ZÖLD ÚT SZAKNYELVI VIZSGA

ANGOL
MŰSZAI SZAKNYELV

FELADATGYŰJTEMÉNY AZ ÍRÁSBELI VIZSGÁHOZ

ALAP- ÉS
KÖZÉPFOK

A feladatgyűjteményben található:
2 db alap- és 8 db középfokú feladatsor
megoldókulcsokkal

Szerkesztette:
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READING COMPREHENSION

TECHNICAL TOPICS

LEVEL B1

1. Locomotive to return to Glasgow

Locomotive 3007, a 179-tonne class 15F built in 1944, has been returned from South Africa for restoration.

IT WAS nearly 200 tonnes of proudly built, but rusting, Glasgow steam engineering about to be shipped to China for recycling and turning into cars.

However, this massive locomotive was rescued from a South African railway siding and has been returned to its home city on a long journey by rail and sea.

And yesterday, restoration work started on the class 15F monster as part of a £300,000 project to make it the centrepiece of Glasgow's new Riverside Museum.

ScotRail apprentice engineers, who will soon be working on Britain's newest trains, are part of the team transforming the 65-year-old Locomotive 3007 before it goes on display in mid-2011.

The engine was chosen to epitomise the tens of thousands of Glasgow-built locomotives exported across the world.

Three of more than 200 built in the city are still running on South African heritage railways, which was also one of the last to use steam on main lines.

The locomotive's sheer scale – 74ft long, 13ft high and 179 tonnes – was required to pull heavy trains over the country's vast distances and rugged landscape. John Messner, the Glasgow Museum of Transport's railways curator, said: "It had very little decoration and is not the prettiest, but was a of tried and tested design."

The locomotive had to be towed 300 miles by rail to Durban to be brought home, with ten trailers added to a diesel locomotive to provide extra braking to ensure the engine did not run away. The train also kept having to stop because 3007's bearings repeatedly overheated.

The locomotive will be the largest and youngest engine at the new museum. The seven-month restoration will include replacing brass piping stripped from the locomotive while it stood in a Bloemfontein siding for 18 years after a crash.

Jonathon Gourlay, one of the ScotRail apprentices who will be working with project leaders Eura Conservation, said he relished the challenge.

Mr Gourlay, 18, from Fife, said: "I was taken aback by seeing the size of it. It has been rusting away, but we are going to make it look fabulous.

Louise Lawson, a project conservation and collections management officer at the Glasgow Museums Resource Centre in Nitshill, where the restoration is being carried out, said: "It will form part of one of the key displays in the new museum. It will be an absolutely fantastic project."

Task 1
Read the text and complete the table with your short notes (based on the text) with no more than 3-4 words, according to the example (0).

	NOTES
Type of locomotive	***0. class 15F***
Way of transporting old engine to Glasgow	1.
	2.
New location of engine	3.
Age of locomotive	4.
Measurements of locomotive: length:	5.
height:	6.
weight:	7.
Length of restoration period	8.
Site of restoration	9.
Importance of locomotive in the new museum	10.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	**TRUE or FALSE**
0. The locomotive has been brought back to Glasgow from China.	***T***
11. The material of the locomotive was to be recycled and used in the production of automobiles.	
12. Only experienced engineers are going to work on the restoration.	
13. The locomotive had to be strong to be able to work properly on the difficult routes of South Africa.	
14. The transportation staff had to solve several technical problems about the locomotive.	
15. All the original parts were there in the engine.	

2. 1,000 new hydro schemes to power Scottish homes

SCOTLAND is set to enter a new era of hydro power after an influential report revealed unused potential for more than 1,000 new schemes across the country, The Scotsman can reveal.
The study, commissioned by the Scottish Government, reveals enough extra hydro potential to power a quarter of the nation's homes.
It shows there are still 657 megawatts of financially viable hydro electricity schemes to exploit, which would power about 600,000 homes. This would come from using schemes smaller than 10 megawatts in size. These could be developed on a community basis by farmers or small landowners.
This is about half as much as the 1,379 megawatts of installed hydro capacity that already exists in Scotland.

Questions and answers

A. What is a hydro scheme?

0. A system for extracting energy from water as it moves. This usually involves the water dropping from one elevation to another.
   An underground sloping pipe is often used, so that water is restricted and builds up in pressure. This can be used to drive a turbine wheel.
   In flatter areas, where there is less pressure build-up or no pipe at all, much larger flows are required, and so larger turbines are used.

1. It is a form of green energy that can complement other renewables, such as onshore wind, by providing backup when needed.
   It can be stored and then drawn upon when there is a need for more electricity, such as in winter.
   It does not provide a constant supply, as the system's efficiency will fluctuate throughout the year with the flow of the water.

2. No, only 128 of the 1,019 potential new schemes would be expected to involve the use of a dam. Most would use a weir – which slightly raises the level of the river and creates a small, waterfall-type effect. It would channel some of the water into an underground pipe, which would build up to power a small turbine.

3. The hydro scheme has to be connected to the national grid. Distance from the grid may be the deciding factor of whether a scheme is viable. And there must be enough capacity in the grid for a new scheme to connect.

4. Anglers and environmental groups are worried about the state of the rivers and about the survival of the salmon population.

5. The Scottish Government is expected to examine the findings of the report as it forms its energy strategy.

Task 1
Read the article and match the questions with the correct answers. Write your answers in the table according to the example (0). There is one extra question you don't need to use.

0.	1.	2.	3.	4.	5.
A					

A. What is a hydro scheme?
B. Would all the new schemes involve dams?
C. How does the electricity get to my house?
D. Who supports the scheme?
E. What are the benefits of hydro power?
F. What happens next?
G. Who is against the scheme?

Task 2
Read the text again and complete the table with your short notes (based on the text) with no more than 6 words, according to the example (0).

	NOTES
Commissioner of the report	***0. Scottish Government***
Already existing hydro power capacity in Scotland	6.
Compulsory technical element of hydro schemes	7.
Optional technical elements of hydro schemes	8.
	9.
	10.
The role of hydro energy in relation to other alternative energy sources	11.
Specific features of the hydro energy	12.
	13.
Environmental concerns in connection with hydro energy	14.
	15.

LEVEL B2

3. How the Eden Project Works

In March 2001, the Eden Project, a massive environmental center in Cornwall, England, opened to the general public. The finished structure is an unprecedented accomplishment -- a giant, multi-domed greenhouse, containing plants from around the globe.

The Eden Project is a sprawling structure built along the side of a deep pit. The structure comprises three biomes, areas designed to represent three distinct climates found around the world.

Eden's designers decided not to use these traditional materials in their greenhouses. They went with glazed ethyl tetra fluoro ethylene (ETFE) foil instead which is a perfect covering for a greenhouse because it is strong, transparent and lightweight. A piece of ETFE weighs less than 1 percent of a piece of glass with the same volume. It is also a better insulator than glass, and it is much more resistant to the weathering effects of sunlight.

The Eden Project designers formed this ETFE material into extremely sturdy pillows, each made from three sheets of ETFE foil with layers of air pumped in between them. The air layers provide increased insulation without decreasing the amount of sunlight that shines through. The coolest thing about these pillows is that they are adjustable: On a colder day, they can be pumped up with more air to provide better insulation; on a hotter day, they can be partially deflated to allow more cooling. Eden's designers attached pillows together to form geodesic domes. In this structure, many flat panels, formed into triangles, pentagons, hexagons or other polygons, are pieced together to form a curved surface. This design is remarkable because none of the individual pieces are curved at all, but they come together to form a rounded structure. In the domes, these geometric panels are the ETFE pillows. Each pillow is attached to a web of interlocking steel tubes. Each dome actually has two web layers, one with hexagonal and pentagonal panels and one with triangular panels.

Like the steel grid in a skyscraper, the steel frame of the geodesic dome is incredibly strong relative to its weight. This weight (667 tons) is dispersed evenly throughout the entire structure so that the dome only needs support around its base, leaving lots of room for the plants inside. The edges of the dome rest on a sturdy foundation necklace, an underground concrete wall around the perimeter of the structure.

Designing these sorts of domes is a mind-boggling exercise in geometry. You have to figure out exactly which shapes to use and how to fit them all together to form a perfectly curved structure. Eden's designers figured everything out using sophisticated computer software. The software generated precise 3-D computer models of the different domes, which the designers fed into an automated production-line computer. Using the 3-D models, this computer determined which pieces the construction crew would need and directed machines to cut steel beams to those exact specifications. When it came time to build the domes, the crew simply followed the instructions and put all of the pieces together.

One advantage of the geodesic dome shape is that it adapts easily to most ground surfaces. Eden's designers describe the domes as giant bubbles that can be set down just about anywhere. The designers built the domes along the side of the pit that faces south, since the Sun is in the southern part of the sky in Cornwall. The slanted ground is perfectly positioned to absorb thermal energy all day long, heating the air even after the sun has gone down.

Eden's creators want it to evolve naturally. The building is designed so that it can change over time. The ETFE pillows are built to detach easily from the steel frame, so they can be replaced should a more efficient material come along. If the Eden Project is a success, it will continue to expand and develop in the decades to come.

Task 1
Read the text and provide short answers to the questions according to the example (0), in no more than 5-6 words.

QUESTIONS	ANSWERS
When was the enterprise opened to the public?	***0. In March 2001***
In which part of England is the Eden Project situated?	1.
What do the biomes in the dome structures show?	2.
What is the role of the air between the foil sheets?	3.
How are EFTE pillows secured in the domes?	4.
Where are the domes founded?	5.
What was used to specify the size of the steel beams?	6.
How is it possible to cool the domes?	7.
What makes it easy to replace EFTE pillows?	8.
Why should the EFTE pillows be changed at a later stage?	9.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	TRUE or FALSE
0. The structure of the dome is very heavy relative to its strength.	***F***
10. Instead of ETFE, they used conventional foil, because it is transparent and strong.	
11. The heat of the earth is used for warming the domes all throughout the day.	
12. The dome shape is more suitable for building it on slopes than on flat surfaces.	
13. The curved surface of the domes is formed by curved polygons.	
14. It will be possible to enlarge the Eden domes due to their flexible structure.	
15. The Eden Project domes make use of both geothermal and solar energy for their heating.	

4. The Eiffel Tower now generates its own power with new wind turbines

The famous Paris landmark has been fitted with two new wind turbines that generate enough electricity to power the commercial areas of its first floor.

France's most recognisable landmark, the iron Eiffel Tower erected in 1889, has seen its iconic frame festooned with many different decorations and objects over the years for various celebrations. Its latest addition is a little more subtle -- and maybe a little more in keeping with the tower's original purpose as a monument to human ingenuity and artistry.

As part of a major renovation and upgrade to the tower's first floor, the Société d'Exploitation de la Tour Eiffel will be adding a variety of sustainability features -- the first of which is a pair of VisionAIR5 wind turbines designed by renewable energy specialist Urban Green Energy.

The two vertical-axis turbines have been installed on the tower's second level, about 122 metres (400ft) from the ground -- a position that maximises wind capture. The turbines have been specially painted so as to blend in with the tower, and produce virtually no sound. They can also capture wind from any direction, producing, between them, a total of 10,000kWh per year -- enough to power the tower's first floor.

The Eiffel Tower is arguably the most renowned architectural icon in the world, and we are proud that our advanced technology was chosen as the Tower commits to a more sustainable future," said UGE CEO Nick Blitterswyk. "When visitors from around the world see the wind turbines, we get one step closer to a world powered by clean and reliable renewable energy."

There was no environmental benchmark the tower was required to meet; however, the SETE wishes to reduce the tower's environmental impact by 25 percent as part of the City of Paris Climate Plan. It is funding the entire €30 million cost of the renovation -- which includes cosmetic and safety upgrades -- itself.

Other sustainable measures to be introduced to the Eiffel Tower include LED lighting, solar panels, a rainwater collection system and high-power heat pumps.

With its transparent floor and its glass balustrades, the 1st floor offers you a great experience and a breath-taking view.

Walk on the glass floor, 57m from the ground, and experience the unique sensation of stepping out into the void.

But you need have no fears: a non-slip treatment has been applied, with a transparency effect that increases gradually from the interior towards the central space and covering 1.85m at its largest.

Although there is no "High Environmental Quality" benchmark for the Eiffel Tower, one of the principal goals of the first floor's renovation responded to a strong wish to reduce its ecological footprint in the context of the City of Paris Climate Plan.

Over 2 years of work during which the Tower remained open to the public!

4,586 m² redeveloped, out of the floor's 5420 m².

Work carried out 57 metres above the city

A 141 m2, lifting platform with a capacity of 9 tonnes

€ 30M excluding taxes: the total cost of the renovation, including fees, entirely funded by SETE (Société d'Exploitation de la Tour Eiffel: the Eiffel Tower Operating Company).

An "influenced" architecture designed entirely in diagonals and transparency by architects Moatti –Rivière

The last major renovation operation for the Eiffel Tower was carried out almost 30 years ago.

Task 1
Read the text and provide short answers to the questions according to the example (0), in no more than 5-6 words.

QUESTIONS	ANSWERS
What has been fitted on the Eiffel Tower recently?	0. Two new wind turbines
What characteristic will be added to the tower by the Société d'Exploitation de la Tour Eiffel?	1.
What was the reason behind installing the turbines on 440ft?	2.
What further sustainable features will be added to the tower? (give two answers)	3.
	4.
What makes us enjoy an outstanding view on the first floor? (give two answers)	5.
	6.
What technology was used in order not to feel bad on glass floor?	7.
What was one of the main goals of the renovation?	8.
How high was the renovation carried out?	9.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	TRUE or FALSE
0. The Eiffel Tower hasn't been decorated since its erection.	F
10. Renovating the first floor is just one step of the whole project.	
11. The turbines have been painted in order to capture wind and solar energy.	
12. The Eiffel Tower is the most famous building in the world without doubt.	
13.The total cost of renovation involves aesthetic upgrades.	
14. More than half of the floors has been redeveloped over two years.	
15. The total cost of the renovation was 30M Euro without taxes.	

5. How Electronic Ink Will Work

0. With a world full of monitors and electronic displays made with liquid crystals, light-emitting diodes and gas plasma, you probably don't think of paper as being a revolutionary display technology, but the Chinese invention of paper forever changed the way the world communicates. Without it, books might still be printed on silk scrolls that only the wealthy could afford, making literacy a rare skill.
1. For nearly 2,000 years, ink on paper was the only way to display words and images, and it still beats computer displays when it comes to portability and price. Paper also doesn't require an external power supply. Yet it does have some limitations: Once you've printed words on paper, those words cannot be changed without at least leaving some marks, and it is also difficult to carry around a large number of books.
2. Scientists are now close to developing a revolutionary technology that could replace paper, called electronic ink! Two companies are simultaneously developing similar electronic inks -E Ink of Cambridge, MA, and Xerox in Palo Alto, CA. At first glance, a bottle of electronic ink looks just like regular ink.
   Although the two companies' products vary slightly, here are the three components of both electronic inks that give them the ability to rearrange upon command: millions of tiny microcapsules or cavities, an ink or oily substance filling the microcapsules or cavities and pigmented chips or balls with a negative charge floating inside the microcapsule.
3. Electronic ink can be applied to the same materials that regular ink can be printed on. In the case of a digital book, the pages would be made out of some kind of ultra-thin plastic. The ink would cover the entire page, separated by cells that resemble the cells on graph paper. Think of these cells as pixels on your computer screen, with each cell wired to microelectronics embedded in this plastic sheet. These microelectronics would then be used to apply a positive or negative charge to the microcapsules to create the desired text or images.
4. To help people understand how E Ink's technology works, the company compares the millions of microcapsules inside the ink to clear beach balls. Each of these beach balls is filled with hundreds of tiny, white ping-pong balls. And instead of air, the beach ball is filled with a blue dye. If you looked at the top of this beach ball, you would see the ping-pong balls floating in the liquid, and the beach ball would appear white. But if you looked at the bottom of the ball, it would appear blue.
   Now, if you were to take thousands of these beach balls and lay them out on a field, and make the ping-pong balls move between the top and bottom of the beach balls, you could make the field change colour. That's the principle behind E Ink's product.
   In reality, these microcapsules are only 100 microns wide, and roughly 100,000 microcapsules can fit into a square inch of paper. In each of those microcapsules there are hundreds of smaller pigmented chips. In prototypes, E Ink is currently working with white chips and blue ink, but it is working to develop other colour inks that could lead to multicolour displays.
   When an electrical charge is applied to the microcapsules, the chips will either rise to the top or be pulled to the bottom. When pushed to the top, the chips make the capsules look white; when they are pulled to the bottom, the viewer only sees the dark ink. Patterns of white and dark can then be created to form words and sentences.
5. Electronic ink can be printed on any surface, including walls, billboards, product labels and T-shirts. Another advantage electronic ink has over traditional computer displays is its readability. It looks more like printed text, so it's a lot easier on the eyes.
   The developers of electronic ink don't expect people to throw all paper out or discard their computer monitors the instant these products hit the market. Instead, electronic ink will initially co-exist with traditional paper and other display technologies. In the long run, electronic ink may have a multibillion dollar impact on the publishing industry.

Task 1
Read the article and match the subtitles with the correct paragraphs. Write your answers in the table according to the example (0). There is one extra heading you don't need to use.

A. The importance of paper
B. The world without paper
C. Technology to replace ink
D. Technology to replace paper
E. Advantages of the new technology
F. Advantages and disadvantages of paper
G. The latest development

0.	1.	2.	3.	4.	5.
A					

Task 2
Read the text again and provide short answers to the questions according to the example (0).

QUESTIONS	**ANSWERS**
What is the most revolutionary type of display technology historically?	*0. paper*
What are the disadvantages of ordinary paper?	6.
	7.
What are the advantages of paper over computer displays?	8.
	9.
	10.
What do the plastic pages of a digital book contain?	11.
	12.
	13.
What solids do microcapsules contain?	14.
What image is used to explain the working principle of the microcapsules?	15.

6. Innovations: Virtual Laser Keyboards

Manufactures have developed special virtual laser keyboards to accompany handheld devices. Instead of having to use your phone's keyboard, a virtual laser keyboard connects to the phone and projects a full-sized virtual keyboard onto any flat surface. So how do they work?

Mechanics of the laser keyboards

Although virtual laser keyboards perform the same function as traditional keyboards, how they analyze and send information to another device is a different process.

All keyboards, whether they're physical or virtual, are input devices -- once you type in a certain series of keystrokes, you're telling the keyboard to deliver a command to your computer. This allows you to write in a word-processing document, close out a program or write out a Web site's URL in a browser. How is a virtual laser keyboard different from a regular keyboard?

A traditional keyboard, one that hooks up to a desktop computer or is part of a laptop, is very much like another smaller computer. If you take it apart, it has a processor and circuitry similar to the insides of your computer. Underneath each key is a grid of circuits, and once you press a key, the switch closes. This sends a small electrical current through the grid, which the processor recognizes and analyzes. The processor, in turn, sends the information regarding your keystrokes to your computer, and it can do this several ways. Most desktop users connect their keyboard using cables, although common wireless technologies like Bluetooth let you type from a distance, as long as the computer has the necessary receiver. Laptop keyboards, on the other hand, connect directly to the computer's hardware.

When you type on a virtual laser keyboard, there aren't any switches involved. In fact, there aren't any mechanical moving parts at all. The device projects the image of a QWERTY keyboard onto a flat, non-reflective surface using a red diode laser. The laser shines through a Diffractive Optical Element (DOE), which is simply a tiny image of the keyboard. The DOE, along with special optical lenses, expands the image to a usable size and projects it onto a surface.

But a simple image of a keyboard won't get you anywhere -- something needs to analyze the information you type in. Situated near the bottom of the device is an infrared (IR) laser diode, which shoots out a thin plane of infrared light. The plane, which is invisible and runs parallel to the surface, rests only millimeters above the image of the keyboard. When you start typing, you pass your fingers through certain areas of the infrared light. A CMOS (complementary metal-oxide semiconductor) images your finger's position within the area of the keyboard, and a special sensor chip called a Virtual Interface Processing Core analyzes the location of the intended keystroke. The device then sends this information to the computer receiving the commands.

Virtual laser keyboards require flat, opaque and non-reflective surfaces for working projection and typing. Once you have the keyboard set up on the right type of surface, the device displays a full-size QWERTY keyboard, which typically contains 60 or more keys. Then you simply type just like you would on a normal keyboard, although the sensation you normally get when typing on a laptop or desktop -- the pops and clicks associated with the keystrokes punching up and down -- won't be there. In fact, it takes practice for many users to become accustomed to pressing their fingers on a smooth surface.

Task 1
Read the text and complete the table with your short notes (based on the text) with no more than 4 words, according to the example (0).

	NOTES
The name of the traditional keyboard	***0. QWERTY***
The link between keyboard and computer hardware in traditional keyboards	1.
The link between keyboard and computer hardware in Bluetooth technology	2.
The link between keyboard and computer hardware in laptops	3.
Main parts of the projection unit of the laser keyboard	4.
	5.
	6.
Main parts of the processing unit of the laser keyboard	7.
	8.
The place one can project and type on	9.
The necessary accompanying equipment for the laser keyboard	10.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	**TRUE or FALSE**
0. The virtual laser keyboard can be used in for the same purposes as a normal keyboard.	***I***
11. The laser keyboard has only electronic parts.	
12. The feeling of typing of the laser keyboard is very different form the traditional one.	
13. The virtual keyboard uses different types of light for projection and reception.	
14. The projected keyboard is a full scale image of a traditional QWERTY.	
15. The laser keyboard is easy to use even for the first time.	

7. David Nyarko, P.E. Mechanical Engineer

A. ……Where do you work?……

0. I am based in New York City, where I work as a lead mechanical engineer with Parsons Brinckerhoff, an international engineering and program management firm.

……

1. Well, I think a lot of people do not know that mechanical engineers work on bridges, but we work on what are called drawbridges. Technically, we call them movable bridges. And we basically design all the systems that actually move the bridge. It takes about 15 minutes for boats to go through; it could be for a railroad crossing or vehicular traffic. While the boat is coming through, the cars or trains have to wait. And this huge bridge opens slowly, because you don't want it to drift apart in any way or form. And there are different types of machines that open them up. It could be hydraulic, or it could be normal gears and motors. You have to size them up, make sure this machinery has enough power to open up that particular bridge.

……

2. Well, I work on all types of movable bridges. It could be a brand-new one, where you start from scratch, and we have to do what we call a type-study, to determine the type of bridge that is adequate for that particular crossing. After the type-study, you come up with preliminary drawings of what should be there. Then you go to the final design process when you design the details of the bridge.

……

3. Another major part of my job is what we call condition surveying, or inspecting the condition of existing bridges. And there's probably more work around the world in surveys than in building new bridges. We look at bridges to assess the operating condition and to evaluate whether they meet current codes and standards.

……

4. Of course. In the case of repairs, after the inspections, we put together reports, and out of this come recommendations. And then, based on that, the client will ask us to do a rehabilitation, or it could be just a minor repair.

……

5. Yes. For power transmission, we use gears, bearings, couplings, etc. There are all sorts of tools, such as gear calipers for some gears and feeler gauges for other gears. You could also use a whole computerized data-gathering system to check pressure and flow at various points.

……

6. Yes. I normally have an electrical engineer with me, and a structural engineer. The structural engineer will be responsible for the loads and the structure itself, to make sure it doesn't fall apart when it's moving, just making sure that the loads are well distributed and that the bridge will be stable. There's also normally a geotechnical engineer, who looks at soil conditions and foundations, and also the alignment of the roadway. Then you have the electrical engineers, who basically make sure that all the equipment is powered well. They also work on the controls, to make sure that everything is in sequence, that something opens or something moves before something else.

……
7. There are two things I really enjoy. You get to go to bridges all over the country. You get to work with all sorts of people out in the field -- maintenance crew, bridge operators. They're very helpful; they're very nice. There's also the new hydraulic equipment on movable bridges, what I call the high-tech end of it. There's always new equipment and new developments -- I enjoy that.

Task 1

Read the article and match the questions with the correct paragraphs. Write your answers in the table according to the example (0). There is one extra question you don't need to use.

0.	1.	2.	3.	4.	5.	6.	7.
A							

QUESTIONS:

A. **Where do you work?**
B. What would you say is the most interesting thing about your work?
C. Do you use any special equipment in your work?
D. What aspects of drawbridges or movable bridges do you work on?
E. What kinds of things do you do as a mechanical engineer?
F. Do you work with a team of engineers?
G. So after the inspection, do you also get involved in repair?
H. What do you like least about your work?
I. What else have you been involved in?

Task 2

Read the text again and complete the table with your short notes (based on the text) with no more than 3-4 words, according to the example (0).

	NOTES
His main expertise	***0. movable bridges***
The other name for movable bridges	8.
Types of machinery mentioned which open bridges	9.
	10.
Major engineering tasks to do with bridges	11.
	12.
	13.
Other engineers working in the team on the bridge itself	14.
	15.

8. BASF rebrands Hungarian factory

For Zoltán Demjén things have come full circle: he began working for BASF in Hungary in 1986 and is now in charge of a company with "BASF" in its name. Since last Thursday he is CEO of BASF Poliuretán Rendszerek Kft., which produces component systems for polyurethanes in Solymár on the western outskirts of Budapest.

The change, however, is just of a formal nature as he has worked for the firm since 2001. Previously it was called Elastogran Kemipur Poliuretán Rendszerek Kft. However, from 1 March this year it was replaced by the general group name, BASF, first in Germany and then a month later in Hungary.

The Hungarian firm has been around since 1984. At the start it was a joint venture, in which the BASF subsidiary Elastogran only had a 49% share. It was BASF's first joint venture in Eastern Europe and one of the first joint ventures in Hungary. Production began at the factory in 1986. It was only in 2004 that the company became fully-owned by Elastogran and thereby BASF. Last year the company's staff of 24 generated turnover of around HUF 4.6 billion (EUR 17.35 million) – just 0.3% lower than in 2008. Demjén is anticipating growth this year.

Combined on site

The factory in Solymár belongs to a worldwide network of 38 system houses of BASF's polyurethane division. Ready polyurethane is not produced in these system houses. Instead the two or more necessary components are made and filled there. They are only combined on site for the customer. The reactive mixture greatly increases in volume and once the resulting polyurethane has hardened it can be processed for the given end use. By fine-tuning the formula and mixing ratio the properties of the polyurethane produced can be precisely regulated.

Wide-ranging

Currently some 4,000 systems for specific applications can be made. Products from polyurethane are used, for example, in the automobile industry, where they can be found in steering wheels, seat cushions and instruments. Construction material manufacturers, which use it to make efficient insulating materials, are also major purchasers.

To give an idea of the range of uses of polyurethanes, Ferenc Turek, technical director of the Solymár factory, points at the floor during a tour of the production facilities: "I am standing here wearing work shoes with a polyurethane sole on flooring made from polyurethanes. The roof insulation of our factory halls is also made from this material." In 2007 polyurethanes had a 6% share of the world synthetics market, over 50% of which is dominated by the two packaging materials polyethylene and polypropylene.

R&D

Key research and product development take place at the German head office. Based on the formulas developed there the relevant components are made at the system houses. That, however, does not merely require mechanically following the predetermined formula. It also involves adapting and readjusting it to suit the specific needs of the customers. According to Demjén it is entirely possible for new formulas with better properties to result. "As soon as we have the impression that they could also be of interest to other system houses, we get in touch with our head office," the CEO said, describing an innovative aspect of the company's work.

Task 1
Read the text and provide short answers to the questions according to the example (0).

QUESTIONS	ANSWERS
When did production start at the company in Hungary?	***0. in 1986***
What does the Hungarian factory manufacture?	1.
How many system houses does the BAS network consist of?	2.
Where are the components mixed?	3.
How can they regulate the exact properties of the polyurethane before the final use?	4.
	5.
Where is polyurethane used in the automobile industry?	6.
	7.
	8.
What does building industry use polyurethanes for?	9.
Where can polyurethane be found in the Solymár factory building?	10.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	TRUE or FALSE
0. The New CEO has been working for the company since 1986.	***T***
12. In Solymár ready polyurethane is not produced, only in the rest of the 38 system houses.	
13. After mixing the components, polyurethane swells up and gets hardened, thus ready to be formed for the customer.	
14. Polyurethane can be used for producing parts of shoes.	
15. Polyurethane production requires following the same procedures and formulae.	

9. Waste oil heaters

With the ever increasing prices of fossil fuels, the idea of utilising waste for heating or energy production is more and more important. Here are some questions and answers about waste oil heaters.

0. …A. …..Which model of waste oil heater do I need?

There are very handy portable models for mobile or temporary universal waste oil heating or drying applications. Where you require an installed universal waste oil heater, you will need to consider the heat required. This can be worked out from the volume of air to be heated and the insulation level of the building space. The calculator on our home page uses these values along with a temperature change value of 20 degrees C (e.g. -4 C° to +16 C°) to calculate the kW output you will need from your heater.

There are then vaporising and atomising heaters to choose from. The vaporising heaters are most cost effective to buy and are easier to install (requiring only 240v power supply). The atomising heaters can be controlled automatically with thermostats. They will also tend to burn more efficiently and require less cleaning but will need three phase power supply (400V) and compressed air supply to operate the burner.

1. ……..

It is possible to retro-fit a waste oil burner onto a heater or boiler already in operation but you will need to consider the combustion chamber dimensions and controls. It is also necessary to ensure that the burner can be mounted securely and will seal properly.

2. ……..

Universal waste oil burners need to effectively burn a wide range of fuels. Different types of waste oil will have different flash points (the point at which the fuel ignites) and different viscosities. In many cases the viscosity of waste oil will be considerably higher than that of heating oil. There is also a greater need for filtration. Combustion is achieved through higher pressure delivery to atomise the fuel through a special nozzle and by a variable level of preheat to decrease the viscosity of the waste oil to a level where it will flow reliably through the burner. All these special features incur extra costs.

3. ……

Waste oil is energy rich and safe to burn. From a greenhouse gas emissions perspective, burning waste oil on site is the most effective solution. It saves the emissions of the truck coming to collect it, the energy cost of recycling it and then the further impact of packaging and redistribution. As most waste oil is eventually burned anyway (for power production in generator furnaces) the net impact of burning waste oil on site is generally regarded as positive.

It is important to service and maintain your universal waste oil burner or heater as specified in manufacturers guidelines. If you do this and use appropriate fuel sources, modern waste oil heaters and burners will achieve clean and efficient smoke-free combustion. Care should be taken in disposing of ash residue.

4. ……..

These universal waste oil heaters and burners will effectively burn a wide variety of fuels including conventional kerosene or heating oil. The heaters will run successfully on waste mechanical oil (engine, gear, hydraulic etc), used cooking oil (WVO) and straight vegetable oil (SVO). Any oils with a maximum kinematic viscosity below 6.00mm^2 per second at a temperature of 20 °C and maximum ignition temperature not lower than 40 °C and density above 0.94g/cm^3 will burn cleanly and safely.

Task 1
Read the article and match the subtitles with the correct paragraphs. Write your answers in the table according to the example (0). There is one extra heading you don't need to use.

Subtitles:

A. Which model of waste oil heater do I need?
B. Is it environmentally friendly to burn waste oil?
C. Why are waste oil burners more expensive than heating oil burners?
D. How can I set my burner to the best results?
E. Which types of waste oil can I burn in my heater or burner?
F. Can I fit a waste oil burner to an existing heater?

0.	1.	2.	3.	4.
A.				

Task 2
Read the text again and complete the table with your short notes (based on the text) with no more than 6-7 words, according to the example (0).

	NOTES
financial advantages of vaporising heaters	*0. most cost-effective*
advantages of atomising heaters	5.
	6.
	7.
safety requirements for retrofitting waste oil burners	8.
	9.
differences from traditional burners concerning combustion	10.
quality of combustion if burner properly serviced	11.
by-product of burning	12.
physical parameters of oils that can be burnt in these burners	13.
	14.
	15.

10. When the rubber hits the road

Turning old tyres into new roads can help cut noise pollution

Around one heart attack in 50 in rich European countries is caused by chronic exposure to loud traffic, according to the World Health Organisation (WHO). The harmful effects of noise pollution in such countries are second only to those from dirty air, says the WHO. Long-term exposure can cause hormonal imbalances as well as mental health problems.

Roadside barriers can help reduce the noise, but they are expensive – up to $600,000 per kilometre – and they often serve as magnets for graffiti. Besides, they work less well in windy days and are impractical along city streets. Happily, there is another option.

By adding rubber "crumbs", reclaimed from old, shredded tyres, to the bitumen and crushed stone used to make asphalt, engineers are designing quieter streets. This rubberised, softer asphalt cuts traffic noise by around 25%. Even better, it also lasts longer than the normal sort.

Not surprisingly, rubberising is catching on. Enough tyres are recycled in America each year to produce 20,000 lane-miles (32,000 lane-kilometres) of the stuff, enough to rebuild about 0.5% of America's roads, according to Liberty Tyre Recycling, a Pittsburgh firm that handles around a third of America's recycled tyres. Rubber roads are also popular in China, Brazil, Spain and Germany. Their popularity could spread further, since it is now possible to make rubberised asphalt less expensive than the traditional sort.

That is because rubber can partially replace bitumen, the binding agent, which is used to hold the crushed stones together in ordinary asphalt. Bitumen is derived from oil, which means its price has risen over the past decade together with that of crude oil. Discarded tyres, by contrast, are cheap and are likely to get cheaper. In rich countries, around one tyre is thrown away per person per year. They are piling up especially quickly in Europe, where dumping them into landfills was banned in 2006.

Rubberised asphalt keeps the noise down in a couple of ways. Pores between the stones in standard asphalt must be small, because if the gaps are too big the bitumen binding cannot do its job properly. Adding rubber thickens the bitumen. That allows bigger pores, which help to absorb and disperse sound waves. The rubberised bitumen itself is flexible, which enables it to absorb more unwanted sonic energy.

Shredded tyres are not the only interesting developments in exotic road surfaces. A substance called PERS, or Poro-Elastic Road Surfacing, is being developed with a mix of private and public money in the European Union. It is made from a blend of crushed rock, rubber and polyurethane, a synthetic plastic that replaces bitumen as the binding agent and allows even bigger pores in the road surface. PERS is not cheap, costing five times as much as rubberised asphalt. But you get what you pay for: tests suggest it can cut road noise in half. In some particularly noisy areas, thinks Luc Goubert, who is co-ordinating the PERS project at the Belgian Road Research Centre in Brussels, the result is a rise in property values – and, therefore, land taxes, which could help cover the cost.

Task 1
Read the text and complete the sentences with no more than 5-6 words each based on the text, according to the example (0).

SENTENCES	COMPLETIONS
PERS is the abbreviation of	*0. poro-elastic road surfacing*
The result of chronic exposure to noisy traffic is	1.
The rubber part added to the roads comes from	2.
The rate of noise decrease achieved by rubberised asphalt is	3.
The drawback of bitumen compared to recycled tyres is	4.
The price of traditional asphalt is dependent on	5.
The explanation of why bitumen binding doesn't work sometimes properly is that	6.
Rubber in the bitumen makes the asphalt	7.
	8.
The binding material used in PERS is	9.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	TRUE or FALSE
0. According to the WHO, long-term exposure to loud traffic can cause health problems.	*T*
10. PERS is less expensive than rubberised asphalt.	
11. Although barriers can lessen the loudness of traffic, they have many shortcomings that make them undesirable in cities.	
12. Since 2006 it has been allowed in Europe to collect tyres at areas for waste materials.	
13. PERS is a development by the European Union.	
14. The results of lowering noise with the use of PERS are worse than with rubberised asphalt.	
15. As a result of the PERS project the market price of houses in previously loud areas will go up.	

ENVIRONMENTAL TOPICS

LEVEL B1

1. Questions & Answers ABOUT THE *ENERGY EFFICIENCY MANUAL*

A: What is the Energy Efficiency Manual?

0. The Energy Efficiency Manual is the world's primary reference and how-to guide for energy conservation and reducing utility costs.

…….

1. It shows you how to save energy and reduce your utilities costs in every kind of business, institution, manufacturing plant, and housing. The main sections cover heating, cooling, water systems, building insulation, air leakage, lighting, sunlight, and common industrial equipment. Conventional energy sources, renewable resources, free energy sources, and water resources are covered in detail.

…….

2. The *Energy Efficiency Manual* is for everyone who is interested in energy conservation and protecting the environment. People from all walks of life use it and enjoy it.
Architects and engineers use it to design efficient, healthy buildings and plants. Property managers and plant operators use it to reduce their utility costs, to solve comfort problems, and to increase equipment reliability. Property owners and administrators use it as a financial tool to manage utility costs.
Energy auditors, public utilities, and energy service providers use it to provide the best service to their customers. Government agencies and code officials use it to understand conservation laws. Homeowners use it to select efficient appliances, improve windows and insulation, save water, and make other improvements.

…….

3. Yes. It has 830 illustrations, including about 700 photographs of actual equipment and installations. Realistic diagrams make the most advanced energy systems easy to understand. Every illustration is captioned to highlight the important points.

…….

4. Both. Also, it shows how to improve your daily operation and maintenance activities.

…….

5. Yes. The *Energy Efficiency Manual* is designed for everyone. Non-technical readers find it easy to understand, while experts get the detail they want. It is written in conversational style. Each subject starts with the basics. It has many features that lead you quickly to the best efficiency improvements for your building, facility, or plant.

…….

6. Some areas of energy efficiency are simple, and others require a great deal of specialized knowledge. The *Energy Efficiency Manual* lets you master them all. The style is informal and easy to read. Every term is explained.

…….

7. No. It doesn't let math get in the way of understanding. Where conservation activities require engineering calculations, the *Manual* identifies the appropriate references. A few simple formulas are provided for convenience.

…….

8. Yes. Each of the 400 Measures includes "Economics" that estimate the energy saving, the payback period, and the cost of accomplishing the activity.

Task 1
Read the article and match the questions with the correct answers. Write your answers in the table according to the example (0). There is one extra question you don't need to use.

0.	1.	2.	3.	4.	5.	6.	7.	8.
A								

Questions:

A. What is the *Energy Efficiency Manual (EEM)*?
B. How technical is it?
C. Does it provide information about costs?
D. What topics does it cover?
E. Does the *Energy Efficiency Manual* use a lot of mathematics?
F. Is it easy to use?
G. Who uses it?
H. Is it for designing new buildings or for improving existing facilities?
I. How much does it cost?
J. Does it have illustrations?

Task 2
Read the text again and complete the table with your short notes (based on the text) with no more than 2-3 words, according to the example (0).

	NOTES
The number of Measures in the book	***0. 400***
EEM use for administrators	9.
EEM use for energy auditors	10.
Types of illustrations used in the book	11.
	12.
Style of the manual	13.
The amount of maths in the manual	14.
The section providing information on the costs and gains of the measures	15.

2. Short news on alternative energy

① Colorado Fuel Cell Center Celebrates Its Grand Opening on May 9,2206

WHAT: New Research Center to Boost Colorado Fuel Cell Industry
Attend the Grand Opening and learn from fuel cell experts and researchers about their projects in portable and transportation applications, working with renewable fuels, and efficiency projects.
WHO: The Governor's Office of Energy Management and Conservation (OEMC) along with its partners, the Gas Technology Institute, the Colorado School of Mines, and the U.S. Department of Energy's National Renewable Energy Laboratory.
WHY: Fuel cells combine hydrogen and oxygen to create electricity; the only byproduct is water vapor. It is a clean, efficient energy technology. With the rising costs of fuel and the uncertainty of its foreign sources, fuel cell technologies may have a vital role in our energy independence.
WHERE: The CFCC is located at 1310 Maple Street, in Golden, Colorado, on the Colorado School of Mines Campus.

② Tesco turns on charm

THE chief executive of Tesco, Sir Terry Leahy, will this week announce plans to transform the supermarket chain into a "better neighbour".
The scheme will be set out in a speech to the Work Foundation, a business think tank, on Wednesday.
Tesco's proposals are said to focus on three core areas: the environment, health and local communities.
The plan will include numerous small initiatives, such as improving lorry suspensions to make delivery trucks quieter and more energy efficient, through to more ambitious projects that include getting 2m people active before the 2012 London Olympics.
Leahy first revealed that Tesco was working on a "community plan" last month when he announced a 17% leap in profits, to a record £2.2 billion.
Tesco also said it was proposing a £100m environmental fund to research and develop the use of wind, solar and geothermal power in Tesco stores and distribution centres.

③ DuPont Shows Off Alternative Fuel Research

(AP) WILMINGTON, Del. DuPont officials got a chance to show off the company's research into alternative fuels today to a Bush administration official visiting Delaware to promote the president's energy proposals
Karen Harbert, from the US Department of Energy, began her visit with a stop at DuPont's Experimental Station, where researchers are working on turning corn plants into ethanol.
DuPont is leading a consortium of three members that received a four-year, 19 million dollar grant from the energy department for research leading to "biorefinery" technology capable of producing cellulosic ethanol.
Unlike traditional ethanol, which is made from corn kernels, cellulosic ethanol is made from the whole corn plant: cob, stalk and silk.
DuPont officials have a good understanding of the combination of enzymes and microorganisms needed to break down the cellulose in the corn plant and convert it into sugars that can be fermented and distilled into ethanol. But they'll need to figure out how to make the technology commercially feasible.

Task
Read the article and decide which question refers to which article or articles according to the example (0). There are 15 correct answers (excluding the example).

QUESTIONS	NUMBER OF ARTICLES
Which article contains an invitation?	*1*
Which article is about an event?	
Which article involves a research institute?	
Which article names several alternative energy sources?	
Which article is about creating alternative energy from gases?	
Which article describes the technology of making a liquid energy source?	
Which article mentions the sum to be spent on environmental research?	
Which article describes co-operation between various organisations?	
Which article compares the production of two kinds of alternative energy source?	
Which article mentions a problem or problems to be solved?	

LEVEL B2

3. Billion litres of water lost every day

SCOTTISH Water should be fined over the waste of one billion litres of treated water a day, angry MSPs (Members of Scottish Parliament) demanded last night.

The state-owned firm has already spent more than £2bn of taxpayers' cash replacing pipes, but every 24 hours, water treated at a cost of £190,000 continues to leak into the ground. Two years ago Scottish Water promised a "historic drive" to crack down on the waste, but it has missed the target set by the industry watchdog by a staggering 44 million litres daily – enough to fill 17 Olympic-sized swimming pools.

MSPs say the waste – nearly half of all water being treated in reservoirs – is also causing a heavy environmental price to be paid because of the energy used in the cleaning process. The regulatory body that oversees the water industry in Scotland has now described the wastage as "profligate".

The new figures also come as water rates payers face a near 4% rise in their bills from this April, taking the average rate to £310 a year.

Homeowners have also been hit in recent years by roadworks across the country caused by Scottish Water's refurbishment programme. The targets to plug the leaks were set in 2006, when the Water Industry Commission for Scotland ordered Scottish Water to cut its leakage from 1.17 billion litres to 960 million litres. However, it only reduced it to 1,004 million litres, missing the target by 44 million litres. A target of 855 million litres per day for this year is now highly unlikely to be achieved.

Labour MSP David Stewart, who raised the matter with the regulators, said: "This is an appalling state of affairs. I am concerned by the climate change problems – it seems we are using power to treat double the amount of water that we actually need.

"There should be more financial sanctions in the system to ensure that Scottish Water is much more efficient in future."

Scots Tory deputy leader Murdo Fraser added: "Scottish Water's record in this is absolutely abysmal and has been so for many years. Maybe it is time sanctions were considered."

The leakages have also been criticised by Scotland's water commissioner, Alan Sutherland. He told MSPs: " We asked Scottish Water to improve its rates of leakage in 2006-07 to 960 million litres a day, and then to 855 million litres a day after that. To put that 855 million litres in perspective, it is around the same level that Thames Water was being heavily criticised for last year, in absolute amounts of water lost due to leakage."

With the estimated cost of each litre of water costing 0.19p, the leakages theoretically cost £190,760 every day.

Scottish Water defended its record last night, insisting that it had been restoring the pipe network at record speed, and that it had gone some way to meeting the regulator's target. But it is still lagging behind water companies in other parts of the UK and Europe.

A Scottish Water spokeswoman said: "We are committed to hitting our economic level of leakage. We did report a reduction of 100 million litres per day, which was within 5% of the Commission's target for 2006/07."

Task 1
Read the text and complete the table with your short notes (based on the text) with no more than 6-7 words, according to the example (0).

	NOTES
Amount of daily loss of water	***0. 1,004 million litres***
Value of daily loss of water	1.
Action to be taken by Scottish Parliament	2.
Action to be taken by Scottish Water	3.
Regulatory body of water companies of Scotland	4.
Environmental problem due to the large amount of wasted water	5.
Average water bill by the end of 2008	6.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	**TRUE or FALSE**
0. Labour and Tory MSPs agree that Scottish Water's wasting of water is horrible.	***T***
7. Scottish Water has less leakage than other British water companies.	
8. The restoration of pipes has been going on in recent years all over the country.	
9. Scotland's water commissioner defended Scottish Water against the charges.	
10. The water wastage seems even more critical for the public because of the planned water price rises.	

4. Biofuels will speed climate change, chief scientist says

FARMERS in Scotland last night criticised a warning from the UK's chief environmental scientist that an increased reliance on biofuels could send greenhouse gas emissions soaring. Professor Robert Watson, chief scientist at the Department for the Environment, spoke out just days before Westminster is to introduce a policy dictating minimum levels of the fuels at the pumps.

He said it would "obviously be totally insane" to have a scheme aimed at reducing greenhouse gases by using biofuels, which instead led to an increase in emissions, and suggested a further review.

Prof Watson's calls for caution on implementation of the Renewable Transport Fuels Obligation (RTFO) angered Scottish farmers, who said the government should be pushing ahead with the promotion of biofuels.

John Picken, National Farmers Union Scotland combinable crops convener, said: "We are running out of time. I don't know where he has been over the last 20 years." He described any government delays as a "shocking situation".

Dr Richard Tipper, technical director of the Edinburgh Centre for Carbon Management, said although there could be some truth in Prof Watson's comments, he felt biofuels should be supported, with any issues dealt with as and when they arose.

James Withers, of the National Farmers Union Scotland, said the country had "real potential" in biofuel and could be a "solution to climate change". However, he admitted that action had to be "based on scientists saying it is a sustainable way to go".

The RTFO is due to take effect on 1 April, when biofuels will have to comprise at least 2.5 per cent of fuel at the pumps.

Biofuels, mainly ethanol and diesel made from plants, have been promoted as an alternative to the use of conventional fuels in transport, which account for about a quarter of global greenhouse emissions. Their proponents say they are a sustainable solution to global warming. Crops such as palm oil, corn and sugar cane are grown as normal and processed for their energy. They absorb carbon dioxide as they grow, meaning in principle fuels such as bioethanol and biodiesel should have lower overall emissions than fossil fuels such as oil or coal.

But in recent months, grain prices have rocketed, with much of the demand coming from biofuel producers. The impact is felt on supermarket shelves in the UK, but much more in the developing world.

There has been a drop in oilseed rape production in Scotland between the end of 2006 and end of 2007 of 14 per cent from 38,000 hectares to 33,000. Farmers in the past year have shifted back into wheat and barley production as world prices have increased, making the crops more attractive to grow.

Yesterday, a coalition of the country's leading environmental and development groups wrote a collective letter to the government warning that its strategy risked doing more harm than good.

Oxfam, RSPB, Friends of the Earth, Greenpeace and others told Ruth Kelly, the Transport Secretary, there was "a very real risk that the RTFO will make climate change worse, not better".

Doug Parr, chief scientific adviser of Greenpeace, said: "For one of the government's top scientists to describe these plans as potentially insane suggests that something has gone seriously wrong here."

Abigail Bunker, agriculture policy officer of the RSPB, said: "Biofuels threaten untold damage to unique wildlife habitats across the world.

"Their production is already causing the destruction of rainforest, peatlands and grasslands and the release of huge amounts of carbon stored by trees and soil."

Task 1
Read the text and decide if the persons or organisations support or object or support with conditions the large scale increase of the production and trade of biodiesel. Write your answers in the table according to the example (0).

		SUPPORT	OBJECT	SUPPORT WITH CONDITIONS
0.	*Professor Watson*		***X***	
1.	John Picken			
2.	Abigail Bunker			
3.	James Withers			
4.	Greenpeace			

Task 2
Read the text again and complete the table with your short notes (based on the text) with no more than 7-8 words, according to the example (0).

	NOTES
Environmental concerns about biofuels	***0. rise in greenhouse emissions***
	5.
	6.
Economic disadvantage of producing biofuels	7.
Change in the volume of Scottish oilseed rape production	8.
Reason for the change in the volume of Scottish oilseed rape production	9.
Reason why biofuel crops have lower emissions than fossil fuels	10.

5. Inheriting the Wind: Danish Wind Power

At the mouth of Copenhagen harbour, twenty giant wind turbines, arranged in an arc, turn in the coastal breeze. This is Middelgrunden, Denmark's first cooperative wind farm and a symbol of that tiny country's impressive wind energy industry. Middelgrunden's turbines, installed in the late 1990s, were designed by Danish engineers, built and installed by Danish technicians, and generate enough electricity to power 40,000 Danish homes. Perhaps most impressively, the project is owned by over 8,500 cooperative members who share the profits of clean energy generation.

Middelgrunden is a result of Denmark's long and successful collaboration between private industry, individual citizens and, most importantly, strong government support. Since 1979, the Danish government, through intelligent, sustained investment, has mobilized the nation in the development of next-generation wind energy, and the results have been impressive. Today, Danish firms account for one third of the global wind power market and have driven the creation of a booming multi-billion dollar industry. In Denmark alone, 6,300 wind turbines pump energy into the regional grid today, providing roughly twenty percent of the nation's electricity. Wind power accounts for some 25,000 Danish jobs, and in 2007, the industry exported 4.7 billion euros worth of energy technology. Without a doubt, government involvement in the wind sector enabled this Danish success story.

Denmark unlocked the energy and capital of its private citizens through strong, consistent market incentives. From 1979 to 1989, the Danish government covered 30 percent of wind investment costs, and later implemented loan guarantees for large turbine export projects. It also guaranteed the domestic wind market by mandating that utilities purchase all generated wind energy at a consistent, above-market price. These market guarantees and subsidies, along with significant tax breaks for wind-generated electricity, promoted rapid deployment and technological innovation, as firms competed to capture the profits to be made from wind energy with the most efficient and cost-effective technologies. Financial incentives also drew ordinary citizens into the wind energy economy, including the members of Middelgrunden and other wind cooperatives, who were attracted by income from shares in wind cooperatives, made tax-free by the Danish government.

The government also provided strong research support for the wind industry. The government's Risø research center, a global leader in wind energy technology introduced innovative standards for wind turbines and pioneered a host of technologies relating to the exploration and exploitation of wind resources. Together with the "learning by doing" benefits of mass deployment, these advances have allowed wind turbines to become more durable, more efficient, and dramatically cheaper, and helped private firms in Denmark and abroad move from small turbines to today's multi-megawatt giants - helping Denmark's firms capture a sizable share of global wind energy markets in the process.

Danish citizens and government regulators have been vital in turbine development. Close links between researchers and regulators ensure that government technology standards are well attuned to the latest technology. And earlier in the industry's history, Danish wind turbine owners provided vital feedback on the reliability and productivity of early machines, boosting confidence in Danish firms and stimulating demand. Today, ordinary Danes like the builders, shareholders and customers of Middelgrunden are a driving force behind the wind energy economy, both politically and economically. In fact, over 80 percent of Denmark's turbines are owned by more than 150,000 Danish families organized in cooperatives.

All in all, Denmark's wind energy success is a model for governments around the world.

Task 1
Read the text and complete the table with your short notes (based on the text) with no more than 7-8 words, according to the example (0).

	NOTES
The proportion of the world's wind turbine production in Denmark	***0. 1/3***
Government's measures to promote the Danish wind farms: to ensure funding for improvements	1.
	2.
to help expand markets	3.
	4.
to increase profitability	5.
Technological improvement of the new generation of turbines compared to the old ones	6.
	7.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	**TRUE or FALSE**
0. Middelgrunden's turbines were installed in 1990.	***T***
8. Risø introduced the first multi-megawatt turbines in Denmark.	
9. The owners of Denmark's turbines are mainly cooperative members.	
10. Government helped private investments in the wind energy sector though market and financial incentives.	

6. Controversial incinerators plan to help Scotland hit green targets

MINISTERS yesterday outlined radical plans to make Scotland one of the greenest countries in Europe with an ambitious target to send just 5 per cent of household waste to landfill sites by 2025.

Seven or eight waste incineration plants – likely to prove controversial – could be built to take up to 25 per cent of waste, while recycling rates would be dramatically increased from 30 per cent today to 70 per cent.

Richard Lochhead, the Scottish environment secretary, said Scotland must "aspire to be up there with the best" recycling countries in Europe as part of the fight against climate change. He signalled he wanted to see small-scale, highly efficient incinerators which utilise heat created by the process. These are able to convert about 80 per cent of the waste's energy into heating, while incinerators that simply create electricity are less than half as efficient.

Speaking at the Scottish Parliament, Mr Lochhead said: "Across Europe, the most impressive municipal recycling rates being achieved now are 60 per cent to 70 per cent– double Scotland's rate.

"Scotland must aspire to be up there with the best. So today I am proposing targets for municipal waste of a minimum of 50 per cent by 2013 and a further aspirational target of a minimum of 70 per cent by 2025. At the heart of our policy proposals is a commitment to move Scotland towards zero waste. "

Councils in the Lothians had suggested that around 50 per cent of their waste could be incinerated and waste management company Viridor has submitted a planning permission for a 450,000-tonne, combined heat and power facility near Dunbar.

But Mr Lochhead said: "This administration will include our 25 per cent limit for energy from waste technologies in the National Planning Framework at both a national and a regional level. We will also lay down conditions to reflect our view that energy from waste plants must deliver a high level of efficiency through combined heat and power or district heating. This Government is opposed to large, inefficient energy from waste plants. Such plants could easily become white elephants and drain public funds."

The Scotsman understands that plants capable of taking up to 100,000 tonnes of waste a year would be considered an acceptable size. And eight of these could take the 25 per cent of waste permitted to be incinerated – about 750,000 to 800,000 tonnes at current rates.

Heating in most of Lerwick is provided by an energy-from-waste plant which pumps hot water into homes, companies and public buildings.

Jim Grant, of Shetland Council, who was in Edinburgh for a conference, said emissions from the modern incineration process were "insignificant".

But Robin Harper MSP, of the Scottish Green Party, said incinerators were "costly, polluting and blight local communities and anyone downwind of them".

Viridor said: "The policy aligns with our proposals."

Task 1
Read the text and decide if the persons or organisations support or object or support with conditions the building incinerators. Write your answers in the table according to the example (0).

	For building incinerators	Against building incinerators	Support(s) building incinerators conditionally
0. Viridor	***X***		
1. Minister Richard Lochead			
2. Lothian Councils			
3. Robin Harper MSP			
4. Councillor Jim Grant			

Task 2
Read the text again and complete the table with your short notes (based on the text) with no more than 3 words, according to the example (0).

	NOTES
2025 target for recycling waste	***0. 70%***
for landfill	5.
for incineration	6.
Main requirement towards new incinerators	7.
Use of energy provided by new incinerators	8.
	9.
Capacity of an ideal size incineration plant (per year)	10.

7. Replant trees you chopped down, council tells builders

A DEVELOPER is to be told to replant a "millennium woodland" after chopping down more than 100 trees without permission.

The city council is to take action after investigating the destruction of the community woodland in Craigmillar.

The authority was called in by residents who watched in horror as builders began hacking down the trees last month. But by the time officials intervened only around ten per cent of the trees remained standing.

The developer has said it believed it had permission to chop down the trees on what it described as "horrible scrubby wasteland".

They had been planted on the council-owned park - which lies directly next to the Aspect housing development - in 2000 as part of a UK-wide initiative.

Thistle Developments, the firm transforming the former Craigmillar Brewery site at Peffermill Road, not only faces having to replant the entire woodland, but also a claim for up to £50,000 in compensation from the council.

The developer today continued to insist it did not believe it had done anything wrong, saying it had struck an agreement with the local authority to create a new "landscaped parkland" next to the new homes.

Some of the homes in the new Aspect development, which will feature more than 230 new homes in three blocks of flats with an average price of around £150,000, are expected to boast views of Arthur's Seat and the Pentland Hills.

A report for councillors states: "No permission has been granted by the council for Aspect to carry out any work on council-owned land within Cairntows Park. Planning permission has been granted to Aspect for work on their own land adjacent to Cairntows Park. They have been instructed to stop work on council-owned land in Cairntows Park and further action is being taken to pursue the question of the restoration of the site."

City environment leader Robert Aldridge added: "Discussions between the developers and the council are due to take place in the near future. It is hoped that an agreement will be reached regarding compensation."

Local Labour councillor Maureen Child added: "It would seem perfectly appropriate for the council to ask for compensation bearing in mind the amount of inconvenience this has caused."

However, Derek Stephen, managing director of Aspect Scotland Limited, a subsidiary of Thistle Developments, said: "If we have to reinstate this area we will do so, but we have been under the clear impression that we had approval to carry out work on this land.

"This was pretty horrible scrubby wasteland and we were going to carry out major landscaping improvements to the area.

"We've still to meet the council but as far as I'm concerned we've done nothing wrong and I don't see why we should have to pay the council compensation."

Task 1
Read the text and decide if the persons or organisations listed argue for or against paying council compensation. Write your answers in the table according to the example (0).

ORGANISATION OR PERSON	FOR COMPENSATION	AGAINST COMPENSATION
0. Councillor Maureen Child	*X*	
1. Local people		
2. City council		
3. Thistle Development		
4. Aspect Scotland Limited		

Task 2
Read the text again and provide short answers to the questions according to the example (0), in no more than 4 words.

QUESTIONS	ANSWERS
How many trees did the builders cut down?	*0. more than 100*
How much of the trees did people save?	5.
When were the trees planted?	6.
What did the developers think about the area they cleared?	7.
What did the developers believe about the permission to cut the trees?	8.
What did the developers want to do with the cleared area?	9.
What does the council want the developers do to the area?	10.

8. Sustainable Growth - Interface, Inc.

Ray Anderson has spent most of his life as an environmental vandal. He has devoted his career - the better part of four decades - to mastering the black magic of the 20th century: He takes huge lakes of petroleum and spins them into elegant brocades.

The petroleum, which took millions of years to make, is irreplaceable. The brocades - beautiful woven fabrics that carpet offices and corridors from the U.S. Capitol to MTV headquarters - will last forever. After just 10 years, most of that fabric will end up in the dump.

Indeed, Anderson's success has been marked by a kind of galloping enviro-gluttony. He is the 63-year-old founder and CEO of Interface Inc., an Atlanta-based company with 7,300 employees. Its business: turning petrochemicals into textiles. In 26 factories on four continents, Anderson's looms produce a million pounds of synthetic carpet and fabric every day - along with more than seven tons of air pollutants every year.

Ray Anderson is a certified captain of industrial capitalism. He is also becoming one of the nation's leading environmentalists, a radical who makes the folks from Greenpeace look timid.

Four years ago, Anderson made a decision that changed the course of his carpet company, and that could transform the nation's economy. He decided that Interface would become, as he put it, "the first fully sustainable industrial enterprise, anywhere." Anderson decided that his petrochemical conglomerate would become 100% environmentally friendly.

His vision for the 21st century: Interface would no longer use virgin nylon yarn to stitch its fabrics. Interface's factories and offices would use power from renewable sources only. Interface would produce zero waste; indeed, it would reclaim its own products and use them as raw material for new textiles. And Interface would pull its suppliers and customers into its sustainability orbit, insisting that the products it bought be recyclable and nontoxic, pushing clients to think differently about carpeting - and about their own businesses. "I want to pioneer the company of the next industrial revolution," says Ray Anderson.

Anderson wants to turn the entire U.S. economy inside out. Companies would consume their own waste. Landfills, after all, are best seen as a yardstick of the failure of human ingenuity. In nature, there is no garbage; everyone's waste becomes someone else's food.

Anderson's thinking is so advanced, and the efforts at Interface are so far along, that Interface ranks as the most highly evolved big company in the country today. In terms of combining social responsibility and economic growth, no one comes close. At Interface, social responsibility and growth have become the same thing.

From 1995 to 1996, sales at the publicly traded company grew from $800 million to $1 billion. During that same period, the amount of raw materials used by the company dropped almost 20% per dollar of sales. Which means, says Anderson, "The world just saw the first $200 million of sustainable business."

Of course, you can't fully transform a modern industrial enterprise in just a year or two. However, a dramatic change has already taken hold at the company. From the factory floor to the R&D lab, sustainability has become as important a consideration in every business decision as profitability. Interface, for instance, has developed a new idea about carpeting and customers: It wants to lease carpet instead of selling it. The company would make, install, and maintain the carpet, take it back from customers, and then turn the old carpet into new carpet.

Ray Anderson is going to be one of those people you look back on and say, 'He changed the world.'

Task 1
Read the text and complete the summary with no more than 3 words each based on the text, according to the example (0).

SUMMARY SENTENCES	COMPLETIONS
Ray Anderson has worked with petroleum for …	*0. 40 years*
The fabric of carpets is made of ….	1.
According to his plans, Anderson intends to turn his company ….	2.
Future companies wouldn't produce …… .	3.
In Anderson's company the two most important issues are ….	4.
	5.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	TRUE or FALSE
0. Black magic is petroleum.	*T*
6. Brocade carpets made with virgin nylon are harmful for the environment.	
7. Anderson's company is absolutely green.	
8. The company is going to reuse its own products.	
9. Enterprises can become economically sustainable in 1-2 years.	
10. Interface Inc. has started leasing carpets to their customers.	

9. What are eco-plastics?

Every year, U.S. landfills handle tens of billions of tons of plastic. And in this case "handle" means "do nothing with" -- plastic just sits there undisturbed for hundreds of years. The microbes that degrade other trash don't want to do anything with plastic, the environmental danger, which is fuel based, requires lots of energy to produce and it clogs up landfills for what might as well be forever.

The danger of plastic-laden landfills has sparked the move from plastic to paper grocery bags, cardboard instead of plastic for prepared foods and products like the exclusive-to-Japan Toyota Raum -- a car whose interior boasts some "eco-plastic" components.

Eco-plastics seem to be the next step in greening our lives. They come in all different forms. Some are simply plastics made all or partially from recycled traditional plastics. Traditional petroleum-based plastics are the kind that sits in landfills for centuries. These "eco-plastics" aren't any more biodegradable than the non-recycled kind, but they have the environmental benefit of keeping a lot of that non-biodegradable stuff out of landfills in the first place.

But when people talk about environmentally friendly plastic, they're more often talking about "bioplastics," a very different group of materials. **Bioplastics** are made from biological material instead of from fossil fuels, and they're supposed to have very different properties from traditional plastics. There's also a pretty new subgroup of miscellaneous plastics made with synthetic materials that might react differently in landfills from the regular stuff.

Green features of different types of eco-plastics

Recycled traditional plastic is composed of varying percentages of "virgin" (non-recycled), traditional plastic. The eco feature here is that all that virgin plastic is reused to make your lawn furniture instead of being thrown into a landfill. This type is no more biodegradable than the original, though.

Bioplastic is made from plant material and it should degrade relatively quickly in landfills and, in some cases, compost bins. The most common forms are starch-based (often corn starch), like polyactide (PLA) plastic, which is the most common form. You'll find PLA in things like biodegradable food-service trays and disposable cups. Polyhydroxyalkanoate (PHA) plastic uses starch also, typically from corn or sugarcane or beetroot, and it shows up in things like cosmetics bottles. Cellulose-based plastics are made of cellulose, the main component in plant tissues. You'll also find bioplastics made from soy protein or lactic acid.

Finally, there are several recent plastics innovations that make up the "*miscellaneous*" category. ECM Biofilms has come up with a way to add microbe-attracting pellets during the manufacturing process for traditional plastics, causing the end product to degrade faster in landfills.

While all of these eco-plastics offer some type of environmental benefit over traditional plastics, the issue ultimately comes down to theory versus practice. In theory, these plastics are biodegradable. But since they're quite new, at least in industrial terms, the long-term research is still lacking.

Task 1
Read the text and complete the table with your short notes (based on the text) with no more than 7 words, according to the example (0).

	NOTES
Yearly amount of plastics in US landfills	*0. billions of tons*
Environmental danger of plastic production	1.
	2.
Alternative wrapping materials used instead of plastic	3.
Disadvantage of recycled plastic	4.
Characteristics of bioplastic	5.
	6.

Task 2
Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	**TRUE or FALSE**
0. Japan has come up with a car made of eco-plastic elements.	*T*
7. Corn and sugarcane are typically used for polyactide plastic. (PLA).	
8. Bioplastic is produced by extracting microbes from traditional plastics.	
9. Several new groups of ecoplastics are under development.	
10. The long-term behavior of eco-plastic needs to be monitored.	

10. Protection needed for 'marine Serengetis'

Efforts to conserve threatened marine creatures such as sharks and turtles should concentrate on so-called hotspots of biodiversity, according to a new scientific study.

Researchers from Germany and Canada discovered that certain areas of the ocean seem to teem with many different species and that these locations should be developed as marine reserves.

The scientists' modelling shows that preventing fishing in these "parks" would be the most efficient way of enhancing the survival prospects of those fish and other marine animals now threatened with extinction.

The team, led by Dr Boris Worm from the Institute for Marine Science in Kiel, publishes its findings in the journal Proceedings Of The National Academy Of Sciences (PNAS).

Plundered seas

It is well known that on land, some places are far richer in species than others; a couple of examples are tropical rainforests and savannah watering-holes. Many of these areas have now been turned into protected parks.

But Dr Worm and colleagues have shown this concentration of life to be true also of the oceans. Although scientists have long suspected this to be the case, the new study is said to be one of the first to put some hard data to the idea.

"This is like the watering-holes in the Serengeti, where you have lions and leopards and gazelles and wildebeest and all species congregating at a relatively small spot," Dr Worm said.

"We've looked for these spots in the open ocean," he told BBC News Online.

And they found them. By using records compiled over many years by scientific observers on long-line fishing boats, Dr Worm's team discovered that there are places in the ocean that really are the marine equivalents of the Serengeti, rich in species like tuna, swordfish, shark and billfishes.

Many of these organisms are under threat of extinction - some of the large predatory species have seen their numbers decline by 90% in living memory.

Wasted effort

The hotspots tend to lie in regions where the tropical and temperate oceans meet, and coincide with features like reefs and underwater mounts where there is also a diversity of plankton and smaller fish.

"We see the ocean as a seemingly uniform, monotonous landscape which is just plain water," Dr Worm said.

"We find out more and more that this is not true. The ocean has structure; this structure is imposed by differences in temperature, in salinity, in different hydrographic features."

Dr Worm's team has run computer models showing that locating marine reserves in hotspots would be a highly efficient way of preserving the spectacular predators of the open ocean.

"If you preserve the wrong area, if you close it off from fishing - fishermen go elsewhere and then they may go to an area which has high diversity and where they cause increased harm.

"If you protect the right areas, you do conservation most efficiently."

Task 1

Read the text and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). Please note that if all your answers are marked as true or as false, your answers will be disqualified.

STATEMENTS	TRUE or FALSE
0. A lot of people thought that the fauna of the ocean is the same everywhere.	**T**
1. Some species of ocean predators are nearly extinct.	
2. The best way to protect the oceans' wildlife if the same protection is given to all the territories.	
3. Computer models help to locate hotspots in the ocean.	

Task 2

Read the text again and provide short answers to the questions according to the example (0).

QUESTIONS	ANSWERS
What territories are mentioned as areas especially rich in wildlife?	*0.* **Ocean hotspots**
	4.
	5.
Where can we find areas of high biodiversity in the ocean?	6.
	7.
	8.
	9.
What do differences in water salinity, temperature and in hydrological features determine?	10.

WRITING SKILLS

Task 1: table description

LEVEL B1

1. Study the table, and finish the sentences with 50-80 words based on the information in the table, according to the example.

Comparison between costs of several production types of energy

GENERATOR TYPE	MEAN COST (US$ per MWh)
Hydro power	0.20 - 0.50
Nuclear power	0.30 - 0.40
Coal power	0.40 - 0.50
Natural Gas	0.40 - 0.50
Wind energy	0.40 - 1.00
Geothermic power	0.50 - 0.80
Biomass	0.80 - 1.20
Fuel Cell of hydrogen	1.00 - 1.50
Solar photovoltaic	1.50 - 3.20

Source: Garbe, Mello and Tomaselli (2011, p. 40).

0. This is a table which shows the cost of the production of several energy types.

1. In the first column, we can see .....

2. In the second column.....

3. The production cost of hydro power .....

4. Nuclear power is cheaper .....

5. The cost of fossil fuels (oil and gas) .....

6. From among the alternative.....

7. Geothermic power is more expensive. .....

8. Fuel cell of hydrogen costs less.....

9. The most expensive.....

10. The graph was taken from.....

2. Study the table, and finish the sentences with 50-80 words based on the information in the table, according to the example.

Tuition fees by region for courses starting in 2017

Student's home region	Studying in England	Studying in Scotland	Studying in Wales	Studying in Northern Ireland
England	£9,250	£9,250	£9,000	£9,250
Scotland	£9,250	No fee	£9,000	£9,250
Wales	£9,250	£9,250	£4,046	£9,250
Northern Ireland	£9,250	£9,250	£9,000	£3,925
EU	£9,250	No fee	£4,046	£3,925

Source : https://www.ucas.com/ucas/undergraduate/finance-and-support/undergraduate-tuition-fees-and-student-loans

0. This is a table which show *tuition fees in parts of Great Britain and in the EU in 2017.*

1. In the first column, we can see .....

2. In the other columns .....

3. There is no fee for .....

4. For students from Wales .....

5. It is the second cheapest to .....

6. It is less expensive to study in .....

7. Students from the EU pay more in .....

8. The most favourable tuition fees are charged in .....

9. Compared to the English tuition fees, Welsh fees for local students are .....

……...

10. The graph was taken from.....

LEVEL B2

1. Study the table, and describe it in about 120-160 words, using the 10 given words or expressions in their right forms. You may include numerical data as well to support your description, which should refer to tendencies and contain comparisons.

New Car Sales by Month, 2009-10

Month	2009	2010	Change	% Change
January	15,799	16,595	+796	+5.0%
February	8,883	12,306	+3,423	+38.5%
March	7,764	13,813	+6,049	+77.9%
April	4,373	8,544	+4,171	+95.4%
May	5,068	8,677	+3,591	+70.6%
June	4,809	8,452	+3,643	+75.8%
Total	**46,715**	**67,846**	**+21,131**	**+45.2%**

Source: Society of Irish Motor Industry

The words to use:

~~above table~~	figure	represent
compare	increase	source
conclude	observe	the highest
double	percentage	

0. The above table is about the new car sales by month between 2009 and 2010.

2. Study the table, and describe it in about 120-160 words, using the 10 given words or expressions in their right forms. You may include numerical data as well to support your description, which should refer to tendencies and contain comparisons.

Average annual fatalities in the United States, 2000-2009

	Private Transportation			Commercial Transportation		
	Crashes solely involving private users	Crashes with commercial highway carriers	Crashes with commercial non-highway carriers	Passengers	Employees	Bystanders
Highway Modes						
Cars and light trucks	26,678	3,766	245	7	9	n.a
Pedestrians & bicycles	4,930	545	592	n.a	n.a	n.a
Motorcycles	3,989	156	2	n.a	n.a	n.a
Large Trucks	n.a	n.a	n.a	n.a	724	n.a
Buses	n.a	n.a	n.a	30	9	n.a
Non-Highway Modes						
Maritime	704	0	1	42	85	1
Aviation [d]	548	0	1	74	21	2
Railroads	n.a	n.a	n.a	7	27	4
Rail Transit	n.a	n.a	n.a	22	3	0
Pipeline	n.a	n.a	n.a	n.a	5	12
Totals						
Total	**36,849**	**4,467**	**839**	**182**	**883**	**19**
U.S. Total	**43,239**					

"Comparing the Fatality Risks in United States Transportation Across Modes and Over Time," 2013

The words to use:

account for	different	~~represents~~
approximately	divide	such as
as a summary	higher than	while
compare	refer to	

0. The table **represents** the average annual fatalities in the United States, 2000-2009.

3. Study the table, and describe it in about 120-160 words, using the 10 given words or expressions in their right forms. You may include numerical data as well to support your description, which should contain comparisons.

Vehicle Performance

Number of batteries	24	48
Battery voltage	6.0	3.2
Capacity (Ah)	260	200
Cost	$3,300 (in 2006) $5,500 (2011 price)	$15,000 (w/BMS; in 2011)
Usable energy storage (kWh)	19 (50% of 37 kWh)	25 (80% of 31 kWh)
Battery weight (lbs.)	1,730	775
Vehicle weight (with batteries)	5,000 lbs.	4,045 lbs.
Typical driving range (miles)	25	60
Max. driving range (miles)	40	75
Acceleration, 0–60 mph (sec.)	35	21
Energy per mile (approx. kWh)	0.75	0.40

The words to use:

according to columns compare considering	final finally higher refer to	three times while ~~with regard to~~

0. The table shows the performance of different vehicles **with regard to** their number of batteries.

4. Study the table, and describe it in about 120-160 words, using the 10 given words or expressions in their right forms. You may include numerical data as well to support your description, which should contain comparisons**.**

Battery Module

Model number		G-BM3250	G-BM3260	G-BM3280
Nominal voltage		3.2V	3.2V	3.2V
Nominal capacity(C/3, 20 ℃)		50Ah	60Ah	80Ah
Discharge@ 23℃	Max. Cont Current	1C	1C	1C
	Max. 30 sec. Pulse	3C	3C	3C
	Cut-off Voltage	2.5V	2.5V	2.5V
Standard Charge (CC/CV)	Charge Voltage	3.65V	3.65V	3.65V
	Charge Current	0.2C	0.2C	0.2C
	Charge Time	5.5 hrs	5.5 hrs	5.5 hrs
Operating temperature		- 20 to 60 ℃	- 20 to 60 ℃	- 20 to 60 ℃
Charge temperature		0 to 45 ℃	0 to 45 ℃	0 to 45 ℃
Storage temperature		- 20 to 45 ℃	- 20 to 45 ℃	- 20 to 45 ℃
Operating humidity(non-condensing)		5% to 90%	5% to 90%	5% to 90%
Lifecycle		>1000	>1000	>1000
Weight		1.8kg	2.2kg	2.7kg
Dimension(mm)		55X168X131	27X179X275	34X179X275

The words to use:

as a summary as far as compare conclude	feature given in every case same	such as the heaviest ~~title~~

0. The **title** of table is Battery Module.

5. Study the table, and describe it in about 120-160 words, using the 10 given words or expressions in their right forms. You may include numerical data as well to support your description, which should refer to tendencies and contain comparisons.

Internet sales per shopper 2014-2015			
	Sales per shopper 2014	Sales per shopper 2015	Increase in sales per shopper
UK	£1,071	£1,174	9.6%
Germany	£890	£1,023	14.9%
France	£767	£847	10.4%
Spain	£458	£499	8.9%
Italy	£444	£485	9.2%
Netherlands	£613	£663	8.1%
Sweden	£539	£588	9.1%
Poland	£181	£206	14.2%
Europe*	£738	£820	11.1%
U.S.	£1,043	£1,120	7.4%
Canada	£731	£780	6.8%

Source :www.econsultancy.com

The words to use:

almost different each express	from high increase per cent	row slight ~~topic~~

0. The **topic** of the table is internet sales per shopper between 2014 and 2015.

6. Study the table, and describe it in about 120-160 words, using the 10 given words or expressions in their right forms. You may include numerical data as well to support your description, which should refer to tendencies and contain comparisons.

Energy Demand in China's Road Transport Sector
(million tonnes)

	2000	2001	2002	2003	2004	2005
Gasoline	36.86	38.55	40.24	43.17	46.30	49.65
Diesel	19.72	21.68	24.71	27.49	31.32	33.92
CNG	0.12	0.20	0.44	0.62	0.79	0.97
LPG	0.40	0.56	0.63	0.74	0.74	0.74
Bioethanol	0	0	0.17	0.34	0.51	0.68
Total	57.10	60.99	66.18	72.35	79.66	85.96

(CNG – Compressed Natural Gas; LPG – Liquefied Petroleum Gas)

Source: www.researchgate.net

all	low	row
amount	period	~~source~~
give	remain	steady
important	rise	

0. The **source** of the table is a website.

7. Study the table, and describe it in about 120-160 words, using the 10 given words or expressions in their right forms. You may include numerical data as well to support your description, which should refer to tendencies and contain comparisons.

Top 5 smart phone vendors

Q3 2014 Preliminary Data (Units in Millions)

Top Five Smartphone Vendors, Shipments, Market Share and Year-Over-Year Growth

Vendor	2014Q3 Shipment Volumes	2014Q3 Market Share	2013Q3 Shipment Volumes	2013Q3 Market Share	3Q14/3Q13 Change
1. Samsung	78.1	23.8%	85.0	32.5%	-8.2%
2. Apple	39.3	12.0%	33.8	12.9%	16.1%
3. Xiaomi	17.3	5.3%	5.6	2.1%	211.3%
4. Lenovo*	16.9	5.2%	12.3	4.7%	38.0%
4. LG*	16.8	5.1%	12.0	4.6%	39.8%
Others	159.2	48.6%	113.0	43.2%	40.8%
Total	**327.6**	**100.0%**	261.7	**100.0%**	**25.2%**

Source: IDC Worldwide Quarterly Mobile Phone Tracker, October 29, 2014

The words to use:

all	low	rise
amount	period	row
give	quarter	~~source~~
important	remain	

0. The **source** of the table is IDC Worldwide Quarterly Mobile Phone Tracker.

8. Study the table, and describe it in about 120-160 words, using the 10 given words or expressions in their right forms. You may include numerical data as well to support your description, which should refer to tendencies and contain comparisons.

Hourly wage by gender and industries in Brazil (in Brazilian real)

	1978		2007	
Activity	Men	Women	Men	Women
Agricultural	14.86	6.49*	3.10	0.91*
Transformation Industry	38.11	17.42*	7.12	4.33*
Construction	23.21	38.82*	4.72	19.72*
General Industry	31.46	33.10	10.45	11.02
Commerce	38.26	21.81*	6.48	4.83*
Services	40.00	12.30*	7.65	3.56*
Transportation	32.67	26.39*	7.28	7.45
Social Services	74.35	32.77*	13.45	8.26*
Public Administration	50.08	45.15*	12.02	10.99*
Other Activities	78.14	38.85*	9.12	7.04*

Brazilian Institute of Geography and Statistics

by	difference	most
~~column~~	except for	sharp
compare	give	significant
decrease	high	

0. : The first **column** presents the different industries in Brazil.

Task 2: letter writing

LEVEL B1

1.
You are the president of a student association (Horváth Ádám/Andrea, AISEC, SZIE, 2100 Gödöllő, Páter K. u.1) and you organise study tours for students to foreign companies and factories in order to broaden the future chances of students on labour market. This time a group of quality control plans the visit. Write a letter of enquiry in 120-140 words to the PR Depaertment (Kia Motors Slovakia, P.O. Box 2, 01301 Teplicka nad Váhom, Slovakia) according to the given instructions.

In your letter,

- ask about the possibility of a visit
- describe the student group
- ask for a presentation about the company
- ask to meet the quality assurance team
- thank for the opportunity

2.
The heating system, which was bought from the Netherlands has stopped working at your plant (Békési Keltető, 5630, Békés, Babilon sor 45) and hundreds of chicks died accordingly. The heating system has a valid guarantee. Write a letter of complaint to the Dutch company (Heating Systems Bv, Beulingstraat 3, Rotterdam, Holland) in 100-120 words according to the following points. Your name and address: Tóth Antal/Anita, production manager.

In your letter,

- describe the problem
- describe the losses in production
- ask for urgent repair
- alternatively, ask for a new system
- ask for compensation for the losses

LEVEL B2

1. The heating system, which was bought from the Netherlands has stopped working at your factory (Ózd Steel Ltd, H-3600 Ózd, Kovács-Hagyó Gyula street 7.) and production stopped as well. The heating system has a valid quarantee. Write a letter of complaint to the Dutch company (Heating Systems Bv, Beulingstraat 3, Amsterdam, Holland) in 140-160 words according to the following points. Your name and position is: Bodor Gábor/Gabriella, production manager.

In your letter,

- describe the technical problem
- describe the losses in production
- ask for urgent repair
- alternatively, ask for a new system

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2. You are a preparing for a job-interview as a fresh graduate. Write a letter to your American professor in 140-160 words, in which you ask him to give a reference about you concerning your studies as a scholarship holder. Your name and address is: Kovács Beáta/Balázs, 7632 Pécs, Fazekas M. street 21.
The name and address of the professor: John Newby, Department of Mechanical Engineering, University of Michigan, 2350 Hayward St**.,** Ann Arbor, MI 48109.

In your letter

- remind your professor about your studies
- ask for a reference
- write about the job you are applying for
- ask him to include details on your language skills and academic performance

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3. You are Hidas Eszter / Elek, the managing director of L and N Radio Ltd (**Unit B, Jenkins Dale, Chatham, Kent, ME4 5RT).** Write a letter of enquiry in 140-160 words to Transport Britain company (Chittening Industrial Estate, Avonmouth, Bristol UK BS11 0YB), in which you enquire about the transporting conditions of electrical goods according to the following points.

In your letter,

- Briefly introduce the company (profile, size, etc.)
- Ask the assistant about
    - modes of transport (road, rail etc.) and
    - possible packaging techniques (cartons, wooden crates)
    - terms of payment (bank transfer, etc.)

4. As a fresh graduate you apply for the job advertisement of IBM Székesfehérvár published last week. Write a letter in 140-160 words, in which you detail at least 4 of the given points in the advertisement.
Your name and address: Balogh Lívia/László, 1196 Budapest, Báthory street 10.

IBM's IT Service Centre in Székesfehérvár is looking for
Junior IT Specialists

Tasks:
- Maintenance of customer systems and networks (SAP basis administration, Mainframe systems, Windows, Unix platforms
- Communication with technical teams and customers in system related questions
- System problem analysis

Requirements:
- Good English skills
- Willing to work in shifts
- Service oriented thinking
- Good problem solving abilities

Please send your application to Melinda Bajnok, 5330 Székesfehérvár, Bíró u 16-20.

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5. Read the following appeal and write a letter in 140-160 words, in which you enter the advertised international competition according to the given points. Your name and address: Kovács Dávid / Diána, Címe: 9220 Győr, Soproni street 20.

Young Businessman of the Year Award / technical services

This award seeks to reward those young entrepreneurs (under 25) who have developed a business without a large capital investment., specialising in providing technical services.
Complete your contact and business details – and summarise your achievements in the areas below.

- the technical services you offer
- your equipment and other assets
- your workforce
- your future plans

Send your letter of application to the American Management Association, 1170 Peachtree Street, Atlanta, GA 30309, USA

6. You have been working in the USA for 6 months as an employee of an IT company. You want to start your own enterprise. You have found the following advertisement, in which the U.S. Small Business Administration offers loan for small start-up businesses. Enquire about the loan in 120-140 words on the following address: The Program Co-ordinator, SBA New Jersey Office, 1 Paddock Way, Mt Holly, NJ 08060. Your name and address: Béres Ibolya/Imre, 15 Bridgeway Rd, Newark, NJ 07062.

Get up to $150,000 for Your Small Business!	
Approval in 48hrs! **Cash within 10 days!** **Re-pay at your own pace!** **No application fee!** **Simple one-page application!**	„The Community Express program helps economic development and job creation in rural and inner city communities by providing loans. Loans may be used for start-up or expansion."

In your letter,

- describe
  - the business you would like to start up
  - your expertise in the business
- ask about
  - the terms of the loan
  - the necessary documents

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7. You are a safety manager working for J.C Retail Ltd. Write a letter in 140-160 words to **Bauer Security Systems Ltd.**, in which you enquire about their latest security system. Your name and address in this role is: Joseph/Julia Schmidt, 25 Leigh Road, Bristol, BR16 S21.

In your letter ask about

- the terms of payment
- guarantees
- the deadline for installation
- and contract for servicing

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8. You are the logistics manager at Hungarosped company. You have been invited to give a presentation at the International Transport and Distribution Conference to be held next year. You have been informed only about the presentation fee (Ł100). Write a letter in 140-160 words to the organizer (Mrs Glenda Brandon, Speaker Organizer, Prime Conferences Ltd, 120 High Street, Chelsea, London SW10 1TE) to enquire about the other details. Your name and address in this role is: Koós György/Györgyi, 1019 Budapest, Úri u.7.

In your letter include the following points:

- Accepting invitation
- Asking them to provide
  - travel costs
  - accommodation
  - equipment

ANSWER KEYS

Level B1 – technical topics

1. Locomotive to return to Glasgow

Task 1

1. by rail, 2. by sea, 3. (new) Riverside Museum, 4. 65 year old, 5. 74ft, 6. 13ft, 7. 179 tonnes, 8. 7 months, 9. Glasgow Museums Resource Centre, 10. key display/ centerpiece/ largest, youngest

Task 2

11. T, 12. F, 13. T, 14. T, 15. F

2. 1,000 new hydro schemes to power Scottish homes

Task 1

1-E, 2-B, 3-C, 4-G, 5-F

Task 2

6. 1,379 MW, 7. turbine (wheel), 8. (underground) sloping pipe, 9. dam, 10. weir, 11. complement them, 12. no constant flow, 13. it can be stored , 14. state of rivers, 15. survival of salmon

Level B2 – technical topics

3. How the Eden Project Works

Task 1

1. Cornwall, 2. different climates, 3. insulation, 4. in a web of steel tubes, 5. underground / around the base, 6. 3-D models of the domes, 7. air pillows are partially deflated, 8. they are easy to detach, 9. if a better material comes along

Task 2

10. F, 11. T, 12. F, 13. F, 14. T, 15. T

4. Eiffel Tower

Task1

1.sustainability features, 2. that is the position which maximizes wind capture, 3. rainwater collection system, 4. high-power heat pumps, 5. transparent floor, 6. glass balustrades, 7. non-slip treatment, 8.to reduce ecological footprint, 9. 57 meters above the city

Task 2

10-T, 11-F, 12-F, 13-T, 14-T, 15-T

5. How Electronic Ink Will Work

Task 1

1-F, 2-G, 3-D, 4-C, 5-E

Task 2

6. words cannot be changed, 7. difficult to carry, 8. price, 9. portability / does not require external power supply, 10. a lot easier on the eyes, 11. electronic ink, 12. cells, 13. (embedded) microelectronics, 14. pigmented chips, 15. Clear beach balls filled with white ping pong balls and blue die

6. Innovations: Virtual Laser Keyboards

Task 1

1. cable, 2. distant / wireless connection, 3. direct connection, 4. DOE, 5. optical lenses, 6. IR / red laser diode, 7. CMO, 8. VIPC, 9. flat, opaque non-reflective surface, 10. phone / handheld devices

Task 2

11. F, 12. T, 13. T, 14. T, 15. F

7. David Nyarko, P.E. Mechanical Engineer

Task 1

1-E, 2-D, 3-I, 4-G, 5-C, 6-F, 7-B

Task 2

8. drawbridges, 9. hydraulic, 10. normal motors and gears, 11. Design (new bridges), 12. condition surveying / inspection, 13. repair/ rehabilitation, 14. structural, 15. electrical

8. BASF rebrands Hungarian factory

Task 1

1. system components, 2. 38, 3. on site, 4. fine tuning formula, 5. fine tuning mixing ratios, 6. steering wheels, 7. seat cushions, 8. instruments, 9. insulation materials, 10. flooring, 11. roof insulation

Task 2

12. F, 13. T, 14. T, 15. F

9. Waste oil heaters

Task 1

0-A, 1-F, 2-C, 3-B, 4-E

Task 2

0. automatic thermostat control, 6. cleaner burning, 7. less cleaning is needed, 8. safely mounted, 9. sealed well, 10. higher pressure, 11. clean/ efficient / smoke free, 12. ash residue, 13. maximum kinematic viscosity below 6.00mm^2 per second at a temperature of 20 °C, 14. maximum ignition temperature not lower than 40 °C, 15. density above 0.94g/cm^3

10. When the rubber hits the road

Task 1

1. frequent heart attacks, 2. old/ shredded tyres, 3. 25%, 4. that it is more expensive, 5. crude oil/ bitumen, 6. the pores between stones are too large, 7. thick, 8. (more) flexible, 9. polyurethane

Task 2

10-F, 11-T, 12-F, 13-T, 14-F, 15-T

Level B1 - Environmental topics

1. Questions and answers about the Energy Efficiency Manual

Task 1

1-D, 2-G, 3-J, 4-H, 5-F, 6-B, 7-E, 8-C

Task 2

9. financial tool, 10. provide best service, 11. photos, 12. diagrams, 13. non-technical/ conversational/ informal, 14. few simple formulas, 15. Economics

2. Short news on alternative energy

Questions	number of the article
Which article is about an event?	1,2,3
Which article involves a research institute?	1,3
Which article names several alternative energy sources?	2
Which article is about creating alternative energy from gases?	1
Which article describes the technology of making a liquid energy source?	3
Which article mentions the sum to be spent on environmental research?	2,3
Which article describes co-operation between various organisations?	1,3
Which article compares the production of two kinds of alternative energy source?	3
Which article mentions a problem or problems to be solved?	2,3

Level B2 - Environmental topics

3. Billion litres of water lost every day

Task 1

1. £190,000, 2. financial sanctions, 3. cut leakage (by repairing pipes), 4. Water Industry Commission for Scotland, 5. lot of energy used in cleaning it, 6. £310

Task 2

7. F, 8. T, 9. F, 10. T

4. Biofuels will speed climate change, chief scientist says

Task 1

	SUPPORTS	OBJECTS	SUPPORTS WITH CONDITIONS
1. John Picken	X		
2. Abigail Bunker		X	
3. NFU			X
4. Greenpeace		X	

Task 2

5. climate change / release of huge amounts of carbon, 6. damage to (unique wildlife) habitats /destruction of forests etc. peatlands, 7. grain prices rocket / price rises in supermarkets / price rises in the developing world, 8. dropped, 9. farmers went back to barley and wheat production, 10. absorb carbon dioxide as they grow

5. Inheriting the Wind: Danish Wind Power

Task 1

1. covered 30% of investment costs for a decade , 2. research support provided , 3. guaranteed consistent market at a higher price , 4. provided loans for turbine exports, 5. tax breaks, 6. more durable, 7. more efficient

Task 2

8. F, 9. T, 10. T

6. Controversial incinerators

Task 1

	For building incinerators	Against building incinerators	Supports building incinerators conditionally
1. Minister Richard Lochead			X
2. Lothian Councils	X		
3. Robin Harper MSP		X	
4. Councillor Jim Grant	X		

Task 2

5. 5%, 6. 25, 7. (they should be) highly efficient, 8. heating, 9. electricity / power, 10. 100,000 tonnes

7. Replant trees you chopped down, council tells builders
Task 1

ORGANISATIONS OR PERSONS	FOR COMPENSATION	AGAINST COMPENSATION
1. Local people	X	
2. City council	X	
3. Thistle Development		X
4. Aspect Scotland Limited		X

Task 2
5. 10 %, 6. in 2000, 7. horrible / scrubby woodland, 8. that they have it, 9. landscaped parkland, 10. Reinstate / replant

8. Sustainable Growth - Interface
Task 1
1. petroleum, 2. green / environmentally friendly, 3. garbage / waste, 4. social responsibility / sustainability, 5. economic growth / profitability
Task 2
6. T, 7. F, 8. T, 9. F, 10. F

9. What are ecoplastics?
Task 1
1. it is fuels based, 2. it requires a lot of energy, 3. paper / cardboard, 4. it isn't more biodegradable than the original / doesn't degrade, 5. it is made of plant material, 6. it degrades relatively quickly
Task 2
7-F, 8-F, 9-T, 10-T

10. Protection needed for 'marine Serengetis'
Task 1
1. T, 2. F, 3. F
Task 2
4. tropical rainforests, 5. savannah watering holes, 6. where tropical and temperate oceans meet, 7. near reefs, 8. near underwater mounds, 9. where there is a diversity of plankton and smaller fish, 10. (ocean) structure

Sample table descriptions
level B1

Costs of energy types
This is a table which shows the cost of the production of several energy types**.**
In the first column, we can see the types of energy compared.
In the second column we can see the mean cost of production, in us dollars, per MWH.
The production cost of hydro power is the lowest, between 0.20-0.50 us dollars.
Nuclear power is cheaper than coal power but more expensive than hydro power.
The cost of fossil fuels, namely, coal power and natural gas is the same.
From among the alternative energy types, wind energy is the cheapest and solar photovoltaic is the most expensive.
Geothermic power is more expensive to produce than wind energy.
Fuel cell of hydrogen costs less per MWH than solar photovoltaic.
The most expensive type of energy is solar.
The graph was taken from a book written by Garbe, Mello and Tomaselli in 2011.

level B2:

New car sales
The **source** of the table is the Society of Irish Motor Industry. In the rows we can find the months from January to June. The columns **represent** different years from 2009 to 2011 and the changes are expressed in **percentage**. If we have a look at the **figures** of January, we can **conclude** that the new car sales **increased** after two years, as in 2009 it was 15.799, while it was 16.595 in 2010. If we **compare** the figures of April, we can **observe** that the new car sales almost **doubled** within two years. The number of new car sales was **the highest** in January in both years, while it was the lowest in April in 2009 and in 2010 as well.

Annual fatalities
In the rows we can find **different** types of vehicles, **such as** cars, light trucks, motorcycles, buses and many others. The columns are divided into two parts, one part shows the private transportation, **while** the other shows the commercial transportation. The commercial transportation sector is **divided** into three parts, passengers, employees and bystanders. If we **compare** the number of the passengers in annual fatalities in the United States, we can say that the number of passengers on non-highway modes is **higher than** the number of passengers on highway-modes. The figure 26.678 **refers to** the crashes solely involving private users of cars and light trucks.
As far as the fatalities of pedestrians and bicycles are concerned, we can state that their number is **approximately** one-fifth of the number of fatalities with cars and light trucks. Out of the total 36.849 casualties occurring in the country, 3.989 casualties **account for** accidents with motorcycles. **As a summary** we can say that the average annual fatalities in the United States is more significant in case of private transportation than in case of commercial transportation.

Vehicle performance
In the rows different features of the vehicles are represented and in the **columns** the number of batteries are demonstrated.
Considering the number of batteries, mainly we can talk about two types of vehicles, one with 24 and the other with 48 batteries.
Ah **refers** to the capacity of the vehicles.
If we **compare** the vehicles with 24 batteries and the vehicles with 48 batteries, we can see that the battery voltage is **higher** with less batteries and the battery weight is a lot more in their case.
The **final** row shows the energy per mile in kWh, which is 0.75 in vehicles with 24 batteries. **According to** the table the maximum driving range in case of vehicles with 24 batteries is 40 miles, while it is 75 miles in case of the vehicles with 48 batteries.

The cost of the vehicles with 24 batteries was **three times** less than the cost of the vehicles with 48 batteries in 2006.
Finally, we can state that the usable energy storage is 19 kWh for the vehicles with 24 batteries, **while** it is 25 in the vehicles with 48 batteries.

Battery module
In the rows we can find different **features** of batteries, such as nominal voltage, nominal capacity, charge current, charge time and some others.
The table **compares** different battery modules, **such as** G-BM3250, G-BM3260 and G-BM3280.
In every case, the nominal voltage is the same, it is 3.2V, while the nominal capacity differs in all cases. If we compare the weight of the given batteries, we can say that the G-BM3280 battery is **the heaviest** and the G-BM3250 is the lightest.
Interestingly, the charge temperature is the **same** in all cases.
The dimension of the batteries is **given** in mm. **As far as** the operating temperature is concerned, it is interesting to **conclude** that the temperature is the same in all the three cases.
As a summary we can conclude that the higher the nominal capacity is, the heavier the battery is.

Sample letter

7.

Bauer Security Systems Ltd.,
42 Inverness Terrace
London, W2 HS1

25 Leigh Road
Bristol
BR 16

3 October 2017

Dear Sir/ Madam,
I am writing on behalf of J.C. Retail Ltd., to enquire about their latest security systems.

Our company is planning to move to Bristol from Manchester and we need reliable security systems for our 3 new shops. We sell valuable I-phones, so we need to ensure the safety of our stock. Your name was given by our partners who recommended you to us for your high quality, precise work.
I would like to ask several questions to find out if your services would be suitable to us. Firstly, I would like to ask about your terms of payments. In how many days you require payment after completing the work? Would bank transfer suit you?
Secondly, I would like to enquire about guarantees. How many years' guarantee do you usually provide for your installed systems? I expect it is no shorter than 5 years in the case of such expensive systems.
Thirdly, how fast can you install your system in all our shops? What would be the deadline after placing the order?
Finally, would it be possible to make a contract with you for maintenance and servicing? How much would you charge for such a contract?

I am looking forward to your reply and to making business with you.

Yours faithfully,

Julia Schmidt
Security Manager