COMMUNICATION BANK

Lesson 2.1

5 B Student A: follow these steps.

1 Read the information about your invention.
2 Prepare to answer the questions in Exercise 5A about your invention. Make some notes.
3 Work with Student B. Ask and answer questions about your inventions. Do not tell Student B what your invention is. Can you guess his/hers?

Science > Inventions

Microwave

Inventor: Percy Spencer
Year: 1964

This object was designed by mistake. At the end of World War II, an engineer was looking for another use for a magnetron, a device which generated microwaves used in radar systems. One day he was standing next to the machine when he noticed the bar of chocolate in his pocket had melted. He started to experiment and soon discovered that the machine worked well on popcorn, too!

Lesson 3.3

9 A Student A: read your roles and think about what you are going to say.

Situation 1

You bought a phone that was described as 'unbreakable'. You dropped it and it broke. You want a refund.

Situation 2

You are a manager. Your employee posted negative comments about the company on social media. Ask him/her not to do it again because it makes the company look bad. This is a formal warning.

Situation 3

You live with three others in a flat. One flatmate often leaves a mess in the kitchen. You (and the two others) think he/she should clean the kitchen after using it.

Lesson 4.4

6 A Student A: read about your scientist and make notes in the table on page 53.

Antonie van Leeuwenhoek was born in Delft, Dutch republic on 24 October 1631. He is best known for his work on the development of the microscope. Leewenhoek did not come from a family of scientists – his father was a basket maker – and he had no fortune or higher education. However, while working as a cloth merchant in Amsterdam, he saw his first microscope. He bought one of these simple microscopes for his own use, and over the years he started to develop the glass lenses to improve the magnitude of the microscope. He used his new, more powerful microscope to observe small insects, like bees. He is often known as 'the Father of Microbiology', having made some of the most important early discoveries regarding single-celled animals and plants, bacteria and red blood cells.

Lesson 6.1

2 B Student A: read the second part of the article and answer the questions.

1 What benefits does doing good have?
2 What was the experiment involving money hidden inside books trying to achieve?
3 What did Chris Topping do with the money he found? Why?

The science behind being GOOD

According to scientific studies, selfless behaviour is good for your health, mood and longevity. So in what ways can being nice actually be good for you?

Firstly, there is the feeling of pleasure you get from doing good – the 'helpers' high' – caused by the production of certain chemicals in the brain. Secondly, it seems that people who help others suffer fewer health problems themselves.

So, how can we encourage more people to be kind? Can one good deed lead to another? In one experiment, people buying books in the UK were astonished to find £5 notes inside them, with a note saying: 'Hi, if you are finding this money, then the universe is smiling at you today. Enjoy a cuppa* on me or pass it along to give another smile to someone else! Have a great day!'

Chris Topping, from Liverpool, decided to do something meaningful with the money he found. 'We bought some sandwiches and drinks for a few homeless people on the way home,' he said. 'I see them in the same spot every day, so I thought I'd buy enough for everyone.'

*Enjoy a cuppa on me. = Let me buy you a cup of tea. (UK)

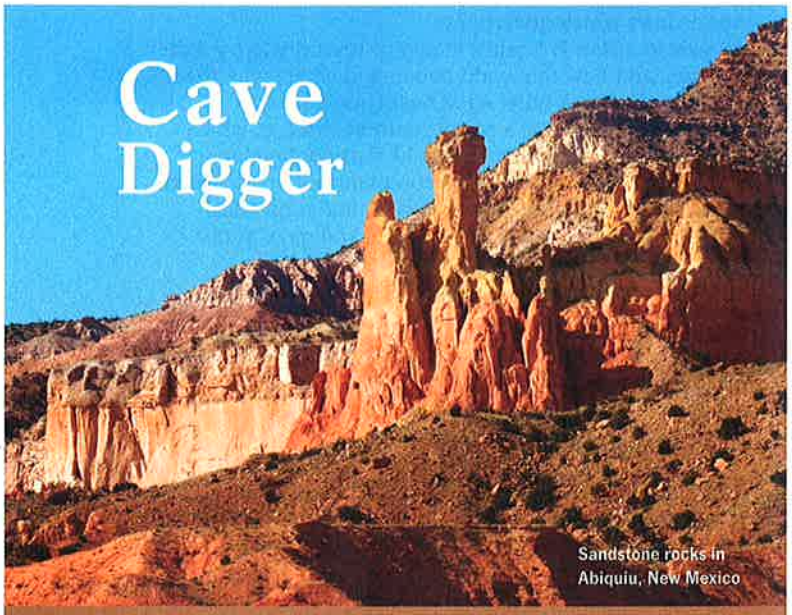
Lesson 8.5

5 B Read the answers to the quiz questions.

1 Library of Congress, Washington D.C., USA
2 from the word *googol*, which is a term for a huge number (1 plus a hundred zeros)
3 generally thought to be Canada; about half of Canadian adults have been to university

Lesson 2.2

3 A Student B: read the text and answer the questions in the table on page 24.



Cave Digger

Sandstone rocks in Abiquiu, New Mexico

Ra Paulette has been creating artistic caves out of sandstone since 1987. Based in New Mexico, USA, Paulette digs into the earth to make the caves. Then he sculpts rooms and walls, columns and roofs, with beautiful designs and shapes. The result is a series of incredible underground interiors.

So far, Paulette has completed more than a dozen of these caves. They look as if they have been built by a team of engineers, architects and artists, but they haven't. Paulette has constructed them alone, with just his dog for company, and using only hand-held tools. He does it for the love of the process. 'When you're doing something you love, you want to do it all the time,' he says. 'I see this as an environmental project. I'm trying to open up people's feelings.'

Paulette has no qualifications as either an architect or a builder. He dropped out of college, hitchhiked across America and did odd jobs for years: postal worker, security guard, farm worker. In the summer of 1985 he got a job digging wells. This gave him the idea that he wanted to work with his hands. When he built his first cave, local people saw his amazing talents and began commissioning him to make more.

In recent years, his work has gone on the market. The caves' owners are able to sell the caves for around a million dollars, but Paulette hasn't made much money. He charges just $12 an hour for his services as a sculptor/builder.

In 2014 Paulette suddenly became famous when a documentary about him, called Cave Digger, was nominated for an Academy Award. Fame hasn't changed him at all.
He has just continued digging, sculpting and making places of rare beauty.

Lesson 4.5

1 b)
2 d)
3 f)
4 c)
5 a)
6 e)

Lesson 5.3

9 Student A: read about a policy for teaching maths in Shanghai. Prepare to tell your group about the policy and try to persuade them to include it. Then read about the criticism of one of the other policies. Be prepared to ask the speaker about it.

Shanghai: A model for teaching maths

In Shanghai, schools use a system for maths called the 'mastery approach'. Students in the class are not taught according to their individual ability; rather, the highly-trained, specialist teachers move through the programme slowly until every student understands. The system has resulted in students that are better at maths than anywhere else in the world.

Criticism for the Poverty in Peru project

Rural poverty in Peru remains high, and more investment in health and education is needed. Corruption is also a problem, particularly as the country's economy slows.

Lesson 7.3

7 A Student A: read about your hacks. Plan what you will say to your group.

Exercise hacks – keeping fit

- New to exercise? Run for just one minute a day. Add an extra minute every day.
- Listen to music while exercising. Fast rhythms means faster exercise.
- Listen to an audio book (in English!) while exercising.
- Add frozen fruit to your water bottle. It keeps water cold/adds flavour.
- Planning an early morning workout? Sleep in your exercise clothes.

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Lesson 2.1

5 B Student B: follow these steps.

1 Read the information about your invention.
2 Prepare to answer the questions in Exercise 5A about your invention. Make some notes.
3 Work with Student A. Ask and answer questions about your inventions. Do not tell Student A what your invention is. Can you guess his/hers?

Science > Inventions

Chewing gum

Inventor: Thomas Adams
Year: 1870

Thomas Adams was experimenting with a substance called 'chicle', the sap from a South American tree. He was trying to use it as a substitute for rubber. However, his experiments kept failing and the inventor was feeling frustrated. Without thinking very much about it, he put a piece of the 'chicle' in his mouth and discovered he really enjoyed chewing it. This substance now comes in brightly-coloured packets you can buy in the supermarket. The bright colours help to make more sales.

Lesson 3.3

9 A Student B: read your roles. Think about what you are going to say.

Situation 1

You work at a phone shop. A customer bought an 'unbreakable' phone, but he/she broke it. The customer wants a refund. You are not allowed to give refunds. You can only replace the phone.

Situation 2

On private social media, you commented about bad things happening at work. Your comments were fair and accurate, but your manager is unhappy with you. You believe that what you say and do in private is not your company's business.

Situation 3

You live with three others in a flat. You are the only person who cleans the floors and the windows and tidies the living room. You do not clean the kitchen because you think they should do some housework.

Lesson 4.4

6 A Student B: read about your scientist and make notes in the table on page 53.

Stephen Hawking was born on 8 January 1942 in Oxford, England. He wanted to study Mathematics at university, but the college where he was accepted did not offer this course, so he studied Physics instead. He later went to Cambridge to study Cosmology. Hawking worked to understand the basic laws which govern the universe, using Einstein's theory of relativity to try and understand how the world began and what is the exact nature of a black hole. Aged twenty-one, he was diagnosed with ALS, a motor neurone disease, which meant that for much of his life he was confined to a wheelchair and had to use a computerised voice system. However, he continued his research into theoretical physics and also wrote many books and gave public lectures. He died on 14 March 2018.

Lesson 7.1

9 A Check your quiz results.

- If you chose mainly a), you are very creative. You probably like to make things in your free time.
- If you chose mainly b), you have an average level of creativity.
- If you chose mainly c), you aren't very creative, but you are probably very logical and sensible.

Lesson 7.3

7 A Student B: read about your hacks. Plan what you will say to your group.

Travel hacks for happier holidays

- Before leaving, scan your passport. Email the scan to yourself in case of theft or loss.
- Write *FRAGILE* on your luggage. Baggage handlers will treat it better.
- Freeze your water. You can't take bottled water through security. You can take ice.
- Use airport ATMs to get foreign currency and avoid changing money (bad rates and fees).
- Buy water/snacks in a supermarket. Hotel food is twice the price.

Lesson 8.3

8 Student A: read about your idioms. Then explain to Student B where these idioms came from.

1 ***Spill the beans:*** to vote, Greeks placed beans in a jar. A white bean was a yes. A brown bean was a no. The beans were counted in secret. If the container was knocked over, the beans were spilled and the secret was out.

2 ***Get side-tracked:*** if you get side-tracked, it means you get diverted from your objective. Early railroads only had one track. Sometimes trains would approach in the opposite direction, which caused a problem. So they built side tracks – short tracks next to the main track so that trains could park temporarily. Side tracks didn't go anywhere.

Lesson 2.2

3 A Student C: read the text and answer the questions in the table on page 24.

Lesson 5.3

9 Student B: read about a policy to get people to stop smoking in Australia. Prepare to tell your group about the policy and try to persuade them to include it. Then read about the criticism of one of the other policies. Be prepared to ask the speaker about it.

Australia: a solution to stop smoking?

Smoking is the leading cause of preventable death, leading to around 6 million deaths per year. In Australia people are giving up smoking at much higher rates than anywhere else. Why? They have some of the world's toughest anti-smoking laws. You're not allowed to smoke in public places, including playgrounds, train platforms and taxi ranks. Also they have some of the world's highest cigarette prices, strict laws about plain packaging and a huge media campaign. The government also introduced a digital app to help people give up.

Criticism for the model for teaching maths in Shanghai

Shanghai: The high pressure schooling system is often criticised because success is often linked to many hours of homework and extra tuition.

Shelter helper

Since 2015, California resident Elvis Summers has been building homes for the homeless. The first home he built was for sixty-year-old Irene McGee. She was living on the street, without even a cardboard box to sleep in. Summers saw her every day and decided to help her. He bought some materials and asked for donations of wood, and then he built the shelter, adding wheels to make it mobile. The home is roughly the size of a shed – one room, large enough for a person to lie down and store a few possessions.

Summers had himself videoed building the house in order to publicise what he was doing. The clip also showed the beautiful moment when Summers handed over the keys to Irene McGee. The video went viral and raised awareness of homelessness in Los Angeles. Since building that first home, Summers has launched a fundraising campaign which has raised over $100,000 in donations. A local church has also helped, offering 10,000 square feet of space in which wooden homes can be placed. Although his plans have received some opposition from the city, which has removed some of the homes because they were on public property, Summers says he'll keep on building.

He and friends have now constructed over forty of the wooden shelters, allowing the homeless of Los Angeles to have some security, privacy and dignity. He has also been working on developing a mobile shower unit. In his own words, 'How we treat and care for those who are suffering and less fortunate determines what kind of society we are and how our future generations will act.'

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Lesson 8.2

10 A **Student A: Ask Student B questions to get the information you need to complete statistics 1–6. Then give Student B they information they ask for to complete statistics 7–12.**

Crazy statistics

1. _____ % of humanity lives on less than $10 a day.
2. The average American will spend _____ months of their life talking on the phone.
3. If everyone on Earth properly washed their hands, nearly _____ lives would be saved every year.
4. Human life expectancy has increased more in the past 50 years that in the last _____ years.
5. You will probably spend about _____ months of your life on the toilet!
6. The average person will walk _____ km in their life. That's more than 3 times around the world!
7. Your probability of living to more than 110 years old is 1 in 7,000,000.
8. Your chance of eating a spider while you are asleep is actually close to 0%.
9. The average person will yawn about 250,000 times during their life.
10. Men in the United States have a 43.31% chance of getting cancer during their lifetime.
11. 0.3% of solar energy from the Sahara is enough to power the whole of Europe.
12. The human eye blinks about 4,200,000 times a year.

Lesson 4.4

6 A **Student C: Read about your scientist and make notes in the table on page 53.**

Ernest Rutherford was born in New Zealand on 30 August 1871. He was a physicist who became known as the father of nuclear physics. In his early work he focussed on radioactivity. He developed a new form of radio receiver and also differentiated between alpha and beta radiation. He was awarded the Nobel Prize in Chemistry for his work into the chemistry of radioactive substances. In 1907 he moved to the University of Manchester, where he started work on splitting the atom in a nuclear reaction. During the first world war he worked on a top secret project to help submarines avoid detection.

Lesson 5.3

9 **Student C: Read about a policy to reduce poverty in Peru. Prepare to tell your group about the policy and try to persuade them to include it. Then read about the criticism of one of the other policies. Be prepared to ask the speaker about it.**

Peru: cutting poverty

Peru has cut its poverty rate in half in just ten years. After decades of economic growth, an inclusive economic policy has helped many of the poorest in the country. The government introduced schemes to provide basic services such as piped water, sanitation and electricity to slum areas, and supported social programmes for children, families and the over sixty-fives. This has helped to lift 7 million people out of poverty in the last five years. Communities played a role in the success of the programme, putting pressure on governments through direct action such as protests and roadblocks.

Criticism for the Australian anti-smoking policy

Some people have criticised the plans saying that governments shouldn't try to control our behaviour and that the policies lead smokers to feel excluded from society. Recent attempts to ban smoking in prisons led to some of the worst riots in recent history.

Lesson 6.1

2 B **Student B: read the third part of the article and answer the questions.**

1. How can fear of negative judgement from others affect our behaviour?
2. What kinds of people tend not to worry about being judged?
3. According to the article, what are the possible benefits of thinking only about yourself and not concerning yourself with others' opinions?

How being selfish can lead to success

Fear of doing something that results in negative judgement from others is very common. However, this fear can stop us from doing things like giving a presentation or complaining about poor service.

People who worry a lot about what other people think of them can be more easily manipulated by others. Self-centred or antisocial people don't worry about being judged and tend to be more successful.

It could be argued that once you start living for yourself and nobody else, you get a lot more done. This is a trait of many high achievers. It may not be 'good' to be 'bad' and not care about other people, but it clearly pays well.

Lesson 7.3

7 A Student C: read about your hacks. Plan what you will say to your group.

Tech hacks — make the most of your machines

- Need to charge your phone quickly? Put it into aeroplane mode. It charges twice as fast.
- Overheating laptop? Put two forks under it.
- Want to talk to a human when calling customer service? Keep pressing 0.
- Writing an essay? Paste it into Google Translate and listen. You'll hear mistakes.
- Emailing? Forgot to send an attachment or pressed 'Send' too soon? Enable Gmail's 'Unsend' button.

Lesson 8.3

8 Student B: read about your idioms. Then explain to Student A where these idioms came from.

1 ***Turn a blind eye:*** it means 'pretend not to see something'. In 1801 British naval officer Lord Nelson was told his commander had put up flags ordering a retreat. Nelson was blind in one eye. He looked through the telescope using his blind eye and pretended not to see the commander's order. Instead, he attacked and won the battle.

2 ***Miss a deadline:*** a deadline is a time limit. But the expression comes from the US civil war. Prisoners had to stay within a boundary, often just a line scratched in the ground. The guards told them, 'If you cross this line, you're dead.' Soon they began calling it a deadline.

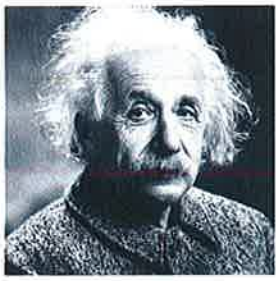
Vocabulary bank, Lesson 5.1

1 B Read the answers to the questions.

1 human beings
2 the lion
3 the blue whale
4 the dinosaur
5 giraffe
6 *ecology* and *system*

Lesson 4.4

6 A Student D: Read about your scientist and make notes in the table on page 53.



Albert Einstein was born in Germany on 14 March 1879. When his family moved to Italy for work, Einstein stayed in Germany to finish his studies. He later moved to Switzerland where he took the exams for the Swiss Polytechnic. Despite his obvious capabilities in science and maths, his other grades were often poor and Einstein had a tendency to rebel against authority. Einstein's main area of research was related to gravity and in 1915 Einstein announced his general theory of relativity, for which he is most famous. In 1921 he won the Nobel Prize for Physics and is considered to be one of the most influential physicists of the twentieth century. .

Lesson 8.2

10 A Student B: Give Student A the information they ask for to complete statistics 1–6. Then ask him/her questions to get the information you need to complete statistics 7–12.

Crazy statistics

1 80% of humanity lives on less than $10 a day.
2 The average American will spend 6 months of their life talking on the phone.
3 If everyone on earth properly washed their hands, nearly 1,000,000 lives would be saved every year.
4 Human life expectancy has increased more in the past 50 years than in the last 200,000 years.
5 You will probably spend about 3 months of your life on the toilet!
6 The average person will walk 120,000 km in their lifetime. That's more than 3 times around the world!
7 Your probability of living to more than 110 years old is 1 in _____.
8 Your chance of eating a spider while you are asleep is actually close to _____%.
9 The average person will yawn about _____ times during their life.
10 Men in the United States have a _____% chance of getting cancer during their lifetime.
11 _____% of solar energy from the Sahara is enough to power the whole of Europe.
12 The human eye blinks about _____ times a year.