

Unit 1 Where We Live

Track 2

My grandmother once told me the story of how she and her best friend Fatima first met. You see, my grandparents came here because there was no work for my grandfather in their home town. They moved to this cheap neighborhood, which has always had a mixed population from different countries. My grandmother was 24. It was her first time in a big city. She had a small child—my father—she didn't have a job, and she didn't know anybody. She was lonely, but she wasn't shy. She noticed that her neighbor across the street was probably the same age, and she also had children who went to the same school as her son. One day she knocked on her neighbor's door. "Sorry to bother you," she said. "My name is Grace, and I live across the street. I'm making a cake, and I've just realized I don't have enough sugar ..." Fatima raised her hand to stop her. "Wait," she said. She disappeared into the house and then came back with a packet of sugar. Her English is much better today, but at the time, she said something like, "You take sugar. No worry." So, my grandmother made her cake and then invited Fatima and her family to eat it. And that's how they became friends, more than fifty years ago. My grandmother has always been very well organized, so the story sounded a bit strange to me. I asked her why she started making a cake without checking that she had all of the ingredients. My grandmother smiled and said, "I *did* have all the ingredients. I had *lots* of sugar. I just didn't have a friend."

Track 3

Australia, the International Nation

Australia is one of the most multicultural countries in the world. Over a quarter of the people who live in Australia were born in another country: about 6.7 million people out of a total population of around 25 million. More than 40 percent of Australians have at least one parent who was born in another country.

In a sense, nearly all Australians are immigrants. A little more than 200 years ago, Australia was inhabited by about 350,000 native people of many different cultural groups. Then, in 1770, the explorer James Cook sailed along the coast and brought back information about the "new" land to England. Soon after this, Australia became part of Great Britain. In 1787, the British government started sending criminals and poor people to Australia. Later, free settlers came to Australia to start farms. In 1850, gold was discovered there, so more and more people came from Europe and China hoping to get rich. Most of them never returned home, so the population began to grow.

Australia has a huge amount of land. In the 1940s, the government decided that the best way to develop the country was to invite more settlers to come from Europe. To attract immigrants, they offered money and other forms of help. More than one million people from Britain moved to Australia, along with several hundred thousand Europeans who had lost their homes in the Second World War.

Migration is still growing. In 2017, more than 262,000 people went to Australia to stay permanently. Four main types of people settle there: Some go there because employment and

business opportunities are better than in their home country. Others are the children, parents, or other relatives of immigrants who have already become Australian citizens themselves. A third group is refugees who are escaping war or political problems in their home countries. Finally, there is a small number of Australians who previously migrated to another country and now want to come home.

At the same time, Australia also sends immigrants to other countries—a smaller number. Each year, about 60,000 Australians go to live permanently in other countries. With people from so many cultures migrating in and out, Australia is truly a diverse nation.

Unit 2 The Mind's Eye

Track 4

Dad: Jane, did I see you reading a Sherlock Holmes book?

Jane: Probably. Why?

Dad: I didn't know you liked detective stories! Is it for school? A test? An exam?

Jane: No, nothing like that. But I watched a Sherlock Holmes TV show set in modern London, England and...

Dad: Do you mean, a detective from 1891 walking around London today?

Jane: No, the authors imagined what Sherlock Holmes would be like now and basically re-invented the stories and set them in our day.

Dad: Is it any good?

Jane: What? The TV show? It's awesome! Sherlock is young, overconfident—which is why few people like him—and really smart, which is why he's always bored. He needs challenges. His favorite challenges are when the police ask him to help them with an impossible problem. You should watch it, Dad! He has this amazing mental ability to observe, notice the smallest details, and make connections...

Dad: You're telling *me*? I read all the Sherlock Holmes stories! I'm a huge fan! But why are you reading the book?

Jane: I was curious to find out about the *original* Sherlock. I read somewhere that what's his name... the author...

Dad: Arthur Conan Doyle.

Jane: Yes, him. I read somewhere that Conan Doyle's inspiration was a doctor who drew amazing conclusions from tiny details, so he created this character who uses scientific methods to solve mysteries. But I didn't know *you* liked Sherlock, Dad!

Dad: That's because, like Sherlock would say, you look, but you don't see... Are you saying you've never noticed my entire shelf of detective novels?

Jane: Oops! Elementary, Watson...

Track 5

The Mind-Body Connection

Norman Cousins was a famous American magazine editor. In 1964, he returned from an overseas trip and became very sick. He was in terrible pain and couldn't move his body, so he went to a hospital. Doctors told him he had a serious disease called ankylosing spondylitis. As

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nobody knew the cause of the disease, there was no cure for it, and because there was no cure, the doctors said he had only a short time to live. They gave him powerful drugs, but his condition only got worse.

Cousins researched the connection between emotions and chemical reactions in the body. He believed that negative emotions could harm your health and that positive emotions were the key to good health, so he decided to try an experiment: he was going to fill his days with good feelings and laughter and see if that might improve his condition.

He left the hospital and moved into a hotel room. There, he got a large supply of comedy TV shows, movies, and cartoons. He also hired a nurse to read funny stories to him. He planned to spend the whole day laughing and thinking about happy things.

On his first night in the hotel, for the first time in weeks, Cousins slept comfortably for a few hours. This seemed to prove his belief was correct: laughing at the movies might have helped his body produce chemicals that reduced pain, and as a result, he was able to rest, and his condition improved. Every time the pain came back, he watched another funny movie and laughed until he felt better.

Over time, Cousins managed to measure changes in his body with blood tests. He found that the harmful chemicals in his body decreased at least five percent every time he watched a funny movie. Therefore, after a short time, he was able to stop taking all of his medications. Finally his condition improved so much that he could go back to work.

Cousins later wrote a book about how laughter and happiness helped him survive a deadly illness. As the idea of an emotional cure for a physical illness was so new, many people didn't believe his story. Many said that his doctors were wrong about his disease from the beginning. But since then, research has found that emotions affect physical health. Now everybody knows that we can become ill after long periods of stress because stress reduces our defenses. More experiments found that laughter can help to reduce pain. And Norman Cousins lived another 26 years after he cured himself from an incurable disease.

Unit 3 Changing Planet

Track 6

Miguel: Shaniqua, I think I found an interesting quote for our project.

Shaniqua: Yeah? What does it say?

Miguel: Here. It says, "When the last tree is cut, when the last river has been poisoned, when the last fish has been caught, then we will find out that we can't eat money."

Shaniqua: Oh, wow! That's amazing! Good find, Miguel! Who said that?

Miguel: I'm not sure—this is an article about the environmental organization Greenpeace. It says the quote was taken from a Canadian filmmaker and changed a bit, but the original quote may be older—it's not clear.

Shaniqua: That's fine! We can quote the article. It's perfect! Let's use it.

Miguel: Wait! I need help. What does *poisoned* mean?

Shaniqua: *Poison* is something that can kill you if it gets into your body. So, if you eat, drink, or breathe poison, you are poisoned.

Miguel: Ah, so a river is poisoned if a factory pollutes it, right? With dangerous chemicals?

Shaniqua: That's right.

Miguel: We had a lot of that in my hometown in Bolivia. If a river is poisoned, it poisons the fish in it, the land around it, and the food people grow using its water.

Shaniqua: So basically, the quote means that the search for profit and money is destroying the Earth.

Miguel: What do you mean? What's *profit*?

Shaniqua: *Profit* is the money you make, for example, when you sell something. For a lot of businesses, polluting is cheaper than *not* polluting. So, if they spend money to avoid polluting, they make less profit.

Miguel: Ah, now I get it. The quote means that we are destroying nature because we put profit before the environment.

Shaniqua: Correct. We've been taking all the good things from nature and putting poison back into it, so there won't be clean air or clean water, and food won't grow.

Miguel: That's exactly what we're trying to show in our video, right? When you find out that all the money in the world can't buy a glass of water or a banana, it will be too late.

Shaniqua: Exactly! So how do we do the video? First of all, I think we need [*fades out*]

Track 7

What Can One City Do?

In 2008, Naema Omar decided to improve her 80-year-old house in Cambridge, Massachusetts in the United States, and make it energy-efficient. Firstly, to keep the heat inside in the winter, she filled the space inside the walls with insulation. This is usually made from chemicals, but in her house, she used something new—insulation made from recycled blue jeans and other clothes. Secondly, she replaced the windows. And lastly, she put in energy-efficient LED lightbulbs that use only a tiny amount of electricity. They also last 50 times longer than traditional lightbulbs.

Naema was able to do this because the Cambridge City Council had created the Cambridge Energy Alliance (CEA) the year before to encourage energy efficiency and solar power. CEA's goal was to help residents and businesses save money and reduce the city's carbon emissions.

The city council had started to work on reducing global warming as early as 1999. In May that year, it had voted to join Cities for Climate Protection, an international group of communities that work to reduce environmental damage from fossil fuels.

First, the council needed to study the situation. So, surveys and research were conducted, and they showed that more than 80 percent of the carbon dioxide produced in Cambridge was coming from buildings—not from cars.

Next, it decided to make the buildings energy-efficient. In addition to saving energy and reducing emissions, the objective was to create new jobs for local people: workers were needed to put in insulation, install energy-efficient doors and windows, and make other energy improvements on buildings.

Soon after that, however, the city council realized that eco-friendly insulation and lighting are much more expensive than the usual kind, and many people in Cambridge couldn't afford them. That's why it created the CEA and encouraged every resident and business to contact them. And that's what Naema did.

First of all, individuals or businesses can ask the CEA, which, since 2011, has been part of the city's Community Development Department, to come and look at their house or office building. Then the CEA makes a plan to save 15 to 30 percent on heating, gas, water, and electricity. Finally, it helps people take out a loan to pay for the improvements. The money that people save by being more efficient should be enough to pay back the money they borrowed.

So, it looks like one city can do a lot if it wants to!

Unit 4 The Good Life

Track 8

Yoko: We read that the Organisation for Economic Cooperation and Development tried to find out how happy people are in different countries around the world. They made a list of specific criteria and asked people to rate how satisfied they were with each one. Criteria included factors like access to high-quality education, finding a good balance between life and work, having good career opportunities, and a good income. We decided that the criteria were designed for adults. They do not represent the realities of students. So, as part of our social studies course, we did a project about how positive students in this school are about their future. Charlie will explain.

Charlie: Thank you, Yoko. This is what we did: We interviewed 200 students in this school aged between 15 and 17. First, we asked what they think are the three most important things in life. Then we asked how positive they feel about being able to achieve them. We asked them to score their hopes from zero to ten, with *zero* meaning *no hope* and *ten* meaning *they were certain to achieve them*. Emma is going to tell you about the results.

Emma: Thank you, Charlie. Well, we found some interesting things. First of all, *nobody* scored their hopes lower than three, and nobody scored them higher than seven. So, nobody feels no hope at all, but everybody is uncertain. It looks like students in this school are worried about their future. Secondly, when asked about the three most important things in life, *everybody* mentioned *love* as one of the three. We had different responses about the other two things, but all 200 students mentioned *love*. How positive are they about finding it? Well, between *three* and *seven*, with 75 percent answering *five*. Yoko, tell us about the other results.

Yoko: Sure. Well, you won't be surprised to hear that *finding work* came up a lot. Many of us are worried that a good education will not help very much. Not many mentioned *health and*

medical care, but 80 percent of students mentioned *safety* and 95 percent mentioned a *clean environment*. Emma?

Emma: That's right. Students in this school are worried about the increase in violence and not feeling safe. And almost everybody thinks that the older generation are destroying the Earth, and we will pay the price for their mistakes. Charlie has the figures.

Charlie: Thank you, Emma. Yes, these are two areas where students are worried most. But the interesting thing is that when we asked them how positive they were about the future, 80 percent answered *seven* and said that this generation is going to fight back to make sure *their* children will have a clean environment and safe cities.

Track 9

Money Jungle

If you have an idea and you need money to develop it, it may be difficult to find that money. Unless your family can and wants to fund your project, you may have limited choices.

One option is to borrow money from a bank in the form of a loan.

The expression "borrow money from a bank" is a bit misleading, though. If I ask you, "May I borrow your pen?" and you say, "Yes, sure," we make the following agreement: I can take your pen, I will use it for a certain amount of time, and then I will give it back to you. If I give you the pen back, our agreement is satisfied. The agreement is the same if I borrow ten dollars from you because I left my wallet at home. However, when you "borrow" money from a bank, you can't just take it, use it, and give it back the way I did with your pen or your ten dollars. When you borrow money from a bank, you take a certain amount of money, and then you have to give back *more* money than you took. The difference between the money you took and the money you must give back is called *interest*. In practice, you don't *borrow* money, you *buy* money.

Some people are uncomfortable with taking a loan from friends, relatives, or banks. They worry that things may go wrong, and they may not be able to pay the money back. That's understandable.

But if your idea is something that will benefit society, then with a really good project and a little bit of luck, you may be able to get something better than a loan: a grant.

A grant is money that is given to you to fund a project in exchange for the use of the results. For example, the National Geographic Society offers grants to fund projects in the fields of conservation, education, research, storytelling, and technology. Here's how it works: Imagine you have an idea about using storytelling and education to teach people about human migrations, about how to reduce plastic pollution before it reaches the sea, or about how to stop the extinction of endangered animals like tigers. If you do, and you can produce a very detailed plan on how you will achieve your aim, how the money will be used, and how long the project will take, you can apply for a grant. If your project is considered to have a good chance of success, the National Geographic Society will give you the money. In return, it will have the exclusive rights to your results, to make, for example, a documentary.

Of course, there are strict rules for projects to qualify, and at the end of the project, you have to show that you did what you said in your plan. But if your plan is good, and good for everyone, then you don't need to be rich to make Earth a better place.

Unit 5 Survival

Track 10

Hannah: Wow! That was good!

Yusuf: Totally agree, Hannah. One of the best documentaries about natural history I've ever seen.

Hannah: And you didn't even want to watch it! Are you glad I insisted, Yusuf?

Yusuf: This one time, yes, I am. If I hadn't watched it, I would have played a video game, and I would have missed out on something really good.

Hannah: Have I ever told you that making movies and documentaries about natural history is my dream? If I could find a grant or something, that's what I would like to do—I mean, as a job.

Yusuf: Wow. No, you never told me before. That would be so cool! But how would you make a movie about natural history?

Hannah: I would like to tell the story of Marina, a teenage girl, born after the extinction of the dinosaurs. At first, she keeps growing up, but when she turns 17, she stops growing older and lives forever.

Yusuf: Wait—I like that a lot, but if she lived forever, she would be very sad. I mean, all the people she knows would die, and she would keep on living.

Hannah: Well, yeah, I'd have to work that bit out. But my idea is that if she lived since the extinction of the dinosaurs, she would see the Earth being transformed over time.

Yusuf: Cool!

Hannah: So, if she saw the world as it was at the beginning, at first, she would be happy about all the inventions that made human life easier and more comfortable.

Yusuf: Ah, I see where you're going with this: if she remembered nature before pollution, she would be the first to raise the alarm when things start going wrong for the environment.

Hannah: Exactly. But of course, nobody would listen to her.

Yusuf: Well, if nobody listened to her, it would be a very realistic but very depressing movie!

Hannah: Yeah, for a bit. But then she would meet our generation, and things would change!

Yusuf: If you made your movie, I would definitely go and see it!

Track 11

Ready for Anything

Every day, there are news reports about natural disasters, like floods, earthquakes, and hurricanes in the media. With extreme weather conditions occurring more and more often, you may want to be ready for them. There are three important things you should do at home to prepare.

In general, the first thing is to stock up on emergency supplies. You should keep enough food and water for at least three days in your house. Choose food that can be stored for a long time and food that can be eaten without cooking. Canned foods, such as soup, fish, meat, and fruit

are good choices. You can also store dry foods like crackers and nuts. On top of that, be sure to store food that you like, and include a few special treats like candy or cookies. In an emergency situation, it's nice to have something to cheer you up. As well as that, it is important to include any special foods that babies, small children, or elderly people in your family may need. Another thing is water: be sure to keep plenty of it. Each person needs one gallon of water per day for drinking and basic washing.

Generally speaking, emergencies can occur in every country in the world, but it's important to think about equipment you might need for the kinds of disasters that are more likely in your country. You might need blankets, very warm clothes, flashlights, or plastic bags. In other words, think about possible situations, and buy the things that would be needed to cope with them.

In addition, plan what you will do in case you need to evacuate your home. In particular, decide where you will go and actually arrange a meeting place in advance, such as a relative's home or a big public building. Also, be sure that all family members have the phone number of a contact person in another city. In short, have a plan to find your family members if you become separated.

To sum up: People don't like to think about natural disasters, but a little bit of preparation can save lives. Following these steps will help you be ready for any kind of emergency.

Unit 6 Art Matters

Track 12

Carla: Hello, and welcome to our School Project podcast—the series that asks the right questions about your school subjects. Today, our guest is Professor of Art History James Connolly. Professor Connolly, welcome and thank you for being here.

Professor Connolly: Thank you for inviting me, Carla. It's my pleasure.

Carla: Professor Connolly is here to tell us about a famous controversy from the 19th century art world. Professor, tell us what happened and why it matters.

Professor Connolly: It all started in 1877, when the American painter James Whistler, who had been living and working in London, displayed a painting called *Nocturne in Black and Gold: The Falling Rocket* in an exhibition at an important art gallery in London. I can show the painting to you online. Here. Look.

Carla: Wow! A recommendation to our listeners: If you've never seen it, find it on the internet. It's quite impressive.

Professor Connolly: *Nocturne in Black and Gold* is a night scene that shows a firework display in London, England. The blacks, blues, and grays are used to represent the night and the River Thames; and the gold, the yellows, and other colors are used to represent fireworks over the river. There are no precise lines—only different shades of colors.

Carla: I see. So, what was the problem?

Professor Connolly: The problem was that the most famous art critic of the time, John Ruskin, didn't like it. He thought it was unfinished and that it had clearly been done very quickly. So, he published an article in which he attacked Whistler.

Carla: In what way?

Professor Connolly: First of all, he said that Whistler was just a man who cared too much about his personal appearance rather than being a professional painter. And secondly, that Whistler was asking for a lot of money for throwing a pot of paint in the public's face, instead of producing a real painting.

Carla: Ouch! In other words, he insulted Whistler, he said that the painting was trash, and he said it in a newspaper, so it was a very public attack.

Professor Connolly: Exactly. And it was extremely damaging because Ruskin could make or break an artist's career. So, Whistler did something no artist had done before: he sued Ruskin for libel.

Carla: Could you explain that for those of us who are not familiar with the law?

Professor Connolly: Sure. The law says you cannot print or publish something damaging about someone if you can't prove it. For example, if you say in the media that a doctor can't do his or her job, the effect of your words is that the doctor won't find work. Now, if you can prove that the doctor *is* a bad doctor, you will save people's lives. But if you can't prove it, then you libeled him or her. So, the doctor can take legal action: he or she can sue you and ask a court to make you pay damages. And that's what Whistler did.

Carla: Why is that important?

Professor Connolly: For two reasons. First of all, nobody had done that before. Whistler was the first artist to sue an art critic. He was the first artist to say that if an art critic makes a mistake that hurts an artist, the critic has to pay the artist.

Carla: That was very brave!

Professor Connolly: Secondly, it was about the value and price of a work of art. Whistler said that the value of a work of art cannot be decided by the amount of work and time it takes to produce it. What matters is the skill and the vision of the artist.

Carla: How did it end?

Professor Connolly: The whole thing lasted more than a year, during which Whistler made very little money. In the end, Whistler won but, surprisingly, Ruskin didn't have to pay anything. For Whistler it was a disaster.

Carla: Thank you very much, Professor Connolly. I hope our listeners found our podcast interesting and will look up Whistler's paintings on the internet.

Track 13

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Track 14

Biographies of Great Artists: Frida Kahlo

Frida Kahlo was born in Mexico in 1907. As a small child, she was very happy and ran and laughed all the time—even in church. However, when she was six years old, her life changed completely. She got a serious disease called polio and had to remain in bed for nine months. The disease made her left leg shorter than her right, so she had serious problems walking.

In spite of this, Frida was able to lead a normal life, and at 15, she was enrolled in a prestigious school in Mexico City. There, she was influenced by the modern changes that were sweeping across Mexico. She cut her hair short like a boy and started riding a bicycle—shocking for a young woman of her time. She was very interested in science and decided to become a doctor.

Then, in September, 1925, Frida was involved in a horrendous accident. She was riding on a bus when it crashed into a trolley car. Her right leg was broken in 11 places, and she had many other broken bones. For the rest of her life, she had severe pain every day caused by that accident.

On the one hand, this was obviously a tragedy: as well as living with pain, she also had to give up her plans to become a doctor because she knew she would never be strong enough. On the other hand, it also helped her discover something else about herself. While lying in bed after the accident, Frida began reading books about art. Her father was a painter and photographer, and he encouraged her interest in the subject. Frida was not only someone who did not give up easily, but she was also very talented. One year later, she completed her first painting: a portrait of herself.

In 1929, Frida married the famous Mexican artist Diego Rivera, and although she was a more original painter than he was, for a long time she was known just as Diego Rivera's wife. However, soon famous artists such as André Breton, Marcel Duchamp, and Georgia O'Keeffe noticed her and praised her work, and after an exhibition in Manhattan in 1938, she became very famous in the US, France, and Mexico. Still, she struggled to make a living from her art because she refused to adapt her style to some of her clients' requests.

She continued to paint all her life, even though her health became increasingly bad. Although she was bedridden when, a famous gallery organized an exhibition of her work not long before her death, she insisted on attending the opening ceremony and her bed was carried into the gallery so that she could talk to visitors.

Frida died in 1954, at the age of 47, but her paintings, her life, and her ideas still attract a lot of attention. In 2002, a popular movie, which was nominated for six Oscars and won two, was

made of her life, with Salma Hayek as Frida, and she is also a character in the 2017 animated movie *Coco*.

Unit 7 Getting Around

Track 15

Kurt: Rosie, can I have my tablet back?

Rosie: Just a minute, Kurt. I'm just finishing an article about self-driving cars.

Kurt: Ah. Let me guess. It says that with self-driving cars, fuel can be saved because they are driven more efficiently, accidents can be avoided because computers don't make mistakes, and more work can be done by people who will not be busy driving, blah blah ...

Rosie: Well, actually, yes ... that's exactly what it says. What's wrong with that?

Kurt: I'll tell you what I think is wrong with that: they're answers to questions that haven't been asked.

Rosie: What do you mean?

Kurt: Well, first of all, take the idea that people can work instead of driving: What kind of work can be done in the back of a car? Can you cut somebody's hair? Can you teach a class of children? Can you fix somebody's washing machine?

Rosie: Ha ha! Of course not!

Kurt: Right. So, all you can do is make phone calls from your cell or work on your tablet or laptop, if reading in a moving car doesn't make you feel sick. But the great majority of people have jobs that can't be done in a car.

Rosie: You're right about that one. But what about safety and fuel efficiency?

Kurt: Has the number of car accidents suddenly increased? I'm not saying that avoiding accidents is not important, but is there a global emergency of car accidents going on? And how much fuel can be saved by parking cars more efficiently?

Rosie: That's true, but what's the harm in making these improvements?

Kurt: I think the harm is that these *improvements* are being made *instead of* the ones that are really needed. The greatest problem humanity is facing is not an increase in car accidents, but global warming. That's the emergency.

Rosie: Ah, now I see what you mean. You're saying that the question that must be asked is not how cars can be made better, but how cars can be made unnecessary.

Kurt: Exactly! We don't need better cars—we need fewer cars. A way must be found to reduce the need for people to travel quickly over long distances, so they won't need to drive.

Rosie: OK, I'm with you now. I was reading the article for a school project, but now I might need to think about innovative public transport systems instead.

Kurt: Cool. Can I have my tablet back now, please?

Rosie: No, sorry. I need to research innovative public transport systems for my science project.

Track 16

Old-Fashioned Solution

When my grandmother was a kid, streets were places where people could walk and bike and where children could play. They didn't even need road markings. She says it was wonderful. Then the age of private cars started: sidewalks were built to move pedestrians off the street,

playing became dangerous, the noise changed from voices and birds to engines and horns, and the air became poisonous. In 2018, researchers in the UK showed the connection between the rise of air pollution and the 25 percent increase in asthma deaths since 2008.

Some say that new technologies will soon solve the problems that technology has created. I don't think we can wait for that: the planet is being fried, and we need to stop it now. And we already have the technology we need: the bicycle. Many local authorities, tired of waiting for government laws, have taken action and are encouraging cycling. In my view, not a minute too early.

Since 1976, Bogotá has had an official city government program called Ciclovía (Bicycleway): Every Sunday, and on public holidays from 7 a.m. to 2 p.m., some of the main roads in the city are closed to cars and taken over by pedestrians, skaters, cyclists, runners, and entertainers. That must be a lot of fun. As more and more people started biking, the city built a very large network of bike lanes connected with a bus system. Many other cities have followed Bogotá's example, even if, sadly, in many of them a Ciclovía is only an annual event.

Between 2007 and 2013, almost 400 miles of bicycle lanes and more than 60 car-free squares were built in New York.

Copenhagen, the capital of Denmark, has a special bike path for cyclists, used by around 5,900 people per hour, every day. Cyclists always get a green light when they ride in and out of the city during rush hour. Also, because biking in some weather conditions can be difficult, there are weather sensors on the traffic lights that detect rain or snow and keep the green light on longer for cyclists. A countdown clock also shows cyclists when the light will turn green for them, so they can speed up or slow down to avoid having to stop. How great is that?

Studies show that where car traffic is reduced in favor of bicycles, air quality has improved greatly. Everybody must be in a better mood. Of course, some vehicles, like those used by emergency services, are still needed, and public transport needs a bigger role in cities built over steep hills. In my opinion, if you have a good public transport system, school buses for every school, and safe bike lanes, not many people would want to use their car and get stuck in traffic.

Unit 8 Competition

Track 17

Jasim: What are you up to, Amy?

Amy: Hi, Jasim. I'm reading stuff on the internet. I'm doing a project about the Olympic spirit—you know, fair play, acts of real sportsmanship, and all that.

Jasim: Anything interesting?

Amy: Actually, yes—loads. For example, do you know what Judy Guinness did at the 1932 Los Angeles Olympics?

Jasim: To tell you the truth, I don't even know who she is.

Audio Scripts

Amy: Well, she was a fencer—you know about fencing, don't you? The sport of attacking and defending with a sword that has a thin, long blade? Like old-fashioned knights, except that you don't kill or even hurt each other?

Jasim: Oh, yeah—all dressed in white, with a mask. The judges give you points every time you touch your opponent with the blade.

Amy: That's right. Well, Judy Guinness was in the final, competing against Ellen Preis, from Austria. At the end, the judges gave Judy Guinness the gold medal by one point, but she refused it because they had made a mistake and had failed to count two points that Ellen Preis had scored. So, she got silver instead.

Jasim: Cool! That's real fair play.

Amy: It certainly is! And what about this other one? At the 1936 Olympics in Berlin, Jesse Owens—you know who Jesse Owens was, don't you?

Jasim: Erm ... no, sorry!

Amy: He was an American athlete. He had already won the gold medal in the 100 meters, and the day after that, he was competing in the long jump. He was the world record holder, and his opponent was a German called Luz Long. Luz Long was the European record holder.

Jasim: His last name was *Long*, and he held the European record for *long* jump?

Amy: Ha ha! Yes! Anyway, Jesse Owens wasn't doing very well. You know the rules for long jump, don't you? You run up as fast as you can, and then jump and land in the sand. But you must jump on or before a white line. If you jump beyond that line, it's a foul, and your jump doesn't count.

Jasim: How many times can you try?

Amy: Six. But if you foul the first three, you're out. So, at the Berlin Olympics, Jesse Owens had fouled his first two jumps. If he had fouled the third one, he would have been out, and Luz Long would have probably won the gold medal.

Jasim: Wow—so what happened?

Amy: Luz Long went to talk to Jesse Owens, he gave him advice on how to correct his run-up, Owens didn't foul his third jump, and then won the gold medal. Luz Long was second.

Jasim: Great story! But did you only find old examples?

Amy: No—here's a modern one: at the 2017 London Marathon, Matthew Rees was running a great time when he came around the corner for the last 200 meters and saw another athlete struggling.

Jasim: What do you mean?

Amy: Well, there was this other guy, David Wyeth, who had lost control of his muscles and all sense of direction, so he didn't even know which way the finishing line was. You can imagine how that can happen—a marathon is 26.2 miles, and they were 200 meters from the finishing line, so they'd come a long way. And the weather was hot. Maybe he hadn't drunk enough water.

Jasim: So, what happened?

Amy: Matthew Rees reached David, put his arm around him, and walked him all the way to the finishing line.

Jasim: That's VERY cool. Hats off to Matthew Rees. There must be a video online, mustn't there?

Amy: There is—look! Here’s David—you can see he can’t even walk, can’t you? And here’s Matthew ... [fade out.]

Track 18

A Champion Who Championed Sport for All

When their talent brings them wealth and people’s attention, some great athletes use them to the benefit of others.

Dutch soccer player Johan Cruyff is a case in point. He was born in April, 1947 in Amsterdam, which is home to the soccer team Ajax. Cruyff, whose father died when he was 12, grew up in a poor neighborhood near Ajax’s stadium, where his mother worked as a cleaner. From an early age, he played soccer in the street with other children. Then, at the age of ten, he joined the Ajax youth team.

Cruyff was noticed by Ajax manager Rinus Michels, who had invented a new way of playing, called *Total Soccer*. In Total Soccer, all the players (except the goalkeeper) moved around and played all positions. Cruyff was perfect for it, as he had the skills, the speed, and the intelligence to play in any position. Soon, his extraordinary talent and spectacular style became very well known internationally, and in addition to being captain of the Netherlands national team, he played for various teams in Europe and the US. He was voted best European soccer player of all time, and second best (after the Brazilian, Pelé) in the world.

When he was living in the US with his wife and three children, Cruyff noticed a young boy who lived next door and was always alone while other children played outside. He had Down syndrome, and he was not accepted by the other children. Cruyff started playing with him, and he noticed that the games and sports that they played together were helping the child to develop and find some confidence—to the point that one day the boy just walked up to the place where the other children were playing and joined them. From then on, he was part of the group.

This friendship confirmed Cruyff’s belief that sports are important for children not only because they make them stronger and healthier, but also because they connect children to each other even if they come from different cultures and have different levels of ability. However, he also knew that not all children have an opportunity to play sports: disabilities, lack of money, or lack of space can all stop children from being active.

So, in 1997, Cruyff started the Johan Cruyff Foundation. It builds small soccer fields—called “Cruyff Courts”—with artificial grass in poor neighborhoods, supports projects for children with disabilities, and brings mobile courts to refugee centers. By the time Cruyff died in March, 2016, his foundation had built over 200 Cruyff Courts all over the world, 33 of which were specially designed for children with disabilities. The foundation continues his work and has built many more courts since his death.

Track 19

Kitty: Grandpa, can you help me with my school project?

Grandfather: Sure, Kitty, if I can ... what do you need?

Kitty: Well, we're doing a project about different types of energy and fuel and how they have changed our lives, and I would like to interview you about what life was like when you worked in the coal mine.

Grandfather: Sure, dear! You see, life was very different when I ...

Kitty: [*interrupting him*] Wait, wait, Grandpa! Can I ask you a few questions and record you on my phone?

Grandfather: Ah, so you mean a real interview! Go ahead, kid!

Kitty: Thanks! OK, I'm ready. So, first of all, tell me about the work.

Grandfather: Well, every morning we arrived at the mine, and we had to go down really deep under the ground, almost a mile down, to dig for coal, and we didn't come out until the evening.

Kitty: Was it scary?

Grandfather: Well ... people were injured and died down the mine over the years, but you see, my father was a miner, and his father before him. There was no other work in the village, apart from a few shops, so all the men had been working in the mine for generations. All the boys knew they were going to work in the mine since they were little. I was 15 when I started.

Kitty: I see ... but you didn't answer my question: Wasn't it scary?

Grandfather: We didn't even think about it. I mean, we knew it was dangerous, but I guess what happened was that the danger made us feel very close—we had very strong connections. It wasn't like any other job, where you just meet the other workers at the office or the factory and then go home. We knew we depended on each other for our safety: someone taking an unnecessary risk could get everybody killed, just as someone thinking very fast could save lives. So, you knew everybody, and you made sure everybody trusted you. And every day, when we came out, we didn't really think about it, but deep inside we knew we had survived another day.

Kitty: Wow. That's amazing. What was life in the village like?

Grandfather: It was great! I mean, pay wasn't great, and we didn't have much. When I was a child, my two brothers and I shared a bed because the house was very small, but everybody in the village was the same, so we didn't think we were poor. And the women had the same strong connections as the men because they all had the same worries when their fathers, husbands, brothers, and sons were down the mine, and the same problems, so everybody helped each other when times were hard.

Kitty: How?

Grandfather: Well, for example, there was no national health system or health insurance. If one of your children was ill, it was very difficult to find the money for a doctor. So, people paid the doctor with, you know, a sack of potatoes and a rabbit, and your neighbors always gave you something for that. Or if one of the women was ill, the others took turns to help with her children and the cleaning and brought a big pot of soup to the house.

Kitty: It sounds like people had very little, but they shared what they had ... So, what happened when the mines closed?

Grandfather: It was very hard, because there was no other work. A lot of people had to move to find work, so you were separated from people you had grown up with, and the community disappeared.

Kitty: But it was dangerous work, and besides, coal is very bad for the environment.

Grandfather: I know, dear, we understood all that, but coal fed our children ... It is very hard when people have to choose between their health, the environment, or anything else that's important on one side, and feeding their family or paying for their children's education on the other. Even when you know that what feeds your children now will make their lives difficult later—those are really hard choices.

Kitty: So, what's the answer, Grandpa?

Grandfather: I think you know the answer, darling.

Kitty: Good jobs that pay well to make useful things that don't pollute?

Grandfather: That's it, Kitty! Your generation understands what's needed! Don't let anybody stop you.

Track 20

Grandfather: We didn't even think about it. I mean, we knew it was dangerous, but I guess what happened was that the danger made us feel very close—we had very strong connections. It wasn't like any other job, where you just meet the other workers at the office or the factory and then go home. We knew we depended on each other for our safety: someone taking an unnecessary risk could get everybody killed, just as someone thinking very fast could save lives. So, you knew everybody, and you made sure everybody trusted you. And every day, when we came out, we didn't really think about it, but deep inside we knew we had survived another day.

Track 21

A Crime with No Victim

It is difficult to find a movie that has won as many important awards, including the Oscar for Best Documentary, as *Man on Wire*. This is not surprising, as the documentary has almost everything that a great heist movie needs: a great story line, suspense, action, police involvement, and interesting characters planning an impossible crime. The only difference between it and the average heist movie is that nobody suffered as a consequence of the crime and nothing was stolen.

Man on Wire is the true story of Philippe Petit, a French tightrope artist, who at the age of 18, saw an article about the plans to build two 104-story high towers for the World Trade Center in New York City, and became obsessed with the crazy dream of walking between the top of the two skyscrapers on a wire. Walking on a wire above the ground requires great strength, the ability to control every muscle to keep your balance, and complete concentration. Doing it 1,350 feet above the ground means that the smallest mistake or loss of concentration will kill you. Philippe trained and waited for six years until the Twin Towers were built, and then, with the help of some friends, he did it on August 7th, 1974.

The “heist” required complicated planning. First of all, the Twin Towers were private property, so entering without a permit was trespassing. Philippe needed to study their structure, so he and two friends said they were journalists writing an article about the towers for an important French magazine about architecture, got access to the towers, and took all the photos they needed. Then they studied the buildings and created the complex design to secure the wire between the top of the two buildings safely.

On the evening of August 6th, two of them went to the North Tower and two to the South Tower with fake IDs, carrying the heavy equipment to the roofs, and they worked all night to install the wire. In the morning, other friends met in the street below, and when Philippe, dressed in black, started walking on the wire a quarter of a mile above the ground, they pointed at him, shouting, “Look!” People looked up: from the street they could not see the wire, so what they saw was a man walking on the clouds—something they were not going to forget. He was up there for 45 minutes and made the crossing eight times.

He was arrested and charged with trespassing and disorderly conduct—he did, after all, stop traffic and put himself and others in danger. However, nobody was hurt, nothing was damaged or stolen, and he created wonderful memories for all the witnesses. So, he was freed on condition that he did a free show for children in Central Park. His “heist” has been called “the artistic crime of the century.”

Unit 10 Mysteries

Track 22

Welcome to our new episode of Unsolved Mysteries from Lincoln High. I’m Terry Santos, and today I’m going to tell you about the world’s biggest unsolved art theft: The Isabella Stewart Gardner Museum heist.

The museum was opened in Boston in 1903 to house the large art collection that Isabella Stewart Gardner had bought over the years. She thought art should be accessible to everybody and not locked away in private houses, and she wanted her collection to be on display for the general public forever. So, she bought some land, she built the museum in the style of an Italian palace, personally arranged the rooms and the artworks, and left instructions and money for the museum to carry on her vision after her death.

Somebody, however, disagreed with her ideas, and on March 18th, 1990, the museum was robbed. At around one o’clock in the morning, two policemen arrived and said they had received orders to investigate strange noises coming from the courtyard inside the museum. Although the rules did not allow strangers to be let in when the museum was closed, one of the security guards on duty thought that police should be allowed in and opened the door. In reality, however, the men who came in were not policemen, but thieves dressed as policemen, and before the two security guards could raise the alarm, the thieves tied them up and took them to the basement. Then the two fake policemen went into the museum rooms, and during the following 81 minutes, took 13 works of art worth a total value of \$500 million.

The museum had a security system that detected movement, and it recorded where the thieves went and for how long. You can see an example of these records if you visit the museum's website. However, there were no security cameras, so the only description of the thieves was given to the police by the two guards. This was an additional problem: The fact that one of the security guards had broken the rules made the police think it was an inside job and the security guard was part of the gang that robbed the museum. They also thought that both security guards were accomplices. Either way, the value of their descriptions was doubtful.

What happened still remains a mystery. The paintings were never found, and nobody has ever been arrested. The police wondered why the paintings that were stolen were chosen, as they were not the most valuable in the museum. The thieves were in the museum long enough to take anything they wanted, so their selection led to the speculation that the criminals were probably not experts employed to steal specific works. There are many theories about who organized the heist, and various people became suspects, but they died before anything could be proven. Lastly, the police do not think the artworks were sold. So, the mystery is unsolved. To this day, the Museum offers a reward for information leading to the recovery of the artworks, and the case has not been closed. The museum keeps the frames where the paintings originally were, as a sign of hope that they will be returned one day.

So, what do you think? Who did it? Was it an inside job? Were the security guards accomplices? Where are the stolen paintings? Write to us, and we will publish the most interesting theories on our website.

Track 23

The Mysteries of Nazca

In the desert of Peru, the Nazca Lines have mystified people for decades. Seen from the ground, they look like random lines scratched into the earth, but from high above, these marks are huge images of birds, fish, and seashells. That's why these patterns were not discovered until the 1930s, when pilots first saw them while flying over the area. In all, there are about 70 different human and animal figures, along with 900 triangles, circles, and lines.

Researchers believe that the lines are at least 1,500 years old. They know what techniques were used to make them, but what nobody knows is why they were made. And like all unsolved mysteries, this has attracted a lot of speculation.

I think the most unlikely explanation is the one a Swiss writer named Erich von Däniken came up with. In 1968, he wrote that the Nazca lines were designed as a landing place for UFOs by people who received instructions from extraterrestrials—a sort of airport for alien spaceships.

The American explorer Paul Kosok had a more plausible theory. In the 1940s, he suggested that the drawings were a map of the movement of the stars and planets and called Nazca "the largest astronomy book in the world." It was an interesting idea, but unfortunately, when later

an astronomer tested this theory on a computer, he couldn't find any connection between the lines and the movements of the stars.

Recently, two other scientists, David Johnson and Steve Mabee, have speculated that the lines could be a giant map of the underground water. Given that the area is one of the driest places in the world, finding water would have been vital for the Nazca people. Other scientists are searching for evidence to prove this.

To me, the most interesting theories, which cannot be proven, are connected with art and religion. Since their appearance on Earth, humans seem to have used art to entertain each other, to record events, and to try to communicate with gods. They built temples and statues, so why not use the desert as a huge canvas to draw amazing art that could be seen from the sky? I prefer to think of these lines as the result of some wonderful artists' imagination asking the god of storms for rain in the desert, rather than the request of an engineer from another planet who wanted an airport.

Unit 11 Learning

Track 24

Paco: Hello, and welcome to another podcast of our School Project series, where we ask the right questions about your school subjects. Today, our guest is professor Layla Said from the University of Pentrich. Professor Said, welcome and thank you for being here.

Professor Said: Thank you for inviting me, Paco. I'm very glad to be here.

Paco: Professor Said is here to tell us about critical thinking and critical thinking skills. Professor, everybody talks about the importance of critical thinking, but nobody says exactly what it is. So, could you start with that, please?

Professor Said: Of course. The simplest description is this: critical thinking is a way of thinking that makes sure you have very good reasons for your beliefs. In a way, it means putting your beliefs to the test by asking difficult questions about them.

Paco: Hmm ... sounds like a lot of work and not much fun ... Maybe you could tell us why we should do it.

Professor Said: Sure, but let me start with this: When you were growing up, you learned to speak from your family and everybody around you, and everybody in your community spoke in the same way, right? What happened the first time you spoke to somebody from a completely different part of the country?

Paco: Well, I noticed they had an accent.

Professor Said: Exactly. *They* had an accent. Of course, you also have an accent, but you don't hear it because, to you, that's the natural, *correct*, way to speak. So, it feels like everybody from other parts of the country has an accent, but not you and the people you grew up with. That's what habits, the things we're used to, do to us: we don't see them—or, in this case, hear them.

Paco: OK, I, and I'm sure our listeners can follow that. But why does that matter?

Professor Said: If we are talking about thinking and beliefs, it matters a lot, because the decisions we make, big and small, are based on beliefs that we have formed, sometimes when we were very young, and we have always held. They feel so normal that we don't see them. So, we have them, but we have not *chosen* them, and they may be wrong.

Paco: Could you give us an example?

Professor Said: Sure. When I was growing up, I thought that people who speak slowly are not very smart. I didn't even know I thought that—I just did. Then I went to college and had to attend classes taught by a professor who spoke slowly and was very, very smart. So, I started thinking, and I understood: I'm from New York, and we talk very fast there. My aunt Sara disliked her daughter's husband, and always said he was not very intelligent. He was from Louisiana, and I noticed that he spoke slowly, as they do there. So as a six-year-old, I thought: *slow talker equals not very smart*. Anyway, I never made friends with slow talkers, until I was forced to examine my belief. Which was lucky, because at college I met another slow talker who was just great, and I married him ...

Paco: Ha ha! That's nice! But what should we do?

Professor Said: Here's the problem: if we don't think critically, we don't know what our deep beliefs are and where they come from, but they control our life. They could even be a *misunderstanding* of somebody else's beliefs, as in the case of my aunt Sara. She didn't think that slow talkers were unintelligent. She just thought one particular man was not intelligent, and by chance, he was also a slow talker. So, if we want to live a life that is our own, and make decisions that are our own, and not somebody else's, we need to learn critical thinking skills. If we don't, we could be living somebody else's life.

Paco: And what are these skills?

Professor Said: There are some rules. First of all, be happy every time you meet one somebody with opinions that are different from yours: like with accents, the difference is what shows you a hidden belief you have that feels right just because it's familiar to you, so you don't see it. Remember: you also have an accent!

Paco: OK. Not easy, but I can try.

Professor Said: I know—talking to people you agree with is so much easier and a lot less irritating! Number two: once you see a belief you have, ask yourself questions. The first question is: Is it true? The second question is: How do I know that it is true? Is that because it happened to me just once, and I think it's a general rule? Because somebody told me? Because everybody thinks it's true? None of these are good reasons: you need to find a very good argument that is not an opinion or a feeling, and that you can prove to somebody else. Just saying, "but that's what I honestly think," or "but this is true," will not persuade anybody, and should not persuade *you*.

Paco: Are you saying that honesty is not a good argument?

Professor Said: Definitely. I honestly believed that slow talkers were not intelligent! So that's rule number three: you must evaluate the argument, the evidence you have found, and the opposing argument. You must never forget that you don't know everything.

Paco: It sounds like what you are saying is that we can only find the truth by talking to people we disagree with.

Professor Said: That's right. They see things we don't see, and we see things they don't see. But we can only show each other the other side if we are both looking for the truth. If each of us talks to win, we will be as blind as we were before we started talking. We can only be free of false ideas if we work together.

Paco: I like your idea of freedom! Professor Said, thank you very much for talking to us.

Track 25

Two Types of Brain

Virgil

In 1993, neurologist Oliver Sacks published an article in *The New Yorker* called “To See and Not To See” in which he told the story of a man, Virgil (not his real name), who had lost his eyesight when he was a child, but had gotten it back after an operation 45 years later. The doctors thought the operation had been successful and excitedly waited for the bandages to come off and to see the happiness on Virgil’s face. They and Virgil were greatly disappointed, though: Virgil’s eyes could see, but his brain could not understand the images it was receiving from his eyes. In other words, the brain had lost the ability to process the data the eyes were sending, and what his eyes saw made no sense to him. This told Sacks that images are not formed in our eyes but in our brain—i.e., the camera doesn’t know what it is recording.

Sequences? No, Thanks!

Sacks’s conclusion is helpful in discussing dyslexia. The brain of a dyslexic person seems to process data from the eyes in a way that is different from how a non-dyslexic brain does it. As a result, there are considerable differences between how easily each group can perform the same tasks. The most obvious difference is that many dyslexics struggle with reading, writing, and lists. That is because these tasks are sequential: they depend on the ability to detect and remember the order of letters in words and words in sentences, which a dyslexic brain finds difficult to process.

Spot the Nonsense

However, dyslexics can accurately identify visual patterns and where the pattern is broken more easily than non-dyslexics. This is what a team of psychologists from the University of Wisconsin-Eau Claire discovered in 2003. They conducted an experiment in which they gave participants a number of images and asked them to pick out the ones that showed impossible things. They found that people with dyslexia were the fastest at the task.

The Bigger Picture

Dyslexics can also think in images, visualize 3-D shapes from 2-D drawings, think creatively about ideas that do not seem connected, and find solutions more easily and often better than non-dyslexic people. This explains why dyslexic people excel at visual arts, architecture, math, science, and critical thinking. Although dyslexia was not known at the time, Picasso, Edison, Walt Disney, Agatha Christie, and Einstein, just to give a few examples, were probably dyslexic. They all did terribly in school because of their dyslexia, but then went on to make their mark on the world.

A Sad Conclusion

For Virgil, however, regaining his sight at 50 might have been too late. Although the operation had fully repaired his eyes, his brain never learned how to process images again, and he almost completely lost his sight again not long after the operation.

Track 26

Mom: Marcos, dinner will be ready soon.

Marcos: Thanks, Mom. I just want to finish this thing first. I need another half hour or so.

Mom: What is it?

Marcos: A school project about inventions. I chose to do it about the telephone, but it's a very complicated story. Do you know what a patent is?

Mom: It's a document that says you're the inventor of a device. When you invent something, you write down exactly what it is and how it works, and apply for a patent, or you patent it. It means that for a specific number of years, if somebody wants to produce something based on your invention and make money with it, they have to ask for your permission and pay you.

Marcos: Ah! Now I understand! OK, the story about the telephone is that it was patented by Alexander Graham Bell in 1876, and he made a lot of money with it, of course, but it seems that he might have stolen other people's ideas, and he may not be the real inventor after all.

Mom: Why? What happened?

Marcos: There were two other people who were working on it, who both said they invented it. One was an American called Elisha Gray, and the other one was an Italian immigrant called Antonio Meucci. Meucci's story is very sad. He was born into a very poor family in Florence in 1808—the first of nine children, and four of them died when they were very little. He had to work to pay for his education and could only study part-time. He got married and emigrated to Cuba for work. He made some money there, but at the end of his contract, he and his wife had to leave, and they went to the US. He invested his money in a factory which later closed, so he lost all his money and became poor again.

Mom: OK, but what does this have to do with telephones?

Marcos: Well, Meucci was a very creative man. He invented all sorts of things, and he worked especially hard on this idea of a device that carried your voice to a different place from where you are, although he didn't call it a *telephone*. He built at least 30 different types of this device. First, when he was working in a theater in Florence, to help communication between people working near the stage and people in the control room. Later, in the US, so that his wife, who had become paralyzed, could talk to people in other rooms.

Mom: Ah! Good man.

Marcos: He tried to patent his device, but he had two problems: one was that he never really learned English; the other was that by the time his invention was ready, he had become poor again and didn't have the money needed to apply for the patent.

Mom: Oh, that really is sad. But if Bell developed his telephone separately ...

Marcos: Well, that's what is in doubt: Bell and Meucci shared an office, so Bell knew what Meucci was doing.

Mom: Ah. So, what happened?

Marcos: Well, Meucci applied for a short patent, which was cheaper and protected his invention for one year. But it was done badly, with lots of information missing. Then he sent a model of his device and the technical details to the telegraph company Western Union and asked to meet the directors. They didn't meet him, but they kept the model, and when he asked for it back, they told him it had been lost. This was in 1874.

Mom: Ah, so when Bell patented the telephone two years later ...

Marcos: [*interrupting her*] Exactly! And what's worse, Bell made a deal with Western Union! It looks very suspicious, doesn't it? Meucci sued Bell, and it looked like he was going to win, but he died. Bell became very famous and made a lot of money. The question of who invented the telephone still hasn't been answered to this day: in 2002, the United States Congress recognized Meucci as the inventor of the telephone 16 years earlier than Bell, but the Senate did not vote. Ten days after the vote in the US Congress, the House of Commons of Canada, where Bell lived for a long time, voted that Bell was the inventor of the telephone. Of course, the Scots and the Italians have no doubts.

Mom: The Scots?

Marcos: Bell was born in Scotland, in Edinburgh, so he was also an immigrant to the US.

Mom: What about that third guy?

Marcos: Elisha Gray? That's another long story. Can I tell you after dinner?

Track 27

Landscape, Illustrations, and Humor

William Heath Robinson was a British cartoonist and illustrator who was born in London in 1872 into a family of artists: his father was an illustrator, and both his older brothers also became illustrators before him. He studied art at Islington Art School and then at the Royal Academy to become a landscape painter, but he soon realized that he wouldn't have been able to earn enough money to pay the bills. So, he put aside his landscape painting ambitions and started working as a book illustrator.

Until that time, printed illustrations could only be simple because the technique used for printing them, called woodblock printing, would have required too much time and work to reproduce complicated drawings. Additionally, they could only be printed in black and white. However, recent innovations allowed illustrations to go straight to print without going through the woodblock process, which meant that much more complex artworks could be reproduced in books. At the same time, more innovations made printing in color also possible.

Heath Robinson took full advantage of the new technology to show what he could do. In the year 1900, he created beautiful, complex pen and ink drawings to illustrate a collection of poems by Edgar Allan Poe, and in 1902, he produced wonderful watercolor images for a full-color edition of *Don Quixote* by the Spanish author Miguel de Cervantes.

Things seemed to be going well: 1902 is also the year in which he wrote and illustrated his first book of children's stories, *The Adventures of Uncle Lubin*, and the following year he married Josephine Latey. However, they had just had their first daughter when the publisher with which Robinson had a large contract went bankrupt, so he had to find another source of income to feed his family.

That's when he started publishing the cartoons he is best known for: illustrations of enormously complicated machines built to achieve ridiculously simple outcomes, which he used to make gentle fun of people's confidence in technological solutions to solve problems that did not need technology. His crazy inventions use the steam power of pots, the heat of candles, and complex

systems of wheels, ropes, parachutes, and balloons to do things like throw water at a noisy cat. It's not just the images of the inventions that are crazy—they also have names like *The Multimovement Tabby Silencer*. His huge and complex machine for making holes in blocks of cheese involves a giant fork and four men to operate it.

He was so successful that, in the UK at that time, "Heath Robinson" was the term used to refer to unnecessarily complicated machines. His serious work has remained very influential with illustrators, and his humor lives on in Wallace, the inventor of crazy machines in the stop-motion animation movies from British director Nick Park about the adventures of Wallace and his much smarter dog: Gromit.