# THE MINISTRY OF SECONDARY-SPECIALIZED AND HIGHER EDUCATION OF THE REPUBLIC OF UZBEKISTAN

**BUKHARA ENGINEERING - TECHNOLOGICAL INSTITUTE** 

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# ENGLISH

# (FOR MASTERS OF NON-LINGUISTIC SPECIALITIES)



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English (for masters of non-linguistic specialities)

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Ushbu darslikni yaratishda muallif bugungi kunda nofilologik mutaxassisliklar bo'yicha til o'rganishning asosiy yondashuvlari hisoblangan STEM/STEAM tizimi va CLIL texnologiyasiga asoslangan. Darslikdagi leksik mavzular muhandislik sohasi, har xil davlatlarning bu sohadagi erishgan yutuqlari va perspectiv rejalari, ekologik muammolar va ularning inson salomatligiga ta'siri haqida ma'lumot beradi, oxirgi mavzular ilmiy tadqiqod yuzasidan hisobot yozish va boshqa yozuvlarni o'rgatishni o'z ichida oladi.

Bu yerdagi mashq va topshiriqlar to'rtta til konikmasi: o'qib tushunish, yozish, tinglan tushunish va gapirishga asoslangan. Darslikda to'rtta bo'lim mavjud va har bir bo'lim oxirida talabalar mavzularni qanchalik o'zlashtirganliklarini tekshirishlari uchun test savollari, darslikning oxirida takrorlash uchun grammatik ma'lumotnoma va lug'at berilgan.

Darslik Buxoro muhandislik-texnologiya institutida ishlab chiqilgan va institut Kengashida tasdiqlangan amaliy xorijiy til fanining o'quv dastur asosida tayyorlangan bo'lib, u nofilologik oliy ta'lim muassalarida magistraturada tahsil olayotgan talabalar uchun mo'ljallangan.

При создании этого учебника автор опирался на систему STEM / STEAM и технологию CLIL, которые сегодня являются основными подходами к изучению языка в нефилологических ВУЗах.

Лексические темы в учебнике предоставляют информацию о сфере инженерии, достижениях и перспективах разных стран в этой области, экологических проблемах и их влиянии на здоровье человека, последние темы включают в себя писать отчеты об исследованиях и развивать другие навили по письму. Упражнения и задания здесь основаны на четырех языковых навыках: понимание прочитанного, письмо, понимание прослушанного и говорение. Учебник состоит из четырех разделов, и в конце каждого раздела есть тестовые вопросы для самопроверки, а также грамматический справочник для повторения и словарь в конце учебника.

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Учебник подготовлен на основе учебной программы, разработанной в Бухарском инженерно-технологическом институте и утвержденной в Совете ирститута. Этот учебник предназначен для студентов, обучающихся по неязыковым специальностям магистатуры.

In compiling this textbook, the author relied on the STEM / STEAM system and CLIL technology, which are the main approaches to language learning in nonlinguistic universities today. The lexical topics in the textbook illustrate information about the engineering, achievements and perspective plans of different countries in this field, ecological problems and their impact on the health of people. The last themes are about developing writing skills. The exercises and assignments are based on four language skills: reading, writing, listening and speaking.

The textbook consists of four units, and at the end of each unit there are tests for progress check, as well as a grammar reference for revision and a vocabulary at the end of the textbook.

The textbook is compiled on the basis of the curriculum worked out at Bukhara engineering-technological institute and approved at the Council of the institute. It is intended for students of magistracy of studying in the non-linguistic specialties.

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#### **Unit 1. Engineering**

#### Lesson 1. Engineering career

"It is a great profession. There is the fascination of watching a figment of the imagination emerge through the aid of science to a plan on paper. Then it moves to realization in stone or metal or energy. Then it brings jobs and homes to men. Then it elevates the standard of living and adds to the comforts of life. That is the engineer's high privilege." *Herbert Hoover, 31<sup>st</sup> President of the United States, 1963* 



Questions for pre-reading discussion.

- 1. What is engineering?
- 2. What does an engineer look like?
- 3. What do engineers do?
- 4. How do you choose your engineering major?

Read the texts A, B and C and check your answers.

#### Text A. What is engineering?

Are you interested in making a **contribution** in the physical world? Are you good at solving problems? Do you like to understand how things work and how to make them better? Would you like to see your ideas for products become reality? If you answer yes to these questions, then odds are that you will want to become an engineer.

So, what exactly is an engineer? An engineer is someone who **applies** mathematics and the principles of science, especially chemistry and physics, to solve problems and meet the needs of society for products and services. Solving these problems and finding new solutions require creativity and persistence.

You may be concerned that you don't meet the stereotypical image of an engineer. Actually, most people don't even know what engineers are, so when you ask them about their stereotypical image, they often tell you about their image of a scientist. The image is often of a white male with out -of-control hair, glasses

with tape holding them together over his nose, wearing a white **lab coat** with a pocket protector (possibly filled with leaking pens) over a **plaid** shirt, pants that are too short, white socks, and untied shoes.

Engineers and engineering have been around for a long time, although many of the theorems that you will study during your years in college have been developed since the 1700s. The Egyptians were master engineers—witness the pyramids. The Romans built aqueducts to bring water into Rome, another significant engineering achievement. The Great Wall of China is a good example of a **man-made** feature on earth that is visible from space—this too is a great engineering accomplishment. Historically, most of the major engineering accomplishments have been "in the field of what is called civil engineering today—although this is changing **rapidly**.

#### Text B. What do engineers do?

One of our engineering colleagues says that "Engineers make the world work." Engineers design and build bridges, buildings, and tunnels. They design, test, and analyze cars, pumps, and heating and air conditioning systems. They design, build, and manufacture space shuttles, airplanes, and helicopters. They design, operate, and **modify** power plants, gas pipelines, airports, and dams. They design computers, software, telecommunications devices, telephones (wireless and wired), fiber optics, and storage routing devices. They design the processes and equipment to manufacture VCRs, TVs,



refrigerators, ovens, and toasters, as well as the appliances themselves. They create machines that cut fabrics to make our clothing, furniture, and draperies. Almost every product and process that you use in your daily life has been affected in some manner by an engineer.

You will find that engineers have had **input** into almost every activity that you undertake during the course of a typical day. Let's look at just a few of them.

Engineers were involved in the design of your electric alarm clock—from its display, to its electrical connection, to the manufacturing of the battery that keeps it working when the power is off, to the sound the alarm makes, to its size, its packaging, its ability to stay in one piece when dropped on the floor, the materials of which it is constructed, and its manufacturing. Engineers were also involved in the design of all of the related equipment and process controls for the manufacturing of the alarm clock.

Your refrigerator has been designed to be energy **efficient** and not to release chemicals into the atmosphere that are believed to cause depletion of the ozone layer. It turns itself on and off as dictated by its **internal thermostat**. If you have a frostless model, a fan turns on regularly to keep the frost from **adhering** to the walls. All of these features were designed, tested, and manufactured to specifications that were established by engineers.

The streets and roads you use to get from your home to school and work were designed and built by engineers. The water you drink and bathe in was made potable by engineers.

#### Text C. Choosing a major.

How will you choose your engineering major? First, think about where you interests lie and what types of courses you like. What is it that you would spend your time doing, if you didn't have to do all of the other things in your life? What do you look forward to doing? How do you see yourself spending your time in your job after you **graduate**?

Maybe you want to spend most of your time outside building roads, bridges, or buildings. If so, you probably want to look into civil or construction engineering. If your dream has always been associated with designing cars, then you may want to consider mechanical engineering. If your interests lie with computers, you have several choices, depending on your specific interest relative to computers. Do you want to make the computer itself, what is referred to as the hardware? Then you want to consider electrical or computer engineering. Does the process of logic and computer programming fascinate you? This is the software part, and you want to pursue either software or computer engineering or computer science. If you really want to **enhance** health and the human body through the design and application of equipment, then biomedical engineering could be for you. If chemistry fascinates you, you ought to look into chemical engineering. If you simply want to help clean up the environment – making clean water and clean air the order of the day for all citizens of the world – consider environmental engineering.



# Vocabulary. Write the definitions of the following words and

phrases.

become reality
pipeline
fiber optics
theorem
engineering accomplishment
pump
modify
electric alarm clock
internal thermostat
designing cars

**Reading comprehension.** 

#### **1.Match the branches of engineering with their definitions.**

	a) design, test, and analyze equipment and
1) Aerospace (or aeronautical	materials used
	in tracting medical conditions. Such
	in treating medical conditions. Such
or astronautical) engineers	equipment and

	materials include artificial joints and body	
	parts, surgical	
	tools, scanning equipment, and breathing and	
	heart	
	monitors.	
	b) are involved with the production and	
2) Agricultural engineers	delivery of	
	electricity, telecommunications, cable.	
	electronics.	
	control systems, and digital systems.	
	c) design products and systems to solve	
3) Architectural engineers	environmental	
	problems particularly cleaning up (or keeping	
	clean) the	
	air, water and land (including cleaning up oil	
	spills in the	
	ocean).	
	d) plan design and construct buildings	
4) Biomedical engineers	dams, airports,	
.,		
	water and wastewater treatment and	
	distribution systems,	
	mass transit systems including roads and	
	bridges, and	
	drainage systems.	

	e) design, develop, and implement new and	
5) Chemical engineers	existing	
	technologies in airplanes, space vehicles, and	
	helicopters.	
	These engineers are also involved in control	
	and	
	guidance systems, information systems, and	
	instruments	
	used for navigation of aircraft.	
	f) become involved in aspects of discovering	
6) Civil engineers	and recov-	
	ering minerals from the earth.	

	g) design, test, and analyze machines, structures,		
7) Computer engineers	and		
	devices including cars, pumps, heating,		
	ventilation and		
	cooling systems, combustion systems, and sports		
	equipment (such as bicycles and skis).		
	h) are involved in ensuring the discovery,		
8) Electrical/electronic	recovery, pro-		
engineers	cessing, and delivery of oil and gas.		
9) Environmental	i) become involved in every aspect of food		
engineers	production,		
	including processing, storage, handling, and		
	distribution.		
10) Geological engineers	j) work with architects on buildings and focus on		
	safety,		
	costs, constructability, and sound construction		
	methods":		
	They work on building systems including		
	illumination		
	and heating, ventilation, and air conditioning.		
11) Marine or ocean	k) design, develop and implement projects		
engineers	relating to the		

	nuclear industry, from nuclear power plants for electric		
	power industry to nautical propulsion systems for the U.		
	S. Navy.		
12) Mechanical engineers	1) design harbors, underwater machines, and offshore		
	drilling platforms. They specifically take into account the		
	additional factors that must be considered in designing		
	and manufacturing for the ocean environment, including		
	wave motion, currents, temperature variations, and		
	chemical and biological factors.		
13) Nuclear engineers	m) plan, design, and operate facilities that take ideas		
	from scientists and translate them into large-scale		
	commercial plants to meet the needs of society.		
14) Petroleum engineers	n) design, construct, and operate computer hardware and		
	software systems.		

#### 2. Write True or False according to the text above.

1. Engineer is someone who always works with theories.

2. Most people, actually, confuse the stereotypical image of an engineer and the image of a scientist.

3. The Egyptian pyramids witness that the Egyptians were master engineers.

4. The Romans' aqueducts and the Great Wall of China are physical achievements.

5. Engineer apply the theories into life.

6. Engineers had nothing to do manufacture.

7. The main goal of inventing the refrigerator was to cause depletion of the ozone layer.

8. Civil or construction engineering deals with the construction of roads, bridges and different erections.

9. If your interests lie with designing cars, then you want to consider electrical or computer engineering.



#### **1.** Listen and fill in the gaps.

Choosing a career \_\_\_\_\_\_biggest decisions we make in life. It used to be that we \_\_\_\_\_\_ career. People \_\_\_\_\_\_ a job when they were 18, 19 or 20 and \_\_\_\_\_\_ same career for life. Their career path \_\_\_\_\_\_ raightforward. Nowadays, it is normal for people to change careers, five, six, seven times. New technology and globalization means things change quickly. We need to study and \_\_\_\_\_\_ all the changes. I've had four different careers now. I like moving from \_\_\_\_\_\_ another. It means life \_\_\_\_\_\_ boring. It's much better to keep learning different things in different careers. I \_\_\_\_\_ what career I'll choose next. Perhaps one that doesn't \_\_\_\_\_\_.

#### 2. Listen again and the questions.

- 1. When do people start a job and how long are they engaged with it?
- 2. What is the reason of people's changing their career several times?
- 3. Why does the author like moving from one job to another?
- 4. What kind of job does he want to choose next?

# Speaking. Work in pairs. Discuss the following question.

What is the role of engineers in the society you live?



#### 1. Complete the table using the words below. There is an example.

mechanic, science, technical, chemistry, mechanics, scientific, technology, chemical, mechanical, scientist, technician, chemist, machine

Subject	People & Jobs	Thing	Adjective
1) engineering	engineer	engine	engineering
2)			
3)			
4)			
5)			

2. Use the words given in capitals to form the words that fit in the spaces.

#### **Creativity in Engineering**

Creation of new 1\_\_\_\_\_ is one of the 2\_\_\_\_\_ forms of **KNOW, HIGH** 

creativity. What concerns engineering and many other 3\_\_\_\_, CREATE

new knowledge is not the final purpose of creativity. The more

4\_\_\_\_\_a problem is the more difficult will be a solution, the **COMPLICATE** 

more dedicated should be creativity. Creativity 5 a routine	e IMPLY
work, for example to make standard <b>6</b> Then routine work	CALCULATE
in creativity will take 7 time, and the main attention will	SUFFICIENT
be 8 to creativity. Creativity is the 9 of	PAY, BASE
engineering activity. A <b>10</b> form of engineering creativity	TYPE
is <b>11</b> and rationalization activities which may result in	INVENT
12	DISCOVER

#### **Lesson 2. Engineering Education**



#### Questions for pre-reading discussion.

- 1. What does engineering career start with?
- 2. How do you imagine the structure of engineering education?
- 3. Which level of this structure is the most important for your future career?
- 4. What are your plans in education? Which level will be final for you?
- 5. Would you like to be a member of any engineering society/association?

#### **ANOTHER DISCOVERY CHANNEL**

Here's one thing we learned: no two scientists have the same experience during their master's or PhD. *New Scientist* has talked to a wide range of prominent researchers about their postgraduate years, and discovered a great deal about their personal journeys to the top flight of science. So from the moment you decide to commit to further study through to life afterwards, here's what to expect as a postgrad.

1. The main thing any undergraduate realises when they decide to commit to a PhD or master's is just how much they love their discipline.

Discovering this is good news, of course: a consuming interest in your subject is probably the most important ingredient for success.

However, just like the difference between falling in love and tying the knot, a passion for your subject does not necessarily come at the same time as knowing you want to commit to years more of study.

Do not worry if you are not completely confident that you are making the right decision - sometimes that doesn't come until later.

2. Success as an undergraduate does not necessarily transfer to the next level, especially to a PhD. Moving from the confines of undergrad exercises with known solutions to the potentially unbounded problems you will explore in a doctorate requires motivation, curiosity, creativity, imagination and stubbornness. If your undergraduate course has an option to do a project or dissertation module, grasp the opportunity with both hands. This is your best chance to get a feel for postgrad life.

3. Many students who go on to do a master's or PhD do so thanks to a gatekeeper - a lecturer or professor who recognizes their potential and helps set them on their journey. If there is somebody in your department encouraging you, then take it as definite sign that you might be well suited.

Do not be shy of looking beyond your department for advice. If you are enjoying a fascinating part of your subject that is beyond the scope of your lectures, why not take an advice and get in touch with the relevant researcher at another university?

Further down the line, choose your supervisor carefully: that relationship is the keystone of postgrad study - particularly in PhDs. Ask yourself if you would want a hands-on supervisor who you see most days, or whether you would prefer one who communicates monthly via Post-it notes in your pigeon-hole? Try to visit a department before applying, and ask students what it's like working for the various professors.

4. In the first few weeks of postgrad life, it is easy to feel somewhat awestruck by your supervisor and your peers. Put bluntly, there will be a lot of people around you who know a lot of stuff you do not. Nodding and smiling can be a useful skill.

A year's worth of fretting before comprehending what your supervisor is talking about is not uncommon.

"It was a massive shock, being thrown into the deep end of research," says Marcus Du Sautoy, professor of mathematics at the University of Oxford.

Listen carefully, note everything down and think about it in your own time. Sometimes a comment from your supervisor that confused you can come into its own months later.

It is important to be ambitious but also realistic. "Many students expect to be doing fundamental research from day one, and in most cases this is unrealistic," says Wendy Hall, professor of computer science at the University of Southampton. "You have a lot to learn and will spend considerable time reading about what others are doing."

5. It is easy to reach the second year of a research-based postgraduate placement and feel you have not achieved much. In a PhD, this is when you start to make your research your own. Starting to apply your knowledge to proper, independent research can be a shock.

Expect to have setbacks and failures. Everybody struggles - if all your experiments worked first time, then your supervisor would more than likely become suspicious. Some things will be out of your control and you will need to make the best of it.

6. Somewhere along the way, you will probably attend academic conferences. This is a chance to meet some of the top people in the field and get some fresh perspectives on your work.

If you do not like talking in public, then this is the time to sort it out. Speaking about something you are passionate about can do wonders for the nerves. Writing a talk forces you to think about the structure and main messages of your thesis, which of course will help you write and present the thing later on.

In a PhD, one of the final hurdles is an oral defense of your thesis - or viva - to two experts in the field. It may be a two to three- hour grilling but, on the bright

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side, it is also a rare opportunity to talk non-stop about your research to people who will actually listen.

7. Towards the end, things unexpectedly start to fall into place and make sense. After months of toiling away on a handful of very specific problems, you come up for air and see where your work fits into the scientific endeavour. Your thesis becomes the story of a period of your life. Step back and you will see you have achieved a lot.

As long as you are interested in the subject, a postgraduate degree will be hard work but ultimately gratifying.

And if you later find yourself picking your completed thesis off the shelf and caressing it like a small pet, do not worry - this is entirely normal behaviour.



Vocabulary. Write the definitions of the following words and phrases.

prominent researcher	postgraduate years
discover	flight of science
PhD	master
passion for	confine
project module	dissertation module
gatekeeper	scope
supervisor	keystone of postgrad study
hands-on	pigeon-hole
independent research	thesis
oral defense of a thesis	scientific endeavor

#### **Reading comprehension**

**1.** Read the text about postgraduate studying. Choose the most suitable heading from the list A-G for each paragraph (1-7).

A. Whatever happens, it will be time well spent

- B. Public speaking is not so bad
- C. Not everything goes to plan
- D. The step up is large
- E. Lecturers can help enormously
- F. Success as an undergraduate does not guarantee success later
- G. The first discovery is a deep-rooted passion for your subject

#### 2. Write true false according to the text.

1. The same things are expected for anyone while he/she is conducting research for his/her master's degree or PhD.

2. The key point in the decision of committing to a PhD or master's is the candidate's passion to the discipline.

3. There are some cases that the candidate get keen on his/her subject right after committing to a PhD or master's.

4. To realise the necessity of your postgrad life you should get a chance of choosing whether to do a project or dissertation module.

5. The role of a gatekeeper - a lecturer or professor is not so important for some students to do a master's or PhD.

- 6. Being shy prevents you to reach success in your research work.
- 7. Choosing relevant supervisor is a keystone of postgrad study.

8. Being apathetic is not very useful in the first few weeks of postgrad life.

9. In a PhD setbacks and failures can prevent your supervisor's suspect.

10. Your final opinion about doing postgraduate degree will be that it is a hard work but finally rewarding.



#### 1.Listen and fill in the gaps.

Education \_\_\_\_\_ most important things in our lives. Don't you agree? \_\_\_\_\_ the difference between success and failure. An education can bring us knowledge and

\_\_\_\_\_\_. In rich countries, people \_\_\_\_\_\_ have good schools. Children start learning from a very young age. They \_\_\_\_\_\_\_ their education and go to higher education or university. In Japan, \_\_\_\_\_\_ private schools for babies to learn English. It's a shame that in many rich countries, many children don't \_\_\_\_\_\_. Perhaps schools need to find better ways to teach so children want to learn. It's \_\_\_\_\_\_ many parts \_\_\_\_\_\_\_, children want to learn but can't. Make sure you never stop learning. Education \_\_\_\_\_\_\_ to a better future.

#### 2.Listen again and answer the questions.

1. Do you agree that education is one of the most important things in our lives? Why (not)?

2. Why are people lucky in rich countries?

3. What do schools need to do to teach so children want to learn in many rich countries?

4. What's sad about children's education in many parts of the world?

# Speaking. Make a presentation about your thesis and present it in front of the auditory.

Writing

Text A. Use the words given in capitals to form the words that fit in the spaces.

Master's Degree	
A master's degree is an academic degree	
<b>1</b> to	1. GRANT
individuals who have 2 study	
demonstrating a	2. UNDERGO

mastery or high-order overview of a specific field of	
study or	
area of professional practice. Within the area studied,	
graduates are posited to possess advanced 3	
of a	3. KNOW
specialized body of <b>4</b> and applied topics;	
high order	4. THEORY
skills in analysis, critical 5 or 6	
application;	5. EVALUATE
and the 7 to solve complex problems and	
think	6. PROFESSION
rigorously and <b>8</b> .	7. ABLE
	8. INDEPENDENT

#### Text B. Fill in the gaps using the words in the box.

advance, undergraduates, equip, capabilities, application, grant, specialty, science, combine, industry

#### Master's degree in engineering

Traditional and master's degree in engineering programs 1\_\_\_\_\_\_ students with indepth knowledge and skills in a particular engineering 2\_\_\_\_\_\_, expanding on the proficiency they gained as 3\_\_\_\_\_\_. And students can design their master in engineering studies as either a platform for real-world 4\_\_\_\_\_\_ or a future in academics.

Depending on the college or university, master's- level engineering programs will 5\_\_\_\_\_ graduates with either a Master of 6\_\_\_\_\_ in Engineering (MS or MSE) or a Master of Engineering (MEng).

With the detailed training that a traditional or online master's degree in engineering provides, graduates can 7\_\_\_\_\_ their careers to higher-level technical or management positions, depending on their organization and 8\_\_\_\_\_. Some master's students might choose to 9\_\_\_\_\_ their engineering training with graduatelevel business course work in an effort to demonstrate the breadth of their knowledge and **10**\_\_\_\_\_.

#### Lesson 3. Internet and engineering.



# **Reading.**

#### **Questions for pre-reading discussion.**

- 1. Did engineers change from the past time?
- 2. What does the 21<sup>st</sup>-century engineer look like?
- 1. Read the text and give the headings for the paragraphs (A-C).

#### **21-century engineers moving at internet time**

1.\_\_\_\_\_ The Internet. Global markets. Time compression. Competitiveness. We increasingly live in a connected world where packets of information whiz around the globe at the speed of light. Not long ago, the engineer of the Cold War prepared for work by immersing himself in a narrow technical discipline, expecting to work his entire career for one of a small number of gigantic employers on some specialized subsystem of a defense-related or smokestack megaproject.

Today's engineer is on a different planet. He or she faces a life filled with multiple project assignments with an almost interchangeable array of employers, clients, startups, and established firms; these assignments require an extraordinarily broad set of technical, business, and interpersonal skills performed as part of everchanging and shifting interdisciplinary teams.

2. \_\_\_\_\_ This change in work life has been as rapid as it has been dramatic, and the job here is to survey those nontechnical skills essential to being a successful engineer in the 21st century. As opposed to the Cold War engineer, we call the ideal engineer of our times an *entrepreneurial engineer*, and here we interpret the word *entrepreneur* quite broadly.

In the traditional sense of the word, today's engineer *is* more likely to find him or herself as part of a startup, replete with 13-hour workdays, a Blackberry, and stock options. But even when today's engineer works in more traditional settings, he or she is likely to find that both the job itself and effective career management require a more venturesome attitude and approach. Increased competition places enormous pressure on companies to continue to improve and innovate in creating new product lines, acquiring new customers, adopting new technology, and implementing better business practices. In larger companies, words have been coined to describe this need, *entrepreneurship* or *corporate entrepreneurship*. However, this pervasive orientation toward opportunity, innovation, and reward is now also necessary in the management of one's own career.

3. \_\_\_\_\_ In times past, employers took a paternalistic view of employees, managing their remuneration, health benefits, and retirement over the course of an entire career. Those days are largely gone, and today's engineer must take charge of his or her career by seeking a challenging sequence of work experiences that help build a marketable portfolio of diverse skills. Entrepreneurial engineers meet the challenges of changing times as opportunities, seeking challenging and rewarding work together with an appropriate balance of intellectual, financial, professional, and personal growth.



#### Vocabulary. Write the definitions of the following words and phrases.

global marketstime compressioncompetitivenesswhizspeed of lighta narrow technical discipline26

defense-related megaproject	smokestack megaproject
startup	interdisciplinary teams.
entrepreneurial engineer	implement
pervasive orientation	reward
challenging	intellectual growth

#### **Reading comprehension**

#### 1. Read the text and match the headings A-C with the paragraphs 1-3.

A. The impact of current changes on the life of today's engineer.

- B. Challenge for engineers today.
- C. The life of an engineer years ago and nowadays.

#### 2. Read the text and write True or False.

1. Before the life of an engineer has been much more interesting than today.

2. Nowadays engineers deal with different people every day.

3. There is not so big difference between today's engineer and an engineer the Cold War time.

4. In the traditional sense of the word, today's engineer can be compared with different things.

5. Increasing competition has a positive influence on the life of an engineer today.

6. In times past, employers did not took care of employees' welfare so much.



#### 1. Listen and fill in the gaps.

I think the Internet is the greatest \_\_\_\_\_. Think how it has changed the world. So much information is out there. \_\_\_\_\_ changed my life. I can chat with friends, download music, buy books and \_\_\_\_\_ I need for my homework. It took days or \_\_\_\_\_ any of these things before the Internet. I spend hours every day online. I think I \_\_\_\_\_ too long. I'm sure \_\_\_\_\_ computer screen all day isn't

good for my eyes. I think it's also \_\_\_\_\_. I need to exercise a little more. The only thing I don't like about the Internet \_\_\_\_\_ be dangerous. I don't really \_\_\_\_\_\_ personal information online, especially on \_\_\_\_\_ sites like Facebook.

#### 2. Listen again and answer the questions.

- 1. Why does the author think the Internet is the greatest invention ever?
- 2. What conveniences can internet make for us?

3. What disadvantages of staring at a computer screen all day does the author mention about?

4. What does the author like and what doesn't he like about the Internet?

# Speaking. 1. Work in small groups and discuss the question.

How do you feel while conducting a research in the era of innovative technologies?

- 2. Read the text again and answer these questions.
- 1. What is the entrepreneurial engineer?
- 2. What advantages and disadvantages do the engineer of the Cold War and today's engineer have?
- 3. Do you agree that an engineer needs to be skilled in matters nontechnical?
- 4. How to select the best candidates for the position of chemical engineer?



# **1.** Use the list of words or word combinations to fill in the gaps in the text "Problem Solving".

prototypes, potential solutions, reduce the risk, appropriate experience, establish the cause, applied mathematics, careful analysis, core contradiction, full-scale production, forensic engineering

#### **Problem solving**

Engineers use their knowledge of science, mathematics, logic, and 1\_\_\_\_\_to find suitable solutions to a problem. Engineering is considered a branch of 2\_\_\_\_\_ and science. Creating an appropriate mathematical model of a problem allows them to analyze it (sometimes definitively), and to test **3** 

Usually multiple reasonable solutions exist, so engineers must evaluate the different design choices on their merits and choose the solution that best meets their requirements. Genrich Altshuller, after gathering statistics on a large number of patents, suggested that compromises are at the heart of "low-level" engineering designs, while at a higher level the best design is one which eliminates the 4\_\_\_\_\_ causing the problem.

Engineers typically attempt to predict how well their designs will perform to their specifications prior to 5\_\_\_\_\_. They use, among other things: **6**, scale models, simulations, destructive tests, nondestructive tests, and stress tests. Testing ensures that products will perform as expected.

Engineers as professionals take seriously their responsibility to produce designs that will perform as expected and will not cause unintended harm to the public at large. Engineers typically include a factor of safety in their designs to 7\_\_\_\_\_\_ of unexpected failure. However, the greater the safety factor, the less efficient the design may be.

The study of failed products is known as **8**\_\_\_\_\_, and can help the product designer in evaluating his or her design in the light of real conditions. The discipline is of greatest value after disasters, such as bridge collapses, when 9\_\_\_\_\_ is needed to **10**\_\_\_\_\_ or causes of the failure.

#### **Lesson 4. Engineering ethics**



### **Reading.**

#### **Questions for pre-reading discussion.**

1. What is the purpose of a business, in your opinion? Is it just to make money?

2. What do you mean by these phrases? a) business ethics b) a code of ethics/of good practice

3. What is engineering ethics?

1. Engineers shall be guided in all their relations by the highest standards of honesty and **integrity**. Engineers shall **acknowledge** their errors and shall not **distort** or alter the facts. Engineers shall advise their clients or employers when they believe a project will not be successful. Engineers shall not accept outside employment to the **detriment** of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses. Engineers shall not promote their own interest at the expense of the **dignity** and integrity of the profession.

2. Engineers shall at all times **strive** to serve the public interest. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project. Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements. Engineers are encouraged to adhere to the principles of **sustainable** development in order to protect the environment for future generations.

3. Engineers shall avoid all conduct or practice that **deceives** the public. Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact. Consistent with the foregoing, engineers may advertise for recruitment of personnel. Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.

4. Engineers shall not **disclose**, without consent, confidential information concerning the business affairs or technical processes of any present or former

client or employer, or public body on which they serve. Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the engineer has gained particular and specialized knowledge. Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the engineer has gained particular specialized knowledge on behalf of a former client or employer.

5. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek **indemnification** for services arising out of their practice for other than gross **negligence**, where the engineer's interests cannot otherwise be protected. Engineers shall conform with state registration laws in the practice of engineering. Engineers shall not use association with a non-engineer, a corporation, or partnership as a "cloak" for unethical acts.

6. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other **accomplishments**. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission. Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may **justify** copyrights or patents, should enter into a positive agreement regarding ownership.



## Vocabulary. Write the definitions of the following words and phrases.

honesty	integrity
distort	detriment
misleading pretenses	dignity
safety	conformity 31

unprofessional conduct	public knowledge
public appreciation	deceive
confidential information	indemnification
negligence	unethical acts
justify copyrights	ownership

#### **Reading comprehension**

**1.** Read the text "Professional obligations of engineers". Define the key statements in each point of the list and fill in the table below.

ENGINEERS		
SHOULD DO	SHOULD NOT DO	

## 2. Read the text "Professional obligations of engineers" and match paragraphs 1-6 with heading A-F.

- A. Working in chime with others.
- B. The watchfulness of engineers towards people.
- C. Taking into account the public interest.
- D. Honesty of an engineer.
- E. Confidence.
- F. Working professionally.

# **3.** Read the text "Professional obligations of engineers" and write True or False.

1. Joint work of engineers with outside engineers should not hurt their regular work or interest.

2. Own employers opinion does not matter in accepting outside engineering employment.

3. Taking part in public affairs is necessary for engineers.

4. Working in agreement with the proper authorities is relevant for engineering standards.

5. Not using statements containing a material misrepresentation of fact can help in enouncing for new employment.

6. Consent of interested parties is not so significant to promote or arrange for new employment.

7. The engineer's interests can be protected by the compensation for the services arising out of their practice.

8. Engineers should be respected.



#### 1. Listen and fill in the gaps.

I'm really interested in \_\_\_\_\_\_ other countries. I don't know why, but I always think other cultures are more interesting \_\_\_\_\_\_ culture. Every time I travel, I learn wonderful, strange, amazing and interesting things \_\_\_\_\_\_ cultures. One of the biggest surprises I had was when I went to the USA as a child. I'm English \_\_\_\_\_\_ Americans had the same culture as me. When I went to America I understood Americans \_\_\_\_\_\_ very different people. Understanding the culture \_\_\_\_\_\_ is very important. It helps us all \_\_\_\_\_\_\_. If everyone really tried \_\_\_\_\_\_\_ other cultures, the world \_\_\_\_\_\_ more peaceful place. The world is becoming smaller, so I \_\_\_\_\_\_ happening.

#### 2. Listen again and answer the questions.

- 1. Why is the author interested in the culture of other countries?
- 2. What was the biggest surprises for him when he went to the USA as a child?

3. Why is it important to understanding the culture of other people?

4. What would happen if everyone tried to learn about other cultures?

Speaking. 1. Work in groups. Discuss the ethical questions below. A different person should lead the discussion of each issue.

You have a shortlist of people for the post of Sales Manager. One of the female candidates is clearly the best qualified person for the job. However, you know that some of your best customers would prefer a man. If you appoint a woman you will probably lose some sales. What should you do?

Your company, a large multinational, has a new advertising campaign which stresses its honesty, fairness and ethical business behavior. It has factories in several countries where wages are very low. At present it is paying workers the local market rate. Should you increase their wages?

A colleague in a company which tests medical equipment has been making bad mistakes recently at work. This is because she has a serious illness. You are her friend and the only person at work who knows this. She has asked you to keep it a secret. What should you do?

You are directors of a potato snack manufacturing company. Research has shown that any price increase causes an immediate dip in sales (although sales recover within six months). It has been suggested that you could maximize your profits by simply reducing the weight of the product in the packets and maintaining the current price. What should you do?

#### 2. Role play this situation.

You are senior managers at medical drugs manufacturing. Your company is losing market share. You strongly suspect your main rival is using unfair methods to promote its products.

For example, you are almost sure that your rival has been:

making cash payments to main dealers

offering expensive gifts to important customers

Hold a meeting to consider how to solve the problem.

Writing

# **1.** Fill in the words from the list below. Use the words only once. Then make sentences using the completed phrases.

detriment, to serve, to notify, private, to duplicate, to acknowledge, expense, affairs, ethical, to evaluate

to \_\_\_\_\_ one's errors

to the \_\_\_\_\_ of one's work or interests

to promote one's own interests at the \_\_\_\_\_ of smth.

to \_\_\_\_\_ the public interest

to participate in civic \_\_\_\_\_

to \_\_\_\_\_ the proper authorities

in accordance with \_\_\_\_\_ considerations

to carry on outside \_\_\_\_\_ practice

to \_\_\_\_\_ the work of other engineers

to \_\_\_\_\_ the design without permission

2. The sets of words and phrases below are related either to *honesty* or to *dishonesty*. Find the odd word in each line.

1 trustworthy	law -abiding	crooked
2 a slush fund	a sweetener	compensation
3 insider trading	industrial espionage	e disclosure
4 a whistleblower	a swindler	a conman
5 a bribe	a bonus	a commission
6 fraud	deceit	integrity

3. Complete these sentences with words and phrases from activity 15. Choose from the first set to complete sentence 1, from the second set to complete sentence 2, and so on.

Our company does nothing illegal. We are very \_\_\_\_\_. We've got \_\_\_\_\_ which is used in countries where it is difficult to do business without offering bribes. Their car looked so much like our new model. We suspect \_\_\_\_\_. They fired him because he was \_\_\_\_\_. He informed the press that the company was using under-age workers in the factory. He denied accepting \_\_\_\_\_ when he gave the contract to the most expensive supplier. I admire our chairman. He's a man of his word and is greatly respected for his

#### Unit 2. Achievements and perspective plans in the field of engineering.

Lesson 1. Uzbekistan's achievements and perspective plans in the field of engineering



Questions for pre-reading discussion.

- 1. What is the role of engineers in the economic development of the country?
- 2. What sectors of industry do you think

the most developed in Uzbekistan?

3. How does the development of industry

influence on the life of the society?



1. Industry is a key factor for the economic development of any country, and manufacture cannot exist without engineers. Industrial development is mostly based on co-operation with other countries, and, of course, industrial sectors can be


expanded by domestic technologies too. In the framework of bilateral cooperation between the Republic of Uzbekistan and the Republic of Korea, the National Holding Company "Uzbekneftegaz" and the Consortium of Korean companies on a

parity basis was established by joint venture in the form of a limited liability company «Uz-Kor Gas Chemical».

2. Joint venture of the Republic of Uzbekistan and the Republic of Korea «Uz-Kor Gas Chemical» LLC is the one of the major leading manufacturer of the polymer products in the Middle Asia based on the high-level Ustyurt GCC natural gas processing technology. Applying sophisticated technologies of produced natural gas and other hydrocarbon by-products processing to materials useful in the society they make a substantial contribution to savings of natural resources and keeping of ecological balance. Production includes a thermoplastic polymer used in a wide range of applications, including in the production of packaging and labeling of textile products (eg, ropes, fibers and carpets), stationery, various types of plastic parts and reusable containers, automotive components, disposable syringes, and so on. Despite the short history, our products have entered the market and already have their rightful place among the end-users through highly qualified and trained personnel who are involved in the production and constant quality control.

3. **LUKOIL** is one of the largest publicly vertically integrated oil and gas companies in the world, accounting for over 2% of world oil production and about 1% of proven hydrocarbon reserves. The experience of fruitful cooperation with Uzbekneftegaz National Holding Company showed that the company is one of the most important components of fuel and energy sector of Uzbekistan, making a huge contribution to the energy independence of the republic.

4. Akhangaran cement plant ("AHANGARANCEMENT") is one of the leading enterprises of the cement industry of the Republic of Uzbekistan. It ranks second in the rating of the cement industry of the country in terms of production. Since

2006, the company has been part of the "EUROCEMENT group" Holding. Full name -Joint Stock Company "Ahangarantsment". It is located in the industrial zone of Akhangaran district of Tashkent region. The design capacity of the plant is 2 180 000 tons of cement per year. In 2008, Portland cement, manufactured by AHANGARANCEMENT, received a diploma from Uzstandart agency "The best products of Uzbekistan". In 2009, the company received a coblet in the nomination namely "The most profitable enterprise of the Holding" EUROCEMENT group". In April 2016, the AHANGARANCEMENT Quality Management System was certified by the International Certificate of Conformity ISO 9001: 2015.

Currently, the company is working to implement investments in the project to build a

new technological line for the production of cement in an energy-efficient and environmentally friendly "dry" way with a capacity of 6,000 tons of clinker per day.

5. **Construction Corporation EVRASCON** (Azerbaijan) is specialized in construction of bridges, highways, tunnels, hydraulic engineering and reclamation facilities, energy facilities, ports, major projects in the oil industry, industrial civil engineering, production



of pile foundations and deep foundations, in production and installation of metal structures. EVRASCON Corporation offers high quality of implemented work, the world's best construction equipment, the latest achievements in the field of construction, and qualified multidisciplinary personnel. EVRASCON Corporation has implemented a number of projects related to construction of core network of transport routes and hydraulic structures in Uzbekistan. The project initiator (customer) is the Republican Road Fund.

6. Cooperation with GP Papenburg AG (Germany). The Committee is working on the issue of attracting foreign direct investment and creating a joint venture with GP Papenburg AG (Germany) for production of asphalt concrete mixture and



other building materials within the framework of the resolution of the President of the Republic of Uzbekistan of November 30, 2017. No. RP-3414. In the future, by establishing the joint venture, it is planned to master production of asphalt mixing equipment of Teltomat brand and spare parts for them, as well as motor graders and other products for the road sector in the Republic of Uzbekistan.

7. **Samsung Group** is a South Korean group of companies, one of the largest chaebol, founded in 1938. It is known as a manufacturer of high-tech components, including the full-cycle production of

integrated circuits, telecommunications equipment, home appliances, audio and video devices in the world market. The Head Office of the company is located in Suwon. In 2017, Technic Globe JV LLC was established, which is engaged in production of TVs under Samsung brand, with an authorized capital of 9,436,939,900 UZS. The plant is located in Nukus



city. The annual production capacity is 150 thousand pieces. 200 jobs are created. The project cost amounted to 6.0 million USD. **VEON Ltd.** is an international communications technology company. Headquarters is located in Claude Debussylaan, Amsterdam, the Netherlands. LLC Unitel company was founded in 1996 in Uzbekistan. LLC Unitel company is included in the group of companies of VEON Ltd. The company's commercial activity began on September 25, 1997. From September 12, 2006, LLC Unitel provides services under Beeline trademark. Currently, Beeline is the largest telecommunications operator in Uzbekistan. As of 2017, the company's subscriber base approached the mark of 10 million.

8. **TEMELSU International Engineering Services Inc. (Turkey).** TEMELSU's specialization areas cover the following spheres: irrigation and drainage works; water supply, transportation, cleaning and distribution, sewer networks; dams, hydroelectric stations, pumping stations;tunnels, highways and urban transport system; industrial facilities; geotechnics, electrical engineering and environmental assessment. In the sphere of agriculture, they were also engaged in consulting services within the framework of projects funded by the IFI: consulting services on Ak-Altin agricultural development project, Uzbekistan, funded by the Asian Development Bank and others. **Case New Holland (CNH)** is a global leading provider of agricultural and construction equipment. CNH was formed in 1999 after the merger of Case and New Holland. Both companies and brands have long and rich histories.

9. **Rieter** is the world's leading supplier of systems for forming short staple fibers. Based in Winterthur (Switzerland), the company develops and manufactures

machines, systems and components used to convert natural and man-made fibers and their mixtures into yarns. Rieter is the only supplier worldwide for covering the spinning preparation process, as well as all four final spinning process that are currently installed in the market. In compliance with the Resolution of the President of the Republic of Uzbekistan



of February 21, 2011 No. RP-1484 "On measures for organization and production of modern textile equipment by Maschinenfabrik Rieter AG (Switzerland) on the basis of a part of production area of the liquidated Uzbektekstilmash in accordance with the signed on February 14, 2011 between Uzbekyengilsanoat JSC and Maschinenfabrik Rieter AG (Switzerland) by the Agreement on implementation of the investment project, an investment project on organization of modern high-tech on production of textile machinery. At the beginning of 2017, a modern training center "Rieter" for implementation of the educational process was commissioned, and a training program was developed and approved.

10. **Indorama Group** was established in 1976 with a headquarters in Singapore and is one of the largest yarn manufacturers in Southeast Asia (500 thousand yarns). Indorama Company created Uzbekistan – Singapore joint venture Indorama Kokand Textile on the basis of unfinished construction of property complex Kokand Textile Mill. In 2010, Indorama put into operation a modern cotton yarn plant in Uzbekistan using the most advanced compact technologies. Uzbekistan is one of the largest exporters of cotton in the world, and the plant of Indorama company turns cotton fiber into high-quality yarn for the textile industry.



11. **Nestle** is the largest producer of food and beverages, as well as an expert in the field of healthy nutrition and healthy lifestyle. Nestle Uzbekistan LLC was founded on the basis of Nafosat dairy plant in Namangan region in February 2000 (in accordance with the Resolution of the Cabinet of Ministers of October 13, 1999). The company believes in huge long-term potential of Uzbekistan, and therefore continues to invest in the country.

12. **Isuzu Company** .The history of ITOCHU Corporation began 150 years ago, with a small store for retail sales of textile products. With approximately 130 offices in 66 countries of the world, ITOCHU is one of the leading trading companies specializing in domestic trade, import and export of various types of products. These are textiles, information and communication technologies, machinery and equipment, energy carriers, metals, minerals, chemical products, food products, as well as provision of services in the spheres of construction, real estate, finance, insurance and logistics.

13. **General Motors Company** is the largest automobile manufacturer in the United States. Currently, General Motors owns automobile brands such as Buick, Cadillac, Chevrolet, GMC, and Holden. Currently, 3 production sites of GM Uzbekistan JSC are producing 10 automobile models under the Chevrolet and Ravon brands, in particular, Matiz, Spark (R2), Nexia (R3), Cobalt (R4), Lacetti (Gentra)

models are produced at the main production plant in the city of Asaka, Captiva and Malibu models in Tashkent city branch, Damas and Labo models in Pitnak city branch.

14. **MAN Truck & Bus AG** is the largest subsidiary of MAN SE CO European Company with headquarters in Munich. It produces trucks of MAN, ERF (United Kingdom) and STAR (Poland) brands, as well as Neoplan buses. JV MAN Auto-Uzbekistan enterprise was established in the Republic of Uzbekistan on August 9, 2009, according to the Resolution of the Cabinet of Ministers No.224 of August 7, 2009. The plant is working on localization of production. First of all, the cab for MAN CLA trucks is being actively developed. The power and strength of MAN trucks assembled in Uzbekistan can be seen in construction and reconstruction of roads, railways, long-distance cargo transportation.



### Vocabulary. Write the definitions of the following words and phrases.

industry	economic development
manufacture	industrial development
co-operation	joint venture
sophisticated technology	processing
ecological balance	packaging
labeling	reusable
vertically integrated	fruitful
enterprise	capacity
achievement	mixing equipment
headquarter	fund (v)
employ	warehouse
implementation	healthy nutrition
joint	private

### **Reading comprehension**

### 1. Read the text above and match paragraphs 1-14 with headings A-N.

**A.** The company that is fruitfully cooperating with Uzbekneftegaz National Holding Company.

B. The leading cement producing plant of the Republic of Uzbekistan.

C. The key factors of developing the industry.

D. Thermoplastic polymer's use in different spheres.

E. The company that is widely contributing to the manufacturer of high-tech components.

F. The company that is functioning in a variety range of spheres such as textile, information and communication technologies, machinery and equipment, energy carriers, etc. in Uzbekistan.

G. The company the project initiator (customer) of which is the Republican Road Fund.

H. Company contributor to the automobile manufacturer of Uzbekistan.

I. Working within the framework of the resolution of the President of the Republic of Uzbekistan.

J. Contribution in the construction and reconstruction of roads, railways, long-distance cargo transportation.

K. Help mostly in agricultural and construction industry.

L. Care about healthy nutrition and healthy lifestyle.

M. For the sake of perfection of national wealth.

N. Transformation of natural and man-made into yarns.

### 2. Read the text again and write True or False.

1. Engineers play a key role in the economic development of any country.

2. Using sophisticated technologies of produced natural gas and other hydrocarbon by-products can natural resources and keep the ecological balance.

3. Akhangaran cement plant is in the third place in the rating of the cement industry of the country in terms of production.

4. The Republican Road Fund does not have anything to do with projects of EVRASCON Corporation.

5. A number of products of Samsung Group are famous in the local market.

6. The products of TEMELSU International Engineering Services Inc. are very useful in agriculture.

7. Indorama company is glorifying the cotton of Uzbekistan over the world.

8. MAN trucks are in the service of people's welfare in Uzbekistan.



### 1. Listen and fill in the gaps.

It's hard to believe \_\_\_\_\_\_ had computers a few years ago. I wonder how people lived. There must have been \_\_\_\_\_\_ paperwork. I can't imagine writing everything by hand. I \_\_\_\_\_\_ everything worked without computers. We need computers today for everything. Hospitals, airports, the police... nothing can work without computers. I'm \_\_\_\_\_\_ ten times busier than now if I didn't have a computer. Imagine \_\_\_\_\_\_ find \_\_\_\_\_ paper and an envelope and then walking down the street \_\_\_\_\_\_ letter! I love my computer. It makes everything \_\_\_\_\_\_ convenient. Sure, it freezes and crashes sometimes. Sure \_\_\_\_\_\_ data. But that's not often. Most \_\_\_\_\_\_ my computer is like my best friend.

### 2. Listen again and answer the questions.

- 1. What does the author think about the people's a few years ago?
- 2. What does he say about the role of the computer today?
- 3. How does he describe to mail a letter?
- 4. What disadvantages of using a computer does he mention about?

# Speaking. Work in pairs and discuss the question?

How do you want to contribute in the economic and industrial development of your country?

Writing. 1. Look at the picture, name the engineers dealing with these sectors of the industry and give definitions to them.



#### 2. Use the correct form of the verb in the brackets.

1. General Motors Company (to be) the largest automobile manufacturer in the United States. 2. Currently, General Motors (to own) automobile brands such as Buick, Cadillac, Chevrolet, GMC, and Holden. 3. Today, 3 production sites of GM Uzbekistan JSC (to produce) 10 automobile models under the Chevrolet and Ravon brands. 4. In particular, Matiz, Spark (R2), Nexia (R3), Cobalt (R4), Lacetti (Gentra) models (to produce) at the main production plant in the city of Asaka, Captiva and Malibu models in Tashkent city branch, Damas and Labo models in Pitnak city branch.

# Lesson 2. The UK achievements and perspective plans in the field of engineering



### Questions for pre-reading discussion.

- 1. What sector of industry do you think is the most developed in the UK?
- 2. Have you ever used the technology made in England? How did you like it?



1. The UK is internationally recognized for its leadership in research, the excellence of their scientific institutions, and the innovation in their economy. They can proudly claim to be the nation that gave the world the steam engine and the jet engine. They discovered graphene and they decoded the structure of DNA. Today, they are by far the top destination in Europe for venture capital, with inward investors attracted by their talented and diverse workforce as well as our cutting-edge technologies and services.

2. This means revitalising our whole system of science, research and innovation to release its potential – to unlock and embrace talent, diversity, resilience and adaptability, and to tackle our biggest challenges, such as achieving net zero carbon emissions by 2050. We have a once-in-a-generation opportunity to strengthen our global position in research, unleash a new wave of innovation, enhance our national security and revitalise our international ties. We will use this opportunity to pursue ambitious new goals – the 'moonshots' that will define the next decade and beyond. By stretching our ambitions and engaging with and

learning from people and communities all over the UK, we will create long-lasting economic and societal benefits for our country.





3. Their mission is to inspire and enable from people all backgrounds and experiences to engage and contribute to

research and innovation and show that science is for everyone. They will nurture the whole system of innovation that will improve lives, services and businesses right around the UK and beyond – creating a fairer, healthier, more prosperous and more resilient society. And they will celebrate our successes far and wide, showcasing our strengths, and promoting the UK as a destination for talent and investment, and a partner of choice.

4. Great Britain is one of the world's leading industrialized nations. It has achieved this position despite the lack of most raw materials needed for industry. It must also import 40% of its food supplies. Thus, its prosperity has been dependent upon the export of manufactured goods in exchange for raw materials and foodstuffs. Within the manufacturing sector, the largest industries include machine tools; electric power, automation, and railroad equipment; ships; aircraft; motor vehicles and parts; electronic and communications equipment; metals; chemicals; coal; petroleum; paper and printing; food processing; textiles; and clothing.

5. One of the leading industries of Great Britain is the textile industry. Coals, iron and steel as well as various machines are also produced there. Ship-building and motor industry are highly developed too. Great Britain is highly industrialized, this was the country in which the earliest of developments modern industry took place. 6. London, the capital, is one of many important industrial centers. Lots of things such as clothes, food, planes and cars are made in and around London. Birmingham is the biggest town in an important industrial area near the centre of



England. Machines, cars and lorries are made in this area. TV sets and radios are also produced there.

7. Coal-mining is important in South Wales, but many of the mines5 there have been closed.

There is much unemployment in South Wales today. North Wales, where steel and chemicals are produced.

8. Sheep can be seen in many parts of England and Scotland, and there are a lot of cattle-farms and farms where milk, butter and cheese are produced. But only half of the food the country needs is

produced by British agriculture.

9. The oil and gas industry plays a central role in the economy of the United Kingdom. Oil and gas account for more than threequarters of the UK's total primary



energy needs. Oil provides 97 per cent of the fuel for transport, and gas is a key fuel for heating and electricity generation.

10. Transport, heating and electricity each account for about one-third of the UK's primary energy needs. Oil and gas are also major feed stocks for the petrochemicals industries producing pharmaceuticals, plastics, cosmetics and



domestic

appliances.





### Vocabulary. Write the definitions of the following words and phrases.

internationally recognized	decode
cutting-edge technology	revitalise
adaptability	challenge
moonshot	industrialized
raw material	lorry
mine	account for

### **Reading comprehension**

### 1. Read the text above and match paragraphs 1-10 with headings A-J.

- A. The reasons of recognition of the UK all over the world.
- B. Great Britain is highly industrialized.
- C. Food industry of GB.
- D. The means of revitalising the whole system of science, research and innovation.
- E. The region of unemployment.
- F. Heavy and light industry together.
- G. Nation's main ambition.
- H. The heart of the country.
- I. The nation of leading industry.
- J. The main source of energy and fuel.

### 2. Write True or False according to the text.

- 1. The steam engine and the jet engine are the pride of Englishmen.
- 2. Once-in-a-generation opportunity enables British people to define the eternity.

3. The main goal of the nation is to persuade the people to rely on their all backgrounds and experiences.

4. Shortage of most raw materials needed for industry had a great impact on the development of the industry of Great Britain.

- 5. Birmingham is a heart of industry in the centre of England.
- 6. British agriculture supplies the nation with the food needed completely.
- 7. The oil and gas industry plays is a main source of energy and fuel.

8. Oil and gas are raw material for only petrochemicals industries producing pharmaceuticals, plastics, cosmetics and domestic appliances.



### 1. Listen and fill in the gaps.

Food safety seems \_\_\_\_\_\_ issue nowadays. I can't remember it \_\_\_\_\_\_ big problem years ago. With today's technology, it \_\_\_\_\_\_ problem. But it is. In fact, there are many problems. In my country, GM food is a big issue. People do \_\_\_\_\_\_ eat food that is genetically modified. They say it is unsafe. I know in America GM food is everywhere. Another \_\_\_\_\_\_ safety \_\_\_\_\_\_. A lot of imported food has made people ill. Our government \_\_\_\_\_\_ of food from certain countries. This is a good idea. A concern in my country \_\_\_\_\_\_ and cows. We have \_\_\_\_\_\_ mad cow disease. It \_\_\_\_\_\_ to be vegetarian.

### 2. Listen again and answer the question.

- 1. Why is food safety a big problem today?
- 2. Why do not people want to eat food that is genetically modified?
- 3. Why does the government ban a lot of food from certain countries?

Speaking. Work in pairs and discuss the questions.

What sectors of UK industry are the most developed and which ones are the least developed? Why do you think so?

Writing. 1. Look at the picture and write about the role of shipping industry in the economic development of the UK.



2. Write phrases combining the words from columns A and B and make up sentences with these phrases.

А	В
internationally	capital
scientific	technologies
steam	workforce
venture	recognized
talented	engine
cutting-edge	institution

### Lesson 3. US achievements and perspective plans in the field of engineering



### Reading.

### Questions for pre-reading discussion.

- 1. What branch of industry do you think the most developed in the US?
- 2. What strategies of development would
- you offer for backward industries?

1. The USA is one of the most industrialized countries of the world. It has done a lot to achieve its current industrial position, and has big perspective plans for further development of the manufacture.



2. Power engineering is one of the most developed branches of the US industry. There are some American LED suppliers given below. Mouser Electronics distributes LED bulbs, modules, emitters, and lighting electronics, optics, connectors, and

mechanical products. It also offers semiconductors and electronic components. Bisco industries distributes LED products amongst its

other offerings of electronic components and fasteners. It serves the aerospace, communications, computer, fabrication, industrial equipment, instrumentation, marine, and military industries. Steven Engineering the company, which claims to be the largest distributor of industrial components and controls in the western region. The company specializes in electrical and electronic components, as well as automated industrial control and pneumatic products. The U.S. T&D (transmission and distribution) system has been called the world's largest machine and part of the greatest engineering achievement of the 20th century (NAE, 2003). This massive system delivers power from the nearly 3000 power plants in the United States to virtually every building and facility in the nation.

3. The U.S. textile industry, its domestic suppliers and customers are comprised of the following: yarn and fabric manufacturers, suppliers in the cotton, wool, and

man-made fiber sectors, dyers, printers, and finishers, the machinery and textile chemical industries, and our customers in the U.S. apparel industry. The U.S. textile industry, suppliers and their



customers are an important component of the U.S. economy and are found in every region of the country. The industry provides much needed jobs in rural areas and has functioned as a springboard for workers out of poverty into good paying jobs for generations. The United States is the world leader in textile research and development, with the U.S. textile complex developing next generation textile materials such as conductive fabric with anti-static properties, electronic textiles that can monitor heart rate and other vital signs, antimicrobial fibers, lifesaving body armor, and new fabrics that adapt to the climate to make the wearer warmer or cooler.

4. Oil and gas industry. The United States became the world's top crude oil producer in 2018 and maintained the lead position in 2019 and 2020. U.S. oil refineries

obtain crude oil produced in the United States and in other countries. Different types of companies supply crude oil to the world market. Where U.S. crude oil is produced. Crude oil is produced



in 32 U.S. states and in U.S. coastal waters. In 2020, about 71% of total U.S. crude oil production came from five states.

In the United States, companies produce crude oil on private and public land and offshore waters. Most of these companies are *independent producers*, and they usually operate only in the United States. The other companies, often referred to as major oil companies, may have hundreds or thousands of employees and operate in many countries. Examples of major U.S. oil companies are Chevron and ExxonMobil. The oil and gas industry is one of America's biggest economic driving forces — and currently, the U.S. is the biggest producer of natural gas on earth, and one of the largest oil-producing countries.



5. The Automotive industry has some of the heritage companies, automobiles of which people world over follow. The leading car brands in USA include not only American brands but also global car manufacturers which have an excellent market across the country. The top automobile brands

in USA include General Motors, Toyota, Ford, Fiat Chrysler & Honda Motors along with car companies like Nissan, Daimler (Mercedes-Benz), Hyundai, Subaru and BMW. The future of mobility begins now. Through the technical partnership with Alpine F1 Team, they will be working side-by-side to anticipate and engineer technology to produce safer, more sustainable, better-performing cars from track to road.

6. America's food industry is a large industry that grows in total volume only with the population. Within that slowly growing volume, however, is a powerful dynamic of change. As population segments change in age, lifestyles and ethnic make-up, their eating habits change. To meet the ever-changing needs and desires of consumer groups, the food industry's delivery systems change and are faced with challenges of quality, safety, consumer satisfaction, economics and simply the

ability to perform. The United States' food processing industries often appear to be taken for granted—a feature of the economic landscape so unremarkable as to be nearly invisible. The following food producing companies are operating in the country to satisfy consumers' demand. **Nestlé**, headquartered in Stamford, CT,





offers baby food, baking products, candy, cereals, dairy products, and culinary, chilled, and frozen food for retail applications. **PepsiCo.** provides chips,

dips, oatmeal, snack bars,

cereal, rice, pasta, and dairy products in addition to soda, juice, and other beverage products.

JBS, in Greeley, CO, supplies beef, poultry, and pork to retailers across 105 countries, including wholesale clubs, grocery stores, and foodservice companies. The other famous such food companies as Tyson Foods, Archer Daniels Midland Company, Mars, Cargill, Asahi Group, General Mills, Dairy Farmers of America also offer their products not only in the USA but also all over the world.

7. Electronics is a very broad category covering everything from consumer level goods, to industrial and laboratory devices, to military equipment, to the individual components used to produce each of those devices. Component electronics encompass a range of products as well, including LCD screens, battery chargers, electrical control systems, electrical components for the automotive industry, computer hard drives, bluetooth transmitters, and more. The following electronic suppliers function in the USA: **Amphenol Corporation**, **Dolby Laboratories**, **Inc.**, **Hubbell Incorporated**, **Acuity Brands**, **Inc.**, **AVX Corporation**, **Advanced Energy Industries**, **Inc.**, **Rogers Corporation**, **Sanmina Corporation**, and others.

**8.** US agriculture includes 300 different commodities with a nearly equal division between crop and livestock products.

However, a warm climate resulting from increased emissions of carbon dioxide into the atmosphere will make it more difficult for farmers to grow crops and raise animals in some places. A changing climate impacts agriculture directly



through changes in the frequency and intensity of extreme weather events, and indirectly through the spread of stressors such as weeds, diseases, and insect pests.

9. Agricultural Engineers improve the technology and processes that supply us with our food. Their inventions affect how

crops are grown, harvested and stored. They're involved in every stage of the farming process including managing long-term effects on climate, soil health and waste recycling.



phrases.

## Vocabulary. Write the definitions of the following words and

1	
perspective plans	emitter
fastener	pneumatic products
distribution	blackouts
man-made	refinery
crude oil	offshore
heritage companies	brand
sustainable	delivery system
assemble	chilled
wholesale	vertical collection

### **Reading comprehension**

### 1. Read the text above and match paragraphs 1-9 with headings A-I.

A. The US oil and gas industry.

B. The U.S. textile industry.

C. The factors that have made the USA one of the most industrialized countries of the world.

- D. The Automotive industry of America.
- E. The power engineering of the USA.
- F. The agriculture of the US.
- G. Food companies satisfying consumers' demand.
- H. The electronic industry.
- I. The affords of agricultural engineers to supply people with food.
- 2. Write True or False according to the text.

1. Steven Engineering the company, which specializes in delivering electrical and electronic components, as well as automated industrial control and pneumatic products.

2. The U.S. T&D (transmission and distribution ) system delivers power to virtually every building and facility in the nation.

3. The U.S. textile industry is very rare, so it cannot be found in every region of the country.

4. U.S. oil refineries obtain purified oil to obtain other oil products.

- 5. Americans are not interested in the brands of other countries.
- 6. While America's food industry grows somehow slowly, it changes a lot.
- 7. The electronic industry grasps a wide range of spheres from consumer level goods, to industrial and laboratory devices, etc.
- 8. Agricultural Engineers are doing their best to supply people with their food.



### **1.** Listen and fill in the gaps.

Are you into cars? My brother is. \_\_\_\_\_\_. He buys car magazines, watches car programmes on TV and \_\_\_\_\_\_ looking at car websites. He knows the name, maker, engine size and \_\_\_\_\_\_ every car on the planet. Every time we go out, he \_\_\_\_\_\_ about the cars he sees. I like cars. They are interesting. \_\_\_\_\_\_ lot of money, I'd like to buy a sports car. I'm saving up for a small car \_\_\_\_\_\_. I'll probably buy

\_\_\_\_\_ that is good for the environment. My brother thinks these are boring. He says \_\_\_\_\_ be powerful and fast. I don't agree. I think cars should get \_\_\_\_\_ and be big enough for me and my friends. I also prefer smaller cars because they are

### 2. Listen again and answer the following questions.

- 1. How can you guess that the author's brother is into cars?
- 2. What would the author do if he had much money?
- 3. What does the author's brother think about cars?
- 4. Why does the author prefer smaller cars?

Speaking. Work in small groups and discuss the question. Try to offer as many strategies as you can.

What strategies must the country develop so that it can be industrially developed?

Writing. 1. Look at the picture and add words to the cluster on the topic "Penewable energy"





2. Read the given definition to engineering. What else can you add to it? Write your answer.

Engineering using science and mathematics to solve problems that improve the world around us. For example, engineers design toasters, robots, light bulbs, air conditioning, surgical tools, software, snowboards, shoes, ships, radar, oil rigs, and nanotechnology and pollution solutions.

# Lesson 4. Russia's achievements and perspective plans in the field of engineering





**Reading.** 

**Questions for pre-reading discussion.** 

1. What do you know about Russian industry?

2. What Russian engineers, who have contributed a lot in the development of the

country, do you know?

1. Russia is the world's second largest natural gas, the third largest oil, and the sixth largest uranium and coal producer. The nation globally ranks second in oil, first in natural gas exports, and third in coal exports. The world's largest country currently hosts 700 electric power stations with a total installed capacity of 243 GW (comprised of 165 GW thermoelectric power plants mostly burning natural gas and coal; 29.13 GW nuclear power reactors, and 48.5 GW hydroelectric plants). All combined, the aforementioned plants in 2018 produced 1091.7 TWh of electricity dispatched in the form of alternating current with a



single 50 Hz current frequency the across world's longest (3.018 million)km) electric power lines. A highly developed nation, with large and advanced steel, naval, chemical, automotive, and aviation industries. Russia

simply cannot lag behind in the basic industrial sector—energy—when most world's countries achieve the key economic advantages of energy self-sufficiency made possible by almost silent industrial and technical progress in renewable energy and energy storage technologies.

2. Energy and renewables in Russia. In accordance with the law "On electric power industry", the electricity market in Russia is open to full competition in generation by ensuring third party access to the grid. The energy market regulator is the "NP Market Council" whose main task is to ensure the correct functioning of the national wholesale electricity and power capacity market. All companies in the wholesale electricity market must become member of the NP Market Council.3. Since mid-2013, the development of renewable energy in Russia is regulated by a decree entitled "On Procedure for Incitement of Use of Renewable Energy Sources

at Wholesale Power Market." The law establishes a system for which renewable energy developers of projects with an output between (at least) 5 MW and 25 MW can bid in annual tenders for capacity supply contracts with Russia's



Administrator of the Trading System.

4. Electric vehicles in Russia. In Russia, the price of electricity is extremely low, and the grid is ubiquitous. Shifting mobility from internal combustion engine to electric vehicles therefore is an economically convenient opportunity starting from companies and cities operating large vehicle fleets. The State-owned company managing the 6500 Moscow's bus fleet already operates 300 electric buses, by late 2020 more than in any city in Europe. All bids to purchase the e-buses required as mandatory condition the localization of the manufacture process within Russia. The electric bus supplied by Kamaz, which won the first bid to supply 200 electric buses, makes use of lithium batteries using the lithium titanium oxide (LTO, lithium titanate)) cathode technology. The LTO cathode ensures high frost resistance (a key requirement in cold regions), extended service life, and fast charging, which eliminates the need for high storage capacity, lightens the bus, and increases the passenger capacity. Perhaps not surprisingly, the same company is currently building in Moscow a 500 vehicle/year production plant and a R&D innovation center for electric buses.

5. Aircraft manufacturing is an important industrial sector in Russia, employing around 355,300 people. The dissolution of the Soviet Union led to a deep crisis for the industry, especially for the civilian aircraft segment. The situation started improving during the middle of the first decade of the 2000s due to growth in air transportation and increasing demand. A consolidation programme launched in 2005 led to the creation of the United Aircraft Corporation holding company, which includes most of the industry's key companies. Other new aircraft developed in recent times include the Yak-130 advanced trainer and light attack jet, the modernized Tu-204SM and the Ukrainian An-148 regional aircraft, which was mostly manufactured in Voronezh prior to worsening Ukrainian-Russian relations. Seaplane manufacturer Beriev is also designing several new passenger aircraft.

6. Russian agriculture today is characterized by three main types of farms. Two of these farm types – corporate farms and household plots – existed all through the Soviet period (the former are basically the successors of the Soviet collective (kolkhoz) and state (sovkhoz) farms). The third type – peasant farms – began to reemerge only after 1990, during the post-Soviet transition. The evolution of Russian agriculture since 1990 shows a significant change of resources and production from the formerly dominant corporate farms to the individual farming sector. During 2006, household plots and peasant farms combined controlled about 20% of agricultural land and 48% of cattle, up from 2% of agricultural land and 17% of cattle in 1990. The share of the individual sector in gross agricultural output increased from 26% in 1990 to 59% in 2005. Producing 59% of agricultural output on 20% of land, individual farms achieve a much greater productivity than corporate farms.

7. The most important branch of light industry is cotton textiles, which has production centers in Ivanovo, Kostroma, Yaroslavl', and about two dozen smaller cities between the Volga and Oka rivers east of Moscow. The industry is concentrated in the European part of Russia, with major facilities in Moscow, St. Petersburg, Nizhniy Novgorod, and the Ural industrial region.

8. The petroleum industry in Russia is one of the largest in the world. Russia has the largest reserves and is the largest exporter of natural gas. It has the second largest coal reserves, the sixth largest oil reserves, and is one of the largest producers of oil. It is the fourth largest energy user.

Russia is by far the world's largest natural gas exporter. Most, but not all, authorities believe that Russia has the world's largest proven reserves of natural gas.

oil

The biggest Russian by Lukoil, Surgutneftegaz, Gazp rom Neft and Tatneft. All oil trunk pipelines (except Caspian Pipeline Consortium) are owned and operated by the state-owned monopoly Transneft and oil products pipeline are owned and



company

is Rosneft followed

62

operated by its subsidiary Transnefteproduct.

9. The electronic industry is an important component of the Russian industrial system. Many other industries depend on the production of electronic components - from medicine to space flights. Currently, there are a number of problems in Russian electronics, the solution of which, nevertheless, is being worked out by both governmental organizations and manufacturers associations. The largest exhibitions in the field of radio electronics and microelectronics ExpoElectronica and Electron TechExpo contribute to the development of the industry, annually gathering key enterprises and industry experts in one place not only to increase sales and purchases, but also to discuss important issues regarding industry development. The key factors in the development of the industry will be the introduction of 5G, autopilot systems, data centers and software-defined networks. The main driver will be industry 4.0, which is based on the active use of digital technology.



### Vocabulary. Write the definitions of the following words and

phrases.

producer	rank
power plant	dispatch
self-sufficiency	renewable
output	grid
ubiquitous	engine
electric vehicle	agriculture
peasant	facility
pipeline	subsidiary
exhibition	key factor
software	digital technology

### **Reading comprehension**

### 1. Read the text above and match paragraphs 1-9 with headings A-I.

- A. From the fuel to the electricity.
- B. A highly developed nation.
- C. Russian agriculture today.
- D. Energy and renewables in Russia.
- E. The light industry of Russia.
- F. Laws regulating renewable energy in Russia.
- G. The key of development of many other industries.
- H. Aircraft industry of RF.
- I. Oil and gas industry of Russia.

### 2. Write True or False according to the text.

- 1. Russia is in the leading position in oil, natural gas and coal exports.
- 2. The main task of "NP Market Council" is to regulate the energy market.

3. The fast charging of the LTO cathode eliminates the need for high storage capacity, lightens the bus, and increases the passenger capacity.

4. The development of air transportation and increasing demand improved the situation in the aircraft manufacturing.

5. Corporate farms and household plots are indispensable parts of Russian agriculture today.

- 6. The most widespread branch of light industry is cotton textiles.
- 7. Russia is a leading exporter of many natural minerals.

8. Both governmental organizations and manufacturer associations have a key role in the solution of the problems in Russian electronics.



### 1. Listen and fill in the gaps.

Electricity \_\_\_\_\_ most important inventions ever. It is the thing that powers the Earth. \_\_\_\_\_ no electricity, we'd be back in the dark ages. Few people stop and \_\_\_\_\_ amazing electricity is. With the flick of a switch, \_\_\_\_\_ almost anything. Think \_\_\_\_\_ happen if there was no electricity. We'd have no TV, no computers, no traffic signals. It would be like \_\_\_\_\_ living in caves. There are a few \_\_\_\_\_ about electricity, of course. Number one, it's dangerous. Thousands \_\_\_\_\_\_ each year from electrocuting themselves or in electrical fires. And number two, it \_\_\_\_\_ the environment. Most electricity comes from \_\_\_\_\_ and that creates greenhouse gasses.

#### 2. Listen and unjumble the words.

Electricity is <u>inventions important most the of one</u> ever. It is the thing that powers the Earth. If there was no electricity, <u>back the ages be in dark we'd</u>. Few people stop and think just how amazing electricity is. With the flick of a switch, <u>you</u> <u>almost can anything power</u>. Think about what would happen <u>electricity was if no there</u>. We'd have no TV, no computers, no traffic signals. It would be like <u>caves in living to</u> <u>back going</u>. There are a <u>about negative electricity points few</u>, of course. Number one, it's dangerous. Thousands of people die each year from <u>in themselves electrical or</u> <u>electrocuting</u> fires. And number two, it isn't good for the environment. Most electricity <u>from and burning comes coal</u> that creates greenhouse gasses.

# Speaking. Work in pairs and discuss the question.

What is the role of engineers in the industrial and economic development of the country?

# Writing. 1. Choose the correct form of the verbs in *italics*.

1. The electronic industry *is/be* an important component of the Russian industrial system. 2. Many other industries *depend/depends* on the production of electronic components - from medicine to space flights. 3. Currently, there *are/is* a number of problems in Russian electronics. 4. The solution of the

problem, nevertheless, *is being worked out/is working out* by both governmental organizations and manufacturers associations. 5. The largest exhibitions in the field of radio electronics and microelectronics ExpoElectronica and Electron TechExpo *contribute/is contributed* to the development of the industry. 6. Not only does it *increase/ increases* sales and purchases, but also *discuss/ discussing* important issues regarding industry development. 7. The key factors in the development of the industry *will be/was* the introduction of 5G, autopilot systems, data centers and software-defined networks. 8. The main driver will be industry 4.0, which *is based/ bases* on the active use of digital technology.

#### 2. Learn the following verbs and write sentences with them.

### **Action verbs for engineers**

accelerate	eclipse	manufacture	research
accommodate	edit	map	reserve
accompany	educate	market	resolve
accomplish	effect	master	respond
achieve	elect	maximize	restore
acquire	elevate	measure	restructure
act	elicit	mediate	result
activate	eliminate	mentor	retain
adapt	employ	merchandize	retrieve
add	empower	merge	revamp
address	enable	meet	reveal
adjust	enact	migrate	reverse
administer	encourage	minimize	review
admit	endorse	mobilize	revise
adopt	engineer	model	revitalize
advance	enhance	moderate	revive
advise	enlarge	modernize	revolutionize
advocate	enlist	modify	reward

affect	enrich	monitor	rout
aid	enumerate	motivate	safeguard
alleviate	envision	move	salvage
alter	establish	multiple	sanction
allocate	estimate	name	satisfy
allow	evaluate	narrate	save
amend	examine	negotiate	schedule
analyse	exceed	notice	screen
answer	exchange	nurture	scrutinize
anticipate	execute	observe	secure
apply	exercise	obtain	segment
appoint	expand	offer	select
appraise	expedite	officiate	separate
approve	explain	offset	serve
approximate	expose	operate	service
arbitrate	extend	open	set up
arrange	extract	optimize	settle
articulate	fabricate	figure	shape
ascertain	facilitate	field	share
assemble	familiarize	field	shorten
assess	assign	assist	

### Unit 3. Ecology and health.

### Lesson 1. Human activities that cause ecological problems



### Questions for pre-reading discussion.

- 1. What influence can ecological problems have on people's health?
- 2. What environmental problems can be

caused by human activities?



1. Humanity's overall impact on the planet is affected by many factors, not just the raw number of people. Their lifestyle and the pollution they generate are equally important. In 2008, *The New York Times* stated that the inhabitants of the developed nations of the world consume resources like oil and metals at a rate almost 32 times greater than those of the developing world, who make up the majority of the human population.

2. Human civilization has caused the loss of 83% of all wild mammals and half of plants. The world's chickens are triple the weight of all the wild birds, while domesticated cattle and pigs outweigh all wild mammals by 14 to 1. Global meat consumption is projected to more than double by 2050, perhaps as much as 76%, as the global population rises to more than 9 billion, which will be a significant driver of further biodiversity loss and increased Greenhouse gas emissions.



3. Human overpopulation. Some scholars, environmentalists and advocates when examining human population growth express concern that human overpopulation is a driver of environmental issues. In 2017, over 15.000 scientists around the world issued second warning a to

humanity which asserted that rapid human population growth is the "primary driver behind many ecological and even societal threats.

4. However, attributing overpopulation as a cause of



environmental issues is controversial. Demographic projections indicate that population growth is slowing and world population will peak in the 21st century, and many experts believe that global resources can meet this increased demand, suggesting a global overpopulation scenario is unlikely.

5. The environmental impact of agriculture varies based on the wide variety of agricultural practices employed around the world. Ultimately, the environmental impact depends on the production practices of the system used by farmers. The connection between emissions into the environment and the farming system is indirect, as it also depends on other climate variables such as rainfall and temperature.

6. The environmental impact of agriculture involves a variety of factors from the soil, to water, the air, animal and soil diversity, plants, and the food itself. Some of the environmental issues that are related to agriculture are climate change, deforestation, genetic engineering, irrigation problems, pollutants, soil degradation, and waste.

7. Environmental impacts associated with meat production include use of fossil energy, water and land resources, greenhouse gas emissions, and in some instances, rainforest clearing, water pollution and species endangerment, among other adverse effects.



Vocabulary. Write the definitions of the following words and

### phrases.

consume	mammals
biodiversity	emission

environment	threat
overpopulation	deforestation
pollutant	species

### **Reading comprehension**

### 1. Read the text above and match paragraphs 1-7 with headings A-G.

- A. Experts opinion about global resources.
- B. The impact of human overpopulation on environmental issues.
- C. Overall impact of humanity on the planet.
- D. Effect of meat production.
- E. Human civilization's damage to wild mammals and the plants.
- F. Impact of agriculture on the environment.

### 2. Write True or False according to the text.

1. Overall impact of humanity's on the planet is defined only by the raw number of people.

2. Domestication of animals can cause the loss of wild animals.

3. Increasing number of people is one of the main factors that cause environmental issues.

4. The environment and the farming system have direct influence on emissions into the environment.

5. Agriculture can lead to climate change, deforestation, genetic engineering, irrigation problems, pollutants, soil degradation, and waste.

6. Meat production does not effect on the surroundings.



### 1. Listen and correct the spelling.

I never used to <u>yowrr</u> about my health until recently. When I was a kid, I did loads of <u>erxciees</u>. Even in my twenties and thirties I was very fit and never ill. I have been <u>lkcuy</u> all my life – always in the best of health. I rarely get even a cold. I suppose

time <u>etahccs</u> up with you. Now I seem to be getting lots of little <u>cahes</u> and pains. I should go to the doctor for a health <u>khcce</u>, but I'm too busy. The older you get, the more you worry about your health. One good thing is that I'm <u>gineat</u> more healthily now than ever before. I no longer have fast food and midnight <u>scnask</u>. I also sleep a lot more. I've read that <u>ntegtgi</u> seven or eight <u>hrosu</u> sleep every night is one of the best things you can do for your health.

2. Listen again and answer the following questions.

- 1. Why did the author never use to worry about his health until recently?
- 2. Why does he think that he has been lucky all his life?
- 3. What health problems does he have these days?
- 4. What does he do to solve these problems?
- 5. What has he read about?

Speaking. Work in small groups and discuss the question. How would you make people protect the environment if you had a power?





### **Lesson 2. Pollution**





## Questions for pre-reading discussion.

- 1. What types of pollution do you know?
- 2. How can pollution be stopped?
- 3. What do you do to control the

pollution?

1. **Pollution** is the introduction of contaminants into the natural environment that adverse change. Pollution take the form of chemical cause can substances or energy, such as noise, heat, or light. Major forms of pollution include air pollution, litter, noise pollution, plastic pollution, light pollution, soil contamination, radioactive contamination, thermal pollution, visual pollution, and water pollution.

2. The major forms of pollution are listed below along with the particular contaminant relevant to each of them:

Air pollution: the release of chemicals and particulates into the atmosphere.
Common gaseous pollutants include carbon monoxide, sulfur


dioxide, chlorofluorocarbons (CFCs) and nitrogen oxides produced by industry and motor vehicles. Photochemical ozone and smog are created as nitrogen oxides and hydrocarbons react to sunlight. Particulate matter, or fine dust is characterized by their micrometre size

 $PM_{10}$  to PM.

- Electromagnetic pollution: the overabundance of electromagnetic radiation in their non-ionizing form, like radio waves, etc, that people are constantly exposed at, especially in large cities. It's still unknown whether or not those types of radiation have any effects on human health, though.
- Light pollution: includes light trespass, overillumination and astronomical interference.
- Littering: the criminal throwing of inappropriate man-made objects, unremoved, onto public and private properties.
- Noise pollution: which encompasses roadway noise, aircraft noise, industrial noise as well as high-intensity sonar.
- •
- Plastic pollution: involves the accumulation of plastic products and microplastics in the environment that adversely affects wildlife, wildlife habitat, or humans.
- Soil contamination occurs when chemicals are released by spill or underground leakage. Among the most significant soil contaminants are hydrocarbons, heavy metals, MTBE, herbicides, pesticides and chlorinated hydrocarbons.
- Radioactive contamination, resulting from 20th century activities in atomic physics, such as nuclear power generation and nuclear weapons research, manufacture and deployment.

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• Thermal pollution, is a temperature change in natural water bodies caused by human influence, such as use of water as coolant in a power plant.

• Visual pollution, which can refer to the presence of overhead power lines,

motorway billboards, scarred landforms (as from strip mining), open storage of trash, municipal solid waste or space debris.

 Water pollution, by the discharge of industrial wastewater from commercial and industrial waste (intentionally or through spills) into surface waters; discharges of untreated sewage, and chemical contaminants, such as chlorine, from treated sewage; release of waste and contaminants into surface runoff flowing to surface waters (including urban runoff and agricultural runoff, which may contain chemical fertilizers and pesticides; also including human feces from open defecation – still a major problem in many developing countries); groundwater pollution from waste disposal and leaching into the ground, including from pit latrines and septic tanks; eutrophication and littering.



Vocabulary. Write the definitions of the following words and

phrases.

adverse	contamination
gaseous	smog
overabundance	expose
interference	habitat
leakage	deployment
billboard	fertilizers

defecation

eutrophication

## **Reading comprehension**

### 1. Read the text above and match the paragraphs 1-2 with headings A-B

A. The main sense of pollution.

B. Forms of pollution.

## 2. Write True or False according to the text.

1. Chemical substances or energy, such as noise, heat, or light causes contamination.

2. The release of chemicals and particulates into the atmosphere is called ozone layer depletion.

3. It's still unknown whether electromagnetic pollution exist or not.

4. The main source of light pollution is the sun.

5. A lot of things can cause noise pollution.

6. Hydrocarbons, heavy metals, MTBE, herbicides, pesticides and chlorinated hydrocarbons mostly pollute the

7. Before 1990's radioactive pollution was higher than in the 20th century.

8. Industries, agriculture and people cause water pollution



## **1. Listen and fill in the gaps.**

I hate pollution. It \_\_\_\_\_\_ angry. I think pollution is greed. People \_\_\_\_\_\_ the environment so they \_\_\_\_\_\_ to make lots of money. Big companies are the worst. They \_\_\_\_\_\_ polluting. They have the money to say they are "green". Pollution affects us all. We are all less healthy because of companies \_\_\_\_\_\_ or our rivers. Everybody needs to think about how we can \_\_\_\_\_\_ of pollution we create. Not using the \_\_\_\_\_\_ walk is one way. Turning off lights we don't need is another. Barack Obama says he's going \_\_\_\_\_\_ help the Earth. I really hope he does because if pollution gets any worse, we'll be in seriously big trouble.

## 2. Listen again and answer the following questions.

- 1. Why does the author hate pollution?
- 2. How do people impact on the environment?
- 3. How does pollution affect us?
- 4. What is Barack Obama's decision?
- 5. What will happen if pollution gets any worse?

Speaking. Work in small groups and discuss the question.

What do you do to prevent pollution?

Writing. 1. Answer the question in detail.

What causes pollution and what can it result in?

2. Write phrases combining the words from columns A and B and make up sentences with them.

Α	В
water	pollution
commercial	waste
chemical	contaminants
surface	runoff
waste	disposal
septic	tanks
natural	environment
light	pollution
radioactive	contamination

#### Lesson 3. Ecology and health





#### **Questions for pre-reading discussion.**

1. What connection is there between environmental problems and health of human being?

2. What diseases can environmental issues cause?

1. We live on a very beautiful planet – on the Earth. Our planet has very rich resources: the bright blue of the sky, fresh, crystal-clear mountain lake water, the rich green of the mountains slopes, wild flower, picturesque views – all these sceneries of nature fill us with admiration.

2. That's why those who live in cities prefer spending their days off and their holidays far from the noise of the city, to be closer to nature. Perhaps they like to breathe fresh air or to swim in clear water because the ecology is not so poor as in the cities.

3. Ecology is the study of the ways in which organisms (plants and animals) depend upon each other and upon their surroundings. Each organism requires

conditions in order to be able to live and breed. These conditions are its environment by changing the ecological conditions.

4. So, pollution is one of the most burning problems of nowadays. Now millions of chimneys, cars, buses, trucks all over the world exhaust fumes and harmful substances into the atmosphere. These poisoned substances pollute everything: air, land, water, birds and animals, people. So, it is usually hard to breathe in the large cities where there are lots plants. Everything there is covered with soot and dirt. All these affect harmfully.

5. Water pollution is very serious, too. Ugly rivers of dirty water polluted with factory waste, poisoned fish are all-round us. And polluted air and poisoned water lead to the end of the civilization. So, nowadays a lot of dead lands and lifeless areas have

appeared. Because our actions and dealings can turn the land to a desert.

6. So, we see that our environment offers an abundance of subject matter for discussion. The problems and prospects of the blue planet interest not only scientist and futurologists, but also politicians, industry, the public – and above all, young people!



There is hardly a young person who is not conserved with the preservation of our natural habitat. To recognize environmental problems and master them, to reduce and avoid environmental pollution, to discover and develop ecologically sound technologies – there are the essential building blocks for our future.

7. The Baltic Sea is a special case. Because it is such a small sea and it becomes dirty very easily. Its waster changes slowly through the shallow straits. As many as 250 rivers run into the Baltic. There are hundreds of factories in these rivers and millions of people live along them. Quite a lot of big cities lie on its coast. All these combined with the active navigation of the sea naturally affects the state of the sea water and the shore line flora and fauna. People suffer from the water pollution; cancer deaths increase people's concern. And there is no escape from this ecological crisis



without organizing a single body dealing with the environmental problems, developing and carrying out a nationwide program of environmental protection and cooperating with international schemes.

8. Air Pollution. Air, is the

most essential element for all living organisms and yet, most humans play a big role on polluting this essential resource. Air pollution may not be as dangerous in its direct outcome as nuclear or water pollution can be, but in the long term it will have an tremendous effect on the environment and health of its organisms living in. Asthma, cancer, acid rain, and the disability to photosynthesize are only a few causes of air pollution.The atmospheric pollutants with the greatest effect onto the environment are the carbon monoxide, carbon dioxide, hydrocarbons, sulfur dioxide, nitrogen oxides, dust particles, radioactive isotopes, and chlorofluorocarbons.



## Vocabulary. Write the definitions of the following words and

#### phrases.

lake	slope
wild	picturesque view
surroundings	exhaust
desert	preservation
natural habitat	flora
fauna	cancer death
acid rain	photosynthesize

#### **Reading comprehension**

## 1. Read the text and match paragraphs 1-8 with headings A-H.

A. Environment is a source of matters for discussion.

B. Air Pollution.

C. Description of our planet.

D. Sea problems.

E. Subject matter of ecology.

F. Why citizens of big cities prefer spending their days off and their holidays far from the city.

G. Pollution in general.

H. Water pollution.

2. Write True or False according to the text.

1. The Earth is the most beautiful planet.

2. Citizens of big cities prefer to enjoy the active city life rather than to get away to a real nature.

3. Ecology learns how plants and animals are interconnected.

4. Where there are lots plants the air is polluted and this in its turn makes breathing hard.

5. Factory waste pollutes water, but it does not poison fish.

6. The problems and prospects of the blue planet are controversial among different specialists.

7. People living near the Baltic Sea worry about cancer deaths.

8. Air Pollution does not lead to as many diseases as water contamination does.



## 1. Listen and fill in the gaps.

\_\_\_\_\_\_ the ozone layer about twenty years ago. I was still in school. I thought it was interesting, but I didn't \_\_\_\_\_\_. It was a bit like science fiction, I mean, \_\_\_\_\_\_ a giant hole in the atmosphere? Over \_\_\_\_\_\_ and more scientists spoke about the ozone layer. Global warming became a serious issue. Important people like Al Gore

\_\_\_\_\_\_ it. We all know today that the thinning ozone layer is perhaps the \_\_\_\_\_\_ we face today. Even though many people have changed their lifestyles, we are still damaging the ozone layer. We need to do something \_\_\_\_\_\_ this. We all need to stop driving cars and stop using coal. That \_\_\_\_\_\_.

## 2. Listen again and answer the questions.

- 1. How did the author feel when he first heard about the ozone layer?
- 2. What has he got to know over the years?
- 3. What should we do to stop damaging the ozone layer?

Speaking. Work in small groups and discuss the questions.

How can environmental problems impact on the health of humanity? How can these problems be prevented?

Writing. 1. Describe the pie-charts using specific vocabulary.



## Lesson 4. Prevention and solution of ecological problems



Reading.

## Questions for pre-reading discussion.

1. What do you do to prevent ecological problems?

2. Have ever ponder over the solution of environmental issues?

1. The relationship between humanity and the environment is a delicate balance. Since the industrial revolution, the world's population has increased exponentially, and with the population growth, the environment has been profoundly affected. Deforestation, pollution and global climate changes are amongst the adverse effects the population and technological expansion has introduced. Included in this category are both subjects dealing with attempts to reduce the negative impact on the environment, and subjects which aim to gain a greater understanding of the environment itself.

2. We are currently facing the most critical environmental issues in human history. Our climate, planet, lives, and future as a civilization are all at risk. The major environmental problems that face our planet did not appear overnight. They are the result of several forces working together: our technological innovation, our consumptive habits, and our pursuit of wealth, along with the exponential rise in the human population over the last 200 years.

3. These forces have transformed the face of Earth to create economic opportunities and increase the standard of living for many people throughout the world. As time has passed, however, scientists have discovered that if population growth and the ravenous consumption of the planet's natural resources continue unabated, they would pose serious threats to the survival of our species, as well as to the survival of millions of others.

4. Today the environmentalists are pondering over the solution of environmental problems. A regulation is, in government, a rule or mechanism that limits, steers, or otherwise controls social behavior. Environmental policy is designed to prevent or reduce harmful effects of human activities on ecosystems. Natural resource management is how societies manage the supply of or access to the natural resources they rely on for survival and development.

5. Environmental law is the field encompassing the principles, policies, directives, and regulations enacted and enforced by local, national, or international

entities to regulate human treatment of the nonhuman world. Environmentalism is a political and ethical movement that seeks to improve and protect the quality of the natural environment. The precautionary principle is an approach in policy making that legitimizes the adoption of preventative measures to address potential risks to the public or environment associated with certain activities or policies.

6. Intergenerational ethics is a branch of ethics that considers if present-day humanity has a moral obligation to future generations to aim for environmental sustainability. Economists have long tried to accurately determine the value of environmental goods to society. If present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically, and more vulnerable to disruption than the world we live in now. Serious stresses involving population, resources, and environment are clearly visible ahead.

Air Pollution			
Causes	Effects	Solutions	
<ul> <li>Dust</li> <li>Animals</li> <li>Radioactive decay</li> <li>Wildfires</li> <li>Vegetation</li> <li>Volcanoes</li> <li>Aircraft</li> <li>Vehicles</li> <li>Marine vessels</li> <li>Waste deposition in landfills</li> <li>Military sources</li> <li>Fossil fuels</li> <li>Mining</li> <li>Agriculture</li> <li>Industry</li> <li>Private households</li> </ul>	<ul> <li>Mortality</li> <li>Cardiovascular diseases</li> <li>Lung diseases</li> <li>Cancer</li> <li>Effects on the central nervous system</li> <li>Acid rain</li> <li>Global warming</li> <li>Depletion of the ozone layer</li> <li>Effects on animals</li> <li>Effects on agriculture</li> <li>Economic effects</li> </ul>	<ul> <li>Change in energy consumption behavior</li> <li>Reduce material consumption</li> <li>Avoid the use of cars</li> <li>Reuse and recycle</li> <li>Biodigesters</li> <li>Use of energy efficient devices</li> <li>Convince others</li> </ul>	



#### phrases.

exponentially

#### reduce

issue	consumptive habits
ravenous consumption	survival
environmentalist	regulation
social behavior	nonhuman world
precautionary principle	preventative measures
environmental sustainability	vulnerable to disruption

#### **Reading comprehension**

#### 1. Read the text and match paragraphs 1-6 with headings A-F.

- A. The factors that have transformed the Earth's crust.
- B. Measures taken for the solution of ecological issues.
- C. Forces that have destroyed the balance between humanity and the nature.
- D. The critical environmental issues we are facing today.
- E. Spheres dealing with the environment.
- F. Intergenerational ethics.

## 2. Write True or False according to the text.

- 1. There is, actually, no balance between humanity and the environment.
- 2. The environmental issues, we are facing today, have resulted from our activities over the last 200 years.

3. Scientists have discovered that if we do not begin to take care of the nature it can posed to serious threats.

4. The function of environmental policy is to control the social behavior of people.

5. Environmentalism is a field encompassing the principles, policies, directives, and regulations enacted and enforced by local, national, or international entities.

6. Economists have long tried to accurately use environmental goods.



## 1. Listen and fill in the gaps.

We \_\_\_\_\_\_ something about pollution. Even though there are warnings about global warming, companies \_\_\_\_\_\_ to reduce pollution. Our sky, air, rivers, beaches

and countryside \_\_\_\_\_\_ rubbish dumps. The air \_\_\_\_\_\_ it is giving children breathing problems. Polluted rivers have no fish \_\_\_\_\_\_ and beaches are too dangerous \_\_\_\_\_\_ because of the garbage everywhere. It seems a lot of \_\_\_\_\_\_. I think there should \_\_\_\_\_\_ for polluters. I don't \_\_\_\_\_\_ more for things if they can be made with less pollution. The problem is that companies are more \_\_\_\_\_\_ profits than pollution. We have only just started looking at our carbon footprint.

## 2. Listen again and answer the questions.

- 1. What do our sky, air, rivers, beaches and countryside resemble?
- 2. What problems do polluted air and water cause?
- 3. What steps should be taken against polluters I the author's opinion?

## Speaking. Work in small groups and discuss the questions.

What strategies of prevention and solution of environmental problems can you offer? Present your strategies with slides in front of the class.

# Writing. 1. Answer the questions in details in written form.

- 1. Is environmental protection the main problem facing humanity today?
- 2. What are the most serious environmental problems?
- 3. What kinds of pollution do you know?
- 4. What is the result of the destruction of the ozone layer?

How can we solve these problems?

#### **Unit 4. Research writing**

#### Lesson 1. Research paper and research report





#### Questions for pre-reading discussion.

- 1. What is a research paper?
- 2. What is a research report?
- 3. How are you going to structure your
- research paper

1. What is a research paper? A research paper is a piece of academic writing, consisting of analysis, interpretation and argument-based research. In comparison to essays, research papers are far more detailed. They don't only focus on your writing skills, but your research skills as well, hence the name "research paper". When writing a research paper, you don't just share your opinion on the matter, but also include a lot of factual information including any relevant sources.

2. What is a Research Report? A research report is a well-crafted document that outlines the processes, data, and findings of a systematic investigation. It is an important document that serves as a first-hand account of the

research process, and it is typically considered an objective and accurate source of information.

3. In many ways, a research report can be considered as a summary of the research process that clearly highlights findings, recommendations, and other important details. Reading a well-written research report should provide you with all the information you need about the core areas of the research process.

4. **Features of a Research Report.** So how do you recognize a research report when you see one? Here are some of the basic features that define a research report.

- It is a detailed presentation of research processes and findings, and it usually includes tables and graphs.
- It is written in a formal language.
- A research report is usually written in the third person.
- It is informative and based on first-hand verifiable information.
- It is formally structured with headings, sections, and bullet points.
- It always includes recommendations for future actions.

5. **Types of Research Report**. The research report is classified based on two things: nature of research and target audience.

**Qualitative Research Report.** This is the type of report written for qualitative research. It outlines the methods, processes, and findings of a qualitative method of systematic investigation. In educational research, a qualitative research report provides an opportunity for one to apply his or her knowledge and develop skills in planning and executing qualitative research projects.

A qualitative research report is usually descriptive in nature. Hence, in addition to presenting details of the research process, you must also create a descriptive narrative of the information.

**Quantitative Research Report.** A quantitative research report is a type of research report that is written for quantitative research. Quantitative research is a type of systematic investigation that pays attention to numerical or statistical values in a bid to find answers to research questions.

In this type of research report, the researcher presents quantitative data to support the research process and findings. Unlike a qualitative research report that is mainly descriptive, a quantitative research report works with numbers; that is, it is numerical in nature.

**Technical Research Report.** A technical research report is a detailed document that you present after carrying out industry-based research. This report is highly specialized because it provides information for a technical audience; that is, individuals with above-average knowledge in the field of study.

In a technical research report, the researcher is expected to provide specific information about the research process, including statistical analyses and sampling methods. Also, the use of language is highly specialized and filled with jargon. Examples of technical research reports include legal and medical research reports.

**Popular Research Report.** A popular research report is one for a general audience; that is, for individuals who do not necessarily have any knowledge in the field of study. A popular research report aims to make information accessible to everyone. It is written in very simple language, which makes it easy to understand the findings and recommendations. Examples of popular research reports are the information contained in newspapers and magazines.



## Vocabulary. Write the definitions of the following words and

phrases. research paper argument-based research factual information well-crafted document systematic investigation highlight formally structured descriptive

interpretation focus on research report outline summary verifiable information bullet points numerical

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jargon

## **Reading comprehension**

## 1. Read the text and match paragraphs 1-5 with headings A-E.

A. Peculiarities of a well-written research report.

B. Features of a research report.

C. The main features of a research paper.

D. Classification of a research report according to the nature of research and target audience.

E. The main features of a research report.

## 2. Write True or False according to the text.

1. In comparison to essays, research papers require higher writing skills.

2. A research report does not contain an objective and accurate information about a research itself.

3. An ordinary research report gives a clear information about findings, recommendations, and other important details.

4. Being written in a formal language is not the main feature of a research report.

5. A qualitative research report outlines the methods, processes, and findings of a qualitative method of systematic investigation.

6. Quantitative research report enables readers to know about the research process and findings.

7. In a technical research report, the researcher may not include statistical analyses and sampling methods.

8. A popular research report should be adapted so, that it can be understandable for everybody.



## 1. Listen and fill in the gaps.

People say intelligence \_\_\_\_\_\_ attractive than beauty. I often ask people if they \_\_\_\_\_\_ partner who is intelligent or good looking. They almost always \_\_\_\_\_\_ someone who is intelligent. I wonder why it is some \_\_\_\_\_\_ intelligent and others aren't. Surely we are all born with a similar \_\_\_\_\_\_ intelligence. I'm not really sure how intelligent I am. Sometimes I think I'm intelligent, but then I do something \_\_\_\_\_\_. Or I meet someone who is \_\_\_\_\_\_ who makes me feel unintelligent. One day, I'm going to take one of those intelligence tests to \_\_\_\_\_\_. Another thing I don't get about intelligence \_\_\_\_\_\_ think our leaders are so intelligent, but then the leaders \_\_\_\_\_\_ things. Do intelligent people start wars?

#### 2. Listen again and answer the questions.

- 1. What do people think about intelligence and beauty?
- 2. What does the author think about intelligence level of people?
- 3. What does the author think about own intelligence?
- 4. What is the author going to do one day?
- 5. What is the question of the author?

Speaking. Make a presentation on your work and present it before the auditorium. Speak about your target auditorium.

Writing. 1. Complete the diagram below writing the differences and similarities of the research paper and research report.



2. Write a report on the part of your research that you have completed.

Lesson 2. How research paper is written



Reading.

Questions for pre-reading discussion.

1. How have you chosen your research topic?

2. How are you going to structure your

research paper?



1. A research paper is a piece of academic writing that provides analysis, interpretation, and argument based on in-depth independent research.

Research papers are similar to academic essays, but they are usually longer and more detailed assignments, designed to assess not only your writing skills but also your skills in scholarly research. Writing a research paper requires you to demonstrate a strong knowledge of your topic, engage with a variety of sources, and make an original contribution to the debate.

2. This step-by-step guide takes you through the entire writing process, from understanding your assignment to proofreading your final draft.

## 3. Table of contents

- 1.
- 2.

3.

4. **1. Understand the assignment.** Completing a research paper successfully means accomplishing the specific tasks set out for you. Before you start, make sure you thoroughly understanding the assignment task sheet:

- Read it carefully, looking for anything confusing you might need to clarify with your professor.
- Identify the assignment goal, deadline, length specifications, formatting, and submission method.
- Make a bulleted list of the key points, then go back and cross completed items off as you're writing.

Carefully consider your timeframe and word limit: be realistic, and plan enough time to research, write and edit.

5. 2. Choose a research paper topic. There are many ways to generate an idea for a research paper, from brainstorming with pen and paper to talking it through with a fellow student or professor.

You can try free writing, which involves taking a broad topic and writing continuously for two or three minutes to identify absolutely anything relevant that could be interesting.

You can also gain inspiration from other research. The discussion or recommendations sections of research papers often include ideas for other specific topics that require further examination.

Once you have a broad subject area, narrow it down to choose a topic that interests you, meets the criteria of your assignment, and is possible to research. Aim for ideas that are both original and specific:

- A paper following the chronology of World War II would not be original or specific enough.
- A paper on the experience of Danish citizens living close to the German border during World War II would be specific and could be original enough.

6. **3. Conduct preliminary research.** Note any discussions that seem important to the topic, and try to find an issue that you can focus your paper around. Use a variety of sources, including journals, books and reliable websites, to ensure you do not miss anything glaring.

Do not only verify the ideas you have in mind, but look for sources that contradict your point of view.

- Is there anything people seem to overlook in the sources you research?
- Are there any heated debates you can address?
- Do you have a unique take on your topic?
- Have there been some recent developments that build on the extant research?

In this stage, you might find it helpful to formulate some <u>research questions</u> to help guide you. To write research questions, try to finish the following sentence: "I want to know how/what/why..."

7. **4. Develop a thesis statement.** A thesis statement is a statement of your central argument — it establishes the purpose and position of your paper. If you started with a research question, the thesis statement should answer it. It should also show what evidence and reasoning you'll use to support that answer.

The thesis statement should be concise, contentious, and coherent. That means it should briefly summarize your argument in a sentence or two; make a claim that requires further evidence or analysis; and make a coherent point that relates to every part of the paper.

You will probably revise and refine the thesis statement as you do more research, but it can serve as a guide throughout the writing process. Every paragraph should aim to support and develop this central claim.

#### 8. 5. Create a research paper outline. A research paper outline is

essentially a list of the key topics, arguments and evidence you want to include, divided into sections with headings so that you know roughly what the paper will look like before you start writing.

A structure outline can help make the writing process much more efficient, so it's worth dedicating some time to create one. 9. 6. Write a first draft of the research paper. Your first draft won't be perfect
you can polish later on. Your priorities at this stage are as follows:

- Maintaining forward momentum write now, perfect later.
- Paying attention to clear organization and <u>logical ordering</u> of paragraphs and sentences, which will help when you come to the second draft.
- Expressing your ideas as clearly as possible, so you know what you were trying to say when you come back to the text.

10. You do not need to start by writing the introduction. Begin where it feels most natural for you — some prefer to finish the most difficult sections first, while others choose to start with the easiest part. If you created an outline, use it as a map while you work. Do not delete large sections of text. If you begin to dislike something you have written or find it doesn't quite fit, move it to a different document, but don't lose it completely — you never know if it might come in useful later.



## Vocabulary. Write the definitions of the following words and

phrases.

in-depth	demonstrate
debate	proofreading
assignment	confusing
submission method	bulleted list
timeframe	edit
brainstorming	inspiration
preliminary research	thesis statement
concise	contentious
coherent	summarize
draft	forward momentum

#### **Reading comprehension**

## 1. Read the text and match paragraphs 1-10 with headings A-J.

- A. The ways of choosing the of a research paper topic.
- B. A research paper table of contents.
- C. The steps of the entire writing process.
- D. What a research paper is.
- E. A research paper structure outline.
- F. The ways of gaining an insight of the assignment.
- G. Some good advice.
- H. The important of an interlocutory research.
- I. A central argument of the work.
- J. The important of the first draft.
- 2. Write True or False according to the text.

1. Writing a research paper enables you to demonstrate a practical knowledge of your topic, engage with a variety of sources, and make an original contribution to the debate.

2. Free writing helps you to choose a topic that could be interesting for you.

3. If you use ideas from other research, you should include them in the discussion or recommendations sections.

4. Using multiple sources is not desirable.

5. The thesis statement should have a logical sequence of ideas.

6. You should make a structure outline to make the writing process much quicker.

7. It is actually impossible to make your first draft of the research paper sophisticated at first.

8. You can begin writing your research paper with that part, which is convenient for you.



## 1. Listen and fill in the gaps.

I think writing is the \_\_\_\_\_\_ in English. I'm not sure why. Some students are really good at speaking, but their \_\_\_\_\_\_. Why can't they just pretend they're speaking but \_\_\_\_\_\_. You certainly have more time to think when you write. I think writing \_\_\_\_\_\_ in recent years. Computers and the Internet \_\_\_\_\_\_. Although I think many teachers would say technology is not a help. But it's true. We have spellcheckers \_\_\_\_\_\_. They even warn us if we've made a mistake with grammar. There is also \_\_\_\_\_\_, but that can produce gobbledygook. And then there are new places to write. With mobile phones and sites like Twitter you don't have \_\_\_\_\_\_ to write.

## 2. Listen again and answer the questions.

1. Does the author know why writing is the most difficult skill in English?

2. How does the author compare some students' speaking and writing skills?

3. What do many teachers think about computers' and the Internet's helped in our writing?

4. What does the author think about it?

# Speaking. Role play the situation. Use the active vocabulary of the

#### text.

You are talking with your scientific supervisor and telling him/her how you're writing your research paper. Tell him how you are planning to write your research report.

# Writing. 1. Write steps of writing a research paper and a short characteristics.



2. Write a research paper on any topic you like according to the steps given in the text.

Lesson 3. The Essential Building Blocks of Research Writing

Reading.

Questions for pre-reading discussion.

1. Do you know the essential building blocks of research writing?

2. Have you ever shared your opinions

with others?

## 1. I. Do real research.

1. Begin from a question to which you don't know the answer and that can't be answered just by going to the appropriate reference source. That is, begin from a research question, not a homework question.

2. Decide what kind of information or data will be needed in order to build the answer to the question.

3. Gather information and/or collect data.

4. Work with the information/data to derive or construct your answer.

This is the *research process*, and it happens before you begin to write your paper. No research, no research writing, so don't shortchange this part of the process.

#### 2. II. Create a one-sentence answer to your research question.

5. This will be the thesis statement/main point/controlling idea of your research paper.

## 3. III. Share your answer to research questions in a way that make it believable, understandable, and usable for your readers. To do this

6. Include plentiful and well-chosen examples from the data/information you gathered

7. Indicate the validity of your data by accurately reporting your research method (field or lab research)

8. Indicate the quality of your information by accurately citing your sources (source-based research)

Provide the reasoning and explanation that will let your readers completely understand how the evidence adds up to your answer.



## Vocabulary. Write the definitions of the following words and

phrases.	
real research	reference source
collect data	derive an answer
shortchange	this part of the process
one-sentence answer	controlling idea
well-chosen example	validity
source-based research	provide the reasoning

#### **Reading comprehension**

#### 1. Read the text and match paragraphs 1-3 with headings A-C.

A. Doing real research.

B. A convenient way of answering to the research question.

C. Ways of making your answer believable, understandable and usable.

#### 2. Write True or False according to the text.

1. In doing a real research collecting data is important.

2. You start working with the information to construct your answer, at the same time you begin to write your paper.

3. The thesis statement is a main point of your research paper.

4. You must include plentiful and well-chosen examples from different sources apart from the information you've gathered.

5. Reporting your research method accurately indicates the validity of your data.

6. Source-based research has nothing to do with the quality of your information.



#### 1. Listen and fill in the gaps.

Do you like doing writing activities in class? I think they're \_\_\_\_\_\_. It's not really like writing. The \_\_\_\_\_\_ my language is different from English. The sentence and paragraph \_\_\_\_\_\_. My teacher gives us fun activities so we can do writing \_\_\_\_\_\_. Sometimes \_\_\_\_\_\_ write, sometimes we speed write for ten minutes. One of my favorite activities is writing in pairs. We \_\_\_\_\_\_ what to write. We even have to agree \_\_\_\_\_\_ and punctuation. That makes us think about the best way. I think this is very good for me. I \_\_\_\_\_\_ online writing activities. It's good to help me practice typing. I need more writing activities.

#### 2. Listen again and answer the questions.

- 1. Does the author find it interesting to do writing activities in class?
- 2. What is the difference between the writing in the author's language and in English?
- 3. What fun writing activities does the author's teacher sometimes give?

4. Why does the author like writing in pairs?

Speaking. Work in small groups and discuss the questions.

How are you going to formulate your research paper? Present it with slides in front of the auditorium.

Writing. 1. Write a detailed answer to the question.
How are you going to formulate your research paper?
2. Write a well-structured research paper according to the building blocks of research writing.

Lesson 4. The structure of a research paper.



Questions for pre-reading discussion.

1. Do you know about the structure of a research paper?

2. How do you want to structure your

research paper?

1. Research is a physical process of gathering information and a mental process of deriving the answer to your question from the information you gathered.

2. Research writing is a process of sharing the answer to your research question along with the evidence on which your answer is based, the sources you used, and your own reasoning and explanation.

3. **Paragraph structure.** Paragraphs are the basic building blocks of research papers. Each one should focus on a single claim or idea that helps to establish the overall argument or purpose of the paper.

Here is an example of a well-structured paragraph. Hover over the sentences to learn more.

#### Sample paragraph

George Orwell's 1946 essay "Politics and the English Language" has had an enduring impact on thought about the relationship between politics and language. This impact is particularly obvious in light of the various critical review articles that have recently referenced the essay. For example, consider Mark Falcoff's 2009 article in The National Review Online, "The Perversion of Language; or, Orwell Revisited," in which he analyzes several common words ("activist," "civil-rights leader," "diversity," and more). Falcoff's close analysis of the ambiguity built into political language intentionally mirrors Orwell's own point-by-point analysis of the political language of his day. Even 63 years after its publication, Orwell's essay is emulated by contemporary thinkers.

**Introduction.** The research paper introduction should address three questions: What, why, and how? After finishing the introduction, the reader should know what the paper is about, why it is worth reading, and how you'll build your arguments.

**What?** Be specific about the topic of the paper, introduce the background, and define key terms or concepts.

**Why?** This is the most important, but also the most difficult, part of the introduction. Try to provide brief answers to the following questions: What new material or insight are you offering? What important issues does your essay help define or answer?

**How?** To let the reader know what to expect from the rest of the paper, the introduction should include a "map" of what will be discussed, briefly presenting the key elements of the paper in chronological order.

**Compelling body of text.** The major struggle faced by most writers is how to organize the information presented in the paper, which is one reason an outline is so useful. However, remember that the outline is only a guide and, when writing, you can be flexible with the order in which the information and arguments are presented.

One way to stay on track is to use your thesis statement and topic sentences. Check:

- topic sentences against the thesis statement;
- topic sentences against each other, for similarities and logical ordering;
- and each sentence against the topic sentence of that paragraph.

Be aware of paragraphs that seem to cover the same things. If two paragraphs discuss something similar, they must approach that topic in different ways. Aim to create smooth transitions between sentences, paragraphs, and sections.

**Conclusion.** The research paper conclusion is designed to help your reader out of the paper's argument, giving them a sense of finality.

Trace the course of the paper, emphasizing how it all comes together to prove your thesis statement. Give the paper a sense of finality by making sure the reader understands how you've settled the issues raised in the introduction.

You might also discuss the more general consequences of the argument, outline what the paper offers to future students of the topic, and suggest any questions the paper's argument raises but cannot or does not try to answer.

#### You should not:

- Offer new arguments or essential information
- Take up any more space than necessary
- Begin with stock phrases that signal you are ending the paper (e.g. "In conclusion")

#### SAMPLE TOPIC PROPOSAL

Please note that I could have also done this as a series of paragraphs. I have chosen to use the listed questions as a guide so you are able to see the specific answers I have provided for each question. In some places, additional commentary has been added to explain and clarify certain things.

- 1. What is your proposed topic: The challenges of teaching composition to college freshmen in the community college
- 2. Why you are interested in this topic? As a professor of composition at a community college, it is important for me to understand both the challenges my students have when entering my classroom as well as the challenges I will have teaching this often unwanted area of study to my students, since many of them have a dislike for English. From my own experiences as a student, I have adopted particular methods and a specific philosophy of teaching that conflict with students' initial expectations. I am interested in finding ways to bridge the gap.
- 3. What do you already know about the topic? With my Masters degree in English and having taught English composition for many years at Ivy Tech, I know a great deal about teaching composition overall. I know the basic demographics of the students I teach, and I know what writing issues seem to be common among incoming freshmen. I also know that students typically don't want to take a writing course and have particular expectations on what it should (and should not) include. I have information from other instructors in a variety of areas that also helps me to understand the concerns about this topic. I know some information about how the current school system works and how that contributes somewhat to the issues with incoming students.
- 4. What do you need to know/don't know about the topic? I don't know the specific statistics relating to student demographics. There are some styles of teaching (pedagogy) that I am unfamiliar with and could look into. I don't have a full list of what kinds of things are currently happening in the high school English classes which may widen the gap further between where high school ends and college expectations begin. I don't have as much specific teaching knowledge that directly deals with older non-traditional students and students who speak English as a second language. I don't know as much about how learning styles impact community college students as opposed to traditional university students.
- 5. What is your research question? While there are numerous questions I could ask about this (I could try to determine what those challenges are, I could identify a specific challenge and analyze it, etc), I have decided to ask this question: Do learning styles play a greater role in composition learning outcomes in a community college than in a university? I may have to restrict this further to particular groups within the community college though are there differences in learning styles between the traditional age community college students versus the older displaced workers? This essay will try to determine whether or not those learning styles have a larger impact composition learning outcomes in one type of institution than another.

Abstract. There are few facts about the role of obedience when committing acts against one's personal conscience (1961). Most theories suggest that only very disturbed people are capable of administering pain to an ordinary citizen if they are ordered to do so. Our experiment tested people's obedience to authority. The results showed that most obey all orders given by the authority-figure, despite their unwillingness. The conclusion is that, contrary to common belief, personal ethics mean little when pitted against authority.

#### [Page 3-X - text starts in the top, left corner, no extra spacing to align text]

**Introduction.** Current theories focus on personal characteristics to explain wrong-doing and how someone can intentionally harm others. In a survey, professionals such as doctors, psychologist and laymen predicted that a small proportion of a population (1-3%) would harm others if ordered to do so. In the recent war trial with Adolph Eichmann, he claims to only have been "following orders". The author wanted to test this claim. Can people harm others because they are merely obeying orders? Can people be ordered to act against their moral convictions? The experiment will test whether a person can keep administering painful electric shocks to another person just because they are ordered to do so. The expectation is that very few will keep giving shocks, and that most participants will disobey the order.

#### Methods.

**Participants.** There were 30 male participants. They were recruited by advertisement in a newspaper and were paid \$4.50.

Instruments. A "shock generator" was used to trick the was used to trick the participants into thinking that they were giving an electric shock to another person in another room. The shock generator had switches labeled with different voltages, starting at 30 volts and increasing in 15-volt increments all the way up to 450 volts. The switches were also labeled with terms which reminded the participant of how dangerous the shocks were.

**Procedures.** The participant met another "participant" in the waiting room before the experiment. The other "participant" was an actor. Each participant got the role as a "teacher" who would then deliver a shock to the actor ("learner") every time an

incorrect answer to a question was produced. The participant believed that he was delivering real shocks the to learner. The learner would pretend to be shocked. As the experiment progressed, the teacher would hear the learner plead to be released and complain about a heart condition. Once the 300-volt level had been reached, the learner banged on the wall and demanded to be released. Beyond this point, the learner became completely silent and refused to answer any more questions. The experimenter then instructed the participant to treat this silence incorrect and deliver a further shock. as an response When asking the experimenter if they should stop, they were instructed to continue.

**Results.** Of the 40 participants in the study, 26 delivered the maximum shocks. 14 persons did not obey the experimenter and stopped before reaching the highest levels. All 40 participants continued to give shocks up to 300 volts.

**Discussion/Conclusion.** Most of the participants became very agitated, stressed and angry at the experimenter. Many continued to follow orders throughout even though they were clearly uncomfortable. The study shows that people are able to harm others intentionally if ordered to do so. It provides evidence that this dynamic is far more important than previously believed, and that personal ethics are less predictive of such behavior.

#### [New Page]

References



## Vocabulary. Write the definitions of the following words and

#### phrases.

physical process evidence building blocks well-structured paragraph mental process paragraph structure establish an argument background

key concepts	brief
insight	topic sentence
logical ordering	smooth transitions
emphasize	consequence

#### **Reading comprehension**

#### 1. Read the text and match paragraphs 1-3 with headings A-C.

- A. The basic building blocks of a research paper.
- B. What research is.
- C. What research writing is.

#### 2. Write True or False according to the text.

- 1. The questions "What, why, and how?" are answered in the body paragraph.
- 2. While answering the question *What*? you should introduce the background, and define key terms or concepts.
- 3. There is a strong order of presenting information and arguments.
- 4. Two paragraphs can contain the same things, but they must be presented differently.

5. Reading the research paper conclusion enables readers to understand the main sense of the work.

6. You are **not supposed to b**egin your research paper with phrases that signal you are ending the paper.



#### 1. Listen and fill in the gaps.

Research \_\_\_\_\_\_ thing. Without research, we'd have no new products. Our \_\_\_\_\_ dangerous to eat. And we'd never go to the moon. I'd like to see my government \_\_\_\_\_ money on research. Especially on research into diseases. Scientists \_\_\_\_\_ into AIDS and cancer for years and \_\_\_\_\_ cures. Research into technology is

also important. There \_\_\_\_\_ research into information and computer technology. It's \_\_\_\_\_ technology is changing. We really need to spend more to research how global warming is affecting our planet. This \_\_\_\_\_ important research scientists ever do. Research to save the planet.

### 2. Listen again and answer the questions.

- 1. What would happen if there were no research?
- 2. What does the author like concerning the government's activity for research?
- 3. What research does the author emphasize?
- 4. What research could be the most important research scientists ever do?

Speaking. Find a well-structured sample of research paper and give reasons why you consider it to be well-formulated. Make notes for your speech beforehand.
## **PROGRESS-CHECK TESTS**

## Choose the synonym to the underlined phrase. Engineers have <u>contributed to</u>

almost every activity.

- **A.** had input
- B. had used
- C. had involved
- D. had released

**Choose the synonym to the underlined word.** An engineer is someone who <u>applies</u> the principles of science to solve problems.

A. uses

B. inputs

- C. involves
- D. release

**Choose the correct answer.** If your interests lie ... computers, you have several choices.

- A. with
- B. in
- C. to

D. for

Choose the antonym to the underlined word.. If so, you probably want to look into

civil or construction engineering.

- A. certainly
- B. possibly
- C. finally
- D. nearly

**Choose the correct answer.** What do you look forward to ...?

- A. doing
- B. do

C. did

D. done

**Choose the correct answer.** If chemistry ... you, you ought ... into chemical engineering.

A. fascinates /to look

- **B.** fascinate /look
- C. fascinating /looking
- D. fascinated /looked

**Choose the correct answer.** If your dream has always been associated with designing cars, ......

- A. then you may want to consider mechanical engineering
- B. then you want to consider electrical or computer engineering
- C. then biomedical engineering could be for you
- D. you probably want to look into civil or construction engineering

**Choose the correct answer.** The ...were master engineers—witness the pyramids.

- A. Egyptians
- B. Chinese
- C. Romans
- D. Russian

Choose the correct answer. Creation of new ... is one of the ... forms of creativity.

- A. knowledge/highest
- B. know/high
- C. knowledgeable/highly
- D. knowledge/high

# Choose the correct answer. It turns itself ... and ... as dictated by its internal

- thermostat.
- A. on/ off
- B. for/on'
- C. in/at
- D. with/ for

**Choose the correct answer.** ... joined the Commonwealth of Independent States in December 1991.

A. Uzbekistan

B. USA

C. Great Britain

D. Russia

**Choose the correct answer.** Uzbekistan is ..... active supporter of U.S. efforts against worldwide terrorism and joined the coalitions which have dealt with both Afghanistan and Iraq.

A. an

B. a

C. some

D. any

**Choose the correct answer.** It is necessary to study the culture ... international communications, the objective laws, ways and methods of its formation, and its development and manifestation ... every sphere and at every level of society.

A. of/in

B. with/for

C. on/of

D. from/in

**Choose the correct answer.** The main aim of the culture of international communications ... social progress, which is the integrated and mutual dependence of different parts of the whole society.

A. is

B. has

C. be

D. were

**Choose the correct answer.** Considerable reforms .... made in the education sector, and government expenditure on education is high.

A. were

B. was

C. is

D. to be

**Choose the correct answer.** There .... been some success in improving access to HIV prevention, treatment and care services.

A. has

B. been

C. has been

D. was

Choose the correct answer. If I ..... been late to work yesterday, I would have

missed the regular morning meeting.

A. had

B. has

C. have

D. having

Choose the correct answer. If Tom hadn't asked my permission before he took my

bicycle, I ... have been angry.

A. would

B. will

C. shall

D. should

Choose the correct answer. Most ... support world trade agreements.

A. nations

B. nation

C. national

D. nationality

Choose the correct answer. I ... absent from class yesterday.

A. wasn't

B. am not

C. aren't

#### D. isn't

**Choose the correct answer.** The Republic of Uzbekistan ... international relations with many countries.

- A. maintains
- B. maintain
- C. have maintained
- D. maintained

**Choose the correct answer.** ... classes are very popular and have become a very effective vehicle to familiarize Uzbek nationals with India's rich cultural heritage.

- A. These
- B. That
- C. This
- D. Then

**Choose the correct answer.** Uzbek-British cultural relations are .... most dynamic and growing area of bilateral cooperation.

- A. the
- B. a
- C. an
- D. some

Choose the correct answer. Special role ... to the ties in education.

- A. belongs
- B. belong
- C. belonged
- D. belonging

Choose the correct answer. It became ..... first and still the only university opened

abroad with ..... assistance of ...... University of Westminster in London.

- A. the/the/the
- B. a/the/an
- C. an/the/the
- D. the/-/the

**Choose the correct answer. .**. 17 July 2003 the Memorandum of Understanding between the Ministry ... Higher and Secondary Education .... Uzbekistan and the Ministry .... Education and Skills .... the United Kingdom was signed.

A. on/of/of/of/of

B. of/on/of/of/of

C. of/of/of/of/of

D. of/of/on/of

**Choose the correct answer.** Uzbekistan joined the United Nations in 1992 as a ... sovereign and independent state.

A. new

B. old

C. important

D. beautiful

**Choose the correct answer.** If you should need more money, go .... the bank before six o'clock.

- A. to
- B. on
- C. by

D. with

Choose the correct answer. If you should change your mind, please let me ...

immediately.

A. know

B. knew

C. known

D. knowing

Choose the correct answer. What is the main any undergraduate realises when they

decide to commit to a PhD or master's?

A. It is just how much they love their discipline.

B. It is a passion for their subject.

C. It is what they expect as a postgrad.

D. It is being completely confident that they are making the right decision.

**Choose the correct answer.** Many students ... go on to do a master's or PhD do so thanks to a gatekeeper - a lecturer or professor ... recognises their potential and helps set them on their journey.

- A. who / who
- B. who / which
- C. that / who
- D. how / what

Choose the correct answer. Do not be shy of ... beyond your department for advice.

- A. looking
- B. look
- C. to look
- D. looked

## Choose the correct answer. ..... can be a useful skill.

- A. Nodding and smiling
- B. Nodding and studying hard
- C. Smiling and supervising
- D. Encouraging and being suitable

## Choose the correct definition to the word. Supervisor

- A. person who encourages and helps a postgrad in his research work
- B. person who works on a particular topic
- C. person who helps students with tests
- D. person who thanks to a gatekeeper

**Choose the antonym to the underlined word.** <u>Success</u> as an undergraduate does not necessarily transfer to the next level.

- A. Failure
- B. knot
- C. passion
- D. subject

## Choose the synonym to the underlined word. Scientist has talked to a wide range

of prominent researchers about their postgraduate years

A. Scholar

B. Researcher

C. Undergraduate

D. Imagination

**Choose the correct answer.** If you do not like talking ... public, then this is the time to sort it ....

A. in / out

B. to / away

C. for / on

D. out / in

Choose the correct answer. In a PhD, one of the final hurdles is an ... of your thesis

- or ...- to two experts in the field.

A. oral defense / viva

B. setbacks / viva

- C. oral defense / failures
- D. endeavour /gratifying

Choose the correct answer. It is important ... ambitious but also realistic.

- A. to be
- B. being
- C. been

D. having been

Choose the correct answer. If I were your teacher, I would insist ... do better

work.

A. you

B. your

C. their

D. theirs

Choose the correct answer. Uzbekistan is an ... tourist destination.

A. attractive

B. peaceful

C. interesting

D. necessary

**Choose the correct answer.** Between the two rivers Amudarya and Syrdarya, in the area ... Maverannahr, human civilizations emerged thousands of years ago.

A. called

B. call

C. calling

D. to be called

**Choose the correct answer.** A Licensed Travel Agencies ... Tour Operators in Uzbekistan contribute in the development of International Tourism in

Uzbekistan.

A. and

B. but

C. from

D. of

**Choose the correct answer.** The tourism industry annually ... a great deal of income to the country.

A. brings

B. bring

C. brought

D. bringing

**Choose the correct answer.** Unfortunately the country still has a legacy of complicated, Soviet-style visa requirements, .... puts it at a disadvantage in a competitive market for international tourists.

A. which

B. why

C. when

D. what

Choose the correct answer. Each autumn, the Uzbek travel industry holds .....

International Tourism Fair.

A. an

- B. any
- C. some
- D. a

**Choose the correct answer.** The main ... at Tashkent is often cited as one of the worst in the world from the point of view of passengers, who experience hectic conditions, long delays, and bureaucratic frustrations.

- A. airport
- B. plane
- C. train
- D. station

**Choose the correct answer.** The World Tourism Organization's Silk Road Office ... opened in 2004 in Samarkand.

- A. was
- B. were
- C. are
- D. to be

Choose the correct answer. This office was commissioned to coordinate the

efforts of international organizations and national tourism offices of countries ... on the Silk Road.

- A. located
- B. locate
- C. place
- D. to locate

**Choose the correct answer.** A large number of tourists have been visiting Uzbekistan because of ... religious-based interest.

- A. their
- B. they

C. them

D. theirs

**Choose the correct answer.** Problems can be divided ... several types according ... scientists' opinion.

- A. into\to
- B. on\to
- C. in\to
- D. to\at

**Choose the correct answer.** In these days of high ..., it's often difficult for young people to find a job.

- A. unemployment
- B. employment
- C. employee
- D. employer

Choose the correct answer. Before you get a job, you usually have to go for a(n)

- ..., when you will be asked a lot of questions about your suitability for the job.
- A. interview
- B. questioning
- C. interrogation
- D. discussion

Choose the correct answer. Did you know, 9 of the 10 ... years on record

occurred in 1995 or later?

- A. the hottest
- B. hottest
- C. most hot
- D. more hot

Choose the correct answer. This is ... steak I've ever eaten!

- A. the worst
- B. worse
- C. the worse

#### D. worst

Choose the correct answer. Hey! You are ... employee in our firm.

- A. the youngest
- B. youngest
- C. younger
- D. young

Choose the correct answer. Yesterday it was ... the day before yesterday.

- A. colder than
- B. colder the
- C. colder them
- D. colder

Choose the correct answer. Nancy's car is ... than mine, but Ben's car is ... car.

- A. more expensive / the most expensive
- B. the most expensive / more expensive
- C. expensive / expensive
- D. most expensive / the more expensive

Choose the correct answer. Your essay was ... than Jim's, but it was ... than

Mary's.

- A. better / worst
- B. better / worse
- C. good / worst
- D. best / worse

Choose the correct answer. New houses are ... than old ones.

- A. more modern and cleaner
- B. more modern and clean
- C. modern and cleaner
- D. more modern and cleanest

#### Choose the correct answer. There are ... types of unemployment.

- A. 5
- B. 6

C. 2

## D. 3

## Choose the correct answer. "Unemployment"

A. ishsizlik (безработица)

- B. ishchi kuchi (рабочая сила)
- C. ishga layoqatsiz (нетрудоспособный)
- D. ishchi (служащий, рабочий)

# Find the synonym to the given word. capacity

- A. volume
- B. employee
- C. product
- D. advertisement

# Find the synonym to the given word. Manufacture

- A. produce
- B. protect
- C. advertise
- D. repair

# Choose the correct answer. Her husband was ... after an accident disabled him.

- A. unemployable
- B. employable
- C. unemployment
- D. unemployed

# Choose the correct answer. He has been ... for three month.

- A. unemployed
- B. unemployable
- C. employable
- D. unemployment

## Choose the correct answer. They asked a lot of questions ... his job.

- A. about
- B. of

C. for

D. on

Choose the correct answer. They need some gas. They're looking ... a gas station.

- A. for
- B. to
- C. from
- D. at

#### Choose the correct answer. She was ... Paris last month.

- A. in
- B. to
- C. at
- D. from

#### Choose the correct answer. There's park across the street ... the hospital.

- A. from
- B. of
- C. to
- D. for

#### Choose the right answer. He has an apartment ... Maple Street.

- A. on
- B. at
- C. into
- D. between

#### Choose the correct answer. There aren't any pictures ... the wall.

- A. on
- B. to
- C. in
- D. at

#### Choose the correct answer. He never watches TV ... Sunday.

- A. on
- B. at

C. in

D. with

Choose the correct answer. I have only been here ... 1983.

- A. since
- B. for
- C. by
- D. in

# Find the right definition to the word *ecstasy*.

A. a feeling of very great happiness

B. break free from confinement or control

C. a substance taken for its narcotic or stimulant effects, often illegally

D. a tropical American shrub grown for its leaves, which are the source of cocaine

## Choose the correct answer. After attending a summer school in Brighton, José spoke

English much more ....

- A. completely
- B. fluently
- C. confidently
- D. accurately

**Choose the correct answer.** I had to drive very ... because the snow was coming down ....

A. slowly / heavily

- B. slow / heavy
- C. slowly / heavy
- D. slow / heavily

# Which of the following is NOT an adverb?

- A. friendly
- B. badly
- C. quietly
- D. carefully

# Which of the following is an advantage of telecommuting?

A. all the answers right.

B. it involves less travel time.

C. it allows companies to retain valuable employees during pregnancy.

D. it enables men and women to stay home with small children.

**Choose the correct answer.** Technology that helps companies change business by allowing them to use new methods is called:

A. information technology.

- B. data processing.
- C. virtualization.
- D. information systems.

**Choose the correct answer.** Trevor Baylis is an inventor. In 1991, he ... ... the problem of bringing health information to people in rural Africa.

- A. heard about
- B. hear about
- C. hears about
- D. heard for

Choose the correct answer. Radio was ... but people had no electricity and couldn't

pay for expensive batteries.

- A. the best way
- B. the worst way
- C. good way
- D. better way

**Choose the correct answer.** So, what did Trevor Bayles invent which doesn't need mains power or batteries?

- A. a radio
- B. a car
- C. a computer
- D. a watch

Choose the correct answer. So how does Trevor Bayles' clockwork radio actually

function? As you turn the handle on the side of the radio, you ... a spring.

A. wind up

- B. wind to
- C. wind of
- D. wind on

Choose the correct answer. Instead, it ... a spring, gears, and a small generator.

- A. consists of
- B. consists on
- C. consists in
- D. consists for

Choose the correct answer. Trevor Baylis has also invented an 'electric shoe'. How

does it charge?

- A. It charges batteries as you walk.
- B. It charges batteries as you lie.
- C. It charges batteries as you swim.
- D. It charges batteries as you speak.

Choose the correct answer. Professor Negroponte of Massachutes Institute of

Technology in the USA ... a clockwork computer which will cost less than 100\$.

- A. has developed
- B. will develop
- C. have developed
- D. will have developed

**Choose the correct answer.** This low-cost laptop ... for children in the developing world.

- A. is intended
- B. are intended

- C. were intended
- D. have intended

**Choose the correct answer.** What does this low-cost laptop use which will connect to WI-FI networks. He hopes to produce 150 million a year.

- A. It uses "open source" software
- B. It uses "closed source" software
- C. It uses "connected source" software
- D. It uses "paid source" software and

Choose the correct answer. The spark plug ... at the end of the compression chamber.

- A. is located
- B. are located
- C. were located
- D. have located

Choose the correct answer. Intake and exhaust ports ... in the walls of the cylinder.

- A. are located
- B. is located
- C. were located
- D. have located

**Define tense form of the verb**. All products begin with an idea, in the past, car designers worked first on paper. At a later stage models <u>were made</u> in wood or fibreglass.

- A. Past simple passive
- B. Present Perfect passive
- C. Present Simple active
- D. Present Perfect Continuous

**Define tense form of the verb**. Now everything <u>is done</u> using CAD (Computer-aided design) programs. These programs allow designers to work in two or three dimensions

(2-D or 3-D) but most new designs are created using a solid modelling program which allows the model to be viewed from any angle.

A. Present simple passive

B. Present Perfect passive

C. Present Simple active

D. Present Perfect Continuous

Choose the correct answer. It can also be viewed ... engineers and executives

anywhere in the world.

A. by

B. to

C. of

D. for

**Choose the correct answer.** Medical robots will ... operations, controlled by surgeons who may be hundreds of kilometers away.

A. carry out

B. carry on

C. carry in

D. carry

**Choose the correct answer.** Tiny robots ... into our bodies to deliver medicine and to perform surgery from the inside.

A. will be injected

B. will be inject

C. will injected

D. will injecting

**Choose the correct answer.** You will be able to ... characters in a TV programme and follow a storyline of your choice.

A. interact with

B. interact in

C. interact on

D. interact by

**Choose the correct answer.** Planes will be controlled ... computers which think like humans and are therefore afraid to crash.

A. by

B. on

C. in

D. to

**Choose the correct answer.** Cars ... . composites, plastic, and fiberglass, and will be assembled in six hours.

A. will be made of

- B. will be made on
- C. will be made in
- D. will be made for

**Define tense form of the verb**. Jobs like teaching children or nursing will continue **to** be done by people, but most other jobs will be done by robots and computers.

- A. Future simple passive
- B. Present Perfect passive
- C. Present Simple active
- D. Present Perfect Continuous

Choose the correct answer. Before a single component is produced, programs will

have ... the forces acting on it.

- A. worked out
- B. worked of
- C. worked by
- D. worked in

**Define tense form of the verb**. Robots with sensors <u>check</u> the finished vehicle for defects. For example, they can check the paint thickness and how well the doors fit.

- A. Present Simple active
- B. Present Perfect passive
- C. Future simple passive
- D. Present Perfect Continuous

**Define tense form of the verb**. Here, all machining operations <u>are planned</u>. For components such as engine parts, when the design is complete, the file is imported into a CAM (Computer-aided manufacturing) program.

A. Present Simple passive

B. Present Perfect passive

C. Future simple passive

D. Present Perfect Continuous

**Choose the correct answer.** Cars will automatically .... safe speeds and safe distances from each other.

A. drive at

B. drive by

C. drive for

D. drive in

**Choose the correct answer.** You will be able to download your brain to .... before you die.

A. a computer

B. a radio

C. a TV

D. a theater

**Choose the correct answer.** Microchips will be stuck to your skin to form different circuits, including ... .

A. computers

- B. radios
- C. TV

D. printers

**Choose the correct answer.** You'll ... watch a DVD using your arm as a screen.

A. be able to

- B. must
- C. should

#### D. have to

**Choose the correct answer.** 'Special editions' of cars can be produced ... new customers to a model, for example the BMW Mini.

A. to attract
B. to lose
C. to remove
D. to mislay
Choose the correct answer. Business will be ... in 3-D virtual space, not in offices.
A. carried out
B. carried to
C. carried of
D. carried for

**Choose the correct answer.** On the assembly line, computer-controlled robots .... for tasks such as welding and painting.

- A. are used
- B. has used
- C. was used
- D. is used

Choose the correct answer. A profession is a vocation founded upon ......

- A. specialized educational training
- B. objective counsel and service to others
- C. direct and definite compensation
- D. business gain

**Choose the appropriate antonym to the underlined word.** In that time there were the first <u>domestic</u> excavators and draglines.

- A. foreign
- B. neighboring

- C. wonderful
- D. tremendous

Choose the correct answer. Today the cotton farms remain ... ...

- A. state property
- B. country's economy
- C. a major export product
- D. the main output

**Choose the correct answer.** Uzbekistan's most productive heavy industries have been extraction of ... ... .

- A. natural gas and oil
- B. coal
- C. crude oil
- D. chemical substances

Choose the correct answer. Uzbekistan is among the world's leading ... producers.

- A. cotton
- B. wool
- C. silk
- D. food

**Choose the correct answer.** On ... bright January morning ... telephone kept ringing in my office.

- A. a/the
- B. office.
- C. the/the
- D. -/-

**Choose the correct answer.** On ... first day they stopped at ... river and decided to make ....camp.

- A. the/a/a
- B. the/-/a
- C. the/an/a
- D. -/the/-

Choose the correct answer. What is the city of Sheffield well known for?

A. It is well known for its manufacture of high quality steels, tools and cutlery.

B. It is well known for its electrical and heavy engineering.

C. It is well known for its wide range of goods including computers and electronic equipment

D. It is well known for its petrochemicals, dye- stuffs and pharmaceuticals.

Choose the correct answer. At ... first they began to look for ... dry place.

A. the/a

**B**. -/a

C. a/the

D. an/a

Choose the correct answer. To climb ... tree is not to climb ... mountain.

A. a/a

B. a/the

C. the/the

D. -/-

## Choose the correct answer. What Is Globalization?

A. Globalization is a process of interaction and integration among the people, companies, and governments of different nations.

B. Globalization is development of information technology.

C. Globalization is a process effecting on the environment, on culture, on political systems, on economic development and prosperity.

D. Globalization is a wide change of human physical well-being.

**Choose the correct answer.** Many years ago ... Tower Bridge of London was ...

fortress.

A. the/a

B. -/a

C. the/the

D. a/-

Choose the correct answer. ... youth of Great Britain wants to have ... better life for

... British people.

A. the/a/the

B. -/-/the

C. the/the/the

D. the/-/the

Choose the correct answer. What is important about integration?

A. It is that the individual cultures, and members of cultural communities, are welcomed and accepted for what they are.

B. Integration changes everything to create something new.

C. In integration there is respect for the practices, beliefs and values of that culture.

D. In integration cultures change their character, features and values.

**Choose the correct answer.** Our government pays great attention ... the education ... the youth.

- A. to/of
- B. -/of
- C. of/of
- D. to/to

**Choose the correct answer.** ... summer holidays many boys and girls like to go ... the country ... their teachers.

A. during/to/with

- B. at/by/to
- C. into/at/with
- D. -/to/to

# Choose the correct synonym to the underlined word. Terrorism is the systematic

use of terror.

- A. fear
- B. violence
- C. goal
- D. noise

Choose the correct answer. I know that he is a noisy boy, but ... the same time I

can't be angry ... him.

A. at/with

- B. -/to
- C. -/with
- D. in/about

Choose the correct answer. What are curtains usually made ...?

- A. of
- B. in

C. with

D. –

## Choose the correct answer. What is civil disorder ?

A. It is a form of collective violence.

B. It is generating fear in the community, or substantial segment of it.

C. It is achievement of a political objective.

D. It is an acts of terrorism which is committed for ideological or political motives.

Choose the correct answer. Great Britain consists ... three parts.

- A. of
- B. with
- C. from
- D. in

Choose the correct answer. He should take care ... his health.

- A. of
- B. for
- C. on

D. at

# Choose the antonym to the underlined word. Religious terrorism is terrorism

performed by groups or individuals.

A. groups

B. people

C. persons

D. youth

Choose the correct answer. You must work hard ... your English.

- A. at
- B. on
- C. for
- D. from

# **Choose the appropriate synonym to the underlined word.** Professions <u>enjoy</u> a high social status.

- A. have
- B. regret
- C. express
- D. like

## Choose the correct answer. Terrorist acts frequently have a ... purpose.

- A. political
- B. social
- C. fundamental
- D. psychological

## Choose the appropriate synonym to the underlined word. Navoi Chemical

Combine (currently Navoi Azot) starts to produce output.

- A. product
- B. goods
- C. nitrogen
- D. substance

#### Choose the correct answer. We are very busy ... weekdays.

- A. at
- B. out of
- C. in
- D. on

# Choose the antonym to the underlined word. Today modern slavery is observed in

our country too.

A. old

- B. new
- C. native
- D. general

Choose the correct answer. I haven't read ... of these books but George has read ...

of them.

- A. any/some
- B. none/some
- C. no/some
- D. any/any

Choose the correct answer. That pen isn't ..., ... is a green one.

- A. mine/mine
- B. my/my
- C. his/he
- D. I/me

**Choose the synonym to the underlined phrase.** On the contrary, it is estimated that there are between 4,200 - 4,600 people in modern slavery in the United Kingdom alone.

- A. Just the opposite
- B. Just the same
- C. Otherwise
- D. Though

Choose the correct answer. She always thinks of ... happiness.

- A. others'
- B. another
- C. others
- D. other

Choose the correct answer. ... was not a marriage that could last.

A. theirs

B. my

C. her

D. them

Choose the synonym to the underlined phrase. A profession tends to dominate,

police and protect its area of expertise.

- A. skill
- B. defense
- C. practice
- D. assistance

Choose the correct answer. If this hat is ..., where have you put ...?

- A. his/hers
- B. your/mine
- C. mine/her
- D. ours/their

Choose the correct answer. ... read the book and ... took it to the library.

- A. I/he
- B. He/me
- C. You/her
- D. She/her

Choose the correct answer. The ... ... of coal mine accounts for 1954-1965 years.

- A. first stage of modernization.
- B. formation
- C. putting into operation
- C. period of renovation

**Choose the correct answer.** We should help everyone as much as possible because we often need help ....

- A. ourselves
- B. themselves
- C. yourselves

#### B. himself

Choose the correct answer. Did you all do the grammar exercises ...?

- A. yourselves
- B. yourself
- C. herself
- D. themselves

Choose the correct answer. He will sit in the room to keep ...warm.

- A. himself
- B. herself
- C. themselves
- D. yourself

**Choose the correct answer.** How did Britain dominate the European and world economy during the 19th century?

- A. Because it led the industrial revolution.
- B. Because it was the major in machinery.
- C. Because it invented the railway system.
- D. Because it increased its disposable income.

**Choose the appropriate synonym to the underlined word.** The British <u>invented</u> the modern railway system and exported it to the world.

- A. create
- B. increase
- C. decrease
- D. major

**Choose the appropriate antonym to the underlined word.** The industry made <u>significant</u> technical advances in terms of vanadium, phosphor magnetic steels and other specialized high-strength alloys.

- A. inexpressive
- B. important
- C. essential
- D. major

Choose the correct answer. What kind of area is the Midlands Region?

A. It is better known as an industrial area.

- B. It is well known farming land.
- C. It is the centre of potteries.

D. It has a lot of forests.

**Choose the correct answer.** They always went to places ... they saw historical monuments.

- A. where
- B. Which
- C. what
- D. that

#### Choose the correct answer. "... else is here?" she asked.

- A. who
- B. whom
- C. which
- D. why

#### Choose the correct answer. I wonder ... her sister's boy looks like.

- A. who
- B. that
- C. what
- D. which

Choose the correct answer. It is 2 o'clock. I ... afraid I ... late.

- A. am/am
- B. was/am
- C. shall be/am
- D. was/was

#### Choose the correct answer. Who usually answers these letters in your office?

- A. I do, of course.
- B. My friend can.
- C. That man will.

D. Mary is.

Choose the correct answer. The milk is hot I ... on it to make it cold.

A. am blowing

B. blow

C. is blowing

D. blew

**Choose the correct answer.** In 1948 the open-pit mine "Angrenskiy" was put into operation, and this date is the ... of coal industry ... of Uzbekistan

A. beginning/development

B. formation/start

C. formation/development

D. modernization/ formation

**Choose the correct answer.** - You don't like horror films, do you? ... They are so terrifying.

A. Yes, I do.

B. Yes, I can.

C. No, I can't.

D. No, I don't.

Choose the correct answer. ... this engineer work at the Ministry of Foreign Affairs?

A. does

B. do

C. has

D. had

## Choose the correct answer. He ... never ... him sing.

A. has heard

B. had heard

C. have heard

D. was hearing

**Choose the correct answer.** "I can't marry Mr. Fire. I ... already ... my word to another man", said the chief's daughter.

- A. have/given
- B. don't/give
- C. had/given
- D. shall/give

## **Choose the correct definition to the given word.** *purpose*

- A. the reason for which something is done or created
- B. advice, especially that given formally
- C. something, typically money, awarded to someone in recognition of loss, suffering,

or injury

D. directed towards the profession

## Choose the correct answer. What ... you ... at 6 tomorrow?

- A. will/be doing
- B. will/do
- C. was/doing
- D. is/doing

Choose the correct answer. By the end of the first term we ... many English books.

- A. shall have read
- B. shall be read
- C. read
- D. have read

## Choose the correct definition to the given word. *launch*

- A. start or set in motion
- B. the amount of something produced by a person, machine, or industry
- C. the action of making use of and benefiting from resources
- D. a natural underground layer of rock, coal, or other material
- **Choose the correct answer.** She ... you a letter three weeks ago.
- A. sent
- B. had sent
- C. has sent
- D. send

## Choose the correct answer. When he ... home I ... him the book.

- A. came/showed
- B. came /shall show
- C. comes/showed
- D. has come/has shown

## Choose the correct definition to the given word. Coal

- A. a hard black substance that is extracted from the ground and burned as fuel
- B. a large deep hole from which stones or minerals are quarried
- C. the action of taking out something, esp. using effort or force
- D. a strong push

**Choose the correct answer.** The pupils ... the sentences yet, the teacher .... the blackboard.

- A. had not written / cleaned
- B. has not written / will clean
- C. did not write / cleans
- D. are not writing / clean

Choose the correct answer. Henry ... Puerto Rico before he ... to St. Thomas.

- A. had visited / went
- B. visited / had gone
- C. was visiting / went
- D. would visit / goes

## Choose the correct definition to the given word. cultivation

- A. the planting, tending, improving, or harvesting of crops or plants
- B. supply or distribute (something) for use or sale
- C. order or authorize the production of (something)
- D. a thing that is regarded as more important than another

Choose the correct answer. The company ... some new equipments before the strike

••••

- A. had ordered / began
- B. have ordered / begin

C. ordered / begins

D. is ordering / began

**Choose the correct answer.** "Ma," said a little girl, "Willie wants the biggest piece of cake, and I think I ... have it, because he was eating cakes two years before I was born."

A. should

- B. couldn't
- C. has to
- D. is to

**Choose the correct answer.** - I live near my work. So you ... go to the office by crowded buses.

- A. don't have to
- B. have to
- C. are able to
- D. would have to

**Choose the correct answer.** - I ... go to the cinema yesterday. -Why? -Because I ... complete my work.

- A. couldn't / had to
- B. can't / must
- C. didn't have to / may
- D. wasn't to / need

Choose the correct answer. The skier broke his leg and ... compete in the recent

Olympic Games.

- A. couldn't
- B. mustn't
- C. had to
- D. can't

Choose the correct answer. Must I do it? No, you ... It isn't necessary.

- A. needn't
- B. couldn't

C. may not

D. can't

## Choose the correct definition to the given word. nucleus

A. the central and most important part of an object, movement, or group, forming the basis for its activity and growth

B. a chemical or natural substance added to soil or land to increase its fertility

C. a currently circulating story or report of uncertain or doubtful truth

D. a plot of land rented by an individual for growing vegetables or flowers

Choose the correct answer. I feel sick and tired. So I ... go to school.

- A. am not able to
- B. can
- C. could
- D. haven't to

Choose the correct answer. If you want to be healthy you should ....

- A. go in for sports
- B. sleep much
- C. attend all your classes
- D. give up sport

# Choose the correct definition to the given word. ferrous

- A. containing or consisting of iron
- B. remove impurities or unwanted elements from (a substance)
- C. a chemical or natural substance added to soil or land to increase its fertility
- D. next to or adjoining something else

Choose the correct answer. If you ... Oxford you ... some interesting old buildings.

- A. visit / will see
- B. will visit / will see
- C. visited / will see
- D. visits / see

# Choose the correct answer. If he ... ill, he would stay at home.

A. were
B. is

C. be

D. are

## Choose the correct definition to the given word. *diversify*

A. enlarge or vary the range of products or the field of operation

B. remove impurities or unwanted elements from (a substance)

C. pay particular attention to

D. drain away from soil, ash, or similar material by the action of percolating liquid, esp. rainwater

**Choose the correct answer.** What would you do if a millionaire ... you a lot of money.

٠ •

A. gave

B. give

C. will give

D. gives

**Choose the correct answer.** The boy ... at home an hour before, if he ... his school at one o'clock last Monday.

A. would have been / had left

B. would be / had left

C. was / would leave

D. had been / had left

## Choose the correct definition to the given word. allotment

A. a plot of land rented by an individual for growing vegetables or flowers

B. the central and most important part of an object, movement, or group

C. a currently circulating story or report of uncertain or doubtful truth

D. drain away from soil, ash, or similar material by the action of percolating liquid, esp. rainwater

Choose the correct answer. ... he would have signed his name in the corner.

A. If he had painted the picture

B. If he would have painted the picture

- C. If he paints the picture
- D. If he painted the picture

# Choose the correct answer. If the help ... in time, the experiment ... tomorrow

afternoon.

- A. had been offered / would be completed
- B. had offered / would he completed
- C. was offered / will be completed
- D. is offered / would be completed

## Choose the correct definition to the given word. surpass

- A. exceed; be greater than
- B. the action or process of converting fibers into thread or yarn
- C. supersede and replace
- D. a kind of spinning machine producing yarn on spindles

Choose the correct answer. If you ... these pills yesterday you ... well now.

- A. had taken / would be
- B. took / would be
- C. had taken / had been
- D. took / will be

## Choose the correct answer. I have done ... part of my homework.

- A. the most difficult
- B. difficult
- C. more difficult
- D. most difficult

## Choose the correct definition to the given word. haul

- A. pull or drag with effort or force
- B. involving many carefully arranged parts or details
- C. combine (one thing) with another to form a whole
- D. make or become less; diminish

## Choose the correct answer. Can't you type ...?

A. more carefully

B. shortly

C. hardly

D. nearly

## Choose the correct definition to the given word. application

A. practical use or relevance

- B. a factory fitted with machinery for a particular manufacturing process
- C. move faster than and overtake
- D. the hair that grows on sheep and on some other animals

Choose the correct answer. This article is worth ....

- A. reading
- B. read
- C. to read
- D. has read

## Choose the correct definition to the given word. innovator

- A. a person who introduces new methods, ideas, or products
- B. spun thread used for knitting, weaving, or sewing
- C. the action or process of converting fibers into thread or yarn
- D. publicly acknowledge a contributor's role in the production of something

Choose the correct answer. They have got enough money ... to the cinema.

- A. to go
- B. go
- C. having gone
- D. to have gone

## Choose the correct definition to the given word. reciprocating

- A. move backwards and forwards in a straight line
- B. a kind of spinning machine producing yarn on spindles
- C. exceed; be greater than
- D. a factory fitted with machinery for a particular manufacturing process

## Choose the correct definition to the given word. *self-sustaining*

A. able to continue in a healthy state without outside assistance

- B. a small group of people specially trained for a particular purpose or profession
- C. an important topic or problem for debate or discussion
- D. find or describe the origin or development of

## Choose the correct definition to the given word. engineering

A. the branch of science and technology concerned with the design, building, and use

of engines, machines, and structures

- B. the basic material from which a product is made
- C. the condition of prospering
- D. any material, substance, etc., that can be used as food

## Choose the correct answer. I saw him ... a newspaper.

- A. reading
- B. to read
- C. to have read
- D. to be reading

## Choose the correct definition to the given word. petrochemicals

- A. chemicals obtained from petroleum and natural gas.
- B. a hard white substance made from clay
- C. a compound manufactured for use as a medicinal drug
- D. the production of books, newspapers, or other printed material.

## Choose the correct definition to the given word. china

- A. a hard white substance made from clay
- B. belonging to or typical of a large busy city.
- C. chemicals obtained from petroleum and natural gas.
- D. a compound manufactured for use as a medicinal drug

## Choose the correct definition to the given word. exchange

- A. give something and receive something of the same kind in return
- B. the condition of prospering; success or wealth
- C. any material, substance, etc., that can be used as food

D. a systematic series of mechanized or chemical operations that are performed in order to produce something

## Choose the correct definition to the given word. *unfettered*

- A. not confined or restricted
- B. giving rise or likely to give rise to public disagreement
- C. a person who disagrees with or resists a proposal or practice
- D. a person who advocates a theory, proposal, or course of action

## Choose the correct answer. Watch me ... the fence.

- A. jumping
- B. jumped
- C. to jump
- D. had jumped

Choose the correct answer. We live on a very beautiful planet....

- A. on the Earth
- B. in the Earth
- C. in the Saturn
- D. on the Mercury

**Choose the correct answer.** There are hundreds ... factories in these rivers and millions ...people live ...them.

- A. of/ of/ along
- B. in/on/ of
- C. of/of/about
- D. in/ on/ along

## Choose the correct answer. Pollution....

A. is the process of polluting water, air, or land, especially with poisonous chemicals.

B. is the process of cleaning water, air, or land, especially with poisonous chemicals.

C. is the process of boiling water with poisonous chemicals.

D. is not the process of polluting water, air, or land, especially with poisonous chemicals.

**Choose the correct answer.** A: What is the most serious disadvantage of living in a city? B: The most serious one is ... the city is too noisy.

A. that

B. about which

C. because of the fact that

D. which is

**Choose the correct answer.** Ecology is the study of the ways in which ... depend upon each other and upon their surroundings.

A. organisms

B. organizers

C. people

D. everything

Choose the correct wish sentence. Our classroom doesn't have any windows

A. I wish our classroom had windows.

B. I wish our classroom has windows.

C. I wish our classroom will have windows.

D. I wish our classroom has no windows.

**Choose the correct answer.** If I ... my entrance exams I ... the happiest man in the world.

A. pass / shall be

B. passed / am

C. passed / would have been

D. will pass / be

Choose the correct answer. We ... to see you next Sunday, if I ... well.

- A. will come / get
- B. come / get
- C. comes / will get
- D. will come / will get

## **Choose the appropriate definition.** *confidence*

- A. firm trust
- B. do something
- C. laugh at someone
- D. weak trust

## ASSIGNMENTS FOR INDEPENDENT WORK



## Assignments

1. Look at the picture and write a short information about it.



2. Give your own opinion on the question. What is drug abuse?



### Assignments

1. Look at the picture and write a short information about it.



2. Give your own opinion on the question. What steps are being taken to quit the terrorism?



Topic 3. Crime and punishment.

## Assignments

1. Look at the picture and write your opinion about it.



2. Give your own opinion on the question. What steps are being taken to quit the crime in your society?



## Assignments

1. Look at the picture and write a short information about it.



- 3. Give your own opinion on the question. What steps are being taken to save the surrounding?
- 4. Write an essay about causes and effects of ecological problems.



**Topic 5. Ethnic conflicts.** 

## Assignments

1. Look at the picture and write a short information about it.



2. Give your own opinion on the question. What steps are being taken to prevent the ethnic conflicts?

- 3. Make a presentation on the topic "Ethnic conflicts"?
- 4. Write an essay about causes and effects of ethnic conflicts.



**Topic 6. Public Health System.** 

## Assignments

1. Look at the picture and write a short information about it.



**Emphasis on Population Wellness** 

2. Look at the chart below and try to describe it using graph vocabulary.

#### Most Harmful to Nutritional Health?



3. Project. Conduct a survey among your course mates about their diet, make a chart or table and have your course mates describe it.



**Topic 7. Medicine in the East andWest.** 

#### Assignments

1. Look at the picture and write your own opinion.



2. Give your own opinion on the question. What are the advantages and disadvantages of the traditional medicine and folk-medicine?



## Topic 8. Healthy and unhealthy food.

### Assignments

1. Make a list of healthy and unhealthy food. Write about them giving reasons.

2. Look at the picture and write if you agree or not with the information. Why (not)?

The I	Best:	The Worst:
	Green Leafy Vegetables (e.g. kale, collard greens, mustard greens, spinach, lettuce)	Sweetened Dairy Products (e.g. ice cream, low-fat ice cream, frozen yogurt)
	Non-Leafy Cruciferous Vegetables (e.g. broccoli, cauliflower, Brussels sprouts, cabbage)	Trans Fat Containing Foods (e.g. stick margarine, shortening, fast foods, commercial baked goods)
100	Berries	Oonuts
被	Beans	Sausage, Hot Dogs, and Luncheon Meats
2	Mushrooms	Smoked Meat, Barbecued
1	Onions	Raised Red Meat
	Seeds (e.g. flax, chia, hemp, sesame, sunflower, pumpkin)	Fried Foods including Potato Chips and French Fries
	Nuts (e.g. walnuts, pistachios,	Highly-salted Foods
	pine nuts, almonds)	Soda
C.	Tomatoes	White Sugar
	Pomegranates	
		white Flour

3. Look at the chart below and try to describe it using graph vocabulary.



## the mankind.

#### Assignments

1. Look at the picture and write a brief information on it.



2. Give your own opinion on the question. What is the role of technology in the society and in the everyday life of people today?

3. Look at the line graph below and try to describe it using graph vocabulary.





Assignments

1. Look at the picture and write a brief information on it.



1. Look at the picture and write whether you approve it or not. Why?





### Assignments

1. Look at the picture and write a brief information on it.



2. Make the list of advantages and disadvantages of using IT and internet in our daily life. Give reasoning and support your idea with examples.



**Topic 12. Pollution.** 

## Assignments

1. Look at the picture and write a brief information on it.



2. Give your own opinion on the questions. What causes pollution and what effects can it have? What prevention and solution strategies can you offer? Present your strategies with slides.



**Topic 13. Unemployment.** 

## Assignments

1. Look at the picture and state your opinion on it.



2. Write about causes and effects of unemployment. Support your idea with examples.

3. Answer the question in detail. What would you do if you were unemployed?



**Topic 14. Patriotism.** 

## Assignments

1. Continue the following list with your own ideas.

15 Batel	ation means lought of a new on far
his ov	n, nation or for the leaders of the
2) In pa their l	triotism many people dedicate ife to serve their nation.
3) Man about	y people think that patriotism is all sacrificing the life for their country.
4) But t for th	he real sense of patriotism is living e betterment of your country.
5) In the	e past many people had spent their r the betterment of the country.
6) A per called	son who follows patriotism is a patriot; a patriot always supports
his na	tion.
7) Feeli closer	ng of patriotism brings people and inspires them to act together.
8) Thos	e who are true patriots work ds pation building in whichever
form	they can.
9) Now	a day's youth do not understand
the in be exp	portance of patriotism which must plained to them.
10) Elde	er people, schools, colleges and
institu	itions must come forward to make understand about patriotism.
202023	© feating taryor.com

2. Answer the question in detail. How do you express your love to your mother land?

3. Make a presentation on the topic "I love my home town".



**Topic 14. Culture and enlightenment.** 

### Assignments

1. Do you agree with the quotation? Why (not)?



2. Answer the question in detail. What would happen if the world were full of ignorant people?

3. Make presentation on the topic "Languages, nationalities and cultures in my country".



**Topic 15. Tolerance.** 

### Assignments

1. What types of tolerance do you know?

2. Learn the tolerance program below. Work out your own one and present your program with slides.



3. Give definitions of the following words.



#### **TEXTS FOR ADDITIONAL READING ABOUT ENGINEERING**

#### Some interesting facts about Agricultural Engineering:

- Biology and engineering overlap for Genetic Engineers, who must combine the mindset of an engineer with knowledge of microbiology, biochemistry and biophysics. They use specialized tools created by teams of highly skilled engineers to do their work.
- Chemical Engineers create compounds that nourish or protect crops.
- Mechanical Engineers design and build equipment to harvest and process food.
- Environmental Engineers ensure that soil, water and land use is managed with sustainability in mind.

Engineering is a broad discipline that is often broken down into several subdisciplines. Although an engineer will usually be trained in a specific discipline, he or she may become multi-disciplined through experience. Engineering is often characterized as having four main branches: chemical engineering, civil engineering, electrical engineering, and mechanical engineering.

#### **Text 1. Chemical engineering**

Chemical engineering is the application of physics, chemistry, biology, and engineering principles in order to carry out chemical processes on a commercial scale, such as the manufacture of commodity chemicals, specialty chemicals, petroleum refining, microfabrication, fermentation, and biomolecule production.

*Fuelling innovation.* Chemical Engineers combine scientific knowledge of chemistry, physics and microbiology with an engineering mind frame and skill set. They ensure chemicals are properly produced, utilised and recycled. Some Chemical Engineers also work to create new chemical compositions and materials.

#### Chemical Engineers work in many industries, including:

- Healthcare and medicine
- Transport
- Waste management
- Food production.

### In the future, Chemical Engineers will help create:

- More efficient systems for fuel development
- Artificial blood
- Powerful medicine
- The next generation of plastics and biodegradable chemical-based materials.

As a Chemical Engineer you will help design and create things that will fuel a better future. Many industries will be open to you and you will apply your knowledge in ways that suit your interests and goals.

## Text 2. Civil engineering

Civil engineering is the design and construction of public and private works, such as infrastructure (airports, roads, railways, water supply, and treatment etc.), bridges, tunnels, dams, and buildings.<sup>[66][67]</sup> Civil engineering is traditionally broken into a number of sub-disciplines, including structural engineering, environmental engineering, and surveying. It is traditionally considered to be separate from military engineering.

*Growing our cities.* Civil Engineers build the world's cities. They work with architects, construction companies and scientists to ensure that we live and work in safe, efficient and sustainable environments.

## **Civil Engineers take care of:**

The structures we rely on, from small buildings to skyscrapers

- Roads and bridges
- Systems for water, gas, electricity and telecommunications.

## Future Civil Engineering projects will:

- make even larger skyscrapers possible, allowing many people to collaborate and work in a single place
- allow for new modes of transportation to be implemented
- make recycling waste and using resources such as water and electricity more efficient
- cater to new technologies such as self-driving cars.

As a Civil Engineer, you will guide the growth of the town or city you choose to live and work in. You may see new types of trains connecting people like never before, or help transition from petrol to electric vehicles.

#### **Text 3. Electrical engineering**

Electrical engineering is the design, study, and manufacture of various electrical and electronic systems, such as broadcast engineering, electrical circuits, generators, motors, electromagnetic/electromechanical devices, electronic devices, electronic circuits, optical fibers, optoelectronic devices, computer systems, telecommunications, instrumentation, control systems, and electronics.

*High-powered skills.* Electrical Engineers utilise knowledge of electricity and electromagnetism to design and build all manner of electric and electronic devices. Many specialities are open to electrical engineers, as the discipline encompasses all stages of power consumption.

### **Electrical Engineers help build:**

- Power plants and new technology for harnessing and distributing power
- Telecommunications platforms and delivery systems
- Power and lighting for houses, offices and municipal buildings
- Electronic components of computers and other tools (see electronics engineer below).

### In the future, Electrical Engineering will provide:

- Faster and more efficient wireless charging systems
- New types of electric cars
- The next generation of solar technology for a greener power system.

As an Electrical Engineer you will help power the world. You will work with other engineers to make all the things modern life requires faster, smaller and better for the environment.

#### **Text 4. Mechanical engineering**

Mechanical engineering is the design and manufacture of physical or mechanical systems, such as power and energy systems, aerospace/aircraft products, weapon systems, transportation products, engines, compressors, powertrains, kinematic chains, vacuum technology, vibration isolation equipment, manufacturing, robotics, turbines, audio equipments, and mechatronics.

*Industry, interest and infinite possibilities.* Mechanical Engineers are responsible for designing and building mechanical systems and machines of all types. They build tools and equipment that make the world run. Modern lifestyles depend on the continued achievements of Mechanical Engineers.

#### **Mechanical Engineers create:**

- Manufacturing facilities that house large machines to serve many industries
- Transport systems such as cars, trains, ships and aircraft
- Specialised tools and equipment for both personal use and important fields such as healthcare.

#### The mechanics of the future include:

- Perfecting forms of travel such as high speed rail and vertical takeoff/landing aircraft
- Robotics created by Mechanical Engineers specialising in mechatronics (see below)
- Machines that harness the power of the tides
- Highly specialised tools that are compact and efficient for applications ranging from art to medicine and beyond, to experiments done in space.

As a Mechanical Engineer you will choose how to innovate - big or small, humanpowered or AI-driven. The machines that make the future a better place will be created by your hands.

### **Text 5. Aeronautical engineering**

Aeronautical Engineers focus on the design and development of aircraft and flight systems. They are the terrestrial branch of aerospace engineering while astronautical engineering is the non-terrestrial branch.

#### **Aeronautical Engineers build:**

- Aircraft like planes and helicopters
- Propulsion systems such as jet engines and rockets
- Avionics systems that help aircraft function
- Simulations to train pilots of all types.

### The future of Aeronautical Engineering includes:

- Faster planes that run on new types of fuel
- New propulsion systems that make flying cheaper and safer
- Technology that allows for streamlined vertical takeoff and landing.

As an Aeronautical Engineer you will help people travel in safety and comfort. You'll also have opportunities to work in defence, keeping Australia's skies clear of danger.

### **Text 6. Biomedical Engineering**

**Building health and happiness.** Biomedical Engineers bridge two important fields: engineering and medicine. Their creations are used at all stages of the healthcare process. They design and build diagnostic tools used to understand the problems patients have, monitor important health metrics and help practitioners with therapeutics.

### We can thank Biomedical Engineers for:

- Research equipment used to study ailments and find cures
- X-ray and CAT scan machines that let doctors see inside the human body
- Equipment and implants that improve the lives of the disabled.

### What's next?

- Improved imaging techniques for faster diagnosis of illnesses
- Refined bionic implants that are more accessible to all who need them
- An even better understanding of the human body.

As a Biomedical Engineer you will empower people who improve and save lives. You will create the tools used by scientists and doctors to cure the afflictions of humankind. Together with top researchers and surgeons you will build a healthier, happier future.

#### **Text 7. Electronics Engineering**

*Gadgets, gizmos and great ideas.* An Electronics Engineer creates the hardware found inside of computers, gaming consoles, mobile phones and many other devices. Electronics is the foundation of modern technology. The engineers who design and build electronic components ensure our daily lives run smoothly.

#### **Things Electronics Engineers make possible:**

- Circuit design for modern tools and appliances
- Functionality of important mechanical engineering projects such as those for healthcare
- High-end software that need more computing power to run properly.

#### **Future electronic innovation:**

- Shrinking headsets and glasses for virtual reality and augmented reality
- Making the Internet even faster
- Creating super-fast quantum computers.

As an Electronics Engineer you will work with product designers or craft your own inventions. With the help of collaborators, such as software and mechatronics engineers, you will create and maintain the tools of the future.

#### **Text 8. Environmental Engineering**

*Building a better world.* Environmental Engineers protect both people and the environment. They build solutions to problems related to resource and waste management such as water treatment, C02 emissions and air pollution. When structures and infrastructure are designed, Environmental Engineers assess their impact and add to the process accordingly.

#### **Environmental Engineers conserve resources by:**

- Planning where to harvest solar energy most efficiently
- Assessing the impact of wind energy harvesting on the environment to place wind farms in the best place
- Desalinating and processing water with efficacy and creating wastewater treatment plans.

### **Future projects for Environmental Engineers:**

- Offsetting carbon emissions to counteract damage to the environment
- Creating new methods for mining and drilling of resources that have far less impact on the environment
- Ecosystem management for expanding cities and suburban zones
- Assisting other branches of engineering with the management of conditions brought about by climate change.

As an Environmental Engineer you will ensure the safety of people, animals, plants and the environment. New, better methods of supplying Australia with the things people need - water, food and ways to manage waste - will come from the minds and creations of Environmental Engineers.

## **Text 8. Industrial Engineering**

*Mastering methods and marvels.* Industrial Engineers apply engineering skills to the management of complex systems. Their job is to make the use of resources such as time, industrial materials, and money optimised.

### An Industrial Engineer is responsible for:

- Research leading to expertise of complex systems with a view to improve them
- Quality assurance and control of business practices and processes
- Workplace safety and wellness.

## In the future, Industrial Engineers will:

- Manage the transition from large fabrication machines to smaller 3D printing oriented solutions
- Decide which tasks in a factory should be automated with robotics and mechatronics and which should remain human-powered

• Be at the forefront of entirely new industries as technology and capability advances.

As an Industrial Engineer you will apply engineering skills to businesses. You will view the production and distribution facilities and operations of a business much like a Mechanical Engineer views an engine; you will be a master of improvement in a rapidly changing future.

#### **Text 9. Marine Engineering**

*Deep insights and fluid thinking.* Marine Engineers design and build ships and structures that allow us to travel, explore and gain resources from the world's oceans.

#### Marine Engineering includes:

- Making ships work, from propulsion and steering to functionality such as ventilation, heating and power
- Creating floating structures such as oil rigs
- Building manned and unmanned submarine vessels for deep sea exploration.

#### The future of Marine Engineering includes:

- Building structures that float and generating energy from ocean waves
- Designing ships that cause less pollution
- Working with mechatronics and Environmental Engineers to create machines that can rid our oceans of plastic waste
- Building new types of submarines and probes to explore the deepest parts of the ocean.

As a Marine Engineer you will help make future advancements that both protect and harness the power of the ocean. You will create tools for exploring the final terrestrial frontier, the ocean. Humanity has seen a mere 5% of it. You can help uncover the secrets of the remaining 95%.

#### **Text 10. Materials engineering**

*Surface with purpose.* Materials Engineers combine engineering with scientific knowledge to produce and enhance special materials. Chemistry, physics, electronics

and other areas of knowledge are all valuable for those seeking methods for creating strong and efficient materials.

### A few exciting recent advances in materials include:

- Improving carbon fibre creation, allowing it to be used as a strong, lightweight material in sports equipment, bicycles, tools and musical instruments
- The development of plant based fibres that can be cured and hardened as a sustainable replacement for wood
- The development of ultra lightweight materials such as aerogels and metal foams
- The emergence of tissue engineering and biomaterial design.

### In the future, Materials Engineers will create:

- Lightweight materials used in the construction of spacecraft and space stations
- Metals that are light yet ultra strong for all manner of mechanical applications
- New materials for efficient storage of energy and information.

As a Materials Engineer you will help shape the future by creating the next generation of 'smart substances'. When humans can survive in deeper space, generate power just from walking down the street and survive strong impacts with lightweight body army it will be due to the work of Materials Engineers.

## **Text 11. Mechatronics Engineering**

*Our robotic reality.* A Mechatronics Engineer uses skills in both electronic and mechanical engineering alongside Software Engineers and other specialists to create machines capable of performing complex tasks. When you think of a future where drones deliver your pizza by air and cars drive themselves you're imagining the work of Mechatronics Engineering.

### Mechatronics Engineers are interested in:

- Mechanics and robotics
- Computerised systems and automation
- Artificial Intelligence (AI)
- Mimicking natural systems.

## In the future, Mechantronics Engineers will:

- Design and build robots that help humans in all areas of life
- Provide Australia's workforce with more free time due to increased automation of tasks
- Help keep our cities clean with small, autonomous waste management machines.

As a Mechatronics Engineer you will develop the systems that usher in a new age of humanity. Dreams of the future become possibilities of the now when engineers take ideas from science fiction to science fact.

## **Text 12. Nano-Engineering**

*It's the little things that count.* A nanometre is one billionth of a metre and Nano-Engineers design and build on this incredibly small scale. They work in many fields and as tools for their discipline become more refined their reach will become even wider.

### Nano-Engineering deals with creating technology for:

- Advanced microscopy and imaging techniques that help scientists gain a better understanding of biology, chemistry and physics
- DNA synthesis
- The creation of advanced materials
- Increased energy efficiency for heating and cooling systems, batteries and more.

### In the future, nanotechnology could:

- Be the basis for advanced medicine and treatments
- Allow for the creation of complex hardware for advanced mechatronics applications.
- Go even smaller! The principles of working at the nano scale will be applied to working at pico (atomic) and femto (subatomic) scales.

As a Nano-Engineer you will create solutions that won't be seen but will be valued by the industries you choose to work in. With nano-tech, we take incredibly small steps towards a boundless future.

#### **Text 13. Software Engineering**

*The mind of the machine.* Software Engineers connect two areas of practice that are crucial for technological advancement: engineering and computer programming. By utilising the principles of an engineer with coding skills, Software Engineers gain a deep theoretical knowledge of computer systems that enables them to learn current tools and practices with ease.

#### Software Engineers are responsible for:

- The creation of complex computer programs that make modern life convenient and connected
- The design and implementation of firmware for everything from mobile phones and cash registers to the computers in cars and aeroplanes
- Pushing the boundaries of computation and driving hardware demands that lead to increased capability and productivity for computer users.

#### The future of software includes:

- Programs that use historical data and real-time climatic analysis to more accurately predict weather patterns
- Artificial Intelligence (AI) systems that will help people find information, complete tasks and even solve complex problems that humans cannot
- The creation of intricate virtual environments where people won't only play games but will also work, research and more.

As a Software Engineer you will do more than code, you will create the systems that define the future of communication, industry and entertainment.

#### **Text 14. Space Engineering**

*Build beyond the sky.* Space Engineering requires the skills of many different types of engineers. That's because the machines built for outer space – satellites, space stations, shuttles and rockets – need fuel, special materials, and more.

#### **Space Engineering facts:**

• There are many differences between earth and space to consider such as: extreme temperatures, radiation, microgravity and the vacuum of space.

- Astronauts don't just rely on engineers, they often are engineers!
- Satellites used for communication, media and defense are products of Space Engineering.

### A star-bright future for Space Engineers:

- Companies such as Space X are privatising the 'space industry' and hope to get humans to Mars by 2020.
- Fabricating tools in space will allow for machines to be built that could never be built elsewhere due to gravity.
- Imaging will be further refined, allowing us to see deeper into space.
- Tools used in space for research will provide insights into the nature of the universe.

As a Space Engineer you will help explore our solar system and beyond, launch equipment for new services and technology and study our planet in new ways. The future is as vast as outer space for those who choose to work in Space Engineering.

#### Grammar reference

Simple Tenses in the Active and Passive Voices Present Simple

Active	Passive	Usage
<ul> <li>(a) Water consists of hydrogen and oxygen.</li> <li>(b)The average person breathes 21,600 times a day.</li> <li>c) The world is round.</li> </ul>	Water is used in everyday life. Soil is cultivated for a good crop.	The simple present says that something was true in the past, is true in the present, and will be true in the future. It expresses general statements of fact and timeless truths.

(d) I study for two hours	I often invited to	The simple present is used
every night.	conferences.	to express habitual or
(e) I get up at seven every morning.	Bread is eaten every day.	everyday activities.
(f) He always eats a sandwich for lunch.		

#### Active Passive Usage (a) I walked to school This house was built last The simple past indicates that an activity or situation yesterday. year. began and ended at a (b)John lived in Paris This car was sold three days particular time in the past. for ten years, but now ago. he lives in Rome. © I bought a new car three days ago. (d) Rita stood under a When a strange noise was If a sentence contains when tree when it began to heard, Rita got up to and has the simple past in rain. investigate. both clauses, the action in the when clause happens (e)When Mrs. Chu When the cup was dropped, first. In (d): 1st: The rain heard a strange noise, the coffee spilled on my lap. began. 2nd: She stood under she got up to a tree. investigate.

### Past Simple

## Progressive Tenses in the Active and Passive Voices Present Progressive Tense

Active	Passive	Usage

(a)John is sleeping right now.	Dinner is being made now.	The present progressive
(b)I need an umbrella because it is raining. ©The students are sitting at their desks right now.	The lecture is being delivered for the students now.	expresses an activity that is in progress at the moment of speaking. It is a temporary activity that began in the past, is continuing at present, and will probably end at some point in the future.
(d) I am taking five courses	A new school is being built	Often the activity is of a
this semester.	in our street.	general nature: something
<ul><li>(e) John is trying to improve his work habits.</li><li>(f) Susan is writing another book this year.</li></ul>		generally in progress this week, this month, this year. Note (1): The sentence means that writing a book is a general activity Susan is engaged in at present, but it does not mean that at the moment of speaking she is sitting at her desk with pen in hand.

Past Progressive Tense

Active	Passive	Usage

(a)I was walking down the	When I came home dinner	In (g):lst: I was walking
street when it began to rain.	was being cooked.	down the street.
(b)While I was walking down the street, it began to rain.	While the student was being examined someone entered the room.	2nd: It began to rain. Both actions occurred at the same time, but one action
©Rita was standing under a	Last year at this time a	began earlier and was in
tree when it began to rain.	theatre was being built in	progress when the other
(d) At eight o'clock last	our city.	action occurred.
night, I was studying.		In (j): My studying began
(e) Last year at this time, I was attending school.		before 8:00, was in progress at that time, and probably continued.
(f) While I was studying in	While the telegramme was	Sometimes the past
one room of our apartment,	being sent by the e-mail on	progressive is used in both
my roommate was having a	this computer other	parts of a sentence when two
party in the other room.	computers were being	actions are in progress
	repaired.	simultaneously.

## Perfect Tenses in the Active and Passive Voices Present Perfect

Active	Passive	Usage
(a) They have moved into a	A new apartment has	The present perfect
new apartment.	been built in our	expresses the idea that
(b) Have you over visited	street.	something happened (or
(b) Have you ever visited	D 11	never happened) before
viexico?	Bread has never	now, at an unspecified lime
(c) I have never seen snow.	been sold in this store.	in the past. The exact time it
	The letter has not	happened is not important.
(d) I have already seen that movie.	been sent yet.	If there is a specific mention
	Have you ever been	of time, the simple past is
(e) Jack hasn't seen it yet.	invited to the scientific	used: They moved into a
(f) Arm started a	conference?	new apartment last month.
letter to her parents last		Notice in the examples: the
week, but she still hasn't		adverbs ever, never, already,

finished it.		yet, still, and just are
$(\sigma)$ Alex feels had He has		frequently used with the
just heard some bad news.		present pe rfect.
(h)We have had four tests	A lot of students have	The present perfect also
so far this semester.	been examined so far	expresses the repetition of
(i) I have written my wife a letter every other day for the last two weeks.	today. One faculty has been opened since he	an activity before now. The exact time of each repetition is not important.
(j) I have met many	entered the institute.	Notice in (h): so far is
people since I came here in		present perfect
June.		
(к) I have flown on an airplane many times.		
(1) They have been	Four books have been	The present perfect, when
---	--	---
here since seven o'clock.	written since September.	used with for or since, also
<ul> <li>( (m) We have been here for two weeks.</li> <li>(n) I have had this same pair of shoes for three years.</li> <li>(o) I have liked cowboy movies ever since I was a child.</li> <li>(p) I have known him for many years.</li> </ul>	English has been taught at this school for the last ten years.	expresses a situation that began in the past and continues to the present. * In the examples, notice the difference between since and for: since + a particular time for + a duration of time

Past Perfect

Active	Passive	Usage
<ul> <li>(a) Sam had already left by the time Ann got there.</li> <li>(b) The thief simply walked in. Someone had forgotten to lock the door.</li> </ul>	Dinner had been made by the time the guests came. Mother got angry. Because the dishes had been left unwashed.	The past perfect expresses an activity that was completed before another activity or time in the past.
© Sam had already left when Ann got there.	When he came into the class room the theme had already been explained.	In (c): First: Sam left. Second: Ann got there.*
(d) Sam had left before	The theme had been	If either before or after is
Ann got there. (e) Sam left before Ann got there.	students left the class room.	past perfect is often not necessary because the time
(f) After the guests had left, I went to bed.	After the theme had been explained the students left the class room.	clear. The simple past may be used, as in (e) and (g). Note: (d) and (e) have the
(g) After the guests left, I went to bed.		same meaning; (f) and (g) have the same meaning.

# Countable and non countable nouns

I bought a	a chair. Sam b	ought three	Chair is a count noun; chairs are items that
chairs.			can be counted. Furniture is a noncount
We bougl We bougl We bougl	nt some furnit nt some furnit nt a furniture.	ure. incorrect: ures. incorrect:	noun. In grammar, furniture cannot be counted.
	a chair one	0 chairs* two	A count noun:
COUNT	chair	chairs some chairs a lot of	may be preceded by alan in the singular.
NOUN		chairs many chairs	takes a final -sl-es in the plural.
	0 furniture*		A noncount noun:
NONCO UNT	some furniture a lot of		is not immediately preceded by alan. has no plural form, so does not take a final
NOUN	furniture		-sl-es.
	much furniture		

### Non-count nouns

(a) I bought some chairs, tables, and	Many noncount nouns refer to a "whole"
desks. In other words, I bought some	that is made up of different parts.
furniture.	In (a): furniture represents a whole group
(b) I put some sugar in my coffee.	of things that is made up of similar but.
	separate items.
	In (b): sugar and coffee represent whole masses made up of individual particles or elements.1

(c) I wish you luck.	Many noncount nouns are abstractions. In
	(c): luck is an abstract concept, an abstract "whole " It has no physical form: you
	can't touch it. You can't count it.
(d) Sunshine is warm and cheerful.	A phenomenon of nature, such as sunshine, is frequently used as a noncount noun, as in (d).
(e) noncount: Ann has brown hair.	Many nouns can be used as either
count: Tom has a hair on his jacket.	noncount or count nouns, but the meaning is different; e.g., hair in (e) and light in (f).
(f) noncount: I opened the curtains to let in some	(Dictionaries written especially for learners of English as a second language
light.	are a good source of information on
count: Don't forget to turn off the light before you go to bed.	count/noncount usages of nouns.)

\*To express a particular quantity, some noncount nouns may be preceded by unit expressions: a spoonful of sugar, a glass of water, a cup of coffee, a quart of milk, a loaf of bread, a grain of rice, a bowl of soup, a bag of flour, a pound of meat, a piece of furniture, a piece of paper, a piece of jewelry.

### Some commom non-count nouns

This list is a sample of nouns that are commonly used as noncount nouns. Many other nouns can also be used as noncount nouns.

(a) whole GROUPS made up of SIMILAR items: baggage, clothing, equipment, food, fruit, furniture, garbage, hardware, jewelry, junk, luggage, machinery, mail, makeup, money I cash!change, postage, scenery, traffic, etc.

(b) fluids: water, coffee, tea, milk, oil, soup, gasoline, blood, etc.

© SOLIDS: ice, bread, butter, cheese, meat, gold, iron, silver, glass, paper, wood, cotton, wool, etc.

(d) GASES: steam, air, oxygen, nitrogen, smoke, smog, pollution, etc.

(e) particles: rice, chalk, corn, dirt, dust, flour, grass, hair, pepper, salt, sand, sugar, wheat, etc.

(f) abstractions:

-beauty, confidence, courage, education, enjoyment, fun, happiness, health, help, honesty, hospitality, importance, intelligence, justice, knowledge,

laughter, luck, music, patience, peace, pride, progress, recreation, significance, sleep, truth, violence, wealth, etc.

-advice, information, news, evidence, proof, etc.

—time, space, energy, etc.

-homework, work, etc.

—grammar, slang, vocabulary, etc.

(g) languages: Arabic, Chinese, English, Spanish, etc.

(h) FIELDS OF STUDY: chemistry, engineering, history, literature,

mathematics, psychology, etc.

(i) recreation: baseball, soccer, tennis, chess, bridge, poker, etc.

(j) activities: driving, studying, swimming, traveling\* walking, etc. (and other gerunds)

(k) natural phenomena: weather, dew, fog, hail, heat, humidity, lightning, rain, sleet, snow, thunder, wind, darkness, light, sunshine, electricity, fire, gravity, etc.

(a) song-songs	The plural of most nouns
	is formed by adding final
	-S.
(b) box-boxes	Final -es is added to
	nouns that end in -sh, -
	ch, -s, -z, and -x
(c) baby-babies	The plural of words that
	end in a consonant + -y
	is spelled -ies
(d)man-men, ox-oxen, tooth-teeth, woman-women,	The nouns in (d) have
foot-feet, mouse-mice, child-children, goose-geese, louse-	irregular plural forms
lice	that do not end in -s.
(e) echo-echoes potato-potatoes hero-heroes tomato-	Some nouns that end in -
tomatoes	o add -es to form the
	plural.
(f) auto-autos photo-photos studio-studios ghetto-ghettos	Some nouns that end in -
piano-pianos tatoo-tatoos kangaroo-kangaroos radio-radios	o add only -s to form the
video-videos kilo-kilos solo-solos zoo-zoos memo-memos	plural.

Plural of nouns. Regular and irregular plural nouns

(g) memento-mementoes /mementos volcano-	Some nouns that end in -
volcanoes/volcanos mosquito-mosquitoes/mosquitos zero -	o add either -es or -s to
zeroes/zeros tornado - tornadoes/tornados	form the plural (with -es
	being the more usual
	plural form).
(h) calf-calves, life-lives, thief-thieves, half-halves, loaf-	Some nouns that end in -
loaves, wolf-wolves, knife-knives, self-selves, scarf-	f or -fe are changed to -
scarves/scarfs, leaf-leaves, shelf-shelves	ves to form the plural.
( i) belief-beliefs,cliff-cliffs, chief-chiefs, roof-roofs	Some nouns that end in - f simply add -s to form the plural.
(j) one deer-two deer, one series-two series, one fish-two	Some nouns have the
fish, one sheep-two sheep, one means-two means, one	same singular and plural
shrimp-two shrimp, one offspring-two offspring, one	form: e.g., One deer is
species-two species	. Two deer are
(k) criterion-criteria (o) analysis-analyses	Some nouns that English
phenomenon-phenomena basis-bases	has borrowed from other
prenomenon prenomena busis buses	languages have foreign
crisis-crises (1) cactus-cacti-cactuses , , , .,	plurals.
hypothesis-hypotheses fungus-fungi	
, , . oasis-oases nucleus-nuclei , .	
parenthests-parentheses stimulus-stimuli ,	
,, , ,, , , thesis-theses syllabus-syllabii syllabuses	
, . , . r , ,, , (p) bacterium-bacteria (m) formula-formulae /formulas . , .	
, , curriculum-curricula vertebra-vertebrae , , ,	
datum—data	
(n) appendix-appendices!appendixes medium-media	
index-indices /indexes memorandum-memoranda	

### Infinitive

(a) He came here in order to study	In order to is used to express purpose. It
English.	answers the question "Why?" In order is
(b) He came here to study English.	often omitted, as in (b).
© incorrect: He came here for studying	To express purpose, use (in order) to, not
English.	for, with a verb.*
(d) incorrect: He came here for to study English.	
(f) I went to the store for some bread.	For can be used to express purpose, but
(g) I went to the store to buy some bread.	it is a preposition and is followed by a noun object, as in (f).

Exception: The phrase be used for expresses the typical or general purpose of a thing. In this case, the preposition for is followed by a gerund: A saw is used for cutting wood. Also possible: A saw is used to cut wood.

However, to talk about a particular thing and a particular situation, be used + an infinitive is used: A chain saw was used to

cut (NOT for cutting) down the old oak tree.

Reference list of verbs followed by infinitive

Verbs with a bullet (•) can also be followed by gerunds.			
A. VERBS	FOLLOWED IMMEDIATE	LY BY AN I	NFINITIVE
1. afford	I can't afford to buy it.	24. love'	I love to go to operas.
2. agree	They agreed to help us.	2.5. manage	
3. appear	She appears to be tired.	26. mean	I didn't mean to hurt your
4. arrange	I'll arrange to meet you at	27. need	I need to have your
	airport.	28. offer	They offered to help us.
5. ask	He asked to come with us.	29. plan	I am planning to have a
6. can't	I can't bear to wait in long	30. prefer*	Ann prefers to walk to
7. beg	He begged to come with us.	31. prepare	We prepared to welcome
8. begin	It began to rain.	32. pretend	He pretends not to
9. care	I don't care to see that	33. promise	I promise not to be late.
10. claim	She claims to know a star.	34. refuse 35. regret'	I refuse to believe his story. I regret to tell you that you
11. consent	She finally consented to	36.	I remembered to lock the

12. continue	eHe continued to speak.	37. seem	That cat seems to be
13. decide	I have decided to leave on	38. can't	friendly. I can't stand to wait in long
14. demand	I demand to know who is	39. start'	It started to rain.
15. deserve	She deserves to win the	40. struggle	I struggled to stay awake.
16. expect	I expect to enter graduate	41. swear	She swore to tell the truth.
	the fall.	42. threaten	She threatened to tell my
17. fail	She failed to return the	43. try'	I'm trying to learn English.
	library on time.	44. voluntee	rHe volunteered to help us.
18. forget•	I forgot to mail the letter.	45. wait	I will wait to hear from
19. hate•	I hate to make silly	46. want	I want to tell you
20. hesitate	Don't hesitate to ask for my	47. wish	She wishes to come with
21. hope	Jack hopes to arrive next		
22. learn	He learned to play the		
23. like'	I like to go to the movies.		
B. VERBS	FOLLOWED BY A (PRO)N	OUN + AN I	INFINITIVE
48. advise	She advised me to wall until tomorrow.	61. instruct 62. invite	He instructed them to be Harry invited the Johnsons his party
50  ask	Lasked John to help us	63 need	We needed Chris to help us
50. ask	They begged us to come	05. liceu	the solution
52 anusa	Her lazinges soured her to	61 order	The judge ordered me to
52. cause	Her faziness caused her to	64. order	The judge ordered me to
55.	She chanenged me to race	os. permit	lete
5.4		(()	
54.	I couldn't convince him to	66. persuade	I persuaded him to come
	help.	67. remind	She reminded me to lock
55. dare	He dared me to do better done.	68. require 69. teach	Our teacher requires us to My brother taught me to
56.	He encouraged me to try	70. tell	The doctor told me to take
57. expect	I expect you to be on time.		pills.
58. forbid	1 forbid you to tell him.	71. urge	I urged her to apply for the
59. force	They forced him to tell the	72. want	I want you to be happy.
60. /ггге	She hired a boy to mow the	73. warn	I warned you not to drive
	lawn.		too fast.

### SOME COMMON ADJECTIVES FOLLOWED BY INFINITIVES

glad to (do it)			careful to	surprised to*
happy to	sad to*	prepared to	hesitant to	amazed to*
pleased to	upset to*	anxious to	reluctant to	astonished to*
delighted to	disappointe	eager to	afraid to	shocked to*
content to	proud to	willing to	likely to certain	stunned to*
relieved to	ashamed to	1.4	to	
lucky to		determined to		
fortunate to			motivated to	

# Using infinitive with too and enough

COMPARE	In the speaker's mind, the use of too
(a) That box is too heavy for Bob to	implies a negative result.
lift.	In (a): too heavy = It is impossible for Bob
(b) That box is very heavy, but Bob	to lift that box. In (b): very heavy = It is
$^{ m C}$ I am strong enough to lift that box. I	Enough follows an adjective, as in (c).
can lift it.	Usually enough precedes a noun, as in (d).
(d) I have enough strength to lift that	In formal English, it may follow a noun, as
box.	in (e).

# Passive and past forms of infinitive

	SIMPLE	PAST
ACTIV	to see	to have seen
PASSIV E	to be seen	to have been

PAST infinitive: to have + past	The event expressed by a past infinitive
participle	or past gerund happened before the time
(a) The rain seems to have stopped.	of the main verb. In (a): The rain seems now to have stopped a few minutes ago.
passive infinitive: to be + past participle	In (b): to be invited is passive. The
(b) I didn't expect to be invited to his party.	understood fey-phrase is "by him": I didn't expect to be invited by him.

past-passive infinitive: to have been +	In (c): Nadia was given a scholarship
past participle	last month by her government. She is
(c) Nadia is fortunate to have been given a scholarship.	fortunate. Nadia is fortunate now to have been given a scholarship last month by her government.

\*If the main verb is past, the action of the past infinitive happened before a time in the past:

The rain seemed to have stopped. = The rain seemed at six P.M. to have stopped before six P.M.

(a) I need to borrow some	
money.	Usually an infinitive follows need, as in (a) and (b).
(b) John needs to be told	
the truth.	
©The house needs to be	In certain circumstances, a gerund may follow need.
painted.	In this case, the gerund carries a passive meaning.
(d) The house needs	Usually the situations involve fixing or improving
(u) The nouse needs	something, (c) and (d) have the same meaning.
repairing.	

# Using passive infinitive following *need*

# Using zero infinitive and Participle I after the verbs of perception

(a) Isaw my friend run down the	Certain verbs of perception are followed by either the
street.	simple form or the -ing form of a verb. There is often
<ul><li>(b) I saw my friend running down the street.</li><li>(c) I heard the rain fall on the roof.</li></ul>	little difference in meaning between the two forms, except that the -ing form usually gives the idea of "while." In (b): I saw my friend while she was running down the street.
(e) When I walked into the	Sometimes (not always) there is a clear difference
apartment, I heard my roommate	between using the simple form or the -ing form. The
singing in the shower.	use of the -ing form gives the idea that an activity is
(f) I heard a famous opera star sing at the concert last night.	already in progress when it is perceived, as in (e):The singing was in progress when I first heard it. In (f): I heard the singing from beginning to end. It was not in progress when I first heard it.

# VERBS OF PERCEPTION FOLLOWED BY THE SIMPLE FORM OR THE INGFORM see, look at, hear, notice, feel, smell observe, listen to, watch

(a) My father lets me drive his	Let is followed by the simple form of a verb, not
car.	an infinitive. incorrect: My father lets me to
(b) I let my friend borrow my bicycle. © Let's go to a movie.	drive his car.
(d) My brother helped me wash	Help is often followed by the simple form of a
my car.	verb, as in (d).
(e) My brother helped me to wash my car.	An infinitive is also possible, as in (e). Both (d) and (e) are correct.

# Using zero infinitive after *let* and *help*

### Using infinitive after the causative verbs: have, get, make.

<ul><li>(a) I made my brother carry my suitcase.</li><li>(b) I had my brother carry my suitcase.</li><li>© I got my brother to carry my suitcase.</li></ul>	Make, have, and get can be used to express the idea that "X" causes "Y" to do something. When they are used as causative verbs, their meanings are	
FORMS X makes Y do something, (simple form) X has Y do something, (simple form) X gets Y to do something, (infinitive)	similar but not identical. In (a): My brother had no choice. I insisted that he carry my suitcase. In (b): My brother carried my suitcase because I asked him to. In (c): I managed to persuade my brother to carry my suitcase.	
Causative MAKE (d) Mrs. Lee made her son clean his room. (e) Sad movies make me cry.	Causative make is followed by the simple form of a verb, not an infinitive, (incorrect: She made him to clean his room.) Make gives the idea that "X" forces "Y" to do something. In (d): Mrs. Lee's son had no choice.	

<b>Causative</b> (f) I had the plumber repair the leak. (g) Jane had the waiter bring her some tea.	Causative have is followed by the simple form of a verb, not an infinitive, (incorrect: I had him to repair the leak.) Have gives the idea that "X" requests "Y" to do something. In (f): The plumber repaired the leak because I asked him to.
Causative <i>get</i> (h) The students got the teacher to dismiss class early. (I) Jack got his friends to play soccer with him after school.	Causative get is followed by an infinitive. Get gives the idea that "X" persuades "Y" to do something. In (h):The students managed to persuade the teacher to let them leave early.
PASSIVE CAUSATIVES (j) I had my watch repaired (by someone), (κ) I got my watch repaired (by someone).	The past participle is used after have and get to give a passive meaning. In this case, there is usually little or no difference in meaning between have and get. In (j) and ( $\kappa$ ): I caused my watch to be repaired by someone.

# **Conditionals Overview of basic verb forms used in conditional sentences**

SITUATION	IF-CLAUSE	RESULT CLAUSE	EXAMPLES
True in the	simple	simple present will +	If I have enough time, I watch TV
present/	present	simple form	every evening.
future			If I have enough time, I will watch
			TV later on tonight.
Untrue in the	simple past	would + simple form	If I had enough time, I would watch
present/			TV now or later on.
Untrue in the past	past perfect	would have + past	If I had had enough time, I would
		participle	have watched TV yesterday.

# Zero conditional and conditional I

(a) If I don't eat breakfast, I always get	In conditional sentences that express true,
hungry during class.	factual ideas in the present/future, the simple
(b) Water freezes or will freeze if the temperature reaches 32°F/0°C.	present (not the simple future) is used in the if-clause.
© If I don't eat breakfast tomorrow morning, I will get hungry during class.	The result clause has various possible verb forms. A result clause verb can be:the simple present, to express a habitual activity or
(d) If it rains, we should stay home.	situation, as in (a).
If it rains, I might decide to stay home.	either the simple present or the simple future, to express an established, predictable fact or
If it rains, we can't go.	general truth, as in (b).
If it rains, we're going to stay home.	the simple future, to express a particular
(e) If anyone calls, please take a message.	activity or situation in the future, as in (c).
	modals and phrasal modals such as should, might, can, be going to, as in (d).* an imperative verb, as in (e).
(f) If anyone should call, please take a	Sometimes should is used in an if-clause. It
message.	indicates a little more uncertainty than the use of the simple present, but basically the meaning of examples (e) and (f) is the same.

# **Conditional II**

(a) If I taught this class, I wouldn't	In (a): In truth, I don't teach this class.
give tests.	In (b): In truth, he is not here right now.
(b) If he were here right now, he would help us.	In (c): In truth, I am not you.
© If I were you, I would accept their invitation.	Note: Were is used for both singular and plural subjects. Was (with I, he, she, it) is sometimes used in informal speech: If I was you, I'd accept their invitation.

COMDADE	[n (d). The meeting wants a part has the arm?t
COMPARE	in (d): The speaker wants a car, but doesn't
(d) If I had enough money I would	have enough money. Would expresses
(u) If I had chough money, I would	desired or predictable results.
buy a car.	- / · · · · ·
(e) If I had enough money I could	In (e): The speaker is expressing one
(c) If I had chough money, I could	possible result. Could = would be able to.
buy a car.	Could expresses possible options.
Conditional III(a) If you had told me	In (a): In truth, you did not tell me about it.
about the problem, I would have	In (b): In truth they did not study
helped you.	
	Therefore, they failed the exam.
(b) If they had studied, they would	In (c): In truth I slipped on the stairs $\mathbf{I}$
have passed the exam.	has he are Note. The south are worked
	broke my arm. Note: The auxiliary verbs
© If I hadn't slipped on the stairs, I	are almost always contracted in speech. "If
wouldn't have broken my arm.	you'd told me, I would've helped you (OR
	I'd've helped you)."
COMPARE	In (d): would expresses a desired or
	predictable result. In (e): could expresses a
(d) If I had had enough money, I	possible option: could have bought -
would have bought a car.	would have been able to buy.
(e) If I had had enough money I could	4
have hought a cor	*
have bought a car.	

# Using progressive verbs in conditional sentences

(a) true:	It is raining right now, so I will not go for a walk.	
(b)conditional:	If it were not raining right now, I would go for a walk.	
© TRUE:	I am not living in Chile. I am not working at a bank.	
(d)conditional:	If I were living in Chile, I would be working at a bank.	
(e) true:	It was raining yesterday afternoon, so I did not go for a walk.	
(f)conditional:	If it had not been raining, I would have gone for a walk.	

(g)true:	I was not living in	Chile last year. I	was not working at a bank.
	0	-	6

(h)conditional: If I had been living in Chile last year, I would have been working at a bank.

### Mixed conditional

Frequently the time in the if-clause and the time in the result clause are different: one clause may be in the present and the other in the past. Notice that past and present times are mixed in these sentences.

	(past)	(present)
<ul><li>(a) true:</li><li>(b)conditional:</li></ul>	I did not eat breakfast several hours ag hungry now.	go, so I am
	If I had eaten breakfast several hours a not be hungry now.	ago, I would
	(present)	(past)
© true: (d) conditional:	He is not a good student. He did not st test yesterday.	udy for the
	If he were a good student, he would hat the test yesterday.	ave studied for

# Omitting if

With were, had (past perfect), and should,
sometimes if is omitted and the subject and
verb are inverted.
In (a): Were I you - if I were you.
In (b): Had I known - if I had known.

### **Implied conditions**

(a) I -would have gone with you, but I	Often the if-clause is implied, not stated.
had to study.	Conditional verbs are still used in the
(b) I never would have succeeded	result clause.
without your help.	In (a): the implied condition = if I hadn't
	had to study. In (b): the implied condition
(c) She ran; otherwise., she would have	Conditional verbs are frequently used
missed her bus.	following otherwise. In (c), the implied
	if-clause = if she had not run.

# Using as if $\$ as though

(a) It looks like rain.		Notice in (a): like is followed by a noun object.		
(b) It looks as if it is goin	ng to	Notice in (b) and (c): as if and as though are		
rain.		followed by a clause. Notice	e in (d): like is	
Tt la alta an than ah it is	anima ta	followed by a clause. This u	ise of like is	
C It looks as though it is	going to	common in informal English, but is not		
rain.		generally considered approp	oriate in formal	
(d) It looks like it is goir	ng to	English; as if or as though is	s preferred, (a), (b),	
rain, (informal)		(c), and (d) all have the same meaning.		
"true" statement (fact)		ORM AFTER AS IE/AS	Usually the idea	
tiue statement (lact)			following as if as	
		[]		
(e) He is not a child. She	e talked to	b him as if he were a child.	though is "untrue."	
			In this case, verb	
(f) She did not take a she	usage is similar to			
rainstorm, she looked wi	that in conditional			
a shower with her clothes on.			sentences.	
(g) He has met her. He a				

# Using wish

Wish is used when the speaker wants reality to be different, to be exactly the			
"true"	statement	VERB FORM	Wish is followed by a
	þ	FOLLOWING WISH	

A wish about	(a) She will not tell me.	I wish (that) she would tell me.	noun clause. Past verb forms, similar to those	
the future	<ul><li>(b) He isn't going to be here.</li><li>© She can't come tomorrow.</li></ul>	I wish he were going to be here. I wish she could come tomorrow.	in conditional sentences, are used in the noun clause. For example, in (a): would, the past form	
A wish about the present	<ul> <li>(d) I don't know</li> <li>French.</li> <li>(e) It is raining right now.</li> <li>(f) I can't speak</li> <li>Japanese.</li> </ul>	I wish I knew French. I wish it weren't raining right now. I wish I could speak Japanese.	of will, is used to make a wish about the future. In (d): the simple past (knew) is used to make a wish about the present. In (g): the past perfect (had come) is used to make a wish about the past.	
A wish about the past	(g) John didn't come Mary couldn't come.	I wish John had come. I wish Mary could have come.		

\*Sometimes in very informal speaking: I wish John would have come.

# Using *would* to make wishes about the future

	-
(a) It is raining. I wish it would stop. (I	Would is usually used to indicate that
want it to stop raining.)	the speaker wants something to happen
	or someone other than the speaker to do
(b) I m expecting a call. I wish the phone	something in the future. The wish may
would ring. (I want the phone to ring.)	or may not come true (be realized).

(c) It's going to be a good party. I wish you would come.	In (c) and (d): I wish you would is often used to make a request.
(d) We're going to be late. I wish you	

# Prepositions

about	at	beyond	into	since	up
above	before	by	like	through	upon
across after	behind below	despite down	near of	throughout till	with within
against	beneath	during	Off	to	without
along	beside	for	on	toward(s)	
among	besides	from	out	under	
around	between	in	over	until	

(a) The student studies in the library.	An important element of English sentences
(b) We enjoyed the party at your house.	is the prepositional phrase. It consists of a preposition and its object. The object of a preposition is a noun or pronoun. In (a): in the library is a prepositional phrase.
© We went to the zoo in the afternoon.	In (c): In most English sentences, "place" comes before "time."
(d) In the afternoon, we went to the zoo.	In (d): Sometimes a prepositional phrase comes at the beginning of a sentence.

# Subjunctive mood

Eg. It is desirable that he come today.	In the subject subordinate clause
It was necessary that they take steps immediately.	beginning with that. Here the predicate of
	the main clause is expressed by the verb
	to be and the following adjectives and
	adverbs: advised, important, mandatory,
	necessary, obligatory, proposed,
	recommended, required, suggested,
	urgent, imperative, desirable
	and the predicate of the subordinate
	clause is expressed by the simple form of
	the verb. Sequence of tenses is not

	important here.
Eg. He ordered that they come immediately. Note: In the above mentioned cases the predicate of the subordinate clause may also be expressed by should + infinitive. Eg. It is desirable that he should come today. He ordered that they should come immediately.	In the object subordinate clause beginning with that. Here the predicate of the main clause is expressed by such verbs as advise, ask, command, decree, demand, insist, move, order, agree, prefer, propose, recommend, request, require, stipulate, suggest, urge, decide expressing order, offer, decision and arrangement and the predicate of the subordinate clause is expressed by the simple form of the verb.
Eg. I hurried up lest I be late for the lesson.	In the purpose subordinate clause beginning with lest. Here the predicate of the subordinate clause is expressed by the simple form of the verb.

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#### **AUDIO SCRIPTS**

### Unit 1. Lesson 1

Choosing a career is one of the biggest decisions we make in life. It used to be that we chose only one career. People would start a job when they were 18, 19 or 20 and stay in that same career for life. Their career path was quite straightforward. Nowadays, it is normal for people to change careers, five, six, seven times. New technology and globalization means things change quickly. We need to study and keep up with all the changes. I've had four different careers now. I like moving from one job to another. It means life never gets boring. It's much better to keep learning different things in different careers. I have no idea what career I'll choose next. Perhaps one that doesn't even exists today.

#### Unit 1. Lesson 2

Education is one of the most important things in our lives. Don't you agree? It can make the difference between success and failure. An education can bring us knowledge and make us rich. In rich countries, people are lucky to have good schools. Children start learning from a very young age. They can further their education and go to higher education or university. In Japan, there are even private schools for babies to learn English. It's a shame that in many rich countries, many children don't want to learn. Perhaps schools need to find better ways to teach so children want to learn. It's sad that in many parts of the world, children want to learn but can't. Make sure you never stop learning. Education is the key to a better future.

#### Unit 1. Lesson 3

I think the Internet is the greatest invention ever. Think how it has changed the world. So much information is out there. It has totally changed my life. I can chat with friends, download music, buy books and get all the info I need for my homework. It took days or weeks to do any of these things before the Internet. I spend hours every day online. I think I spend a little too long. I'm sure staring at a computer screen all day isn't good for my eyes. I think it's also making me fat. I need to exercise a little more. The only thing I don't like about the Internet is that it can be dangerous. I don't

really like putting my personal information online, especially on social networking sites like Facebook.

### Unit 1. Lesson 4

I'm really interested in the culture of other countries. I don't know why, but I always think other cultures are more interesting than my own culture. Every time I travel, I learn wonderful, strange, amazing and interesting things about other cultures. One of the biggest surprises I had was when I went to the USA as a child. I'm English so I thought Americans had the same culture as me. When I went to America I understood Americans and Brits are very different people. Understanding the culture of other people is very important. It helps us all to get along. If everyone really tried to learn about other cultures, the world would be a more peaceful place. The world is becoming smaller, so I think this is happening.

### Unit 2. Lesson 1

It's hard to believe that no one had computers a few years ago. I wonder how people lived. There must have been a lot of paperwork. I can't imagine writing everything by hand. I also wonder how everything worked without computers. We need computers today for everything. Hospitals, airports, the police... nothing can work without computers. I'm sure I'd be ten times busier than now if I didn't have a computer. Imagine having to find a piece of paper and an envelope and then walking down the street to mail a letter! I love my computer. It makes everything in my life so convenient. Sure, it freezes and crashes sometimes. Sure I lose some data. But that's not often. Most of the time my computer is like my best friend.

### Unit 2. Lesson 2

Food safety seems to be a big issue nowadays. I can't remember it being such a big problem years ago. With today's technology, it shouldn't be a problem. But it is. In fact, there are many problems. In my country, GM food is a big issue. People do not want to eat food that is genetically modified. They say it is unsafe. I know in America GM food is everywhere. Another issue with food safety is food imports. A lot of imported food has made people ill. Our government bans a lot of food from certain

countries. This is a good idea. A concern in my country is with chickens and cows. We have bird flu and mad cow disease. It might be better to be vegetarian.

### Unit 2. Lesson 3

Are you into cars? My brother is. He's car crazy. He buys car magazines, watches car programmes on TV and spends hours looking at car websites. He knows the name, maker, engine size and top speed of every car on the planet. Every time we go out, he talks non-stop about the cars he sees. I like cars. They are interesting. If I had a lot of money, I'd like to buy a sports car. I'm saving up for a small car at the moment. I'll probably buy a hybrid car that is good for the environment. My brother thinks these are boring. He says a car should be powerful and fast. I don't agree. I think cars should get you from A to B and be big enough for me and my friends. I also prefer smaller cars because they are easier to park.

#### Unit 2. Lesson 4

Electricity is one of the most important inventions ever. It is the thing that powers the Earth. If there was no electricity, we'd be back in the dark ages. Few people stop and think just how amazing electricity is. With the flick of a switch, you can power almost anything. Think about what would happen if there was no electricity. We'd have no TV, no computers, no traffic signals. It would be like going back to living in caves. There are a few negative points about electricity, of course. Number one, it's dangerous. Thousands of people die each year from electrocuting themselves or in electrical fires. And number two, it isn't good for the environment. Most electricity comes from burning coal and that creates greenhouse gasses.

### Unit 3. Lesson 1

I never used to worry about my health until recently. When I was a kid, I did loads of exercise. Even in my twenties and thirties I was very fit and never ill. I have been lucky all my life – always in the best of health. I rarely get even a cold. I suppose time catches up with you. Now I seem to be getting lots of little aches and pains. I should go to the doctor for a health check, but I'm too busy. The older you get, the more you worry about your health. One good thing is that I'm eating more healthily now than ever before. I no longer have fast food and midnight snacks. I also sleep a lot more. I've read that getting seven or eight hours sleep every night is one of the best things you can do for your health.

### Unit 3. Lesson 2

I hate pollution. It makes me really angry. I think pollution is greed. People don't care about the environment so they pollute the air just to make lots of money. Big companies are the worst. They pretend they're not polluting. They have the money to say they are "green". Pollution affects us all. We are all less healthy because of companies that pollute the air or our rivers. Everybody needs to think about how we can reduce the amount of pollution we create. Not using the car when we can walk is one way. Turning off lights we don't need is another. Barack Obama says he's going to do his best to help the Earth. I really hope he does because if pollution gets any worse, we'll be in seriously big trouble.

#### Unit 3. Lesson 3

I first heard about the ozone layer about twenty years ago. I was still in school. I thought it was interesting, but I didn't take it seriously. It was a bit like science fiction, I mean, how could there be a giant hole in the atmosphere? Over the years, more and more scientists spoke about the ozone layer. Global warming became a serious issue. Important people like Al Gore made movies about it. We all know today that the thinning ozone layer is perhaps the most serious crisis we face today. Even though many people have changed their lifestyles, we are still damaging the ozone layer. We need to do something really drastic to stop this. We all need to stop driving cars and stop using coal. That would be a start.

### Unit 3. Lesson 4

We have to do something about pollution. Even though there are warnings about global warming, companies don't do anything to reduce pollution. Our sky, air, rivers, beaches and countryside are becoming rubbish dumps. The air is so polluted it is giving children breathing problems. Polluted rivers have no fish left in them and beaches are too dangerous to walk on because of the garbage everywhere. It seems a lot of people don't care. I think there should be big fines for polluters. I don't mind paying more for things if they can be made with less pollution. The problem is that

companies are more interested in profits than pollution. We have only just started looking at our carbon footprint.

### Unit 4. Lesson 1

People say intelligence is a lot more attractive than beauty. I often ask people if they would prefer a partner who is intelligent or good looking. They almost always say they want someone who is intelligent. I wonder why it is some of us are so intelligent and others aren't. Surely we are all born with a similar level of intelligence. I'm not really sure how intelligent I am. Sometimes I think I'm intelligent, but then I do something really dumb. Or I meet someone who is super-brainy who makes me feel unintelligent. One day, I'm going to take one of those intelligence tests to measure my IQ. Another thing I don't get about intelligence is how people think our leaders are so intelligent, but then the leaders do such stupid things. Do intelligent people start wars? **Unit 4. Lesson 2** 

I think writing is the most difficult skill in English. I'm not sure why. Some students are really good at speaking, but their writing is terrible. Why can't they just pretend they're speaking but write it all down. You certainly have more time to think when you write. I think writing has got easier in recent years. Computers and the Internet have helped us. Although I think many teachers would say technology is not a help. But it's true. We have spellcheckers when we type. They even warn us if we've made a mistake with grammar. There is also translation software, but that can produce gobbledygook. And then there are new places to write. With mobile phones and sites like Twitter you don't have a lot of space to write.

### Unit 4. Lesson 3

Do you like doing writing activities in class? I think they're quite interesting. It's not really like writing. The way we write in my language is different from English. The sentence and paragraph structures are different. My teacher gives us fun activities so we can do writing a bit at a time. Sometimes we brainstorm and write, sometimes we speed write for ten minutes. One of my favourite activities is writing in pairs. We have to agree on what to write. We even have to agree on the spelling and punctuation. That makes us think about the best way. I think this is very good for me. I also like

doing online writing activities. It's good to help me practice typing. I need more writing activities.

### Unit 4. Lesson 4

Research is a very important thing. Without research, we'd have no new products. Our food would be more dangerous to eat. And we'd never go to the moon. I'd like to see my government spend a lot more money on research. Especially on research into diseases. Scientists have been researching into AIDS and cancer for years and still have not found cures. Research into technology is also important. There seems to be loads of research into information and computer technology. It's amazing how quickly technology is changing. We really need to spend more to research how global warming is affecting our planet. This could be the most important research scientists ever do. Research to save the planet.

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