12 SCIENCE AND TECHNOLOGY

Do not worry about your difficulties in Mathematics. I can assure you mine are still greater.'

ATTRIBUTED TO ALBERT EINSTEIN

WORDBANK · PAGE 165

AREAS OF SCIENCE AND SCIENTISTS

1 CD 2·35 **For each discipline, write the name of the person who specialises in it. Then listen, check and repeat the words.**

DISCIPLINE	PERSON
mathematics	
physics	
chemistry	
biology	
geology	
psychology	
archaeology	

SCIENTISTS AT WORK

2 **Match the sentence beginnings 1–7 with the endings a–g.**

1 Thomas Edison **invented**
2 The British chemist Sir Humphry Davy **discovered**
3 In the 20th century evidence from genetics **confirmed**
4 Louis Pasteur **rejected** the idea that
5 Jane Goodall worked in Africa and **studied**
6 American doctors Ernst Wynder and Evarts Graham were the first to **investigate**
7 Isaac Newton **observed** that

a bacteria were born from dirt.
b a prism breaks up white light into a spectrum of colours.
c Darwin's theory of evolution.
d the chemical elements magnesium and sodium.
e the light bulb and the phonograph.
f the **link** between smoking and cancer.
g the social life of chimpanzees.

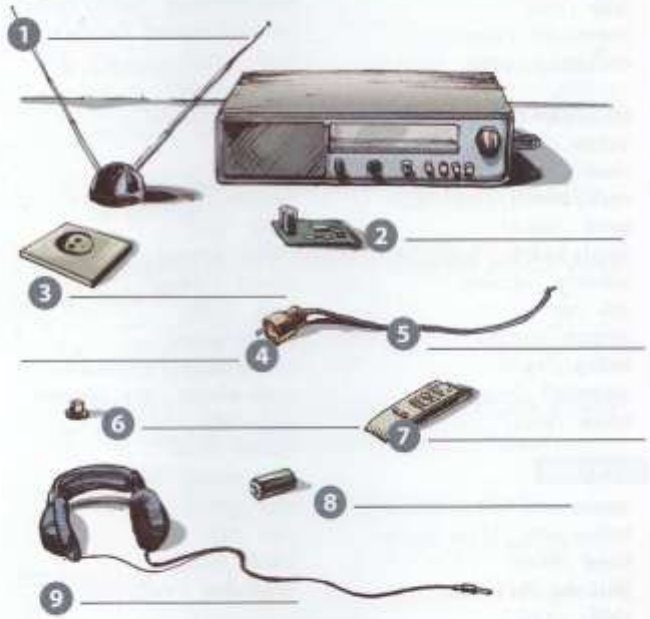
3 **Match the words form the box to the definitions.**

evidence findings hypothesis lab record research

1 _____ – something you think is true but have not proved
2 _____ – looking for information
3 _____ – what you discover as a result of research
4 _____ – facts or signs that prove something is true
5 _____ – information written down or stored in a computer so that you can check it later
6 _____ – the place where experiments are conducted

TECHNOLOGY

4 **Label the numbered elements in the picture.**



COMPUTING

5 **Complete the text with the words from the box.**

virus software restarting error downloading data crashed

My computer [1]_____ yesterday. I think I got a [2]_____ when I was [3]_____ music files from the Internet. First there was an [4]_____ message, and then it stopped responding. I tried [5]_____ it, but it didn't help. I lost a lot of important [6]_____. I've got to buy myself better anti-virus [7]_____.

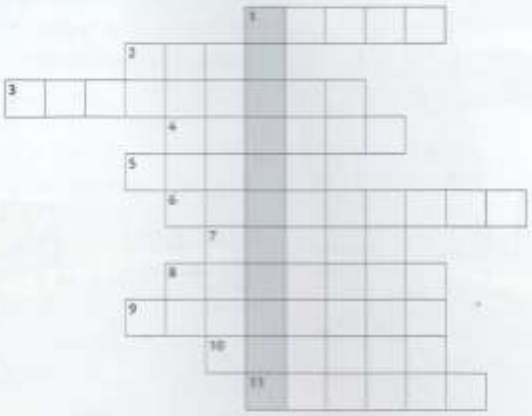
6 **What can you do with a file or document? Complete the table.**

	create	a document/ a file

7 Label the numbered elements in the picture.

SPACE EXPLORATION

8 Complete the crossword.



1 **Outer** ___ is the area outside the Earth's atmosphere.
2 A **space**___ is the same as a spacecraft.
3 A person who travels into space
4 A long, thin spacecraft.
5 A star with a tail
6 Something that goes around a planet. It can be natural or man-made.
7 If a spacecraft is in ___, it's going around the Earth or another planet.
8 Astronauts can go and live on a **space** ___ for many months.
9 The whole space and everything in it.
10 A very big one hit the earth millions of years ago and killed the dinosaurs.
11 To ___ a spacecraft is to send it into space.

USEFUL PHRASES

9 Complete the sentences with appropriate words.

1 Copernicus _____ to the conclusion that the Earth rotates around the Sun.
2 We know a lot about Charles Darwin's work, because he _____ records of all his research.
3 James Clerk Maxwell's most important _____ of research was electromagnetism.
4 Albert Einstein _____ the Nobel Prize in physics in 1921.
5 In 1922 British archaeologists _____ an important discovery in Egypt: they found the tomb of the pharaoh Tutankhamun.
6 Alexander Fleming found _____ that some types of mould kill bacteria.
7 Richard Feynman specialised _____ quantum electrodynamics.
8 Specialists are carrying _____ new research into ways of fighting malaria.

10 Complete the dialogues with appropriate words.

1 **A:** 'Hi! Did you have a good weekend?'
B: 'It was OK. I spent five hours surfing the _____ on Saturday.'

2 **A:** 'Excuse me. How do I switch _____ this machine?'
B: 'Just _____ this button.'
A: 'I have, but nothing's happened. Maybe it's out of _____.'
B: Let me see... gosh, yes it is. Again! It breaks _____ every two or three days!'

MULTIPLE CHOICE ◂◂24

1 **In pairs, list three things which you think scientists do as part of their work.**

examtask

2 **Read the text below. For questions 1–5 choose the correct answer A–D.**

1 **The Egyptians**
- A made incorrect observations of frogs.
- B could not think of a hypothesis.
- C did not test their hypothesis experimentally.
- D believed frogs were sacred.

2 **The heavier of the two balls dropped by Galileo**
- A looked just the same as the other one.
- B fell faster than the other one.
- C fell more slowly than the other one.
- D fell at the same speed.

3 **It is important to repeat an experiment**
- A to see if the results are the same.
- B to check if the results are statistically significant.
- C so that others can check it.
- D to record what you've done.

4 **It is important to record the procedure of an experiment**
- A so that others don't copy it.
- B to check if you get the same results.
- C so that others can repeat it.
- D so you can check your conclusions.

5 **The main point of the last paragraph is that**
- A there are many branches of science.
- B the scientific method is universally used.
- C mud doesn't produce frogs.
- D laboratories are essential to science.

3 **According to the text, in what order does a scientist do the following? Number the steps 1–4.**
- Analyse the findings
- Observe the world
- Carry out an experiment
- Formulate a hypothesis

4 **Use the highlighted words from the article to complete this text. Change the form when necessary.**

Germ theory

Antoni van Leeuwenhoek, Dutch scientist and microscope-maker, [1]_____ the existence of bacteria and was the first person who [2]_____ microorganisms under a microscope. The French [3]_____ and biologist Louis Pasteur carried out [4]_____ on fermentation. He believed that fermentation could happen only if a substance contained, or came into contact with, microorganisms, or *germs*. His findings [5]_____ his hypothesis, and so provided the [6]_____ which finally convinced European scientists that germ theory was true.

The Scientific Method

Every year in the spring, large numbers of frogs appear in the mud near the river Nile. They aren't there in dry weather, so in the past ancient Egyptians used to believe that the mud produced the frogs. The problem is they didn't test their belief scientifically.

The first step in the scientific method is to observe the world around you. For example, Newton noticed that an apple fell down, not up. The Egyptians did this part alright; they observed the frogs.

Step two is to ask yourself a question based on your observations. 'Why does the apple go down?' 'Where do the frogs come from?' And then think of a hypothesis: a possible answer. 'Objects are pulled to the ground by an invisible force.' 'Mud produces frogs'. The Egyptians did this too.

But it isn't enough just to think of an answer to a question and believe it's true. You have to discover some evidence that confirms your hypothesis. So, the next step in the scientific method is to test your ideas with experiments and more observations. Galileo believed that two objects with different masses would fall at the same rate. So, the story goes, he carried out an experiment. He dropped a heavy ball and a light ball from the Leaning Tower of Pisa, and confirmed his belief. The Egyptians never did any experiments on their mud-frog hypothesis, so they never found out it was false.

If you do an experiment only once, you may make a mistake. So repeat your experiment to make sure you get the same results, and analyse your findings statistically to check they're significant. Then make any necessary changes to your hypothesis and conduct more experiments. Carefully record everything you do so other scientists can duplicate your work and check your conclusions.

A hypothesis with lots of experimental evidence becomes a theory. A theory which has been confirmed many times is a scientific law. The great thing about hypotheses, theories and laws is that you can use them to make predictions. The law of gravity predicts that astronauts should float in space. And they do.

Chemists and physicists, geologists and biologists, researchers in every laboratory in every field of research use the scientific method. They don't accept untested observations. So they don't believe that mud produces frogs.

LISTENING 1

MULTIPLE CHOICE ◂◂ 14

1 **In a survey, people were asked about the best invention since 1800. Complete the results with what *you* think are the best inventions.**

Bicycle Computer Internet

In a national survey in the UK these were the British people's

TOP INVENTIONS SINCE 1800

1 _____ – 59%
2 Transistor – 8%
3 Electro-magnetic induction ring – 8%
4 _____ – 6%
5 Germ theory of infection – 5%
6 Radio – 5%
7 _____ – 4%

2 **Read the results of the survey above on page 172. Do any of the answers surprise you?**

examtask

3 **CD 2·36 You are going to hear five people talking about the most useful inventions. For questions 1–5 choose the correct answer A–C.**

1 What is the woman's favourite invention?

2 What is the man's favourite invention?

3 What is the girl's favourite invention?
- a a new medicine
- b an environmentally friendly product
- c a means of transport

4 The two inventions the scientist thinks are most useful are both connected with
- a research work
- b genetics
- c electricity

5 What is the man's favourite invention?
- a genetically modified food
- b the Internet
- c he isn't sure

4 **In pairs, ask and answer the following questions.**
- Which speaker or speakers do you most agree/disagree with? Why?
- What is your favourite invention? Why?
- What do you think is the worst invention? Why?

USE OF ENGLISH

MULTIPLE CHOICE ◂◂ 34

examworkout

1 **Complete the sentences in each pair with the correct words.**

1 **discovered / were discovered** ▸▸ 188
- a Wilhelm Röntgen ___ X-rays.
- b X-rays ___ in 1985.

2 **although / because** ▸▸ 208
- a I'd like to be a scientist ___ I'm interested in why things happen.
- b I'd like to be a scientist, ___ I could probably make more money in finance.

3 **from / to** ▸▸ 210
- a The device is similar ___ a big telescope.
- b The device is different ___ the one we had before.

examtask

2 **Read the text about the discovery of radioactivity. For gaps 1–9 choose the correct answer A–D.**

THE DISCOVERY OF RADIOACTIVITY

In 1896 the French physicist Antoine Henri Becquerel [1] _____ investigating uranium salts. He accidentally left a bit of uranium lying on some photographic plates – glass plates which were used in photography before film was [2] _____.

[3] _____ the plates were wrapped in thick black paper to protect them from light, after some time Becquerel found out that they had been exposed, just as if they had been lying in the sun. He asked himself how this [4] _____ happened. He repeated the experiment and finally [5] _____ to the conclusion that the uranium salt emitted unknown rays, similar [6] _____ X-rays, which could pass through thick black paper. In this way radioactivity [7] _____ discovered.

The story shows some important qualities of a scientist's mind: the desire to understand why something happens the way it does, and the imagination which made Becquerel [8] _____ of a new, original explanation. In 1903, Henri Becquerel won the Nobel [9] _____ in Physics for his discovery.

1	A was	B had	C been	D had been
2	A discovered	B invented	C observed	D found
3	A Because	B When	C Although	D However
4	A been	B was	C had	D has
5	A came	B went	C made	D did
6	A than	B like	C to	D with
7	A –	B was	C had	D been
8	A thought	B thinking	C to think	D think
9	A Award	B Prize	C Reward	D Price

TRUE/FALSE ◂◂23

1 Work in pairs. Can you answer any of the following questions?

- What is dry ice?
- How does lemon juice keep fruit fresh?
- Why does ocean water contain salt?
- How can a volcano erupt under water?
- Is the iron in cereals the same as in cars?
- What is the largest organ of the body?
- Why does your mouth become dry when you're nervous?

exam*workout*

2 Read the text below without using a dictionary. Try to work out the meaning of the highlighted words, using clues 1–3.

'DRY ICE' – WHAT IS IT?

Carbon dioxide (CO_2), the gas we exhale when we breathe, freezes at a very cold temperature – not at 0°C like water, but at 79.5°C below zero! When you heat it, it doesn't melt: it goes directly from a solid to a gas without becoming a liquid. And so it's called 'dry ice'.

1 What part of speech is the word *exhale*? What do we do with CO_2 as we breathe?
2 What part of speech is the word *melt*? Ordinary ice changes into a liquid when it is warmed. What is that change called?
3 What part of speech is the word *solid*? The text refers to the three states in which substances can occur: solid, liquid, gas. What are those?

3 Match the words 1–3 to their definitions A–C.

1	exhale	A	become liquid as a result of heating
2	melt	B	a substance that is not in a form of a liquid or a gas
3	solid	C	let out the air when you breathe

4 Read the extract from Exercise 2 again. Decide if the statements below are true (T) or false (F).

1 A common gas can take the form of 'dry ice' at very low temperatures.
2 Every kind of ice will melt if you warm it.

exam*task*

5 Read the text below. Decide if the statements 1–6 are true (T) or false (F).

1 Vitamin C stops fruit becoming oxidized.
2 Water remains in the ocean, but salt doesn't.
3 Water can stop an underwater volcano burning.
4 It is easy for our bodies to use the iron in breakfast cereals.
5 There are about three million skin cells on your body.
6 In danger, nervous reactions start in the body which can help you save yourself.

6 Match the highlighted words from the text to their definitions a–f.

a	become a part of something else	_____
b	the smallest living unit	_____
c	put out (the fire)	_____
d	change into a gas or steam	_____
e	combine with oxygen	_____
f	mix with a liquid and become a part of it	_____

EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT... SCIENCE

Send in your questions to lizzie@scienceandtheworld.com

How does lemon juice help fruit stay fresh?
If you cut up apples or bananas and leave them in the air, they become brown. Why? Because chemicals in the fruit react with oxygen and are *oxidised*. The Vitamin C in lemons, however, can make this reaction happen more slowly, preserving the taste and the colour of the fruit.

Why is there salt in the sea?
As rivers flow over rocks and earth, small quantities of minerals enter the water and make it taste a little bit salty. This salty water then runs into the sea. There are two ways for water to escape from the sea: it can evaporate into the air or it can freeze into ice around the poles. However, the salt which is dissolved in the water can't escape, and so the seas just get saltier.

Can volcanos erupt under water?
Yes. Normally, fire needs oxygen in order to burn. If you tried to put a fire under water, it would receive no oxygen and could not burn. But underwater volcanoes don't need oxygen to burn because they're already so incredibly hot. The water can't extinguish the eruption because the heat immediately transforms it to steam.

Is the iron found in cereals and machines the same?
It is the same chemical and it comes from the same mineral. However, the iron which is added to cereals in the food-making process is in a form which our bodies can assimilate easily.

7 **Use the words from Exercise 6 in the following sentences. Change the form when necessary.**

1 Forest fires can be very difficult to _____.
2 Some living organisms are so small that they consist of just one _____.
3 On a hot day, rain water _____ very quickly.
4 Babies can only eat food which is easy for them to _____.
5 Sugar _____ in water.
6 When metal rusts, it becomes _____.

8 **Read the following statements about science and technology. Tick (✓) the ones you agree with. Compare your answers in pairs. Give reasons.**

Everyone should learn something about science.

Science does not explain the most important things.

Thanks to science, we no longer believe a lot of nonsense.

People don't know how to use their own inventions well.

Science and technology have made people's lives better.

Science and technology have made people's lives worse.

An eruption of an underwater volcano is seen in the Pacific Ocean near the uninhabited Minami Iwojima Island, about 1,400km (870 miles) south of Tokyo July 3, 2005.

And the largest organ of the human body is...?
It's not the heart and it's not the stomach. Believe it or not, it's the skin! On every square centimetre of a human body there are approximately three million skin cells. All together the weight of your skin probably comes to about three kilos.

Why does your mouth become dry when you're nervous?
When you're nervous, your body automatically prepares to fight or to run away. This is an automatic reaction to danger. The nerves in your body are activated only if they help you fight or escape. Because eating is not considered to be important at this time (you don't feel like eating if a lion is trying to eat you), nerve signals are sent to your mouth telling it to stop producing saliva and so your mouth becomes dry.

LISTENING 2

MULTIPLE CHOICE ◂◂ 14

1 **Describe the photo. Why do you think the man looks unhappy?**

examtask

2 **CD 2-37 You are going to hear a conversation about problems with a computer. For questions 1–6 choose the correct answer A–C.**

1 **Tony calls Michelle**
A to tell her about his project.
B to talk about exams.
C to invite her to dinner.

2 **Tony has problems**
A printing his project.
B emailing his project to his professor.
C connecting to the Internet.

3 **Which of these methods of solving the problem does Tony NOT try?**
A Restarting the computer.
B Reinstalling the software.
C Talking to his computer.

4 **Tony calls Michelle again in order to**
A tell her he is ill.
B ask her for advice about his computer problems.
C cancel their date.

5 **Tony**
A has downloaded a suspicious program.
B has opened a strange email.
C has not made a backup copy of his project.

6 **We can guess that Michelle**
A is angry with Tony.
B offers to come and help Tony.
C decides to go out with someone else.

3 **In pairs, ask and answer the following questions.**

- Have you ever had a similar problem to Tony's? What happened? What did you do?
- How do you feel about computers? Do you think they are great/awful/problematic but necessary?
- What do you use computers for?
- What do you usually do when you have a computer problem?

SPEAKING

DISCUSSION ◂◂56

examworkout

1 Read the exam task below and do exercises a–c.

Discuss the ways in which people use electronic devices in the following areas of human life. Say what possible problems might be connected with them.
- education
- entertainment
- communication
- work

a Complete the table below with the ideas from the box. Then add three more ideas in each category.

online dictionaries game consoles
mobile phones Internet communicators
educational software data storage
Internet banking MP3 players

Education	Communication
_____	_____
_____	_____
Entertainment	**Work**
_____	_____
_____	_____

b Discuss the questions below with your partner and make notes which you could use while doing the exam task in Exercise 1.
- What electronic devices do people use in these areas of life? Why?
- What possible problems can be connected with using electronic devices?

c Do the exam task with your partner.

examtask

2 Work in pairs and do the exam task below.

Discuss the ways in which the Internet can be used in the following areas of human life. Say what possible problems might be connected with it.
- education
- entertainment
- communication
- work

3 Work in pairs and answer the follow-up questions below. One of you is a student and answers the questions, the other plays the role of the examiner.

Follow-up questions:
- What electronic devices do you find the most useful? Which of them do you use every day?
- Do you think people rely too much on technology nowadays?

WRITING

INFORMAL LETTER ◂◂49

examworkout

1 Read the exam task in Exercise 2 and do preparation exercises a–c.

a Complete the following sentences with the words from the box.

amazed/impressed interested interesting liked

1 The most _____ part was...
2 The thing I _____ best was...
3 I was especially _____ in...
4 I was really _____ by...

b Put these jumbled sentences in order.

1 you / here / wish / were
_____
2 you'd / love /sure / it / I'm
_____
3 not / a pity / it's / you're / me / here / with
_____
4 it's / you / the kind of thing / love / just
_____

c Circle the openings and endings that are appropriate in a postcard to a friend.

- Dear Sir or Madam,
- Yours sincerely,
- Hi!
- See you soon.
- Love,
- All the best,
- Hi Steve,
- Dear Jane,

examtask

2 Read the exam task below and write an email.

You are on a sightseeing trip in London. This is a part of an email you received from your English friend Peter.

... you visited the Science Museum in London, right? Did you like it? What exhibitions did you like best? I have always wanted to go there, there must be so many fascinating things to see and do! I think I could come to London at the weekend, would you like to go there with me one more time? Let me know because I need to book train tickets...

Write him an email answering all his questions.

SCIENCE

assimilate /ə'sɪməleɪt/
cell /sel/
chemical element /'kemɪkəl 'eləmənt/
chemical formula /'kemɪkəl 'fɔ:mjələ/
chemical reaction /'kemɪkəl rɪ'ækʃən/
concentrated /'kɒnsəntreɪtɪd/
contain /kən'teɪn/
development /dɪ'veləpmənt/
dissolve /dɪ'zɒlv/
earth /ɜ:θ/
evaporate /ɪ'væpəreɪt/
exhale /eks'heɪl/
extinguish /ɪk'stɪŋgwɪʃ/
freeze /fri:z/
gas /gæs/
germs /dʒɜ:mz/
gravity /'grævəti/
immune system /ɪ'mju:n 'sɪstɪm/
knowledge /'nɒlɪdʒ/
liquid /'lɪkwɪd/
mass /mæs/
mathematical formula /mæθə'mætɪkəl 'fɔ:mjələ/
melt /melt/
microbe /'maɪkrəʊb/
mineral /'mɪnərəl/
molecule /'mɒlɪkju:l/
multiply /'mʌltəplaɪ/
oxidise /'ɒksədaɪz/
oxygen /'ɒksɪdʒən/
rate /reɪt/
salt /'sɔ:lt/
salty /'sɔ:lti/
scientific /saɪən'tɪfɪk/
scientific law /saɪən'tɪfɪk lɔ:/
scientific method /saɪən'tɪfɪk 'meθəd/
scientific theory /saɪən'tɪfɪk 'θɪəri/
scientifically /saɪən'tɪfɪkli/
scientist /'saɪəntɪst/
solid /'sɒlɪd/
statistical data /stə'tɪstɪkəl 'deɪtə/
statistically /stə'tɪstɪkli/
statistics /stə'tɪstɪks/
steam /sti:m/
vaccine /'væksi:n/
vitamin /'vɪtəmən/

AREAS OF SCIENCE AND SCIENTISTS

archaeologist /ɑ:kɪ'ɒlədʒɪst/
archaeology /ɑ:kɪ'ɒlədʒi/
biologist /baɪ'ɒlədʒɪst/
biology /baɪ'ɒlədʒi/
chemist /'kemɪst/
chemistry /'keməstri/
computer science /kəm'pju:tə 'saɪəns/
economics /ekə'nɒmɪks/
economist /ɪ'kɒnəmɪst/
engineer /endʒə'nɪə/
engineering /endʒə'nɪərɪŋ/
geneticist /dʒə'netɪsɪst/
genetics /dʒə'netɪks/
geologist /dʒi'ɒlədʒɪst/
geology /dʒi'ɒlədʒi/
linguist /'lɪŋgwɪst/
linguistics /lɪŋ'gwɪstɪks/
math *(AmE)* /mæθ/
mathematician /mæθəmə'tɪʃən/
mathematics /mæθə'mætɪks/
maths /mæθs/
physicist /'fɪzɪsɪst/
physics /'fɪzɪks/
political science /pə'lɪtɪkəl 'saɪəns/
political scientist /pə'lɪtɪkəl 'saɪəntɪst/
psychologist /saɪ'kɒlədʒɪst/
psychology /saɪ'kɒlədʒi/
social science /'səʊʃəl 'saɪəns/
social scientist /'səʊʃəl 'saɪəntɪst/
sociologist /səʊsi'ɒlədʒɪst/
sociology /səʊsi'ɒlədʒi/

SCIENTISTS AT WORK

analyse /'ænəlaɪz/
analysis /ə'nælɪsɪs/
conclusion /kən'klu:ʒən/
confirm a hypothesis /kən'fɜ:m ə haɪ'pɒθəsɪs/
confirm a theory /kən'fɜ:m ə 'θɪəri/
connection /kə'nekʃən/
determine /dɪ'tɜ:mɪn/
discover /dɪs'kʌvə/
discovery /dɪs'kʌvəri/
duplicate /'dju:plɪkeɪt/
evidence /'evɪdəns/
experiment /ɪk'sperəmənt/
findings /'faɪndɪŋz/
hypothesis /haɪ'pɒθəsɪs/
hypothesise /haɪ'pɒθəsaɪz/
invent /ɪn'vent/
invention /ɪn'venʃən/
inventor /ɪn'ventə/
investigate /ɪn'vestɪgeɪt/
lab /læb/
laboratory /lə'bɒrətri/
link /lɪŋk/
make predictions /meɪk prɪ'dɪkʃəns/
observations /ɒbzə'veɪʃəns/
observe /əb'zɜ:v/
predict /prɪ'dɪkt/
records /'rekɔ:dz/
reject a hypothesis /rɪ'dʒekt ə haɪ'pɒθəsɪs/
reject a theory /rɪ'dʒekt ə 'θɪəri/
reject an idea /rɪ'dʒekt ən aɪ'dɪə/
research /rɪ'sɜ:tʃ/
researcher /rɪ'sɜ:tʃə/
results /rɪ'zʌlts/
study /'stʌdi/
survey /'sɜ:veɪ/
test /test/
theory /'θɪəri/

TECHNOLOGY

aerial /'eərɪəl/
battery /'bætəri/
button /'bʌtn/
cable /'keɪbəl/
device /dɪ'vaɪs/
digital /'dɪdʒɪtəl/
electricity /ɪˌlek'trɪsəti/
electro-magnetic induction ring /ɪlektrəʊ mæg'netɪk ɪn'dʌkʃən rɪŋ/
electronic /elɪk'trɒnɪk/
estimate /'estɪmeɪt/
gadget /'gædʒɪt/
genetically modified food /dʒə'netɪkli mɒdəfaɪd fu:d/
GM food /dʒi: əm fu:d/
headphones /'hedfəʊnz/
internal combustion engine /ɪn'tɜ:nl kəm'bʌstʃən 'endʒɪn/
lens /lenz/
machine /mə'ʃi:n/
manual /'mænjuəl/
mobile phone /'məʊbaɪl fəʊn/
motor /'məʊtə/
nuclear power /'nju:kliə 'paʊə/
plug /plʌg/
remote control /rɪ'məʊt kən'trəʊl/
socket /'sɒkɪt/
sound /saʊnd/
switch off /swɪtʃ əf/
switch on /swɪtʃ ən/
technology /tek'nɒlədʒi/
transform /træns'fɔ:m/
transistor /træn'zɪstə/
VCR /vi: si: ɑ:r/
video cassette recorder /'vɪdiəʊ kə'set rɪ'kɔ:də/

COMPUTING

backup copy /'bækʌp 'kɒpi/
CD /si: di:/
CD-ROM drive /si: di: rɒm draɪv/
click /klɪk/
computer program /kəm'pju:tə 'prəʊgræm/
computer programmer /kəm'pju:tə 'prəʊgræmə/
crash /kræʃ/
cursor /'kɜ:sə/
data /'deɪtə/
database /'deɪtəbeɪs/
delete /dɪ'li:t/
document /'dɒkjəmənt/
double click /'dʌbəl klɪk/
download a file /daʊn'ləʊd ə faɪl/
download a program /daʊn'ləʊd ə 'prəʊgræm/
download data /daʊn'ləʊd 'deɪtə/
DVD drive /di: vi: di: draɪv/
error /'erə/
external memory /ɪk'stɜ:nl 'meməri/
file /faɪl/
flat screen monitor /flæt skri:n 'mɒnɪtə/
floppy disk /'flɒpi dɪsk/
folder /'fəʊldə/
hard disk /hɑ:d dɪsk/
icon /'aɪkɒn/
information technology /ɪnfə'meɪʃən tek'nɒlədʒi/
IT /aɪ ti:/
keyboard /'ki:bɔ:d/
laser printer /'leɪzə 'prɪntə/
lose a document /lu:z ə 'dɒkjəmənt/
memory stick /'meməri stɪk/
mouse /maʊs/
online /ɒn'laɪn/
open a document /'əʊpən ə 'dɒkjəmənt/
open a file /'əʊpən ə faɪl/
open an email /'əʊpən ən 'i:meɪl/
PC /pi: si:/
pendrive /pendraɪv/
personal computer /'pɜ:sənəl kəm'pju:tə/
photocopier /'fəʊtəʊˌkɒpiə/
print /prɪnt/
process /'prəʊses/
reboot /ri:'bu:t/
restart /ri:'stɑ:t/
save /seɪv/
scanner /'skænə/
screen /skri:n/
software /'sɒftweə/
speakers /'spi:kəz/
the Internet /ðə 'ɪntənet/
USB port /ju: es bi: pɔ:t/
virus /'vaɪərəs/
website /'websaɪt/
wireless /'waɪələs/

SPACE EXPLORATION

astronaut /'æstrənɔ:t/
comet /'kɒmɪt/
in orbit /ɪn 'ɔ:bɪt/
launch a rocket /lɔ:ntʃ ə 'rɒkɪt/
launch a spacecraft /lɔ:ntʃ ə 'speɪskrɑ:ft/
meteor /'mi:tiə/
orbit /'ɔ:bɪt/
outer space /'aʊtə speɪs/
rocket /'rɒkɪt/
satellite /'sætəlaɪt/
space /speɪs/
space station /speɪs 'steɪʃən/
spacecraft /'speɪskrɑ:ft/
spaceship /'speɪsʃɪp/
universe /'ju:nəvɜ:s/

USEFUL PHRASES

area of research /'eərɪə əv rɪ'sɜ:tʃ/
area of science /'eərɪə əv 'saɪəns/
branch of science /brɑ:ntʃ əv 'saɪəns/
break down /breɪk daʊn/
carry out an experiment /'kæri aʊt ən ɪk'sperəmənt/
carry out research /'kæri aʊt rɪ'sɜ:tʃ/
come to the conclusion that... /kʌm tə ðə kən'klu:ʒən ðæt/
conduct an experiment /kən'dʌkt ən ɪk'sperəmənt/
conduct research /kən'dʌkt rɪ'sɜ:tʃ/
do an experiment /du: ən ɪk'sperəmənt/
do research /du: rɪ'sɜ:tʃ/
field of research /fi:ld əv rɪ'sɜ:tʃ/
field of science /fi:ld əv 'saɪəns/
find out /faɪnd aʊt/
keep a record of... /ki:p ə 'rekɔ:d əv/
make a discovery /meɪk ə dɪs'kʌvəri/
make a funny noise /meɪk ə 'fʌni nɔɪz/
out of order /aʊt əv 'ɔ:də/
patent an invention /'peɪtnt ən ɪn'venʃən/
press a button /pres ə 'bʌtn/
specialise in /speʃəlaɪz ɪn/
surf the Internet /sɜ:f ðə 'ɪntənet/
undertake research /ʌndə'teɪk rɪ'sɜ:tʃ/
win the Nobel Prize in... /wɪn ðə nəʊ'bel praɪz ɪn/