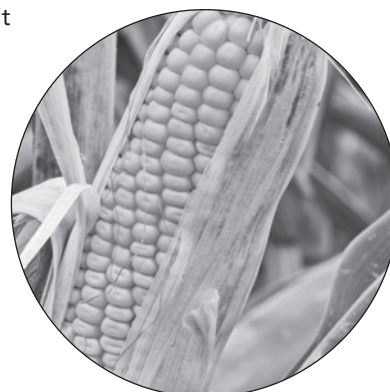
Biofuels: the solution to a post-oil age?

In recent decades many governments and environmentalists have been very enthusiastic about the use of biofuels as ¹ _____ to petroleum-based fuels. As a result, investment in biofuels has risen significantly in the past few years.

However, this recent explosion in the biofuel market has highlighted two extremely worrying problems. Instead of ² _____ by lessening our reliance on petroleum-based fuel, it has actually caused a dramatic increase. Biofuels boost the demand for crops, raising prices and causing agricultural expansion. Farmers want to grow as much of these crops as possible which has led to an ³ _____ for land. Consequently, land such as the Amazon rainforest in Brazil is being destroyed at an even faster rate than before. Studies have shown that, when ⁴ _____ is taken into account, biofuels, like corn ethanol and soya biodiesel, produce about twice the carbon emissions of ⁵ _____-based fuels.

The other main problem with biofuels is that the world's grain and oil-seed crop are used make biofuels, ⁶ _____. World food prices are rising fast. Many people fear this will result in ⁷ _____ in poorer countries, where people can't afford basic foods, such as wheat and rice.

More research is being done into biofuels that do not require use of agricultural land currently used for food production, such as ⁸ _____, which survive in waste water. At present, however, it is clear that biofuels are not part of the solution to global warming, but part of the problem.

**What do you think?**

- What alternative forms of energy can you think of?
- Which do you think would be the best alternative to oil?

PROJECT

In the USA, the average item of food is transported almost 2,500 km before it gets to the consumer. A locavore is someone who eats food grown or produced locally. Write a paragraph (150 words) about the locavore movement. Find out more using the Internet, newspaper articles, or magazines. Include this information:

- the definition of a locavore and the origin of the word 'locavore'
- examples of where the food you eat comes from and how far it has been transported
- the advantages and disadvantages of being a locavore

- 1 Discuss with a partner what you understand by climate change.



- 2 Read the paragraph headings from a text about climate change.

What would you expect to be mentioned in each?

- Evidence for climate change
- Causes of climate change
- Consequences of climate change
- The ozone layer

- 3 Read the text on p2 and match the paragraph headings in exercise 2 to the correct paragraph.

Were your predictions correct?

- 4 Match the underlined words in the text with the correct definition a–h.

- a a large amount of water that has spread from a river or the sea which covers an area that should be dry _____
- b to change something from a solid to a liquid by means of heat _____
- c a long period without rain _____
- d to force something into a place from which it cannot escape _____
- e very bad weather with a lot of rain and wind _____
- f a mass of very small drops of liquid in the air _____
- g oil, gas, or coal formed millions of years ago by dead plants or animals in the ground _____
- h the gradual rise in temperature of the Earth's atmosphere caused by an increase of gases _____

- 5 Read the text again and answer the questions.

- 1 What do scientists now believe is the main cause of global warming?
- 2 What is the 'greenhouse effect'?
- 3 What are the causes of the present global warming?
- 4 Describe what is happening to the ozone layer.
- 5 What evidence do scientists link with global warming?
- 6 What are some of the consequences of global warming?

- 6 Greenhouse gases trapped in the atmosphere are the main causes of global warming.

Where do these gases come from? In pairs, look at the list of some greenhouse gases (1–4) and find out what their source is (a–d).

1 ____ Nitrous oxide	a is released into the atmosphere from farming and landfill sites.
2 ____ Methane	b comes from factories, power stations, and vehicles.
3 ____ CFC gases	c come from old fridges, aerosols, and fast food packaging.
4 ____ Carbon dioxide	d is released into the atmosphere from fertilizers.

Check your answers on the Internet or in an encyclopaedia.

THE EARTH'S GETTING HOTTER!

In the twentieth century, global temperatures rose on average by 0.6°C. In the 1970s and 1980s, some scientists believed global warming was a natural phenomenon while others thought it was the result of human activity. By the mid-1990s there was enough evidence for the Intergovernmental Panel for Climatic Change (IPCC) to announce that global warming was probably due to human activity.

A

Global warming is caused by the 'greenhouse effect'. The Earth is protected by its atmosphere, which surrounds it and keeps it warm – like a greenhouse does. The atmosphere is made up of many gases. The most important gases involved in the 'greenhouse effect' are water vapour, carbon dioxide, nitrous oxide, methane and ozone. Modern industrial processes and the population growth of the last two centuries have meant the demand for energy has soared. To meet this demand, we burn huge quantities of fossil fuels. This releases large amounts of carbon dioxide and other greenhouse gases back into the atmosphere. As these gases increase, they trap even more heat, increasing the greenhouse effect so that the Earth gets hotter, causing global warming.

B

Ozone is the chemical element oxygen arranged in a special way. A thin layer of ozone surrounds the earth, about 20–30 km above the surface. Ozone is very important because it absorbs much of the sun's most harmful ultra-violet radiation. If the ozone layer is reduced, then more ultra-violet radiation will reach the Earth's surface. Human activity releases gases such as chlorofluorocarbons (CFCs) into the atmosphere. These gases reduce the amount of ozone in the atmosphere by changing it back to oxygen, and this lessens our protection from the sun's rays. In humans, exposure to ultra-violet radiation is linked with the development of skin cancer and cataracts. Each spring a hole in the ozone layer occurs naturally above the Antarctic region. There are concerns in Australia, New Zealand, and Southern Chile that the size of the ozone hole is increasing.

C

Apart from the rise in health problems in regions under the holes in the ozone layer, there are other events which scientists now believe can be associated with global warming. The steady rise in global temperatures over the past century and the increase in the number of extreme weather events, such as tropical storms, floods, and droughts, are thought to be clear evidence of the greenhouse effect.

D

The years since 1980 have been the hottest on record. Over time this increase in temperature will have a significant effect on the world's climate zones. Ice sheets and glaciers are beginning to melt and this has caused sea levels to rise by 0.25 m in the last 100 years. In the next 100 years, sea levels will probably rise by another 0.5 m, which could mean that low-lying islands such as the Maldives may disappear. Other possible consequences are that desertification will increase, so dry areas such as the Sahara could spread north into Southern Europe, for example Southern Italy. Extreme weather events could become even more severe, widespread, and common. If global warming continues, the entire polar icecap may melt, which could cause catastrophic environmental problems.

What do you think?

- What can you, as an individual, do to help stop global warming?

PROJECT

The 1997 Kyoto Treaty is an international agreement which aims to reduce emissions of carbon dioxide and other greenhouse gases into the atmosphere. Prepare a magazine article (100 words) about the Kyoto Treaty. Use the Internet, magazines, and newspaper articles to help you. Include information on:

- which countries have signed the treaty
- what member countries are doing to reduce emissions of greenhouses gases
- what your country is doing to protect the environment

- 1 Put these countries in order of population size, biggest first.

Russia China Italy India Germany United States

- 2 Work with a partner. Ask and answer the questions about the countries in exercise 1.
- What is the population of each country?
 - Which country do you think has the fastest growth rate in population?
 - Which country has the slowest?
 - Which country has the highest GDP (Gross Domestic Product) per capita?
 - Which country has the lowest GDP per capita?

Check your answers on the Internet or in an encyclopaedia.

- 3 Work in small groups. Make a list of factors causing poverty in society. Think of possible solutions. Read *Poverty – equality in balance* on p2. Which of your ideas came up?

- 4 Find and underline words in the text that mean:

- 1 the process of becoming a desert or of making an area of land into a desert _____
- 2 cutting down trees over a large area _____
- 3 a long period without rain _____
- 4 the food that you eat and the way it affects your health _____
- 5 easily affected or influenced by something _____
- 6 to destroy or get rid of something completely _____
- 7 something a country or a group of people has which they can use to improve their lives _____

- 5 Work with a partner. Cover the text. What can you remember about the Millennium Development Goals and the Sustainable Development Goals?

What do you think?

- Do you think the aim to eradicate poverty in all its forms everywhere is realistic and achievable by 2030? Why (not)?



- 6 Complete the text *Women fighting poverty in India* on p2 with the words in the box.

poverty literacy market rural growth union

- 7 Read the text again. Answer the questions.

- 1 How many people in India live on less than a dollar a day?
- 2 What is SEWA?
- 3 Where is SEWA based?
- 4 How is SEWA helping to combat poverty?
- 5 What are SEWA's main goals?
- 6 Why do some economists think poverty will disappear?

PROJECT

In 1992, the United Nations declared that 17th October would be the International Day for the Eradication of Poverty.



Write a brief paragraph (100 words) about why it is held on 17th October and what its aims are. Find out more using the Internet, newspaper articles, or magazines. Then design a poster outlining information and events that your school could do in order to commemorate this event.

Poverty – equality in balance

Nearly half the world's population, or about three billion people, live on less than two dollars a day. The poorest 40% of the world's population accounts for 5% of global income; the richest 20% accounts for 75% of world income.



There are several identifiable causes of poverty including **environmental factors**, for example, poor soil fertility, desertification and overgrazing, deforestation, and drought; **geographical factors**, for example, lack of access to fertile land, fresh water, minerals, energy, and other natural resources; **economic factors**, for example, unemployment, rising costs of basic necessities like oil and food, unfair trade and protective tariffs in the developed world; **health factors**, for example, poor access to health care and inadequate nutrition, which makes people more susceptible to disease.

At the United Nations Millennium Summit in September 2000, 189 nations, plus the world's leading development institutions, signed the *Millennium Declaration*, adopting eight Millennium Development Goals. The MDGs targeted the challenges facing world development. These have been replaced by Sustainable Development Goals. The first of these goals is to eradicate poverty in all its forms everywhere by 2030. They hope to achieve this by ensuring that there are no people living on less than \$1.25 a day; making sure that the poor have access to resources and that they are less vulnerable to economic, social and environmental disasters; and through investment, programmes and policies to end all poverty.

The world today is richer than ever before. Advances in technology, science, and medicine, amongst other things, have provided us with fantastic opportunities to improve people's lives and reduce hunger. These advances must benefit the poorest as well as the richest members of society.



Women fighting poverty in India

Although India's recent economic ¹_____ has been remarkable, the country remains desperately poor. It has the world's largest number of people living below the ²_____ line, with almost a quarter of India's population surviving on less than one dollar a day, mostly in ³_____ areas.

Based in the state of Gujarat in northwest India, the Self-Employed Women's Association (SEWA), a trade ⁴_____ for poor, self-employed women workers, is leading ambitious schemes to combat poverty. SEWA's main goals are full employment and self-reliance; ensuring that poor women have work, income and food security, access to health and childcare, and a roof over their heads. The association organizes agricultural and textile cooperatives; champions the rights of the poorest workers; offers ⁵_____ classes and computer classes for teenagers; and sponsors doctors in rural areas. It also runs a bank which caters for the poorest women.

Some economists think that poverty in India will disappear as ⁶_____ forces start to work. However, this would take many years. India needs more initiatives like the ones undertaken by SEWA, if the problem of poverty is to be solved at all.



- 1 Work with a partner. Answer the questions. Which of the following are made using catalysts or enzymes?
Can you think of any other examples?



- 2 Read the website information on p2 *Enzymes – nature's catalysts*.
Check your answers to question 1.

- 3 Match the words in the website with their definitions.

1 ___ speed up	a creating a temperature that is fairly high, between cool and hot
2 ___ side-effect	b to go, or make something go, faster
3 ___ warming	c the process of making beer
4 ___ organic	d an unexpected, and usually undesirable, effect when something is used
5 ___ brewing	e something produced from living things

- 4 Read the website again. Answer the questions.

- What is a catalyst?
- Why are catalysts important in industry?
- What is an enzyme?
- What are two examples of how human beings and animals use enzymes?
- How are enzymes different from inorganic catalysts?
- Name some domestic and industrial uses of enzymes.

What do you think?

- Packets of washing powder carry the warning that it is an irritant and should be washed off the skin at once. Why do you think washing powder can be a skin irritant?

- 5 Read the website information on p2 *Enzymes and biological washing powders*. Are these sentences true (✓) or false (✗)? Correct the false sentences.

- Washing powders and detergents always contain enzymes.
- Subtilisin is a protease found in biological washing powders.
- Lipase and cellulase remove fat-based stains.
- Enzymes only work at high temperatures.
- Enzymes help protect the environment.

PROJECT

The Haber or Haber-Bosch process uses a catalyst. Write a paragraph (100 words) describing this process. Use the Internet and chemistry books to help you. Include the following information:

- who invented the Haber process
- why it is used in industry
- which catalyst is used in the process
- why it is so important

<http://www.chem4kids.com/files/bio-enzymes.html>

Enzymes – nature's catalysts

A *catalyst* is any substance that speeds up the rate of a chemical reaction, without being used up or undergoing any change itself. Catalysts can be organic, synthetic or metallic. Catalysts are often used in industry as they speed up the production process, and therefore reduce costs so that products can be made more efficiently.

Biological catalysts are called *enzymes*. They are large protein molecules. They are essential in many industrial production processes. Human beings and other animals use enzymes too. The digestion of food and the release of energy for movement are two examples of the many natural processes that rely on enzymes. In the same way as inorganic catalysts, enzymes speed up chemical reactions without being used up themselves and they can be used repeatedly. Enzymes are different from inorganic catalysts in the following ways:

- 1 They have higher reaction rates.
- 2 They have greater reaction specificity (fewer side-effects).
- 3 They are easy to control – altering the concentrations of substances can vary the catalytic activity of an enzyme.

Enzymes work best in warm conditions and, if it is too cold, they quickly stop working.

Enzymes as catalysts are used in many different domestic situations including bread-making, brewing, yoghurt making, and also in biological detergents. Industrial uses include enzymes that break down proteins (proteases) such as those used in the production of some baby foods, and enzymes that break down starch into sugar (carbohydrases) such as those used in soft-centred chocolates.

<http://www.chem4kids.com/files/bio-enzymes.html>

Enzymes and biological washing powders

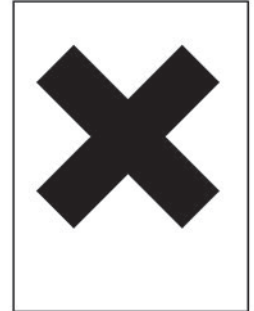


Biological washing powders contain enzymes and non-biological detergents do not. Enzymes help break down the dirt and stains on clothes. Most biological washing powders contain a protease called subtilisin, which breaks down proteins and removes protein stains, such as blood and egg. Different forms of subtilisin are added to washing powders, depending on the temperature of the wash they are to be used at. Modern biological washing powders also contain an amylase which digests starch-based stains and a lipase to digest fat-based stains. The most recent powders also contain cellulase, which is an enzyme that breaks down cellulose to 'condition' the fabric. This is very useful as it removes the stray ends of fibres produced by wear on the fabric.

Enzymes can remove stains at low temperatures, which means you use less energy and save money!

1 Science laboratories have a lot of safety signs. Work with a partner and match the signs with their meanings.

flammable toxic harmful or irritant emergency eye wash station fire extinguisher



1 _____ 2 _____ 3 _____ 4 _____ 5 _____

2 What science experiments have you done in school? If you used hazardous substances, what precautions did you take?

3 Read the school web page on p2 about safety in the science lab. Write the headings in the correct place.

WHAT TO WEAR

FOOD AND DRINK

IN CASE OF EMERGENCY

HEATING CHEMICALS SAFELY

PREVENTING ACCIDENTS

PRECAUTIONS FOR ELECTRICAL SAFETY

5 Read the web page again and answer the questions.

- 1 What two things must you do at the end of each experiment?
- 2 What should you wear in the science laboratory during experiments? What could be hazardous?
- 3 What should you do if you get chemicals in your eyes?
- 4 Are you allowed to bring food or drink into a science laboratory?
- 5 What safety procedure should you follow before using electrical equipment?

4 Match the underlined words from the web page with the definitions.

- 1 harm done to a person in an accident _____
- 2 any container or object made of glass _____
- 3 (in the) immediate area _____
- 4 liquids that have accidentally come out of a container _____
- 5 a tool that looks like a pair of scissors used for picking things up _____
- 6 to catch your foot on something and nearly fall _____
- 7 a laboratory instrument used to produce a hot gas flame _____
- 8 old or damaged _____
- 9 to throw away _____
- 10 special glasses worn to protect the eyes _____

What do you think?

- What have you studied in science at school this year?
- Do you think science is a useful subject? Why (not)?

PROJECT

Fire drills are an important part of being safe at school. Design a web page for your school on what to do in a fire. Use the headings below. Ask your teacher to help you with the information and use the Internet for ideas on safety.

- The location of fire alarms and fire extinguishers
- The location of fire escapes and emergency exits
- What to do in the event of a fire
- Where students go in the event of a fire



Be safety-aware in the lab!

**1**

Conduct yourself in a responsible manner at all times in the laboratory. Observe safety rules and follow instructions carefully. Most experiments will include instructions on how to protect yourself and others against injury. Dispose of chemicals and solutions properly, and never mix chemicals in sink drains. Always remember to wash your hands with soap and water properly, and to leave your work station tidy at the end of each experiment.

2

Dress suitably during a laboratory activity. Dangling jewellery, and loose or baggy clothing are a hazard and must be secured. Wear your chemical-resistant laboratory coat or apron at all times. Tie back long hair so it will not fall into chemicals solutions or catch fire. Never wear open-toe shoes with open sides or heels – shoes must completely cover the foot. Always wear goggles or safety glasses to protect your eyes when working with chemicals, heat, or glassware.

3

Report any accident (spill, breakage, etc.) or injury (cut, burn, etc.) to the teacher immediately, no matter how trivial it seems. Do not panic. If a chemical should splash in your eye(s) or on your skin, immediately flush with running water for at least 20 minutes at an emergency eye wash station. Never handle broken glass with your bare hands. Use a dustpan and brush to sweep away glass fragments and dispose of them in the designated container. Always clean up spills immediately.

4

Never bring food or drink into the laboratory. This includes bottles of water or chewing gum. Do not use laboratory containers for food or beverages.

5

Always follow the safety procedures when using a Bunsen burner. Know the locations and operating procedures of all safety equipment including first aid kit(s), fire extinguishers, and fire blankets. Before lighting the Bunsen burner, remove any flammable or combustible materials from the vicinity. Always use tongs or gloves to pick up hot objects and heat objects in heat-resistant glass. Use a test tube holder if you are heating a test tube in an open flame and point the open end away from yourself and others. Gently move the test tube back and forth over the flame so that it is heated evenly. Never reach across an open flame or walk around the room with a flame. Never leave lit Bunsen burners unattended.

6

Make sure electrical cords are placed properly where no one will trip over them. Check all electrical equipment for worn cords or loose plugs before using them. Keep your work area dry. Do not use electrical appliances with wet hands.

Nuclear power

1 Work in small groups to answer the questions.

1 Which of these countries uses nuclear power as an energy source?

China India Romania France Italy USA

2 Which country do you think has the most nuclear power stations?

3 Which country has the highest percentage of its total energy supplied by nuclear power?

2 Read the introduction to the text *Nuclear power* on p2 and check your answers to exercise 1.

3 What do these numbers from the introduction refer to?

15%	430	100	19%	76%
-----	-----	-----	-----	-----

4 Read the rest of the text. Work with a partner to decide whether these statements are true (✓) or false (✗). Correct the false statements.

1 World demand for energy is rapidly increasing.

2 The price of fossil fuels has remained stable over the past few years.

3 Nuclear power produces more greenhouse gases than burning fossil fuels for energy.

4 Building more nuclear power stations will be extremely expensive.

5 The expansion of nuclear power stations might contribute to the spread of nuclear weapons.

5 Match the words from the article in A with their meanings in B.

A	B
1 ___ expansion	a other
2 ___ increases	b reliance
3 ___ alternative	c multiplication
4 ___ emits	d rises
5 ___ dependence	e gives off
6 ___ proliferation	f growth

6 Read *Fission versus fusion* on p2. Answer these questions.

1 Are conventional nuclear power stations based on nuclear fission or fusion?

2 Which process is natural and cannot be artificially or scientifically reproduced?

3 Which process is artificially reproduced in nuclear reactors?

4 Which process is cleaner?



What do you think?

- Does your country use nuclear power as an energy source? Why (not)?
- Do you think nuclear power is a good or bad idea? Why?
- What alternatives are there to nuclear power?

PROJECT

Many political parties in Europe and international organizations like Greenpeace are very strongly against the proliferation of nuclear power, either fission or fusion reactors. Use the Internet and the text to find out what their objections are. Prepare a PowerPoint presentation about one of these organizations to show to the class. / Write an article (150–200 words) about their objections.

NUCLEAR POWER



Nuclear power stations provide about 15% of the world's electricity. Some countries depend more on nuclear power for electricity than others. There are more than 430 nuclear power stations around the world, in countries such as China, India, France, the USA, and Romania. Although the USA has the highest number of nuclear power stations, with over 100, only about 19% of the country's electricity is supplied by nuclear power. In contrast, France has fewer nuclear power stations than the USA, but more than 76% of its electricity supply comes from nuclear energy. This makes it the country with the highest percentage of its energy needs met by nuclear power.

The rapid expansion in world population means an ever-increasing demand for energy. Rises in the price of fossil fuels, especially oil and gas, have meant that many countries are now exploring alternative sources of energy, including nuclear power. One of the main advantages of the process of nuclear power production is that it emits no greenhouse gases. This is important given today's concerns about the greenhouse effect and climate change.

Not everyone is in favour of increasing our dependence on nuclear power. Environmental activist organizations like Greenpeace are vigorously campaigning against it. They think that building enough nuclear power stations to make a real difference in reducing greenhouse gas emissions creates too many risks to the environment and to humanity itself. First and foremost, is the question of safety: they argue that building more nuclear power stations will increase the risk of more accidents like the one in 1986 at Chernobyl in Ukraine. A typical nuclear power station will create around 30 tons of high-level radioactive waste, together with many cubic metres of intermediate and low-level waste every year. All of this has to be stored, or disposed of carefully. Some people argue that high-level waste could contribute to the proliferation of nuclear weapons.

Nuclear power is extremely expensive to develop and maintain. Governments will have to decide if the benefits of nuclear power are worth the financial cost and the risk to the environment.

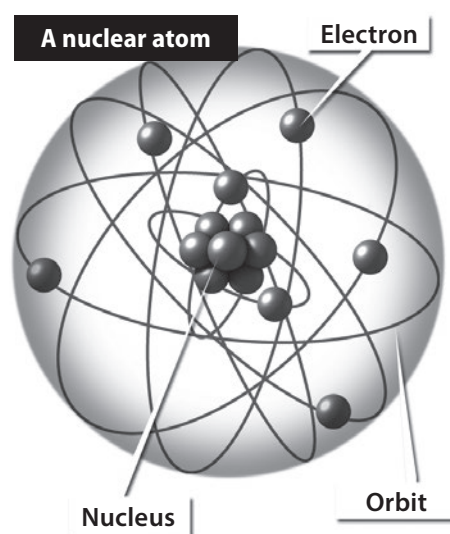
Fission versus fusion

Nuclear fusion and nuclear fission both produce a large amount of energy from atomic nuclei, but in very different ways.

Nuclear fusion is the joining or fusing of atomic nuclei to form a single larger nucleus. In contrast, nuclear fission is the splitting of a single atomic nucleus into smaller pieces.

Nuclear fission is the process nuclear reactors use to make energy from fissile materials such as uranium-235. Unfortunately, when a reactor is used, the process creates harmful radioactive waste which is difficult to dispose of.

In contrast, nuclear fusion is also a natural process, but produces more energy than nuclear fission. It is evident in nature, in the centre of stars such as the sun. Scientists do not know how to replicate it in a safe, controlled manner. It does not create the harmful levels of waste associated with nuclear fission.



DNA and genetic engineering

1 Do you look like your parents? Which characteristics do you think you inherited from them?

2 You are going to read a text about DNA.

Look at the title and the picture. Why do you think the writer describes DNA *as a very large molecule*?

DNA – a very ‘large’ molecule

From the beginning of time, humanity has wondered how certain characteristics could be passed on from one generation to another. Deoxyribonucleic acid (DNA), the material which programmes many of our physical and psychological traits, was first identified in 1869 by the Swiss scientist Friedrich Meischer. But it was not until 1953 that the molecular structure and distinctive double helix shape of DNA was established. Discovered by Francis Crick and James Watson, this was the real breakthrough that has made possible the advances in molecular biology that continue to this day.

DNA is the best known of a series of acids called nucleic acids. These acids are made up from smaller nucleotide molecules. A nucleotide has three parts:

- a sugar molecule
- a phosphate group
- a base containing nitrogen

There are four types of base: adenine, guanine, thymine, and cytosine. These are sometimes abbreviated to **A**, **G**, **T**, and **C**. It is the bases that store hereditary information. A series of nucleotides is called a polynucleotide chain. DNA consists of two of these polynucleotide chains.

The interconnections between these two chains, which keep them together, are hydrogen bonds. The two interconnected chains form themselves into the shape of a double helix.

Chromosomes are the biological carriers of hereditary information. DNA is stored in chromosomes in the nucleus of cells. Inside human cells there are 46 pairs of chromosomes, 23 pairs supplied by each parent.

Crick and Watson’s discovery marked the advent of molecular biology and genetic engineering, and the modern day uses of DNA in industry, medicine, crime solving and agriculture.

A strand of DNA

3 Read the text on DNA again. Answer these questions.

- 1 What did Crick and Watson establish in 1953?
- 2 What does DNA stand for?
- 3 What does DNA look like?
- 4 What function do A, G, T, and C perform?
- 5 What do chromosomes do?
- 6 Where is Crick and Watson’s discovery used today?

4 Find the words in **A** in the text and underline them. Match them with their correct meaning in **B**.

A	B
1 ___ humanity	a the smallest part of a chemical compound
2 ___ traits	b the tiny structures in the cell nucleus that carry biological information
3 ___ molecule	c the human race considered as a whole
4 ___ chromosome	d something passed genetically to a child before it is born
5 ___ hereditary	e a quality that forms part of your character

5 Read and complete the text *Genetically modified crops* with the words from the box.

chemicals nutritional plants molecule nature process grow

GENETICALLY MODIFIED CROPS

Genetic engineering is the ¹_____ in which genes are modified artificially by being taken from one organism and inserted into the cells of another. Today, the agricultural industry in some countries uses genetic engineering to genetically modify crops (GM crops) and animals. These are animals and ²_____ that have had their genetic make-up changed by scientists adding another gene from a different living creature. This creates modified organisms (animals and plants) that might never evolve in ³_____.

GM crops are made for many different purposes, the main one being to develop crop or animal varieties able to survive without the use of harmful ⁴_____ like pesticides.

Supermarkets can sell food more cheaply, as tomatoes and other fruits and vegetables can be genetically engineered to stay fresh longer. Plants can be developed which can ⁵_____ in poor weather and soil conditions. This could help people grow food in developing countries where it is very hot or very cold, and who otherwise would die of starvation.

Some people think that GM crops damage human health by causing allergies, and that it is unethical for scientists to experiment with the taste, quality, and appearance of food. There is also concern for the ⁶_____ quality of genetically modified organisms. One thing is certain, whether you agree with them or not, the discovery of a tiny ⁷_____ called DNA made it all possible!

6 Read the text again and answer the questions.

- 1 What is genetic engineering?
- 2 What are genetically modified crops?
- 3 List some advantages and disadvantages of genetically modified crops.

What do you think?

- Are GM crops available in your country?
- Do you buy/eat them? Why (not)?

PROJECT

James Watson directed the Human Genome Project. Prepare a PowerPoint presentation about the Human Genome Project (six slides). Include the following information:

- which countries were involved
- its goals
- what the project was about
- its outcomes

- 1 Work with a partner. Which countries are these artists from? Who painted which masterpiece?

Constable	Goya	Munch	Degas
-----------	------	-------	-------

- 1 *La classe de danse (The Dance Class)* _____
- 2 *Der Schrei der Natur (The Scream)* _____
- 3 *The Hay Wain* _____
- 4 *Los Fusilamentos del 3 de Mayo 1808 (The Shootings of the Third of May 1808)* _____

Have you seen any of these paintings? If so, which ones and where?

- 2 How much do you know about the artist John Constable? Do you think these statements are true (✓) or false (X).

- 1 ____ John Constable is a famous artist from the nineteenth century.
- 2 ____ He is famous for his still life paintings.
- 3 ____ He was rich and successful during his lifetime.
- 4 ____ He had six children who he brought up himself.
- 5 ____ In his lifetime his works of art sold well, especially in England.

- 3 Read the biography of John Constable on p2. Check your answers to exercise 2.

- 4 Match the words from the text in A with their meanings in B.

A

- 1 ____ landscape
- 2 ____ exhibit
- 3 ____ approach
- 4 ____ sketch
- 5 ____ influence
- 6 ____ prestigious

B

- a to show work in public
- b countryside in a painting
- c the method used to paint, act, teach, etc.
- d having an effect on someone or something
- e important and esteemed
- f to make a simple, quick drawing, without much detail

- 5 Read the biography on p2 again and answer the questions.

- 1 What future did Constable's father want for him?
- 2 When did he sell his first important painting?
- 3 What were Constable's views on painting?
- 4 When was he finally made a member of the Royal Academy?
- 5 Which painters did Constable influence?

What do you think?

Constable painted scenes of the English countryside which were very true to life. Most other eighteenth century landscape artists chose to paint more romantic images of wild landscapes and ruins. Constable said that 'Fashion always had, and will have its day – but Truth (in all things) only will last and can have just claims on posterity.'

- What do you think he meant by this? Do you agree or disagree? Why?

- 6 Complete the description of *The Hay Wain* with the words in the box.

distance	exhibited	collector	awarded
returned	rural life	foreground	

PROJECT

Write a brief description (150–200 words) of another famous landscape painting. Find out more using the Internet, newspaper articles, or magazines. Include this information:

- the subject of the painting
- the style in which it was painted
- how it compares to Constable's landscapes

*'Painting is
but another word
for feeling'*

John Constable

John Constable



Born in 1776 in Suffolk, in the east of England, John Constable was a famous English landscape painter, whose name is now synonymous with the area of the English countryside surrounding his home, often called 'Constable Country'. His most famous paintings include *Dedham Vale*, painted in 1802 and *The Hay Wain*, painted in 1821.

His father was a rich, landowning merchant, who hoped that John would follow him into the family business. But from a very early age, John showed a great interest in painting and was determined to become a professional painter. He persuaded his father to let him study art at the Royal Academy School in London.

In 1816 Constable married Maria Bicknell, overcoming opposition from her family because of his profession, and they had seven children together. He sold his first masterpiece in 1819, *The White Horse*. He exhibited his first paintings the same year. Following his beloved wife's death in 1828, he never

remarried and struggled to look after his seven children alone.

Decades before the Impressionist movement, Constable painted ordinary, everyday life scenes which were unfashionable in that period. He rejected the classical, formal approach to landscape painting of the eighteenth century, because he felt that those who painted in this style were 'running after pictures and seeking truth at second hand.' He was fascinated by the effects of changing light. Unlike other artists of his day, he sketched and painted in the open air to capture these changes. Today these sketches are as highly rated as his finished paintings.

Although his paintings are now very valuable, during his lifetime he was never financially successful. He only became a member of the Royal Academy of Arts, London – one of the most prestigious art institutions of its time – when he was 52. Although he refused to travel abroad, he was a major influence on French Romantic painters such as Eugène Delacroix, and ultimately on the Impressionists. In fact, during his lifetime, he sold more paintings in France than he did in England. He died in 1837, and was buried alongside his wife in the family tomb in Hampstead, London.



The Hay Wain (1821) is one of Constable's best known scenes of ¹_____. In the ²_____ of the painting, a hay wain, or large wagon drawn by horses, is standing in the River Stour, near Flatford Mill in Suffolk. The mill cottage is on the left bank of the river. Across the meadow, in the ³_____ on the right, a group of haymakers is at work. In the background are the clouds and trees Constable was so famous for.

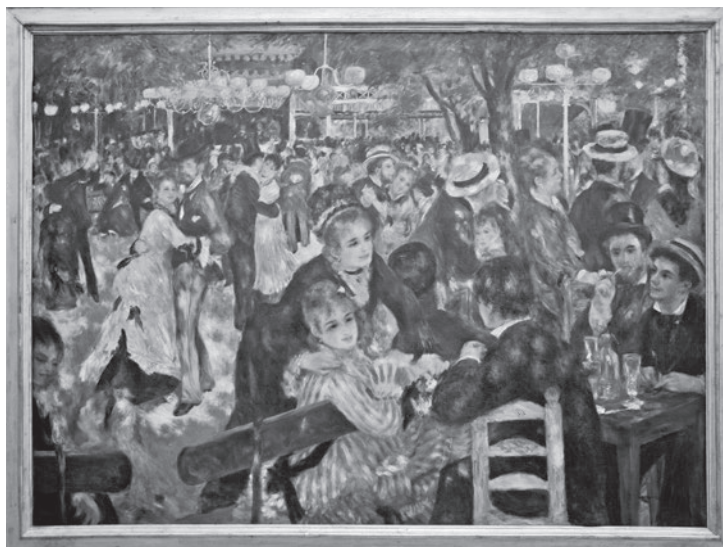
The painting was ⁴_____ at the Royal Academy in 1821, under the title 'Landscape – Noon', but no-one wanted to buy it. Constable sold the painting to a French art dealer, and in 1825 when it was exhibited in France, King Charles X of France ⁵_____ it a Gold Medal. In 1838, a private art ⁶_____ bought *The Hay Wain* and ⁷_____ it to England. It is now on permanent exhibition in the National Gallery in London.

Today, the cottage and river path in Flatford have hardly changed from Constable's time and the town is now on the tourism map of Britain. *The Hay Wain* is one of the most famous and iconic English paintings of all time.

- 1 How many different artistic movements can you name? Which artists are best known in these movements?
- 2 What do you know about the Impressionist movement? Work with a partner, do the quiz.

IMPRESSIONISM QUIZ

- 1 When did the Impressionist movement develop?
 - a In the 1900s and 1910s
 - b In the 1830s and 1840s
 - c In the 1860s and 1870s
- 2 Who was the leader of France at the start of the Impressionist movement?
 - a Napoleon III
 - b Charles X
 - c Charles de Gaulle
- 3 Where was traditional French art displayed?
 - a the Palace de Paris
 - b the Salon de Paris
 - c the Opéra de Paris
- 4 The Impressionist movement takes its name from a painting by which artist?
 - a Pissarro
 - b Manet
 - c Monet
- 5 Which Impressionist artist liked to paint water lilies?
 - a Monet
 - b Pissarro
 - c Renoir



Bal au Moulin de la Galette
by Auguste Renoir

- 3 Read the text on p2 about Impressionism. Check your answers to the quiz.
- 4 Read the text again. Answer the questions.
 - 1 What was exhibited at the Salon de Paris?
 - 2 What was the Salon des Refusés?
 - 3 When did the first Impressionist exhibition take place? Where?
 - 4 Which painting gave its name to the Impressionist movement?
 - 5 What are the main characteristics of the Impressionist style of painting?
- 5 Match the underlined words with their definitions.
 - 1 probably true _____
 - 2 powerful and important _____
 - 3 movements that you make when you are painting _____
 - 4 not accepted _____
 - 5 ways of behaving _____
 - 6 any of the colours red, yellow, or blue _____

What do you think?

Look at the painting *Bal au Moulin de la Galette* by Pierre-Auguste Renoir. It was sold in 1990 for \$78,000,000.

- Should great works of art be kept in private collections or in public galleries for everyone to see?
- Should great works of art be allowed to leave the country they were created in?
- If you could hang any painting in your bedroom, which would it be?

PROJECT

Write a description (150 words) of one of these art movements: *Realism* or *Divisionism*. Find out more using the Internet, newspaper articles, or magazines. Include information on:

- when and where the movement originated
- what the main characteristics are
- the artists and their works of art

IMPRESSIONISM

The Impressionist movement started in France in the late nineteenth century during the reign of Emperor Napoleon III. The name for the movement comes from *Impression, Sunrise* (1873), a work by Monet, who belonged to the first group of impressionist painters.

In Paris, at the time of Napoleon III's rule, the Académie des Beaux-Arts dominated the French art scene. It favoured traditional conventions for painting, both in subject, style, and technique. The annual Académie exhibition was very prestigious. Held at the Salon de Paris, only artists conforming to the approved style were allowed to exhibit their work. In 1863, a painting by Édouard Manet, *Déjeuner sur l'herbe*, was rejected, alongside many other paintings – but this time there was an outcry from a small group of artists.

In response to their objections, Napoleon III decided that the general public should be able to see their work – and the rejected paintings were exhibited at the Salon de Refusés (Salon of the Refused).

This exhibition highlighted new tendencies in art and attracted a lot of interest from the public. A group of the young artists whose works were exhibited, including Claude Monet, Pierre-Auguste Renoir, Alfred Sisley, Camille Pissarro, and Berthe Morisot, became friends. They started organizing their own exhibitions, holding the first in 1874, at the studio of the photographer Nadar.

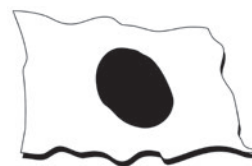
Impressionist paintings are easily identifiable through their use of colour. Fascinated by light and reflection, they usually painted and sketched out of doors to achieve the spontaneity of the moment. They wanted to capture an emotional response to what they saw, not a faithful representation. They used unmixed primary colours and small, visible brush strokes. Both content and composition of the paintings were less posed, and more natural.

Claude Monet is arguably the most famous of the Impressionists today, especially for his paintings of water lilies. Slowly, over the next two to three decades, the movement became an established part of the French art scene. It paved the way for Modernism, Fauvism, and other twentieth century art movements.



Impression, Sunrise by Claude Monet

- 1 Work with a partner. Write the name of the countries under the flags.
Which of these countries is not a member of the G8?



1 _____ 2 _____ 3 _____ 4 _____ 5 _____

- 2 With your partner, underline the correct option.

- 1 G8 stands for the *Group of Eight* / *Great Eight*.
- 2 The G8 countries make up approximately 65% / 85% of the Gross World Product.
- 3 The G8 meetings are called *conventions* / *summits*.
- 4 The G8 started in 1975 as the *G5* / *G6*.
- 5 The original members were France, Germany, Japan, the US, the UK, and *Italy* / *Spain*.
- 6 It became the G7 when *Canada* / *Russia* joined in 1976.
- 7 It became the G8 when *Canada* / *Russia* joined in 1997.

- 3 Read the article. Check your answers.



The Group of Eight, or G8 as it is more commonly known, is an international forum for the governments of Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States. Together, these countries make up approximately 65% of the Gross World Product.

The idea of a forum for the world's major industrialized countries came out of the 1973 oil crisis and global recession. In 1974, the United States created the Library Group, an informal gathering of senior officials from the Ministries of Finance of the US, the UK, Germany, Japan, Italy, and France. The next year, the French President, Valéry Giscard d'Estaing, organized a meeting for the heads of government from these six countries. The six leaders agreed to an annual meeting or summit, and formed the 'Group of Six' (G6). These summits would allow leaders to talk directly to each other about shared problems, without all the usual bureaucracy and media attention of a big meeting. In 1976, Canada joined and the group became the Group of Seven or G7.

At the 1994 Summit in Naples, Russian officials held meetings with the leaders of the G7 and Russia formally joined the group in 1997, resulting in the Group of Eight or G8. There is a ninth member of the G8, the European Union.

The aims of the G8 are to boost cooperation over trade and finance; to strengthen the global economy; to promote

peace and democracy; and to prevent and resolve conflict.

Other important countries with fast growing economies are invited to attend the G8 meetings. These countries are Brazil, China, India, Mexico, and South Africa, and they are known as the Outreach Five (O5) or the Plus Five. The O5 make up approximately 11% of the Gross World Product, which is relatively small compared to that of the G8. However, they make up approximately 42% of the world's population, compared to 13% in the G8 countries, so their involvement is essential when discussing global issues such as climate change.

Every year, the presidency and responsibility of hosting the G8 summit rotates though the member states. The holder of the presidency sets the agenda, and hosts the summit for that year. The summits are often a target for anti-globalization protests and now take place behind very high security. The G8 members can agree on plans and set objectives. Although these plans and objectives are not legally binding for any of the countries involved, governments can, and often do, comply with them.

4 Match the underlined words and phrases from the text on p1 with their meaning.

- 1 the monetary value of the total annual goods and services in the world _____
- 2 invites leaders to their country for an important meeting _____
- 3 action against corporations which are operating internationally _____
- 4 the period when businesses and industry throughout the world are not successful _____
- 5 the administration of rules made by the government _____
- 6 a meeting where people from different countries can discuss ideas _____
- 7 important people in government or organizations _____
- 8 to agree on a result you try to achieve _____

5 Read the text again and answer the questions.

- 1 What was the *Library Group*?
- 2 Who are the G8?
- 3 Who is the 'ninth' member of the G8?
- 4 What are the main aims of the G8?
- 5 Who are the Outreach Five?
- 6 Why is security a problem at the G8 summits?
- 7 How important is the G8?

6 Look at the profile of the UK, one of the G8 countries. Complete the paragraph about the UK with information from the chart.

What do you think?

Imagine you are hosting the G8 summit, which of these topics is the most important:

- Peace in the Middle East
- Aid for the developing world – debt relief / initiatives to counter disease
- Resolution of the situation in Syria
- Global warming
- Dealing with international terrorism

PROJECT

Choose another G8 country and write a paragraph (150–200 words). Find out more using the Internet, newspaper articles or magazines. Prepare a poster or PowerPoint presentation of your profile.

THE UNITED KINGDOM



Location	Western Europe
Population	65,518,000
Capital	London
Government	Constitutional monarchy
Currency	British pound (GBP)
GDP – real growth rate	2.25% (2015 est.)
GDP – per capita (PPP)	£27,500 (2015 est.)
Public debt	99% of GDP (2015 est.)
Agriculture – products	cereals, oilseed, potatoes, vegetables, cattle, sheep, poultry, fish
Industries	heavy industry, including shipbuilding, aircraft and car manufacturing, information technology, petrochemicals, food processing

The UK is a group of islands off Western Europe. It consists of England, Scotland, Wales, and Northern Ireland. It has a population of ¹_____, of whom over 50,000,000 live in England. The capital city is ²_____, and it is a parliamentary democracy with a ³_____ monarchy. Although the UK is in Europe, the currency is not the euro, it is the British ⁴_____.

In 2015, its GDP (Gross Domestic Product) was ⁵_____ in real terms, and in the same year the average income per capita was ⁶_____ per annum. The public debt was approximately 99% of the GDP.

Its agricultural products are: ⁷_____, oilseed, potatoes, vegetables; cattle, sheep, poultry; ⁸_____. Its industrial products are heavy ⁹_____, including shipbuilding, aircraft and car ¹⁰_____, information technology, petrochemicals and food processing.

Three ancient Greek mathematicians

- 1 Look at the quotations. Which ancient Greek – Plato, Pythagoras, or Archimedes – said which quote?

‘Give me where to stand and I will move the earth’

‘Number is the measure of all things’

‘Wonder is the feeling of a philosopher, and philosophy begins in wonder’

Check your answers in an encyclopaedia, or on the Internet.

- 2 Choose one of the ancient Greeks – Plato, Pythagoras, or Archimedes. Which subjects is he most famous for? Which subject does he have in common with the others?

- 3 Read the text about your chosen ancient Greek. Complete the chart with information about him.

	Biographical details	Mathematical ideas
Plato		
Archimedes		
Pythagoras		

- 4 Work in groups of three to exchange information about the three men. Complete the rest of the chart.

- 5 Look at these mathematical symbols and geometric shapes. Match the symbols to the words from the box.

a right angle	equals	square	the square root
plus	cube	squared	circle
infinity	Pi	triangle	
		minus	

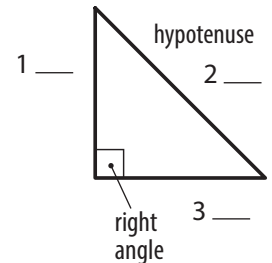
- | | | |
|------------------|------------|----------------|
| 1 $\sqrt{\quad}$ | 5 = | 9 \square |
| 2 x^2 | 6 ∞ | 10 \triangle |
| 3 + | 7 π | 11 \bigcirc |
| 4 – | 8 \perp | 12 \square |

- 6 Read *The Pythagoras theorem*. What is special about the triangle for his equation? Label the sides of the triangle **a**, **b**, and **c**.

The Pythagoras theorem

The Pythagoras theorem provides a simple relation among the three sides of a right angle triangle. It allows us to calculate the length of any one of the three sides of a right angle triangle, provided the lengths of the other two sides are known. It states that:

*In any right-angled triangle, the square (2) of the hypotenuse (**c**) is equal to the sum of the squares of the other two sides (**a** + **b**).*



The hypotenuse is the longest side of the triangle, which is always opposite the right angle.

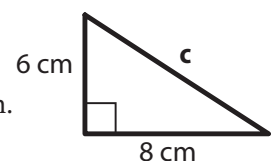
To find the actual value of the hypotenuse (**c**), you need to take the square root of c^2 . Alternatively you can calculate the value of **c** by calculating the square root of the sum of the squares of the other two sides.

- 7 Look at the three equations.

$$c^2 = a^2 + b^2 \quad c = \sqrt{a^2 + b^2} \quad c^2 = a^2 \times b^2$$

- Which one does not represent the Pythagoras theorem?
- Which explanation goes with which formula?
c squared equals **a** squared plus **b** squared
c equals the square root of **a** squared plus **b** squared
- Do you know any other variations of this equation? Can you explain them in English?

- 8 Find the length of the missing side **c** using the Pythagoras theorem.



What do you think?

The Pythagoras theorem can be used to solve practical problems. Work in small groups to solve these problems.

- A ladder with a length of 5 m is placed with the foot 2.2 m from the base of a wall. How high up the wall does the ladder reach?
- Write two similar triangle problems using the Pythagoras theorem and see if your partner can solve them. Note the solutions.

PROJECT

Find out more about one of the three mathematicians, Pythagoras, Plato or Archimedes. Use the Internet and encyclopaedias to get information about their life and achievements. Prepare a PowerPoint presentation about your mathematician.

PLATO

Although Plato's theories seem to be expressed in a bizarre way to modern readers, his basic philosophical assumption, i.e. that everything in the universe can be explained through mathematics, forms the basis of modern science.

He was born in Athens around 429BC. Along with Socrates, his teacher, and Aristotle, his pupil, Plato laid the foundations of Western philosophical thought. He founded the Academy in Athens – a school of higher learning where problems were studied and solved through dialogue. He believed that 'science is nothing without perception.'

Plato's theories about the Earth and the cosmos followed the ancient belief that the Earth was made up of four elements. In *Timaeus*, he states that everything in the universe is based on the five geometric solids already known to Greek mathematicians: the tetrahedron, the cube, the octahedron, and the icosahedron. According to Plato, these solids represented earth, fire, air, and water, and the dodecahedron represented the shape of the universe. Although Plato's theories are not correct, the philosophical assumptions behind them are the same as those underlying modern-day cosmology.



ARCHIMEDES

An inventor of legendary weapons, and an engineer credited with the development of the lever, Archimedes is generally thought of as the greatest of the Ancient Greek mathematicians. Stories of his weapons, like his Heat Ray and his Claw, sound like science fiction, not ancient history!

We know relatively little of his life. He was born in Syracuse, in Sicily, around 287BC, then a Greek colony. He was reputed to have been murdered by a Roman soldier during the siege of Syracuse around 212BC, while he was contemplating a mathematical problem.

As an inventor and engineer, he developed methods of accurate mathematical calculations using the 'method of exhaustion.' This method used a geometric shape, the polygon, to calculate the area of any shape, and with it he accurately calculated π (Pi). He was also the first person to work out the square root of 3 very accurately, but he did not explain how. These mathematical calculations were essential to his inventions, and today he is called 'the father of integral calculus.' But it is perhaps for his discovery of the displacement of liquid, his 'eureka,' that he is best remembered.

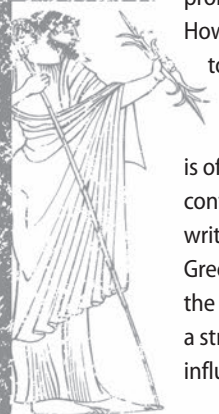


PYTHAGORAS

A philosopher and religious leader, Pythagoras, is probably most famous for his mathematical theorem. However, it is clear that this theorem was known to ancient civilizations, i.e. the Babylonians and the Egyptians, long before Pythagoras.

Born in Samos, Greece, around 570BC, Pythagoras is often called 'the father of numbers.' He was a controversial figure. Unfortunately, none of his writings have survived, but he was famous to other Greeks, like Plato, for his religious teachings and for the brotherhood he founded. The Pythagoreans lived a strictly controlled monastic life, but had a strong influence on the development of geometry.

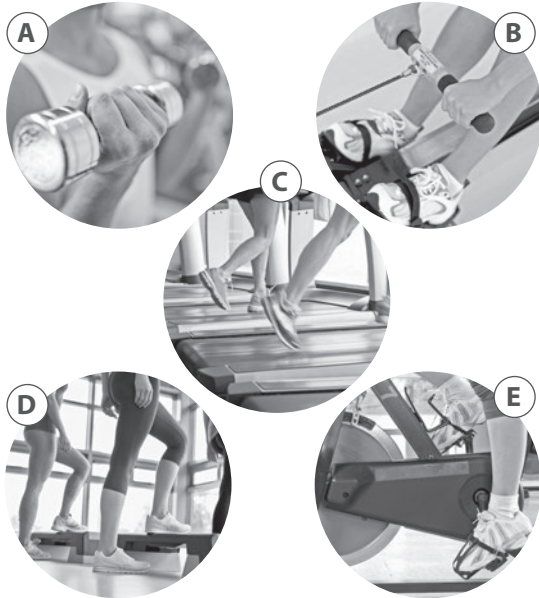
Pythagoras based a lot of his theories about numbers on the relationship between music and mathematical equations. We know little about his life and teaching, but it is known that he and his students believed that everything was related to numbers. He is quoted as saying: 'number is the ruler of forms and ideas and the cause of gods and demons.' His theorem can be used to calculate area and volume. It has been important in the development of modern mathematics, engineering, navigation and cartography. Most students today know of Pythagoras because they have studied his geometry theorems and proofs relating to triangles and squares in Maths classes at school or in university.



Sport and diet

1 Match the words to the gym equipment and activities:

treadmill	weight training
rowing machine	exercise bike
aerobics class	



2 Read *Keeping Fit*. Why is it good to keep fit?

Keeping Fit

It is interesting to discover that the word fit now has two meanings in English – the original meaning, *in good physical condition*, and the newer meaning young people use these days, *very good-looking*. 'Keeping fit' now has a new level of importance!

There are lots of reasons to do sport, or, at the very least, regular exercise. Physically, you will probably lose weight, or at least look better because of your beautifully toned muscles. Your heart will stay healthy for longer, and your strength and flexibility will improve. Mentally, you will find that your stress levels decrease, your concentration improves, and your confidence grows – and all because you feel more relaxed and look better. Socially, taking up a new sport gives you a great opportunity to make new friends.

It doesn't matter what sort of exercise you do, what equipment you use, or what you wear while you are doing it. Just get out there and do it!

3 Match the underlined words from the text with their meanings. Check your answers in the dictionary, if necessary.

- 1 attention or ability to focus on something _____
- 2 in good physical condition, or very good-looking _____
- 3 the things you need to do a particular sport or exercise _____
- 4 ability to move and bend easily _____
- 5 firm and muscular _____

4 Ask and answer the questions with a partner.

- Do you eat healthily?
- What sort of food do you eat every day?
- What food do you like best/least?

5 Read *A balanced diet* on p2 and correct the sentences.

- 1 The food we eat should contain six essential items.
- 2 There are three different types of carbohydrates.
- 3 Complex carbohydrates are sugars found in things like cake and chocolate.
- 4 Polyunsaturated fats are found in animal products.
- 5 It is healthier to eat red meat rather than white meat.
- 6 It is important to eat more protein than carbohydrates for a balanced diet.

6 Match a line in **A** with a line in **B**. Use a dictionary if necessary.

A	
1	___ Carbohydrates provide the body with glucose and glycogen,
2	___ Fats are found in a layer
3	___ Proteins help repair and replace damaged tissue
4	___ Minerals are
5	___ Fibre helps
6	___ Water makes up
7	___ Vitamins help
B	
a	the process of digestion.
b	two-thirds of our body content.
c	maintain resistance against disease.
d	beneath the skin and keep the body warm.
e	inorganic chemicals found in most fresh food.
f	the main sources of energy.
g	and build new tissue for growth.

A BALANCED DIET

In order to be fit and healthy, it is very important to eat a balanced diet. The food we eat should contain seven essential items: carbohydrates, fats, proteins, minerals, water, fibre, and vitamins.



There are two types of carbohydrates: simple carbohydrates, which can be natural or refined, and include the sugars found in things like jams, cakes, chocolate, and sugar itself; and complex carbohydrates, also natural or refined, which are the starches found in foodstuffs like vegetables, cereals, rice, pasta, and bread. Simple carbohydrates are absorbed directly into the bloodstream providing a rapid burst of energy for a short period of time – a ‘sugar high’. These carbohydrates quickly disappear and hunger returns. However, complex carbohydrates are more important as they take longer

to be absorbed and supply the body with a constant source of energy.

There are also different types of fats. There are polyunsaturated fats, which can reduce harmful cholesterol in the blood. These are found in fish oils and products made from vegetable seeds, such as sunflower and corn. There are also less healthy saturated fats, which contain cholesterol and are found in animal products such as meat, cheese, milk, and cream, and trans fats, found in chemically modified foods such as margarine. The cholesterol in these less healthy fats can block arteries and lead to high blood pressure and heart disease.

A good balanced diet is:

- 10%–15% protein – white meat such as chicken and fish is considered more healthy as it contains less saturated fat
- 25%–30% fat – polyunsaturated fats rather than animal fats
- 50%–60% carbohydrate – starch rather than simple sugar carbohydrates

This combination of foodstuffs gives our bodies the necessary amounts of vitamins, minerals, and fibre, which, together with regular exercise, helps our bodies to stay healthy.

A SPORTING DIET

A carefully controlled diet is essential for top sports people, especially in sports where weight is crucial to participation. Carbohydrates are the most important fuel for energy, so the best sporting diet is higher in complex carbohydrate (60–70%), and lower in protein and fat than average.

Carbohydrates are stored in the liver and muscles as glycogen. The more you exercise, the more carbohydrates you need. The actual amount an athlete needs depends upon the type of sport they do, the intensity, duration, and frequency of the sport, plus their fitness level. The bigger the glycogen stores in an athlete’s muscles, the longer they can perform. This is very important for endurance sports such as marathon running, long-distance cycling, or cross-country running. It is also important to drink a lot of water while doing sport to make sure the body does not get dehydrated.

7 Discuss with a partner. What sort of diet should athletes have?

Read *A sporting diet* and check your ideas.

8 Read the text again and answer the questions.

- 1 How does an average diet differ from a sporting diet?
- 2 Where are carbohydrates stored?
- 3 What does the number of carbohydrates you need to eat depend on?
- 4 Which type of sport in particular needs a lot of glycogen?

What do you think?

Some doctors warn that young people today are becoming less active and increasingly unfit.

- What could the reasons be? What could the consequences be?
- Write down the exercise you do in a typical week. Do you think you do enough exercise? Why (not)?

PROJECT

Work in groups. Choose a weekend day.

- Chart the foods you ate and the exercise you did.
- Interview other groups to compile information and get an overview of how healthy your class is.
- Make a poster to display your findings.

Two British philosophers

1 Match these philosophers (1–3) to their famous works (a–c).

What other philosophers do you know? What were their ideas?

1 ____ Thomas Hobbes	a <i>The Wealth of Nations</i>
2 ____ Adam Smith	b <i>A Treatise of Human Nature</i>
3 ____ David Hume	c <i>Leviathan</i>

2 Work with a partner. You are each going to read a biography on p2 of a British Philosopher.

Student A read about **Thomas Hobbes**.

Student B read about **David Hume**.

Complete the table with details about your philosopher.

	Biographical details	Ideas and works
Thomas Hobbes		
David Hume		

3 Work with a partner who has read about the other philosopher and complete the table.

4 These dates are from the text. What do they refer to?

1642 1651 1734 1779

5 Match the words and phrases from the texts to their definitions. Check your answers in the dictionary, if necessary.

1 ____ hypotheses	a a general feeling of doubt about something; a feeling that you are not likely to believe something.
2 ____ absolute authority	b total control over everything with the power and right to give orders and make others obey
3 ____ controversies	c explanations used as the basis for further investigation
4 ____ rational	d topics which people have strong feelings about
5 ____ scepticism	e the use of experiments or experience as the basis for your ideas; the belief in these methods
6 ____ empiricism	f shows clear and sensible thinking

What do you think?

In his book *Leviathan*, Hobbes stated that people were naturally guided by self-interest and would fight each other in order to better their positions. As a result, he believed in a very authoritarian version of the social contract, with a government which had absolute power over everything in people's lives.

- Do you think Hobbes is right? Why (not)?
- Do you think governments have too much or not enough control?
- Give examples to explain your answers.

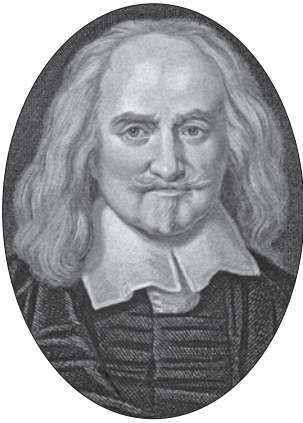
PROJECT

Write a short biography (150 words) of Adam Smith, another British philosopher and pioneering political economist. Find out about his life and works using the Internet, and history or philosophy books. Include information on:

- where and when he was born
- his education
- his main philosophical thoughts
- famous works
- when he died

*'... all that is real is material,
and what is not material is not real ...'*

Thomas Hobbes



Thomas Hobbes was an English philosopher born in 1588. His ideas marked the end of medieval thinking and the beginning of modern philosophical and political theory. One of his main hypotheses was that human beings can live together in peace, avoiding the danger and fear of civil conflict, but only if there is an effective government with absolute authority.

Hobbes studied at Oxford University. After finishing his degree in 1608, Hobbes became tutor to several wealthy families, which meant that he moved in influential political circles.

Hobbes lived in a time of great change in England. He was undoubtedly influenced by the turmoil of the English Civil Wars of 1642–46 and 1648–51 between the Royalists, the people loyal to King Charles I, and the Parliamentarians, who were supporters of Parliament and Oliver Cromwell. Witnessing the upheavals in English society encouraged his political belief in absolutism and the necessity of political stability.

He had to live in Paris, in self-imposed exile, at this time because of his Royalist sympathies.

Hobbes's most famous work *Leviathan*, written in 1651, outlined his theory of civil government in relation to the political crisis. He took a pessimistic view of human nature: that it is natural for us to act in our own self-interest. As a result, he believed that the state must have total control over the lives of its citizens. This was the only way to protect and secure their liberty. This 'social contract theory' suggests that both the state and the citizen have moral obligations to each other. *Leviathan* helped establish the foundation for most Western political philosophy.

Hobbes returned to England in the same year as *Leviathan* was published. He was caught up in political and religious controversies for the rest of his life. Many saw his ideas as dangerous and atheist. His commonwealth seemed to be organized without the need for God. At times, King Charles II had to protect him from his political enemies. He died in 1679.

'Truth springs from argument amongst friends'

David Hume



David Hume was born in Edinburgh, Scotland in 1711. A contemporary and friend of Adam Smith, he was perhaps the most important philosopher of the British Enlightenment. He influenced men like Immanuel Kant and Charles Darwin. A philosopher, historian, and economist, he was responsible for much of the modern development of scepticism and empiricism. He defined moral philosophy as 'the science of human nature'. According to Hume, we rarely have rational justification for the things we believe to be fact. Instead, much of what we claim as knowledge can actually be traced back to custom or habit. He believed knowledge comes to a person exclusively through experience.

Hume's father died when he was two and he was educated at home for a time, before going to study at Edinburgh University when he was still very young. After university, he went to Bristol for a short period to work in commerce,

and then travelled to France in 1734, where he read the works of great European philosophers such as René Descartes. While he was there, he wrote the first draft of one of his most famous works, *A Treatise of Human Nature* (1739–40) on the formation of belief. It took him four years to write, but it was not particularly successful when it was published. He wrote other important works on moral philosophy and on economics. The controversial and atheist *Dialogues Concerning Natural Religion* (1779) was published after his death. During his lifetime, Hume was better known as an historian, and his work *The History of Britain*, published in six volumes between 1754 and 1762, made him financially successful. Hume applied for positions at the universities of Edinburgh and Glasgow, but was refused on both occasions due to his reputation as an atheist. In fact, Hume never held an academic post. He died in Scotland in 1776.

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