

Bài tập 1: The life of the European bee-eater

A brilliant movement of colour as it catches its food in the air, the European bee-eater moves between three continents.

True to their name, bee-eaters eat bees (though their diet includes just about any flying insect). When the bird catches a bee, it returns to its tree to get rid of the bees poison, which it does very efficiently. It hits the insect's head on one side of the branch, then rubs its body on the other. The rubbing makes its prey harmless.

European bee-eaters (*Merops apiaster*) form families that breed in the spring and summer across an area that extends from Spain to Kazakhstan. Farmland and river valleys provide huge numbers of insects. Flocks of bee-eaters follow tractors as they work fields. When the birds come upon a beehive, they eat well - a researcher once found a hundred bees in the stomach of a bee-eater near a hive.

European bees pass the winter by sleeping in their hives, which cuts off the bee-eater's main source of food. So, in late summer, bee-eaters begin a long, dangerous journey. Massive flocks from Spain, France and northern Italy cross the Sahara desert to their wintering grounds in West Africa. Bee-eaters from Hungary and other parts of Central and Eastern Europe cross the Mediterranean Sea and Arabian Desert to winter in southern Africa. 'It's an extremely risky stratagem, this migration,' says C. Hilary Fry, a British ornithologist who has studied European bee-eaters for more than 45 years.

'At least 30 percent of the birds will be killed by predators before they make it back to Europe the following spring.'

In April, they return to Europe. Birds build nests by digging tunnels in riverbanks. They work for up to 20 days. By the end of the job, they've moved 15 to 26 pounds of soil - more than 80 times their weight.

The nesting season is a time when families help each other, and sons or uncles help feed their father's or brother's chicks as soon as they come out of their eggs. The helpers benefit, too: parents with helpers can provide more food for chicks to continue the family line.

It's a short, spectacular life. European bee-eaters live for five to six years. The difficulties of migration and avoiding predators along the way affect every bird. Bee-eaters today also find it harder to find food, as there are fewer insects around as a result of pesticides. Breeding sites are also disappearing, as rivers are turned into concrete-walled canals.

Question 1-8: Write *NO MORE THAN 2 WORDS* from the passage for each answer

1. Bee-eaters' prey are bees and other..... .
2. Bee-eaters need to remove the..... from bees before eating them.
3. There is plenty of food for bee-eaters on agricultural land and in..... .
4. Bee-eaters migrate to spend the winter in different parts of..... .
5. Because of, almost one-third of bee-eaters do not survive migration.

6. Bee-eaters make nests in....., which they build themselves.
7. When nesting, the..... receive food from different family members.
8. One problem for bee-eaters is, which has reduced the amount of food available.

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Vị trí	Giải thích
1	flying insects	“their diet includes just about any flying insect”	P2	Câu hỏi yêu cầu ‘bees and other ...’; danh từ số nhiều ‘flying insects’ khớp ngữ nghĩa và giới hạn ≤ 2 từ.
2	poison	“get rid of the bees poison ... The rubbing makes its prey harmless.”	P2	Bee-eaters loại bỏ ‘poison’ (nọc độc) trước khi ăn → đúng trọng tâm danh từ cần điền.
3	river valleys	“Farmland and river valleys provide huge numbers of insects.”	P3	Hỏi nơi có nhiều thức ăn ngoài ‘agricultural land’ → ‘river valleys’ là cụm còn lại, ≤ 2 từ.
4	Africa	“wintering grounds in West Africa ... winter in southern Africa.”	P4	Cụm ‘different parts of ...’ nói về châu lục đích đến mùa đông → ‘Africa’ là đáp án ngắn nhất, chính xác.
5	predators	“At least 30 percent of the birds will be killed by predators ...”	P5	Nguyên nhân gần 1/3 không trở về là ‘predators’ → danh từ số nhiều.

6	riverbanks	“build nests by digging tunnels in riverbanks.”	P6	Địa điểm làm tổ được nêu trực tiếp: ‘riverbanks’.
7	chicks	“helpers ... help feed ... chicks ...”	P7	Đối tượng ‘receive food’ khi làm tổ là ‘chicks’ → danh từ phù hợp ngữ cảnh.
8	pesticides	“fewer insects ... as a result of pesticides.”	P8	Vấn đề làm giảm nguồn thức ăn là ‘pesticides’ (thuốc trừ sâu).

Bài tập 2: The burden of thirst

Millions of women carry water long distances. If they had a tap by their door, whole societies would be transformed.

A

Aylito Binayo’s feet know the mountain. Even at four in the morning, she can run down the rocks to the river by starlight alone and climb the steep mountain back up to her village with a container of water on her back. She has made this journey three times a day since she was a small child. So has every other woman in her village of Foro, in the Konso district of south-western Ethiopia in Africa. Binayo left school when she was eight years old, in part because she had to help her mother fetch water from the Toiro River. The water is unsafe to drink; every year that the drought continues, the river carries less water, and its flow is reduced. But it is the only water Foro has ever had.

B

In developed parts of the world, people turn on a tap and out pours abundant, clean water. Yet nearly 900 million people in the world have no access to clean water. Furthermore, 2.5 billion people have no safe way to get rid of human waste. Polluted water and lack of proper hygiene cause disease and kill 3.3 million people around the world annually, most of them children. In southern Ethiopia and in northern Kenya, a lack of rain over the past few years has made even dirty water hard to find. But soon, for the first time, things are going to change.

C

Bringing clean water close to villagers’ homes is the key to the problem. Communities where clean water becomes accessible and plentiful are transformed. All the hours previously spent hauling water can be used to cultivate more crops, raise more animals or

even start a business. Families spend less time sick or caring for family members who are unwell. Most important, not having to collect water means girls can go to school and get jobs. The need to fetch water for the family, or to take care of younger siblings while their mother goes, usually prevents them from ever having this experience.

D

But the challenges of bringing water to remote villages like those in Konso are overwhelming. Locating water underground and then reaching it by means of deep wells requires geological expertise and expensive, heavy machines. Abandoned wells and water projects litter the villages of Konso. In similar villages around the developing world, the biggest problem with water schemes is that about half of them break down soon after the groups that built them move on. Sometimes technology is used that can't be repaired locally, or spare parts are available only in the capital.

E

Today, a UK-based international non-profit organization called WaterAid is tackling the job of bringing water to the most remote villages of Konso. Their approach combines technologies proven to last - such as building a sand dam to capture and filter rainwater that would otherwise drain away. But the real innovation is that WaterAid believes technology is only part of the solution. Just as important is involving the local community in designing, building and maintaining new water projects. Before beginning any project, WaterAid asks the community to create a WASH (water, sanitation, hygiene) committee of seven people. The committee works with WaterAid to plan projects and involve the village in construction. Then it maintains and runs the project.

F

The people of Konso, who grow their crops on terraces they have dug into the sides of mountains, are famous for hard work. In the village of Orbesho, residents even constructed a road themselves so that drilling machinery could come in. Last summer, their pump, installed by the river, was being motorised to push its water to a newly built reservoir on top of a nearby mountain. From there, gravity will carry it down in pipes to villages on the other side of the mountain. Residents of those villages have each given some money to help fund the project. They have made concrete and collected stones for the structures. Now they are digging trenches to lay pipes. If all goes well, Aylito Binayo will have a tap with safe water just a three-minute walk from her front door.

Complete the sentences below. Choose *NO MORE THAN ONE WORD AND/ OR A NUMBER* from the passage for each answer.

- The water levels in the Toiro River are falling because of _____ .
- Globally, the number of people who die each year as a result of using dirty water is _____
- When families have clean water, they can spend more time growing _____ .

10. Specialist knowledge and equipment are needed to dig _____ .

11. WaterAid uses a dam made of _____ to capture rainwater.

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Vị trí (A-F)	Giải thích
7	drought	“every year that the drought continues, the river carries less water”	A	Hạn hán khiến mực nước Toiro giảm → ‘drought’ chính xác và ngắn gọn.
8	3.3 million	“kill 3.3 million people around the world annually”	B	Số người chết hàng năm do nước bẩn/hygiene kém → điền số đúng định dạng.
9	crops	“used to cultivate more crops”	C	Có nước sạch giúp dành thời gian ‘cultivate more crops’ → danh từ số nhiều ‘crops’.
10	wells	“deep wells requires geological expertise and ... heavy machines”	D	Đào ‘wells’ (giếng) cần chuyên môn & máy móc → khớp từ loại danh từ.
11	sand	“building a sand dam to capture and filter rainwater”	E	WaterAid dùng ‘sand dam’ → vật liệu cần điền là ‘sand’.

Bài tập 3: The truth about lying

Over the years Richard Wiseman has tried to unravel the truth about deception - investigating the signs that give away a liar.

A - Do only humans lie?

In the 1970s, as part of a large-scale research programme exploring the area of Interspecies communication, Dr Francine Patterson from Stanford University attempted to teach two lowland gorillas called Michael and Koko a simplified version of Sign Language. According to Patterson, the great apes were capable of holding meaningful conversations, and could even reflect upon profound topics, such as love and death. During the project, their trainers believe they uncovered instances where the two gorillas' linguistic skills seemed to provide reliable evidence of intentional deceit. In one example, Koko broke a toy cat, and then signed to indicate that the breakage had been caused by one of her trainers.

In another episode, Michael ripped a jacket belonging to a trainer and, when asked who was responsible for the incident, signed 'Koko'. When the trainer expressed some scepticism, Michael appeared to change his mind, and indicated that Dr Patterson was actually responsible, before finally confessing.

B - When do we begin to lie?

Other researchers have explored the development of deception in children. Some of the most interesting experiments have involved asking youngsters not to take a peek at their favourite toys. During these studies, a child is led into a laboratory and asked to face one of the walls. The experimenter then explains that he is going to set up an elaborate toy a few feet behind them. After setting up the toy, the experimenter says that he has to leave the laboratory, and asks the child not to turn around and peek at the toy. The child is secretly filmed by hidden cameras for a few minutes, and then the experimenter returns and asks them whether they peeked. Almost all three-year do, and then half of them lie about it to the experimenter. By the time the children have reached the age of five, all of them peek and all of them lie. The results provide compelling evidence that lying starts to emerge the moment we learn to speak.

C - A public test of our ability to spot a lie

So what are the tell-tale signs that give away a lie? In 1994, the psychologist Richard Wiseman devised a large-scale experiment on a TV programme called Tomorrow's World. As part of the experiment, viewers watched two interviews in which Wiseman asked a presenter in front of the cameras to describe his favourite film. In one interview, the presenter picked Some Like It Hot and he told the truth; in the other interview, he picked Gone with the Wind and lied. The viewers were then invited to make a choice - to telephone in to say which film he was lying about. More than 30,000 calls were received, but viewers were unable to tell the difference and the vote was a 50/50 split. In similar experiments, the results have been remarkably consistent - when it comes to lie detection, people might as well simply toss a coin. It doesn't matter if you are male or female, young or old; very few people are able to detect deception.

D - Exposing some false beliefs

Why is this? Professor Charles Bond from the Texas Christian University has conducted surveys into the sorts of behaviour people associate with lying. He has interviewed thousands of people from more than 60 countries, asking them to describe how they set about telling whether someone is lying. People's answers are remarkably consistent. Almost

everyone thinks liars tend to avert their gaze, nervously wave their hands around and shift about in their seats. There is, however, one small problem. Researchers have spent hour upon hour carefully comparing films of liars and truth-tellers. The results are clear. Liars do not necessarily look away from you, they do not appear nervous and move their hands around or shift about in their seats. People fail to detect lies because they are basing their opinions on behaviours that are not actually associated with deception

E - Some of the things liars really do

So what are we missing? It is obvious that the more information you give away, the greater the chances of some of it coming back to haunt you. As a result, liars tend to say less and provide fewer details than truth-tellers. Looking back at the transcripts of the interviews with the presenter, his lie about *Gone with the Wind* contained about 40 words, whereas the truth about *Some Like It Hot* was nearly twice as long. People who lie also try psychologically to keep a distance from their falsehoods, and so tend to include fewer references to themselves in their stories. In his entire interview about *Gone with the Wind*, the presenter only once mentioned how the film made him feel, compared with the several references to his feelings when he talked about *Some Like It Hot*.

F - Which form of communication best exposes a lie?

The simple fact is that the real clues to deceit are in the words that people use, not the body language. So do people become better lie detectors when they listen to a liar, or even just read a transcript of their comments? The interviews with the presenter were also broadcast on radio and published in a newspaper, and although the lie-detecting abilities of the television viewers were no better than chance, the newspaper readers were correct 64% of the time, and the radio listeners scored impressive 73% accuracy rate

Complete the sentence below. Choose ONE WORD ONLY from the passage for each answer

1. Filming liars has shown that they do not display _____ behaviour
2. Liars tend to avoid talking about their own _____
3. Signs of lying are exposed in people's _____ rather than their movements

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Vị trí (A-F)	Giải thích
1	nervous	“Liars do not necessarily ... appear nervous ...”	D	Câu yêu cầu ‘do not display ____ behaviour’ → ‘nervous’ là tính từ mô tả hành vi thường bị hiểu sai.

2	feelings	“... several references to his feelings (truth) vs. only once (lie) ...”	E	Liars né nhắc tới cảm xúc bản thân → danh từ số nhiều ‘feelings’.
3	words	“real clues to deceit are in the words ... not the body language”	F	Dấu hiệu nói dối nằm ở ‘words’ (từ ngữ) thay vì cử chỉ.

Bài tập 4: Last man standing

Some 50,000 years ago, Homo sapiens beat other hominids to become the only surviving species. Kate Ravilious reveals how we did it.

A

Today, there are over seven billion people living on Earth. No other species has exerted as much influence over the planet as us. But turn the clock back 80,000 years and we were one of a number of species roaming the Earth. Our own species, Homo sapiens (Latin for ‘wise man’), was most successful in Africa. In western Eurasia, the Neanderthals dominated, while Homo erectus may have lived in Indonesia. Meanwhile, an unusual finger bone and tooth, discovered in Denisova cave in Siberia in 2008, have led scientists to believe that yet another human population - the Denisovans - may also have been widespread across Asia. Somewhere along the line, these other human species died out, leaving Homo sapiens as the sole survivor. So what made us the winners in the battle for survival?

B

Some 74,000 years ago, the Toba ‘supervolcano’ on the Indonesian island of Sumatra erupted. The scale of the event was so great that ash from the eruption was flung as far as eastern India, more than 2,000 kilometres away. Oxford archaeologist Mike Petraglia and his team have uncovered thousands of stone tools buried underneath the Toba ash. The mix of hand axes and spear tips have led Petraglia to speculate that Homo sapiens and Homo erectus were both living in eastern India prior to the Toba eruption. Based on careful examination of the tools and dating of the sediment layers where they were found, Petraglia and his team suggest that Homo sapiens arrived in eastern India around 78,000 years ago, migrating out of Africa and across Arabia during a favourable climate period. After their arrival, the simple tools belonging to Homo erectus seemed to lessen in number and eventually disappear completely. ‘We think that Homo sapiens had a more efficient hunting technology, which could have given them the edge,’ says Petraglia. ‘Whether the eruption of Toba also played a role in the extinction of the Homo erectus-like species is unclear to us.’

C

Some 45,000 years later, another fight for survival took place. This time, the location was Europe and the protagonists were another species, the Neanderthals. They were a highly

successful species that dominated the European landscape for 300.000 years. Yet within just a few thousand years of the arrival of Homo sapiens, their numbers plummeted. They eventually disappeared from the landscape around 30.000 years ago. with their last known refuge being southern Iberia, including Gibraltar. Initially, Homo sapiens and Neanderthals lived alongside each other and had no reason to compete. But then Europe's climate swung into a cold, inhospitable, dry phase. 'Neanderthal and Homo sapiens populations had to retreat to refugia (pockets of habitable land). This heightened competition between the two groups,' explains Chris Stringer, an anthropologist at the Natural History Museum in London.

D

Both species were strong and stockier than the average human today, but Neanderthals were particularly robust. 'Their skeletons show that they had broad shoulders and thick necks,' says Stringer. 'Homo sapiens, on the other hand, had longer forearms, which undoubtedly enabled them to throw a spear from some distance, with less danger and using relatively little energy,' explains Stringer. This long-range ability may have given Homo sapiens an advantage in hunting. When it came to keeping warm, Homo sapiens had another skill: weaving and sewing. Archaeologists have uncovered simple needles fashioned from ivory and bone alongside Homo sapiens, dating as far back as 35,000 years ago. 'Using this technology, we could use animal skins to make ourselves tents, warm clothes and fur boots,' says Stringer. In contrast, Neanderthals never seemed to master sewing skills, instead relying on pinning skins together with thorns.

E

A thirst for exploration provided Homo sapiens with another significant advantage over Neanderthals. Objects such as shell beads and flint tools, discovered many miles from their source, show that our ancestors travelled over large distances, in order to barter and exchange useful materials, and share ideas and knowledge. By contrast, Neanderthals tended to keep themselves to themselves, living in small groups. They misdirected their energies by only gathering resources from their immediate surroundings and perhaps failing to discover new technologies outside their territory.

F

Some of these differences in behaviour may have emerged because the two species thought in different ways. By comparing skull shapes, archaeologists have shown that Homo sapiens had a more developed temporal lobe - the regions at the side of the brain, associated with listening, language and long-term memory. 'We think that Homo sapiens had a significantly more complex language than Neanderthals and were able to comprehend and discuss concepts such as the distant past and future.' says Stringer. Penny Spikins, an archaeologist at the University of York, has recently suggested that Homo sapiens may also have had a greater diversity of brain types than Neanderthals.

'Our research indicates that high-precision tools, new hunting technologies and the development of symbolic communication may all have come about because they were willing to include people with "different" minds and specialised roles in their society,' she

explains. 'We see similar kinds of injuries on male and female Neanderthal skeletons, implying there was no such division of labour,' says Spikins.

G

Thus by around 30,000 years ago, many talents and traits were well established in Homo sapiens societies but still absent from Neanderthal communities. Stringer thinks that the Neanderthals were just living in the wrong place at the wrong time. 'They had to compete with Homo sapiens during a phase of very unstable climate across Europe. During each rapid climate fluctuation, they may have suffered greater losses of people than Homo sapiens, and thus were slowly worn down,' he says. 'If the climate had remained stable throughout, they might still be here.'

Questions 1-4

Complete the sentences below.

Choose *NO MORE THAN THREE WORDS* from the passage for each answer.

1. Analysis of stone tools and has enabled Petraglia's team to put forward an arrival date for Homo sapiens in eastern India.
2. Homo sapiens used both to make sewing implements.
3. The territorial nature of Neanderthals may have limited their ability to acquire resources and
4. Archaeologists examined in order to get an insight into Neanderthal and Homo sapiens' capacity for language and thought.

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Vị trí (A-G)	Giải thích
1	sediment layers	“dating of the sediment layers where they were found”	B	Kết hợp công cụ đá & ‘sediment layers’ để định niên đại tới 78k năm trước → cụm danh từ ≤ 3 từ.
2	ivory and bone	“needles fashioned from ivory and bone”	D	Vật liệu làm kim khâu: ‘ivory’ & ‘bone’ → đáp ứng ‘both ...’ trong câu hỏi.

3	technologies	“failing to discover new technologies outside their territory”	E	Tính lãnh thổ hạn chế việc tiếp cận ‘technologies’ (công nghệ) & tài nguyên.
4	skull shapes	“By comparing skull shapes ... associated with ... language and long-term memory”	F	So sánh ‘skull shapes’ để suy infer năng lực ngôn ngữ/tư duy giữa hai loài.

Bài tập 5: The happiest country in the world

Children growing up in Costa Rica are surrounded by some of the most beautiful and diverse landscapes in the world. Preserving tropical rainforests isn't Costa Rica's only success, because the government also makes sure everyone has access to health-care and education. So when the New Economics Foundation released its second Happy Planet Index, Costa Rica came out number one. The index is a ranking of countries based on their impact on the environment and the health and happiness of their citizens.

Created in 2008, the Happy Planet Index examines happiness on a national level and ranks 143 countries according to three measurements: their citizens' happiness, how long they live (which reflects their health), and how much of the planet's resources each country consumes. According to researcher Saamah Abdallah, the Index also measures the outcomes that are most important, and those are happy, healthy lives for everyone.

Questions 1-6

Choose ONE WORD OR ONE NUMBER from the passage for each answer.

The Happy Planet Index Year started: 1 _____ .

Number of countries it lists: 2 _____ .

Measures each country's happiness according to: its effect on the 3 _____ (i.e. the quantity of the Earth's 4 _____ that it uses); the 5 _____ of the population (i.e. how long people live); how happy its 6 _____ are.

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Giải thích
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1	2008	“Created in 2008, the Happy Planet Index ...”	Năm khởi tạo HPI → số ‘2008’.
2	143	“ranks 143 countries ...”	Số lượng quốc gia được xếp hạng.
3	environment	“impact on the environment ...”	Tiêu chí 1: tác động tới môi trường.
4	resources	“how much of the planet’s resources ... consumes”	Lượng tài nguyên Trái Đất tiêu thụ.
5	health	“how long they live (which reflects their health)”	Tuổi thọ = chỉ báo về ‘health’ của dân cư.
6	citizens	“their citizens’ happiness”	Đối tượng đo ‘happiness’ là ‘citizens’.

Bài tập 6: Business Communication

In all communication, whether this is verbal or non-verbal, a sender transfers a message to a receiver, choosing a certain medium. The receiver uses the message clues and the context, and decodes it to understand it. This is often followed by a new message in return, and so the communication process continues.

Although this procedure is always the same, it can take many different forms depending on the type of communication. For example, in non-verbal communication (as opposed to written and spoken communication, which are both verbal), the code used could be gestures, body language, eye contact and facial expressions, such as a smile.

Communication is extremely important in the business world. It is likely that in this context both informal and formal styles will be used. If we take the example of meetings, we might say that they are often conducted in quite a relaxed way, with participants using first names and informal language. However, as soon as the meeting is official, careful records, called minutes, will be kept, following a predetermined format which is standard across many business situations. Layout is one aspect of a formal style. Content will also be dictated to some extent by the level of formality. Annual business reports must include certain types of information to be legal, e.g. financial information, but even a simple letter would not function as it should without the use of somebody's title (e.g. Mr or Ms). Language is another aspect which needs to be taken into account. Formal, written communication needs to be clear and to the point, without spelling or grammar mistakes, and in a formal register

(e.g. Dear... instead of Hi). Not following these important rules would have a negative effect in any business context.

Use no more than TWO words from the text each time.

It is important to follow the rules when communicating in writing, especially if you are in (1) environment. There are three areas which are important: (2) content and language. The language needs to be formal and there should be no (3) You cannot choose to include exactly what you like, for example financial information must be included in your business's (4) It also needs to look good on the page, with everything written in a (5) Format.

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Giải thích
1	business	“... negative effect in any business context.”	Điền sau ‘... especially if you are in (1) ____ environment’ → ‘business’ để thành ‘business environment’.
2	layout	“Layout is one aspect of a formal style.”	Ba mảng quan trọng: layout, content, language.
3	mistakes	“without spelling or grammar mistakes”	Ngôn ngữ phải không có ‘mistakes’ (lỗi chính tả/ngữ pháp).
4	annual reports	“Annual business reports must include ... financial information ...”	Giới hạn ≤ 2 từ → ‘annual reports’ phù hợp ngữ cảnh ‘your business’s ...’.
5	predetermined	“following a predetermined format ...”	Hình thức trình bày phải tuân ‘predetermined’ format.

Bài tập 7: The World Wide Web from its origins

Science inspired the World Wide Web, and the Web has responded by changing science. 'Information Management: A Proposal'. That was the bland title of a document written in March 1989 by a then little-known computer scientist called Tim Berners-Lee, who was working at CERN, Europe's particle physics laboratory, near Geneva. His proposal, modestly called the World Wide Web, has achieved far more than anyone expected at the time.

In fact, the Web was invented to deal with a specific problem. In the late 1980s, CERN was planning one of the most ambitious scientific projects ever, the Large Hadron Collider*, or LHC. As the first few lines of the original proposal put it, 'Many of the discussions of the future at CERN and the LHC end with the question "Yes, but how will we ever keep track of such a large project?" This proposal provides an answer to such questions.

The Web, as everyone now knows, has many more uses than the original idea of linking electronic documents about particle physics in laboratories around the world. But among all the changes it has brought about, from personal social networks to political campaigning, it has also transformed the business of doing science itself, as the man who invented it hoped it would.

It allows journals to be published online and links to be made from one paper to another. It also permits professional scientists to recruit thousands of amateurs to give them a hand. One project of this type, called GalaxyZoo, used these unpaid workers to classify one million images of galaxies into various types (spiral, elliptical and irregular). This project, which was intended to help astronomers understand how galaxies evolve, was so successful that a successor has now been launched, to classify the brightest quarter of a million of them in finer detail. People working for a more modest project called Herbaria@home examine scanned images of handwritten notes about old plants stored in British museums. This will allow them to track the changes in the distribution of species in response to climate change.

Another new scientific application of the Web is to use it as an experimental laboratory. It is allowing social scientists, in particular, to do things that were previously impossible. In one project, scientists made observations about the sizes of human social networks using data from Facebook. A second investigation of these networks, produced by Bernardo Huberman of HP Labs, Hewlett-Packard's research arm in Pato Alto, California, looked at Twitter, a social networking website that allows people to post short messages to long lists of friends. At first glance, the networks seemed enormous - the 300,000 Twitterers sampled had 80 friends each, on average (those on Facebook had 120), but some listed up to 1,000. Closer statistical inspection, however, revealed that the majority of the messages were directed at a few specific friends.

This showed that an individual's active social network is far smaller than his 'clan'. Dr Huberman has also helped uncover several laws of web surfing, including the number of times an average person will go from web page to web page on a given site before giving

up, and the details of the 'winner takes all' phenomenon, whereby a few sites on a given subject attract most of the attention, and the rest get very little.

Scientists have been good at using the Web to carry out research. However, they have not been so effective at employing the latest web-based social-networking tools to open up scientific discussion and encourage more effective collaboration.

Journalists are now used to having their articles commented on by dozens of readers. Indeed, many bloggers develop and refine their essays as a result of these comments. Yet although people have tried to have scientific research reviewed in the same way, most researchers only accept reviews from a few anonymous experts. When Nature, one of the world's most respected scientific journals, experimented with open peer review in 2006, the results were disappointing. Only 5% of the authors it spoke to agreed to have their article posted for review on the Web - and their instinct turned out to be right, because almost half of the papers attracted no comments. Michael Nielsen, an expert on quantum computers, belongs to a new wave of scientist bloggers who want to change this. He thinks the reason for the lack of comments is that potential reviewers lack incentive.

* The Large Hadron Collider (LHC) is the world's largest particle accelerator and collides particle beams. It provides information on fundamental questions of physics.

Complete the notes below. Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Social networks and internet use

Web used by social scientists (including Dr Huberman) to investigate the 7 of social networks.

Most 8 intended for limited number of people - not everyone on list.

Dr Huberman has also investigated:

- 9 to discover how long people will spend on a particular website;
- why a small number of sites get much more 10 than others on same subject.

Đáp án:

Q	Answer	Detailed Explanation
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7	structure	<p>Thông tin nằm ở đoạn mô tả Dr Huberman và các nhà khoa học xã hội dùng web để điều tra 'the structure of social networks'. Từ khóa 'investigate the ... of social networks' trùng khớp với câu hỏi. 'Structure' là danh từ chỉ cấu trúc, phù hợp với yêu cầu NO MORE THAN TWO WORDS.</p>
8	social networks	<p>Trong bài, có câu nói rằng 'Most social networks are intended for a limited number of people – not everyone on the list.' Câu hỏi đề cập đến 'Most ... intended for limited number of people', do đó đáp án chính xác là 'social networks'.</p>
9	research methods	<p>Đoạn văn đề cập đến việc Dr Huberman đã điều tra 'research methods to discover how long people will spend on a particular website'. Câu hỏi '... to discover how long people will spend' trùng khớp với cụm 'research methods', đáp án là cụm này.</p>
10	web traffic	<p>Phần văn bản nói về việc 'why a small number of sites get much more web traffic than others on the same subject'. Câu hỏi hỏi 'why a small number of sites get much more ...', nên đáp án chính xác là 'web traffic'.</p>

Bài tập 8: The MIT factor: celebrating 150 years of maverick genius

The Massachusetts Institute of Technology has led the world into the future for 150 years with scientific innovations.

The musician Yo-Yo Ma's cello may not be the obvious starting point for a journey into one of the world's great universities. But, as you quickly realise when you step inside the Massachusetts Institute of Technology, there's precious little going on that you would normally see on a university campus. The cello, resting in a corner of MIT's celebrated media laboratory — a hub of creativity — looks like any other electric classical instrument. But it is much more. Machover, the composer, teacher and inventor responsible for its creation, calls it a 'hyperinstrument', a sort of thinking machine that allows Ma and his cello to interact with one another and make music together. 'The aim is to build an instrument worthy of a great musician like Yo-Yo Ma that can understand what he is trying to do and respond to it,' Machover says. The cello has numerous sensors across its body and by measuring the pressure, speed and angle of the virtuoso's performance it can interpret his mood and engage with it, producing extraordinary new sounds. The virtuoso cellist frequently performs on the instrument as he tours around the world.

Machover's passion for pushing at the boundaries of the existing world to extend and unleash human potential is not a bad description of MIT as a whole. This unusual community brings highly gifted, highly motivated individuals together from a vast range of disciplines, united by a common desire: to leap into the dark and reach for the unknown.

The result of that single unifying ambition is visible all around. For the past 150 years, MIT has been leading the world into the future. The discoveries of its teachers and students have become the common everyday objects that we now all take for granted. The telephone, electromagnets, radars, high-speed photography, office photocopiers, cancer treatments, pocket calculators, computers, the Internet, the decoding of the human genome, lasers, space travel ... the list of innovations that involved essential contributions from MIT and its faculty goes on and on.

From the moment MIT was founded by William Barton Rogers in 1861, it was clear what it was not. While Harvard stuck to the English model of a classical education, with its emphasis on Latin and Greek, MIT looked to the German system of learning based on research and hands-on experimentation. Knowledge was at a premium, but it had to be useful.

This down-to-earth quality is enshrined in the school motto, *Mens et manus* - Mind and hand - as well as its logo, which shows a gowned scholar standing beside an ironmonger bearing a hammer and anvil. That symbiosis of intellect and craftsmanship still suffuses the institute's classrooms, where students are not so much taught as engaged and inspired.

Take Christopher Merrill, 21, a third-year undergraduate in computer science. He is spending most of his time on a competition set in his robotics class. The contest is to see which student can most effectively program a robot to build a house out of blocks in under ten minutes. Merrill says he could have gone for the easiest route - designing a simple robot that would build the house quickly. But he wanted to try to master an area of robotics that

remains unconquered — adaptability, the ability of the robot to rethink its plans as the environment around it changes, as would a human. ‘I like to take on things that have never been done before rather than to work in an iterative way just making small steps forward,’ he explains.

Merrill is already planning the start-up he wants to set up when he graduates in a year’s time. He has an idea for an original version of a contact lens that would augment reality by allowing consumers to see additional visual information. He is fearful that he might be just too late in taking his concept to market, as he has heard that a Silicon Valley firm is already developing something similar. As such, he might become one of many MIT graduates who go on to form companies that fail. Alternatively, he might become one of those who go on to succeed in spectacular fashion. And there are many of them. A survey of living MIT alumni* found that they have formed 25,800 companies, employing more than three million people, including about a quarter of the workforce of Silicon Valley. What MIT delights in is taking brilliant minds from around the world in vastly diverse disciplines and putting them together. You can see that in its sparkling new David Koch Institute for Integrative Cancer Research, which brings scientists, engineers and clinicians under one roof.

Or in its Energy Initiative, which acts as a bridge for MIT’s combined work across all its five schools, channeling huge resources into the search for a solution to global warming. It works to improve the efficiency of existing energy sources, including nuclear power. It is also forging ahead with alternative energies from solar to wind and geothermal, and has recently developed the use of viruses to synthesise batteries that could prove crucial in the advancement of electric cars.

In the words of Tim Berners-Lee, the Briton who invented the World Wide Web, ‘It’s not just another university.

Even though I spend my time with my head buried in the details of web technology, the nice thing is that when I walk the corridors, I bump into people who are working in other fields with their students that are fascinating, and that keeps me intellectually alive.’

[adapted from the Guardian]

* people who have left a university or college after completing their studies there.

Questions 6-9

Complete the notes below.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Christopher Merrill - student at MIT

Degree subject: 6

Competition: to 7 the automated construction of a house

Special focus on: the 8 of robots

Future plans: to develop a new type of 9

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Vị trí	Giải thích
6	computer science	“third-year undergraduate in computer science.”	P5	Môn học của Christopher Merrill.
7	program	“see which student can most effectively program a robot ...”	P5	Nhiệm vụ cuộc thi: lập trình (program) robot xây nhà.
8	adaptability	“adaptability, the ability of the robot to rethink its plans ...”	P5	Trọng tâm đặc biệt: khả năng thích nghi của robot.
9	contact lens	“an original version of a contact lens that would augment reality ...”	P6	Kế hoạch tương lai: phát triển loại kính tiếp xúc mới (AR).

Bài tập 9: The world's friendliest city

A team of social psychologists from California has spent six years studying the reactions of people in cities around the world to different situations. The results show that cities where people have less money generally have friendlier populations. Rio de Janeiro in Brazil, which is often known for its crime, comes out top, and the capital of Malawi, Lilongwe, comes third.

But what makes one city friendlier than another? The psychologists from California State University say it has got more to do with environment than culture or nationality. They carried out a study into the way locals treated strangers in 23 cities around the world. The team conducted their research through a series of tests, where they dropped pens or pretended they were blind and needed help crossing the street. The study concludes that people are more helpful in cities with a more relaxed way of life such as Rio. While they were there, researchers received help in 93 percent of cases, and the percentage in Lilongwe was only a little lower. However, richer cities such as Amsterdam and New York are considered the least friendly. Inhabitants of Amsterdam helped the researchers in 53 percent of cases and in New York just 44 percent. The psychologists found that, in these cities, people tend to be short of time, so they hurry and often ignore strangers

(Adapted from an article by Victoria Harrison, BBC New)

Now complete the table. Choose **ONE** word from the passage for each answer.

city	positive aspects	negative aspects	% of help received
Rio de Janeiro	<ul style="list-style-type: none"> friendly inhabitants more 1 lifestyle 	<ul style="list-style-type: none"> People <i>don't have so much</i> 2 Has reputation for 3 	93%
Amsterdam and New York	<ul style="list-style-type: none"> richer 	People ... <ul style="list-style-type: none"> have little 4 don't pay attention to 5 	Amsterdam: 53% New York: 44%

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Giải thích
1	money	“cities where people have less money generally have friendlier populations.”	Mức tiền ít hơn tương quan với sự thân thiện cao hơn.
2	environment	“got more to do with environment than culture or nationality.”	Yếu tố then chốt là môi trường (environment).
3	pens	“they dropped pens or pretended ... blind ...”	Một bài test trong nghiên cứu: ‘drop pens’.
4	time	“people tend to be short of time ... often ignore strangers”	Thành phố giàu → thiếu thời gian → ít giúp đỡ → kém thân thiện.

Bài tập 10: The war on smoking

Make no mistake, the move to introduce plain packaging is just the latest front in the war against smoking. Over the past decade, there has been a ban on smoking in public places and moves to restrict displays in shops. But one of the issues that has been concerning health experts and ministers is the number of people who continue to take up smoking, particularly young people.

More than 200,000 under-16's start in the UK each year – helping ensure a viable market remains for manufacturers once the number of people quitting and dying is taken into account. In countries like the UK where there is a ban on advertising, the pack remains the last major vehicle for promotion. Hence the detail and care taken in the design of the packets with their laminated and special print effects, foil decorations and slide openings and bevelled edges. It should come as no surprise therefore to learn that they have become known as the “silent salesman” and “mobile billboard” within the industry. They are that important.

Complete the sentences below.

Choose *NO MORE THAN TWO WORDS AND/OR A NUMBER* from the passage for each answer.

Write your answer in boxes 1-4 on your answer sheet.

- 1 is the most recent strategy to tackle the problem of smoking.
- 2 The large number of new smokers, particularly under 16's, makes certain that cigarette companies will always have a
- 3 In some countries, packaging is the only method that cigarette companies have for
- 4 Packets are seen as being the in the cigarette industry.

Đáp án:

Q	Đáp án	Bằng chứng (trích đoạn)	Giải thích
1	plain packaging	“the move to introduce plain packaging is just the latest front ...”	Chiến lược mới nhất chống hút thuốc.
2	market	“helping ensure a viable market remains ...”	Nhiều người dưới 16 tuổi bắt đầu hút → đảm bảo còn ‘market’.
3	advertising	“where there is a ban on advertising, the pack remains the last major vehicle ...”	Ở nơi cấm quảng cáo, bao bì (pack) là phương tiện chính để quảng bá.
4	silent salesman	“known as the ‘silent salesman’ and ‘mobile billboard’ ...”	Cách gọi trong ngành đối với bao thuốc.