

МІНІСТЕРСТВО ОСВІТИ І НАУКИ
НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ
«Харківський політехнічний інститут»

ENGLISH FOR TECHNICAL STUDENTS

Англійська мова для студентів технічних ВНЗ

Навчальний посібник з англійської мови
для студентів 1 курсу всіх спеціальностей

Харків
Підручник НТУ «ХПІ»
2012

УДК 811.111:378.6

ББК 81.2 Англ

Л17

Рецензенти:

В. І. Соляник, доцент кафедри практики англійського усного та писемного мовлення Харківського національного педагогічного університету ім. Г. С. Сковороди;

О. Л. Шапошнікова, доцент кафедри іноземних мов НТУ «ХП»

Затверджено редакційно-видавничою радою університету
(протокол № 1 від 24.06.2010 р.)

Лазарєва О. Я.

Л17 English for technical students = Англійська мова для студентів технічних ВНЗ : навч. посіб. з англ. мови / О. Я. Лазарєва, О. О. Ковтун, С. С. Мельник. – Харків : Підручник НТУ «ХП», 2012. – 240 с.

ISBN 978-966-2426-58-8

Тематика посібника охоплює широке коло ситуацій, що виникають у повсякденному житті та у професійній діяльності. Кожний тематичний підрозділ містить блоки завдань з усного мовлення, читання, письма, граматики та підсумкові завдання підрозділу, а також ілюстративний мовний матеріал: прислів'я, приказки, жарти тощо. В додатку надано низку автентичних текстів з різних галузей науки й техніки, споряджених розмовними моделями та завданнями.

Призначено для студентів 1-го курсу технічних ВНЗ усіх спеціальностей.

УДК 811.111:378.6

ББК 81.2 Англ

ISBN 978-966-2426-58-8

© Лазарєва О. Я., Ковтун О. О., Мельник С. С., 2012

© Підручник НТУ «ХП», 2012

ВСТУП

Навчальний посібник “English for Technical Students” («Англійська мова для студентів технічних ВНЗ») призначений для студентів, які починають навчання в технічному ВНЗ. Тому поряд з загальновживаною лексикою і повсякденними розмовними виразами, які, безумовно, необхідні фахівцям будь-якої сфери, студенти зможуть опанувати також і спеціальну лексику, набути навичок читання фахових текстів, підвищити рівень володіння усним та писемним мовленням за рахунок повторення граматичних структур і моделей.

Посібник відповідає програмі вивчення іноземної мови у технічному ВНЗ і вимогам необхідного кваліфікаційного рівня. Він складається з п'яти розділів (модулів), кожен з яких містить матеріал, об'єднаний загальною тематикою. Це «Персональна ідентифікація», «Соціальні контакти», «Україна в Європейському освітньому просторі», «Європейський та міжнародний освітній простір», «Екологія». Кожний розділ, в свою чергу, поділяється на декілька занять. У кожному підрозділі, що складає одне заняття, студенти знайдуть матеріали для вдосконалення усного мовлення, читання, письма, короткий граматичний довідник з вправами, а також домашнє завдання. Структура всіх занять є однотипною, що дозволяє студентам планувати свій час і зусилля.

Для підвищення привабливості посібник споряджений численними ілюстраціями, жартами, анекдотами, прислів'ями та приказками, а також додатковими автентичними текстами, пов'язаними з темою заняття. У розділі “Supplementary Reading” зібрано низку оригінальних текстів, які можуть бути використані для опанування спеціальної лексики та розмовних моделей студентами різних спеціальностей.

Автори вдячні викладачам кафедри іноземних мов НТУ «ХПІ» за допомогу в підборі матеріалів та цінні зауваження.

UNIT 1. PERSONAL IDENTIFICATION

🔗 Active Vocabulary of the Unit:

name, surname, age, nationality, occupation, address, a first year student, to enter smth, department, major; relatives, uncle, aunt, cousin, niece, nephew, friendly, handsome, good-looking, senior, junior; appearance, to look like, hair-cut, grey hair, blue eyes, short, tall, helpful, sociable, hard-working; to finish school, to graduate from a university, wife, husband; to be famous for, outstanding, contribution, science, scientist, scientific, development, to discover, to invent, to found, to devote, to take part in, research work, in the field of; hostel, time-table, break, lecture, to miss classes, laboratory, to pass an exam; to be interested in, to be fond of, to prefer, to be crazy about, to hate, to dislike.

Lesson 1. Personal Presentation

1.1. Усна тема. Презентація студента НТУ ХПІ

🔗 Active Vocabulary:

Mechanical Engineering Department – машинобудівний факультет; major – основна дисципліна.

I am Ivan Dmitrenko. I am 17. I am a first-year student of National Technical University “Kharkiv Polytechnic Institute”. I study at the Department of Mechanical Engineering. My major (speciality) is the Technology of Cutting. I am from Kharkiv.

Вправа 1. Дайте відповіді на запитання.

1. Who are you? 2. What are you? 3. How old are you? 4. Do you work or study? 5. Where do you study? 6. What department do you study at? 7. What is your major? 8. Where are you from?

Вправа 2. Розкажіть про себе, взявши за зразок вправу 1.

I am ____ (name). I am ____ (age). I am a ____ year student of National Technical University. I study at ____ (department). My major is ____ (speciality). I am from ____ (town).

1.2. Письмові завдання

Вправа 3. Заповніть анкети за зразком.

Baker's Hotel	
Registration form	
Surname <u>Johnson</u>	First name <u>Antony</u>
Nationality <u>the UK</u>	
Passport number <u>271895306</u>	Date and place of issue <u>12.06.08 Leeds</u>
Address <u>17 Church Lane, LEEDS, LS6 4NR</u>	
Date of arrival <u>07.06.2009</u>	Date of departure <u>11.06.2009</u>
Signature _____	

1) Surname; 2) First name; 3) Nationality; 4) Passport number; 5) Date and place of issue; 6) Address; 7) Date of arrival; 8) Date of departure.

Brighton School of English			
Enrolment form – please write in block letters			
Mr/Mrs/Ms <u>MS</u>	Family name <u>BLANCA</u>	First name <u>MARIA</u>	Date of birth <u>08.01.90</u>
Nationality <u>ITALY</u>	Languages <u>ITALIAN, FRENCH</u>		
Address in your country <u>VIA PONTE, 21, NOVI DI MODENA, MODENA</u>			
Occupation <u>STUDENT</u>			
Reason for learning English: business/pleasure/exams/other <u>I WANT TO TRAVEL</u>			
How many hours a day do you want to study? <u>4</u>			
How long are you going to stay at school? <u>1 MONTH</u>			
What date do you want to start? <u>01.08.2009</u>			

1) Mr/Mrs/Ms; 2) Family name; 3) First name; 4) Date of birth; 5) Nationality; 6) Languages; 7) Address in your country; 8) Occupation; 9) Reason for learning English; 10) How many hours a day do you want to study? 11) How long are you going to stay at school? 12) What date do you want to start?

☺ **Smile!**

- Teacher: “What is an autobiography?” – Pupil: “Er ... the life story of a car.”
- How old are you? – Thirty-three, but I don’t look this age, do I? – No, but you used to.

1.3. Розмовна тема. Знайомство

Greetings

Привітання

How do you do?	Доброго дня!
Hallo (hello, hullo)! Hi!	Привіт!
Good morning! (Morning!)	Доброго ранку!
Good afternoon!	Добрий день!
Good evening! (Evening!)	Добрий вечір!

Answers for greeting

Відповіді на привітання

Haven’t seen you for ages!	Давно не бачились.
It’s good to see you again. Nice to see you again.	Радий Вас бачити.
I’m glad we’ve met!	Радий, що ми зустрілися.
How are you? How are you doing?	Як справи? Як поживаєте?

Words of parting

Слова на прощання

Good-bye! Good-bye for the present!	До побачення.
Bye- bye! So long!	Бувайте.
See you soon! See you later!	Побачимось.
See you tomorrow!	До завтра.
I hope we’ll see some more of you!	Сподіваюсь побачити Вас знову.
Remember me to ... Give my (kind) regards to ... Give my love to ...	Передавайте вітання ...

Introducing people

Представлення людей

Let me introduce myself. My name is D.	Дозвольте відрекомендуватись. Мене звати Д.
May I introduce Mr. N.? Allow me to introduce Mr. N. to you.	Дозвольте відрекомендувати Вам містера Н.

Allow me to introduce you to my friend.	Дозвольте відрекомендувати Вас моєму другу.
Please, introduce me to your friend. Will you please introduce me to your friend?	Будь ласка, познайомте мене зі своїм другом.
Meet my friend Doctor M. I'd like you to meet Doctor M.	Познайомтесь з моїм другом до- ктором М.
Pleased to meet you	Радий з Вами познайомитись

Вправа 4. Вивчіть діалог напам'ять.

– Nice party, isn't it? – Yes, it's great. – I'm Alison. What's your name? – I'm Steve Brown. Nice to meet you. – Glad to meet you, too. Let me introduce my friend Ann to you. – Pleased to meet you, Ann. How are you doing? – I'm fine, thanks. Hope to see you again. Bye! – So long!

1.4. Граматика. Іменники

1.4.1. Множина іменників

Утворення множини іменника

Закінчення -s	Закінчення -es	Інша форма
a car – cars an engine – engines a tree – trees	a watch – watches a dress – dresses a dish – dishes a box – boxes	a man – men a woman – women a child – children a tooth – teeth
a boy – boys	a city – cities	a goose – geese
a piano – pianos a photo – photos	a potato – potatoes a tomato – tomatoes	a foot – feet a mouse – mice
a roof – roofs a cliff – cliffs a gulf – gulfs a safe – safes a chief – chiefs	a leaf – leaves a life – lives a wolf – wolves	an axis – axes a datum – data a formula – formulae a phenomenon – phenomena a nucleus – nuclei

📌 Запам'ятайте!

Однина	Множина
a sheep	sheep
a deer	deer
a swine	swine

Вправа 5. Поставте слова у форму множини. Увага: в множині неозначений артикль не вживається, означений артикль залишається.

A car, a mountain, a class, a show, a photo, a bridge, the waiter, the teacher, a man, the man, a woman, the woman, an eye, a wolf, a fox, the city, a boy, a goose, the watch, a mouse, a foot, a dress, a toy, the sheep, a tooth, a child, the ox, a deer, the life, a potato, the piano, a cactus, a crisis, the criterion, an alumnus, a millennium, the nebula.

☺ Smile!

- How many **sheep** have you got? – I don't know. Every time I count them I fall asleep.
- Why does a mother kangaroo hate rain? – Because the **children** have to play inside.
- Snake-charmer: "Be careful with that suitcase, porter. It contains a ten-foot snake." – Porter: "You can't kid me – snakes don't have any **feet**."

1.4.2. Присвійний відмінок іменників

Іменник у присвійному відмінку відповідає на питання **чий?**

Вживання

• Живі істоти

Однина	Множина
The man's bag	The men's bags
The boy's bicycle	The boys' bicycles

• А також:

a month's holiday
today's party
the country's best opera house

Вправа 6. Запишіть речення іншим способом, використовуючи присвійний відмінок іменників.

1. The room of my granny. 2. The questions of our professor. 3. The wife of my brother. 4. The skates of his sisters. 5. The voice of this girl. 6. The new club of the footballers. 7. The letter of her friend. 8. The car of my parents. 9. The lives of these women. 10. The tools of those men. 11. The greatest singer of the country. 12. The newspaper of this week. 13. The building of UN. 14. The spectacles of our teacher. 15. The flat of my sister is large. 16. The house of my uncle is made of wood. 17. The office of the dean is on the first floor. 18. The name of this girl is Jane. 19. The work of these engineers is very important.

1.4.3. Ланцюжки іменників

Іменники, що стоять перед головним іменником (останнім у ланцюжку), виконують функцію **означення**. Переклад здійснюється двома способами: 1) попередні іменники перекладаються як прикметники, наприклад: *steel beam* – *сталевий брус*; *world music festival* – *міжнародний музичний фестиваль*; 2) першим перекладається головне слово: *wheel suspension* – *підвіска коліс*; *reaction rate constant* – *постійна швидкості реакції*.

Вправа 7. Перекладіть словосполучення:

apple juice – apple prices; book shelf – book review, room temperature – room height, computer virus – computer efficiency, water transport – water analysis.

Вправа 8. Перекладіть словосполучення англійською, використовуючи ланцюжки іменників:

паперовий пакет, сталеплавильний завод, кислотний дощ, вуличний рух, водяний насос; генератор пару, пучок електронів, екран комп'ютера, зменшення цін на нафту, корпус ракетного двигуна, система безпеки автомобіля, температура утворення льоду, система управління базами даних.

1.5. Домашнє завдання

 **Запам'ятайте!**

this is – these are	that is – those are	there is – there are	it is – they are
---------------------	---------------------	----------------------	------------------

Вправа 9. Запишіть речення в множині.

1. This is a car. 2. This is a mouse. 3. This is a cactus. 4. That is a plate. 5. That is a tower. 6. That is a bookcase. 7. Is this a sofa? 8. Is this an arm-chair? 9. Is this a correct formula? 10. Is that a plane? 11. That is not a kangaroo. 12. That is not a garden. 13. That is not a bus. 14. That is the girl's box. 15. It is a sheep. 16. It is a boy's bicycle. 17. It isn't Mary's dictionary. 18. There is a bird's nest on the tree. 19. This is my friend's study.

Вправа 10. Перекладіть словосполучення:

spaceship design; air resistance; planet surface; space flight danger; low temperature nitrogen adsorption measurement; control equipment; equipment control; thermoelectric generator development; fuel supply; household goods; steam engine invention; a car speed calculation problem; liquid fuel rocket reconstruction; improved test program; load condition.

Вправа 11. Перекладіть речення письмово, звертаючи увагу на іменники в функції означення.

1. A direct current system has big disadvantages. 2. There are lots of types of special service motor cars. 3. These fuel elements consist of a large number of thin uranium rods. 4. A new hospital X-ray unit locates a bullet or shell fragment in one minute. 5. There are lots of principal corrosion protection methods.

Вправа 12. Складіть усну розповідь про себе (7–10 речень).

Lesson 2. My Family

2.1. Усна тема. Моя сім'я

📌 Active Vocabulary:

friendly – дружний; surgeon – хірург; neither ... nor – ні ... ні; handsome – красивий (про чоловіків); grey – сивий; sociable – товариський; overtime – понаднормово; nursery school – дитячий садок; nephew – племінник; separately – окремо.

Now I am going to tell you about my family. We are a family of five. We think we are a large, friendly and united family. So we are happy to be living together and getting on all right.

To begin with, I am going to talk about my dad. His name is Sergey Petrovich. He is 45. He works as a surgeon in a hospital. He is neither old, nor young. He is a good-looking man, handsome, rather thin with dark brown hair just beginning to get grey. He is a very sociable person. What I don't like about my father is that he is always busy. He works overtime very often. He is a bread-maker in our family. He is fond of going to the country on weekends, because he enjoys working in the garden.

My mother's name is Galina Nickolayevna. She is three years younger than my father. She works as a teacher at a nursery school. My mother is rather slim and pretty; she is always elegant and smart. In short, she is a pleasant-looking woman of about 40. She always has a lot of work to do at school and about the house. She is fond of her work and spends a lot of time there. But she has to cook the food for all the family at home. Shopping and cooking is nearly half a day's work for her. But my granny and I have a habit of helping her about the house.

Boris is my elder brother. He is six years my senior. So he is 23 already. He has graduated from the University and he works as an economist now. He is married. His wife is a journalist. They are three in the family. They have got a child, my nephew. It is a lovely little boy of two with golden hair and dark blue eyes. He is full of joy and gaiety. My brother's family lives separately.

And finally, a few words about my grandmother. My granny is my best friend, I must tell you. She is always ready to listen to my endless stories about my school life and my friends. She is retired now, but in her youth and her older age she worked as a teacher at school. She is a very understanding person, I must admit.

Put it into a few words, we are a united and friendly family.

Запам'ятайте!

orphan – сирота; aunt – тітка; uncle – дядько; niece – племінниця; half-sister – зведена сестра; half-brother – зведений брат; mother-in-law – теща, свекруха; father-in-law – тесть, свекор; brother-in-law – зять, шурин, дівер; sister-in-law – невістка, своячениця; stepmother – мачуха; stepfather – вітчим; widow – вдова; widower – вдівець; fiance – наречений; fiancée – наречена; housewife – домогосподарка.

Вправа 1. Доповніть речення інформацією про свою сім'ю.

My family consists of _____. I want to tell you about my _____. My _____'s name is _____. He (she) is _____ years old. He (she) is a _____ (occupation). He (she) works (studies) at _____. He (she) is rather _____ (height). His (her) hair is _____. His (her) eyes are _____. He (she) is fond of _____. I love my _____ very much.

Вправа 2. Підберіть відповідне слово з наведених нижче, щоб доповнити речення: *aunt, cousin, father, brother, sister, grandfather, grandmother, nephew, mother, uncle, niece.*

1. My father's wife is my _____. 2. My parents' son is my _____. 3. My parents' daughter is my _____. 4. My mother's husband is my _____. 5. My mother's father is my _____. 6. My father's sister is my _____. 7. My mother's brother is my _____. 8. My father's mother is my _____. 9. My mother's sister is my _____. 10. My uncle's son is my _____. 11. My aunt's son is my _____. 12. Peter is his uncle's _____. 13 Ann is her aunt's _____.

☺ **А ще прочитайте анекдоти про родинні стосунки.**

- There was an Irishman whose sister had a baby. Nobody told him if it was a boy or a girl so he didn't know if he was an uncle or an aunt.
- Neighbour: "Do you think your son will forget all that he learned at college?"
Father: "I hope so – he certainly can't make a living by kissing girls."

Прочитайте, як розповідають про свої сім'ї люди з різних країн (див. Appendix I).

2.2. Письмові завдання

Вправа 3. Прочитайте текст та заповніть пропуски, де необхідно.

My _(1)_ is Lorenza Fiore. I'm 18 _(2)_ old and I'm from Lausanne _(3)_ Switzerland. I have _(4)_ two brothers and _(5)_ sister. I'm _(6)_ youngest. One of my brothers _(7)_ married. He and _(8)_ wife live in France.

My father is _(9)_ scientist. _(10)_ works at the Polytechnic Institute _(11)_ Lausanne. My mother is a doctor. _(12)_ works in a hospital. My _(13)_ comes from Ireland. She met my father when _(14)_ were students together in

Trieste. They got married and went _(15)_ live in Switzerland. My father _(16)_ born in Venice, and _(17)_ grandparents are also from Italy. That's why I've got _(18)_ Italian name.

I like riding horses, swimming, listening _(19)_ symphonic music and singing.

I learn English _(20)_ special courses. Now I want _(21)_ go to university to _(22)_ physics. I want to be a scientist as my father. Most of all I'd _(23)_ to travel to other countries. That's why _(24)_ want to learn English.

2.3. Граматика. Артиклі

Вживання артиклів

Артикль	Вживання	Приклади
Неозначений a (an)	<ul style="list-style-type: none"> Вперше йде мова про предмет. В значенні числівника <i>one</i>. 	This is <i>a</i> book. Take <i>an</i> apple.
Означений the	<ul style="list-style-type: none"> Йде мова про вже відомий предмет. 	I bought <i>a</i> book yesterday. <i>The</i> book is interesting.
	<ul style="list-style-type: none"> Є пояснення до предмета. 	Take <i>the</i> book which is on <i>the</i> table.
	<ul style="list-style-type: none"> Коли ясно з контексту, який предмет мається на увазі. 	Open <i>the</i> window, please.
	<ul style="list-style-type: none"> Перед географічними назвами (деяких країн, океанів, морів, рік, гірських масивів). 	<i>the</i> USA, <i>the</i> Pacific Ocean, <i>the</i> Carpathians
Відсутній	<ul style="list-style-type: none"> Перед власними іменами. 	Kharkiv, England, Smith
	<ul style="list-style-type: none"> Перед речовинними іменниками. 	snow, milk
	<ul style="list-style-type: none"> Перед назвами днів, місяців, пори року. 	in October, in winter, on Friday
	<ul style="list-style-type: none"> Якщо перед іменниками стоїть займенник чи числівник. 	this student, some books, five pens, three lessons

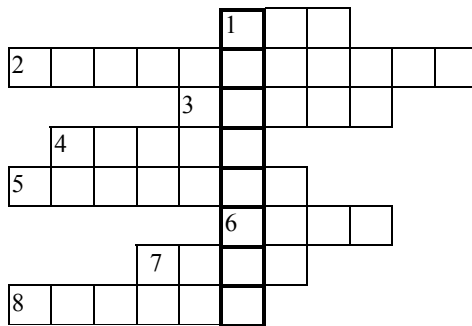
Вправа 4. Заповніть пропуски артиклями, якщо це необхідно.

1. He is ___ doctor. 2. ___ text-book is on ___ table. 3. Here is ___ book you wanted to read. 4. ___ Kyiv is ___ capital of ___ Ukraine. 5. This is ___ nice

city. 6. All ____ students of our group attended ____ meeting. 7. I don't know his ____ brother. 8. This ____ article is interesting. 9. Please, give me ____ black pencil. 10. We will go to ____ theatre tonight. 11. ____ Dnieper is ____ longest river in ____ Ukraine. 12. There is ____ new monument in ____ square. 13. There is ____ snow on ____ top of your car. 14. ____ water consists of ____ two molecules of ____ hydrogen and ____ one molecule of ____ oxygen. 15. In ____ September I entered ____ University.

2.4. Домашнє завдання

Вправа 5. Заповніть кросворд та у виділеному стовпчику прочитайте ключове слово:



1) the opposite to thin or slim; 2) your brother's wife; 3) your sister's daughter; 4) your mother's brother; 5) your aunt's children; 6) the opposite to fair; 7) the opposite to short; 8) your parents, brother, sisters, etc. are your ____.

📌 Запам'ятайте, як читати скорочення!

etc. – and so on (тощо)	i.e. – that is (тобто)	e.g. – for example (наприклад)
--------------------------------	-------------------------------	---------------------------------------

Вправа 6. Вставте артикли *a, the* або займенник *some*, де необхідно.

1. There are three rooms and ____ kitchen in our new flat. 2. My new dress is made of ____ silk. 3. If you want to write something on ____ blackboard, you must have ____ piece of ____ chalk. 4. Are there any students in ____ classroom? 5. I have ____ new English book. ____ book is very interesting. 6. There is ____ garden in ____ front of our university. ____ garden is not large, but it is very nice. 7. ____ May is ____ fifth month of the year. 8. ____ Saturday is ____ sixth day of the week. 9. There is ____ coffee in the cup. ____ coffee is black. 10. My brother found out ____ interesting facts about ____ history of ____ our city.

Вправа 7. Напишіть розповідь про свою родину (10–12 речень).

Lesson 3. My Biography

3.1. Усна тема. Моя біографія

📌 Active Vocabulary:

surname, favourite subject, occupation, with great interest, to leave (finish) school, to be born, to introduce oneself, to come from, to be fond of, to enter the university, to do well at school, as well.

Let me introduce myself. My name is Ivan. My surname is Dmitrenko. I come from Ukraine. I was born on May 5, 1989 in Kharkiv. I live with my parents in a block of flats on the 9th floor. We are three in the family. Both of my parents work as engineers. That's why I entered National Technical University "Kharkiv Polytechnic Institute" to become an engineer. I am a first-year student of Mechanical Engineering Department. My major is the Technology of Cutting. In 2006 I finished school № 51. I always did well at school and studied with great interest. My favourite subjects are Maths and Physics. I am fond of sports and active games. I like playing computer games as well.

Вправа 1. Дайте відповіді на запитання.

1. What is your name? 2. What is your nationality? 3. Where and when were you born? 4. Where do you live? 5. What are your parents? 6. Where do you study? 7. What department do you study at? 8. What is your major? 9. What were your favourite subjects at school? 10. What do you like doing?

☺ Smile!

- What is your date of birth? – July fifteenth. – What year? – Every year.
- I do wish I could tell you my age but it's impossible. It keeps changing all the time.

3.2. Читання

Вправа 2. Знайдіть в обох текстах цього розділу відповіді на запитання про талановитих дівчаток-підлітків.

1. What is her name? 2. How old is she? 3. Does she go to school? 4. What is she famous for? 5. When did she begin her career? 6. Who does she live with? 7. What do her parents and other relatives do? 8. What are her achievements?

9. Is she a normal teenager? 10. What is she going to do in future? 11. What does she do in her free time? 12. Is she good at sports?

Young Organist

Back in 2002, when former church organist David Christianson purchased an Oberlinger organ for his home, he thought maybe he would play from time to time to relax. But, as it turns out, he can't do it. That's because his then 7-year-old daughter Karen liked this impressive instrument and devoted her life to classical music. Now, after hours of practice during eight years, 15-year-old Karen is one of the youngest organ virtuosos in the country. She recently made her radio debut on National Public Radio's "From the Top" show.

Karen's parents, David and Anastasia, said they had known since a very early age that Karen was musically inclined. "She was very skilled on the piano, even at the age of six," said Anastasia.

At first, she learned to play from her father. But within a year, Karen started studying at the organ department at the Curtis Institute of Music in Philadelphia.

At the age of 8, she gave her first public performance at the historic Christ Church in Philadelphia. Soon after, she performed her first solo recital, playing a selection of Bach in honor of his birthday. By the age of 9, she was composing original works.

In the sixth-grade, she played in Notre Dame de Paris for acclaimed organist Olivier Latry. In 2010 alone, she performed in Atlanta, San Francisco, Athens, the Netherlands, New York and Abilene. And she's got a full calendar already for 2011.

In the summer of 2009, Karen had a recital in Rhode Island. Her younger brother, Nicholas, an accomplished cellist, had a recital in Washington, DC, on the same day.

Despite her practice between 8-10 hours a week and tight schedule, she has a full load of academic and extracurricular activities without missing them.

And on top of all that, she still finds time to be a pretty normal teenager. She loves sailing and soccer. She is never far from her iPod, which holds an eclectic mix of Rock, Pop, Country and, of course, classical. And, as she looks toward her critical junior year at Episcopal Academy, her thoughts are turning to college and beyond.

Though she is still debating whether she'll pursue music therapy or teaching, she knows that touching others with music will definitely be a part of her future.

Teen Scientist Gets High Honor from Obamas

Li Boynton, 18, a senior at Bellaire High School, says meeting the president and first lady in White House will top the stack of academic honors she has accumulated.

In the fifth grade, Li Boynton built a device that removed salt from seawater. In the 11th grade she created a cheap method of testing for water contaminants.

Along the way, the Bellaire High School senior racked up \$50,000 in college scholarships, won top honors in the Intel International Science and Engineering Fair, became a semifinalist in Intel's Science Talent Search and was accepted to Yale University.

Biology teacher Anna Loonam, who taught Boynton as a freshman and again as a junior, called her "a top science student." Art teacher Jo Zider has described her as "one who looks deeply into the mystery of life." An entire class of younger science students appreciates her, too.

Boynton's premier achievement as a young scientist was creation of a method to test for water pollutants by using light-generating bacteria. The student found that the microscopic organisms generated less light as the water's toxicity grew.

By placing a bacterial culture in a light-tight box with a digital camera and processing the results through a free computer program, Boynton was able to reliably and cheaply test for half a dozen common pollutants. The technology won top science and engineering fair honors.

Boynton, who hopes to become a medical doctor or researcher or both, credits her mother, Laura Luo, a financial manager; her father, John Boynton, an aeronautical engineer; and her stepfather, Robert Pearson, a computer science expert, for supporting her academic interests.

Accepted by Yale, Li recently also applied to Harvard University.

Outside the classroom, she enjoys socializing on Web social sites and shopping. Sports, she said, hold little charm. "Physical education is one of my worst classes. I failed pushups."

3.3. Письмові завдання

Вправа 3. Складіть розповіді про різних людей за інформацією з таблиці. Наприклад: *Jean Lacroix is a taxi driver. He comes from France and lives in Paris. He works ...*

Name	Jean Lacroix	Tisato Greenwood	Sean O'Ranfeay
Age	28	34	46
Occupation	taxi driver	dance teacher	journalist for "The Irish Examiner"
Origin	France	Japan	Ireland
Town	Paris	Boston	Dublin
Place of work	in the centre of Paris	high school	in an office
Languages	French	Japanese, English	English, French, and German
Family	a cat	married to an American, two sons	married, two daughters
Free time	computer games and singing	travelling	golf, yachting

3.4. Граматика. Дієслова *to be, to have*

Дієслово *to be*

Функції та значення	Приклади
1. Смислове дієслово із значенням «бути», «знаходитись». У реченні після нього вживається іменник з прийменником або прислівник.	Our institute is in the center of the city. – Наш інститут знаходиться у центрі міста. He is here. – Він тут.
2. Дієслово-зв'язка. Після нього можуть вживатися іменник або прикметник.	My friend is a designer. – Мій друг – конструктор. She is beautiful. – Вона вродлива.
3. Допоміжне дієслово: а) для формування часів групи Continuous; б) для формування пасивного стану.	He is making an experiment. – Він проводить експеримент. This book was published last year. – Ця книга була опублікована у минулому році.

4. Модальне дієслово у значенні «повинен»: <i>to be to</i>	He is to come at 7. – Він повинен прийти о сьомій.
--	--

Відмінювання дієслова <i>to be</i> в Present Indefinite Tense		
Число Особа	Однина	Множина
I	I <i>am</i>	We <i>are</i>
II	You <i>are</i>	You <i>are</i>
III	He, she, it <i>is</i>	They <i>are</i>

Приклади (ствердна, заперечна та питальна форми).

1. He is a student. 2. He is not a student. 3. Is he a student?

Відмінювання дієслова <i>to be</i> в Past Indefinite Tense		
Число Особа	Однина	Множина
I	I <i>was</i>	We <i>were</i>
II	You <i>were</i>	You <i>were</i>
III	He, she, it <i>was</i>	They <i>were</i>

Приклади.

1. He was a student. 2. He was not a student. 3. Was he a student?

Відмінювання дієслова <i>to be</i> в Future Indefinite Tense		
Число Особа	Однина	Множина
I	I <i>shall (will) be</i>	We <i>shall (will) be</i>
II	You <i>will be</i>	You <i>will be</i>
III	He, she, it <i>will be</i>	They <i>will be</i>

Приклади.

1. He will be a student. 2. He will not be a student. 3. Will he be a student?

Структура *There is ... There are ...*

Є найбільш поширеною конструкцією з дієсловом ***to be*** (в різних часових формах). Вона використовується, коли треба повідомити, що деякий об'єкт знаходиться в певному місці. Англійське речення в такому випадку перекладається з кінця (з обставини місця). Наприклад:

There is a printer **on the desk**. – **На столі** стоїть принтер.

There are lots of formulae **in this textbook**. – **В цьому підручнику** багато формул.

Якщо обставина місця відсутня, то речення перекладається, починаючи з дієслова:

There is only one solution of this problem. – **Існує** тільки одне рішення цієї проблеми.

Питальна форма.

Is there a printer in your office? – У вашому офісі є принтер?

Дієслово *to have*

Відмінювання дієслова <i>to have</i> в Present Indefinite Tense		
Особа \ Число	Однина	Множина
I	I <i>have</i>	We <i>have</i>
II	You <i>have</i>	You <i>have</i>
III	He, she, it <i>has</i>	They <i>have</i>

Приклади (ствердна, заперечна та питальна форми).

1. He has a dog. 2. He does not have a dog. 3. Does he have a dog?

Past Indefinite Tense – *had*

Приклади.

1. I had a bicycle. 2. Did you have a pet when you were a child? 3. They didn't have any time to meet us.

Future Indefinite Tense – *will have*

Приклади.

1. I will have time to help you tomorrow. 2. Will you have musicians at your party? 3. They will not (won't) have much money.

📌 Запам'ятайте!

to have = to have got

Приклади.

1. He has got a dog. 2. He has not got a dog. 3. Has he got a dog?

📌 Запам'ятайте!

to have dinner (breakfast, lunch, supper)

to have a cup of tea (a cigarette, a meal, a drink)

to have a shower (a bath, a sleep, a rest, a talk, a chat)

to have a good time

Вправа 4. Поставте дієслово *to be* в Present, Past або Future Indefinite Tense.

1. I ___ a student. 2. They ___ absent at the institute last Friday. 3. My father ___ not a teacher, he ___ a scientist. 4. ___ your aunt a doctor? – Yes, she _____. 5. ___ they ___ at home tonight? 6. We ___ busy the whole day yesterday. 7. My brother ___ a worker. He ___ at work. 8. I hope that the test results ___ positive. 9. All the exercises at the last lesson ___ easy. 10. ___ you an engineer? – Yes, I _____. 11. Yesterday the weather ___ very cold. 12. ___ your brother at school? – Yes, he _____. 13. ___ this your watch? — Yes, it _____. 14. I ___ very tired when I came home yesterday. 15. She ___ an actress. 16. These ___ our bicycles. 17. Peter and Jim ___ at home when I called on them the other day.

Вправа 5. Заповніть пропуски необхідними формами дієслова *to have*.

1. My brother ___ dark hair now, but when he was a child he ___ rather fair hair. 2. Let's go to the party. We ___ a good time there. 3. I want to call him. ___ you ___ his telephone number? 4. I ___ a terrible headache. 5. We couldn't get the concert tickets yesterday because we ___ (not) enough money.

3.5. Домашнє завдання

Вправа 6. Перекладіть речення англійською, використовуючи конструкцію *There is ... There are ...*.

1. На наступній сторінці є графік (a chart) цієї функції. 2. В телефонному довіднику немає Вашого номеру. 3. В США багато міст з однаковими на-

звами. 4. На другому поверсі є 2 великі аудиторії. 5. В моїй машині немає пального. 6. Є тільки один вихід з цієї ситуації. 7. Існує багато робіт з цього питання. 8. Нема про що хвилюватись. 9. Вчора був гарний концерт. 10. З цим пристроєм не буде ніяких проблем.

Вправа 7. Поставте дієслова *to be, to have* в Present, Past або Future Indefinite.

1. My father ____ a teacher. 2. He ____ a pupil twenty years ago. 3. He ____ a doctor when he grows up. 4. My sister ____ not ____ at home tomorrow. 5. She ____ at school tomorrow. 6. ____ you ____ at home tomorrow? 7. ____ your father at work yesterday? 8. My sister ____ ill last week. 9. She ____ not ill now. 10. Yesterday we ____ at the theatre. 11. Where ____ your mother now? – She ____ in the kitchen. 12. Where ____ you yesterday? – I ____ at the cinema. 13. When I come home tomorrow, all my family ____ at home. 14. We ____ a really good time yesterday. 15. ____ you ____ time to go to the stadium with me tomorrow? 16. We usually ____ lunch at the canteen. 17. He ____ three lessons every day.

Вправа 8. Напишіть та вивчіть автобіографію (7–10 речень).

Lesson 4. Outstanding Scientists

4.1. Усна тема. Біографія видатної людини

D.I. Mendeleev (1834–1907)

Dmitry Ivanovich Mendeleev is a famous Russian chemist. He is best known for his development of the periodic table of the properties of the chemical elements. This table displays that elements' properties change periodically when they are arranged according to atomic weight.

Mendeleev was born in 1834 in Tobolsk, Siberia. He studied chemistry at the University of St. Petersburg, and in 1859 he was sent to study at the University of Heidelberg. Mendeleev returned to St. Petersburg and became Professor of Chemistry at the Technical Institute in 1863. He became Professor of General Chemistry at the University of St. Petersburg in 1866. Mendeleev was a well-known teacher, and, because there was no good textbook in chemistry at that time, he wrote the two-volume “Principles of Chemistry” which became a classic textbook in chemistry. In this book Mendeleev tried to classify the elements

according to their chemical properties. In 1869 he published the first version of his periodic table of elements. In 1871 he published an improved version of the periodic table, in which he left gaps for elements that were not known at that time. His table and theories were proved later when three predicted elements: gallium, germanium, and scandium were discovered.

Mendeleyev investigated the chemical theory of solution. He found out that the best proportion of alcohol and water in vodka is 40 %. He also investigated the thermal expansion of liquids and the nature of petroleum.

In 1893 he became the director of the Bureau of Weights and Measures in St. Petersburg and held this position until his death in 1907.

Вправа 1. Знайдіть у словнику переклад слів і словосполучень:

a property; two-volume; a gap; to investigate; germanium; expansion; to prove; to improve; to predict; liquid; solution; Bureau of Weights and Measures.

Вправа 2. Складіть розповідь про Менделєєва за моделями.

___ was born in ___ (year) in ___ (place) in the family of ___.

He studied ___ (subject) at ___ (institution).

He worked as a ___ (position) at ___ (institution).

He invented ___.

He discovered ___.

He is also famous for ___.

He died in ___.

☺ **З великими людьми теж трапляються кумедні історії.**

- In the period that Einstein was active as a professor, one of his students came to him and said: “The questions of this year’s exam are the same as last years’!” “True,” Einstein said, “but this year all answers are different.”
- Albert Einstein, who fancied himself as a violinist, was rehearsing a Haydn string quartet. When he failed for the fourth time to get his entry in the second movement, the cellist looked up and said, “The problem with you, Albert, is that you simply can’t count.”
- One student in Rutherford’s lab was very hard-working. Rutherford had noticed it and asked one evening:
– Do you work in the mornings too?

- Yes, – proudly answered the student sure he would be commended.
– But when do you think? – amazed Rutherford.

Прочитайте біографії інших видатних людей (див. Appendix I).

4.2. Письмові завдання

Вправа 3. Запишіть декілька фактів з біографії будь-якого вченого.

Приклади виконання завдання.

___ was born in ___ (city / country) in ___ (year) / on ___ (date). He studied at ___ (school). He was good at ___ (subjects). At the age of ___ he entered ___ (institute). His greatest discovery was _____. He was also interested in ___ (fields of science). He was married to ___ (name). He had ___ (children). He died in ___ (year).

4.3. Граматика. Числівники. Прийменники

4.3.1. Числівники

Утворення кількісних числівників

Другий десяток: закінчення *-teen* – 13 – 19 (*thirteen ... nineteen*).

Десятки: закінчення *-ty* – 20 – 90 (*twenty ... ninety*).

Тризначні числівники утворюються за зразком: 356 – *three hundred and fifty-six*.

Кожні три розряди чисел (справа наліво) відокремлюються комою: 2,437; 5,789,240.

Утворення порядкових числівників

Закінчення *-th* – *sixth, thirteenth, twenty-fourth*.

Виняток: *1st – the first, 2nd – the second, 3rd – the third*.

📌 Запам'ятайте!

У числівників *five* and *twelve* букви *ve* змінюються на *f* – *fifth, twelfth*; до числівника *eight* додається лише буква *h* – *eighth*; у числівника *nine* пропускається остання буква *-e* – *ninth*; у числівників, що позначають десятки, кінцева буква *y* змінюється на *ie*: *twenty – twentieth, fifty – fiftieth*.

Роки читаються так:

1989 – *nineteen eighty-nine*

1905 – *nineteen [ou] five*

1700 – *seventeen hundred*

2005 – *two thousand five (twenty hundred and five)*

Дати: 14 січня – *the fourteenth of January, January the fourteenth*

14-го січня – *on the fourteenth of January*

📌 **Запам'ятайте як читаються дати та час!**

1.01.1984 – **on** the first of January nineteen eighty-four;

в 1741 году – **in** seventeen forty-one;

о 5–30 – **at** half past five;

о сьомій годині дванадцять хвилин – **at** twelve minutes past seven;

без п'ятнадцяти шість – **at** a quarter to six.

📌 **Запам'ятайте як читаються дробові числа!**

1/2 – a half; 1/3 – one third (of an apple); 2/5 – two fifths (of an apple).

📌 **Запам'ятайте як читаються математичні операції та функції!**

+ – plus	$\sqrt[n]{}$ – <i>n</i> -th root of
- – minus	$\sqrt{}$ – square root of
* – times; multiplied by	$\sqrt[3]{}$ – cube root of
/ – divided by	5^2 – five squared
= – is; equals; is equal to	5^3 – five cubed
$f(x)$ – <i>f</i> of <i>x</i>	7^5 – seven to the fifth power

Вправа 4. Запишіть числівники англійською мовою.

9, 11, 20, 33, 45, 89, 100, 400, 721, 999, 1535, 276498, 3100001.

Вправа 5. Перекладіть словосполучення англійською мовою.

третій рік; дев'ятий день; тринадцята школа; тридцять друга книга; сорок третій дім; сьоме березня 1900р.; двадцять січня 2000р.; двадцять третє грудня 2002 р.; він народився 1 лютого 1985р.; він приїхав 21 травня 2003 р.

☺ **Smile!**

- Teacher: Name 6 animals which live specifically in the Arctic.

Pupil: Two polar bears and four seals.

- What is the difference between an amateur programmer and a professional one? – An amateur thinks that 1 kilobyte is 1000 bites. A professional thinks that 1 kilometer is 1024 meters.

4.3.2. Прийменники

Передача українських відмінків за допомогою англійських прийменників

Відмінок в українській мові		Прийменники в англійській мові
Називний	Хто? Що? Мій друг багато читає	(у реченні завжди підмет стоїть перед присудком) My friend reads much.
Родовий	Кого? Чого? Сестра мого друга в кімнаті. Я отримав листа від свого друга	of; from The sister of my friend is in the room. I have received a letter from my friend.
Давальний	Кому? Чому? Я завжди даю свої книги моєму другові.	to I always give my books to my friend. Або: I always give my friend my books
Знахідний	Кого? Що? Я зустрів свого друга вчора.	- (у реченні завжди додаток стоїть після присудка) I met my friend yesterday.
Орудний	Ким? Чим? Ця робота виконана моїм другом. Я пишу ручкою.	by; with This work is done by my friend. I write with a pen.
Місцевий	Про кого? Про що? Я часто думаю про друга.	about, of I often think about (of) my friend.

Багатозначність деяких прийменників

Прийменник	Обставина місця	Обставина часу	Додаток
In	<i>в / у; на</i> in the plane – у літаку in the tree – на дереві in the street – на вулиці	<i>у / через</i> in October – у жовтні in 5 minutes – через 5 хвилин in the morning (afternoon, evening) – вранці (вдень, ввечері) in time – вчасно	
On	<i>на</i> on the table – на столі	<i>у / по , після</i> on Saturday – у суботу on Sunday morning – вранці у неділю on the 1 st of May – першого травня on arrival – після приїзду	
At	<i>на, при, в, за</i> at the lesson – на уроці at the table – за столом to look at – дивитися на ... at home – вдома	<i>о; в</i> at 5 o'clock – о 5-й годині at noon – вдень at night – вночі	
To	<i>на, до</i> to the station – на станцію	<i>до</i> from 1 to 10 – з 1 до 10	<i>(кому?)</i> to me – мені
From	<i>з; зі; із</i> from the table – зі столу	<i>з</i> from 5 till 6 – з 5 до 6	<i>від</i> from my friend – від мого друга

For		<i>протягом</i> for 5 minutes – 5 хвилин	<i>для, за</i> for me – для мене for peace – за мир
With			<i>з, зі; орудний відмінок</i> with me – зі мною with a pen – ручкою
By	<i>біля</i> by the river – біля річки by the window – біля вікна	<i>до</i> by the evening – до вечора	<i>по; орудний відмінок</i> by the radio – по радіо by plane – літаком

📌 **Запам'ятайте! Прийменники не вживаються:**

next week – наступного тижня; *last Monday* – минулого понеділка.

Наприклад: I saw my friend last month. They will take the exams next week.

Вправа 6. Заповніть пропуски прийменниками *at, in* або *on*, якщо необхідно.

1. There is some tea ____ the shelf ____ the cupboard. 2. Does your train stop ____ Lyon? 3. My friend works ____ chemist's ____ the town centre. 4. Turin is ____ the north of Italy, ____ the River Po. 5. Shall we meet ____ the railway station? 6. Is Tom ____ the living-room? – No, he is ____ the garden. 7. I waited ____ the bus stop for 20 minutes. 8. We are leaving ____ next Sunday. 9. The competition starts ____ Monday. 10. I am taking my driving test ____ 4.30 ____ the 3rd of July. 11. My grandfather was born ____ 1926. 12. The professor is going to the conference ____ a week. 13. Our university was founded ____ the 19th century. 14. We take our first exams ____ winter.

4.4. Домашнє завдання

📌 **Запам'ятайте!**

$1 + 2 = 3$ – *one plus two equals (is equal to) three*

$22 - 9 = 13$ – *twenty-two minus nine equals thirteen*

$2 \times 2 = 4$ – *two times two is four*

Вправа 7. Запишіть англійською мовою.

1.	243	11.	дванадцятого січня
2.	1,673,019	12.	у 1992 році
3.	7 автомобілей	13.	пів на третю
4.	18 відсотків	14.	без п'ятнадцяти дев'ять
5.	перший	15.	\$100
6.	другий	16.	$7+8=15$
7.	п'ятий	17.	$3*9=27$
8.	тридцять дев'ятий	18.	$\sqrt{64}=8$
9.	двісті сорок шостий	19.	$2^{10}=1024$
10.	двадцять третього вересня	20.	0.0312 метра

Вправа 8. Впишіть прийменники, де це необхідно.

1. Look ___ these two pictures. Whom do you see ___ these pictures? 2. Every day Mr. Green gets up ___ 7 o'clock, goes ___ the bathroom, takes a bath and has breakfast. 3. He goes ___ the plant ___ underground. 4. He arrives ___ work ___ 8 o'clock. 5. He works ___ week-days. 6. I presented this camera ___ my friend. 7. We arrived ___ London ___ the seventh ___ October. 8. There were lots ___ new words ___ the text we translated. 9. ___ present about 40% ___ the students have satellite or cable TV ___ home.

Вправа 9. Коротко викладіть факти з біографії вченого, про якого Ви прочитали (письмово).**Lesson 5. Students' Life**
5.1. Усна тема. Моє студентське життя
STUDENT'S WORKING DAY

Hi ! As you know, I am a first-year student of the University.

Now, let me describe my usual working day. My classes begin at eight thirty. So, on weekdays I have to get up at half past seven. My alarm clock usually wakes me up and my working day begins. I turn on the radio, do my morning exercises, take a shower and brush my teeth. After that I get dressed and comb my hair. Then I have breakfast. I love to listen to the latest news on the radio while I am eating.

I leave the house at ten minutes to eight and walk to the nearest bus stop. I live rather far from the University and it usually takes me about a quarter of an hour to get there by bus. Sometimes when the weather is fine and I have enough time I walk to the University.

As a rule we have three or four classes a day. We have lectures in different subjects. Usually I don't miss my classes because I want to pass my examinations successfully. But sometimes I do, especially when the weather is fine and the classes are boring.

At twelve o'clock we have a big break for lunch. That's my favourite time. That is the time to share the latest news with my friends. I prefer not to go to the canteen and we often have lunch in a small cafe not far from the University. At one o'clock we have to be back to our classes. During the working day we also have several short breaks that last for ten minutes.

From time to time I have to stay at the University till late evening because I go to the library to get ready for my practical classes or to write a report. As a rule I have no free time on weekdays. So, by the end of the week I get very tired.

I come home at about 6 o'clock in the evening. My parents are already at home. We have supper together. After supper we wash up, have coffee or tea and watch TV. I prefer old comedies and serials or films about travelling. Sometimes I go for a walk in the park or visit my friends.

At about eleven p.m. I go to bed. I like to read something before going to bed or to listen to some music. Sometimes I fall asleep while I am reading.

Вправа 1. Знайдіть відповідності у списках словосполучень.

1.	Бути студентом першого курсу	a	on weekdays
2.	По буднях	b	take a shower
3.	Прокидатися о 7.30 ранку	c	to pass examinations successfully
4.	Приймати душ	d	to get somewhere by bus
5.	Чистити зуби	e	from time to time
6.	Одягатися	f	to be over at 5 o'clock
7.	Слухати останні новини	g	to get ready for practical classes
8.	Діставатись кудись автобусом	h	to get tired
9.	Велика перерва на обід	i	to be at home
10.	Закінчуватися о 5 годині вечора	j	to fall asleep

11.	Пропускати заняття	k	to go to bed
12.	Успішно скласти іспити	l	to come home
13.	Час від часу	m	as a rule
14.	Готуватися до практичних занять	n	to be a first-year student
15.	Як правило	o	to get dressed
16.	Втомлюватися	p	to get up at half past seven
17.	Приходити додому	q	to brush teeth
18.	Бути вдома	r	to listen to the latest news
19.	Засинати	s	a big break for lunch
20.	Лягати спати	t	to miss classes

☺ Smile!

- Two young men who had just graduated from Harvard were all excited and talking effusively as they got into a taxi in Boston downtown. After listening to them for a couple of minutes the cab driver asked, “You men Harvard graduates?”

“Yes Sir! Class of ‘94!” they answered proudly.

Then the cab driver turned back to shake their hand, “Class of ‘58.”

- A student didn’t know what to do, so he grabbed a coin, flipped it in the air and said, “Heads – I watch a movie, Tails – I go to sleep and if it stands on the edge I’ll study!”

5.2. Читання

Прочитайте текст про двох студентів. Що вони роблять однаково, а що по-різному?

Jack lives in a hostel. He gets up at eight o’clock in the morning. He goes to classes at nine o’clock. His classes usually last till 2 p.m. In the afternoon he studies in the library. He does his homework in the evening. He sometimes goes to the cinema on Saturdays. He has many friends and visits them on Sundays. Usually they play football – regardless of the weather – and sometimes they go cycling in the country.

Pete does not live in the hostel, he lives with his parents. He does not go to the Institute on Tuesdays and Thursdays. He goes to the laboratory and works there till six o’clock on these days. He has a lot of friends. They seldom go to

the cinema but they like concerts. Pete usually does his homework from 7 till 9 o'clock p.m. Pete doesn't go in for any sports. He thinks it takes too much time, and he wants to devote himself to science.

5.3. Письмові завдання

Вправа 2. Заповніть пропуски у тексті словами і словосполученнями:

11 p.m., a glass of orange juice and a sandwich, on his homework, at 8.30 a.m., local bus, first-year student, suburb near Chicago, team-mates, one day, finishes with, in the canteen, 7.30 a.m.

Dan Lions lives in a __ (1). He is a __ (2). Every morning he gets up at __ (3). He has __ (4) for breakfast and leaves the house __ (5). He goes to his Technical School by bus. He doesn't take a packed lunch from home and prefers to eat __ (6). After classes he usually plays basketball with his __ (7). Dan is a promising basketball player and he dreams that __ (8) he will be invited to play for "Chicago Bulls". After his training he takes a __ (9) home and has dinner at about 7 o'clock. Dan doesn't spend much time __ (10) and it is usually ready by 9 o'clock. His usual evening __ (11) watching TV or playing his favourite computer games. He goes to bed at __ (12).

5.4. Граматика. Займенники

5.4.1. Особові, присвійні, зворотні та підсилювальні займенники

Особові		Присвійні		Зворотні та підсилювальні (-ся, себе, сам)
Називний відмінок (хто?)	Об'єктний відмінок (кого? кому?)	I форма (чий? чия?)	II форма (абсолютна)	
I (я)	me (мене, мені)	my (мій)	mine (мій)	myself
You (ти)	you (тебе, тобі)	your (твій)	yours (твій)	yourself
He (він)	him (його, йому)	his (його)	his (його)	himself
She (вона)	her (її, їй)	her (її)	hers (її)	herself
It (воно)	it (його, йому)	its (його)	its (його)	itself
We (ми)	us (нас, нам)	our (наш)	ours (наш)	ourselves
You (ви)	you (вас, вам)	your (ваш)	yours (ваш)	yourselves
They (вони)	them (їх, їм)	their (їх)	theirs (їх)	themselves

Приклади: *I* work in an office. *My* office is in the centre of the city. This office is *mine*. Call *me* to *my* office. I will come to *your* office *myself*.

Зворотні займенники вживаються також як **підсилювальні слова** і відповідають українському *сам*. У цьому значенні зворотний займенник стоїть у кінці речення або безпосередньо після підсилювального слова:
I have seen it **myself**. – Я бачив це сам.

Вправа 3. Замініть виділені іменники займенниками у називному та об'єктному відмінках.

1. *The girls* are playing tennis. 2. I saw *the girls* in the park. 3. Put *the books* on the shelf. 4. *The books* are on *the shelf*. 5. We have seen *the film*. 6. *The film* is very interesting. 7. *My sister* went to *the post-office*. 8. I am waiting for *my sister*. 9. We listened to *the professor* with great attention. 10. The *teacher* is explaining a new grammar rule to *the students*.

Вправа 4. Заповніть пропуски особовими займенниками у необхідному відмінку.

1. On my way home I met Peter and told ___ about the trip. 2. I need this book badly. I can't prepare my report without ___. 3. I don't know the way to the railway station. Couldn't you show it to ___? 4. We are going to spend the summer in the country. Will you join ___? 5. Wait for us at the bus stop. ___ will be back in no time. 6. If you give me your home address, ___ will write to ___. 7. I know this woman. ___ works at the factory with my mother. 8. If I see Helen, I'll ask ___ to ring ___ up tomorrow. 9. I like this radio set very much. Where did you buy ___? 10. You are to be here at 7. We'll be waiting for ___.

5.4.2. Вказівні займенники

Однина	Переклад	Множина	Переклад
this	це, цей	these	ці
This man	Цей чоловік	These men	Ці чоловіки
This is a desk	Це – парта	These are desks	Це – парти
that	то, той	those	ті
That man	Той чоловік	Those men	Ті чоловіки
That is a desk	То – парта	Those are desks	То – парти

5.4.3. Кількісні займенники

Займенники *many, few* вживаються перед **злічуваними** іменниками у множині, а також замінюють їх, наприклад: *There were many (a lot of) students in the room. She has few books.*

Займенники *much, little* вживаються перед **незлічуваними** іменниками, а також замінюють їх, наприклад: *There is much (a lot of) snow on the ground. I have very little time.*

багато	many (books, students)
	much (snow, time)
	a lot of (books, students, snow, time)

мало	few (books, students)	декілька	a few (books, students)
	little (snow, time)	трохи	a little (snow, time)

☺ **Smile!**

Teacher (on the telephone): “So **you** say John is too ill to come to school?”

Voice at other end: “**That’s** right.”

Teacher: “**Who** am **I** talking to?”

Voice at the **other** end: “**This** is **my** father.”

Вправа 5. Запишіть речення у множині.

1. This is an electric cable. 2. That is a light bulb. 3. That is a crane. 4. This is a screwdriver. 5. Is this a mistake? 6. Is that an engine? 7. Is this a correct answer? 8. Is that a laser printer? 9. That is a machine-tool.

Вправа 6. Заповніть пропуски займенниками *few, little, a few, a little*.

1. I couldn’t buy the coat because I had ___ money left. 2. Let us buy some ice-cream, I have ___ money left. 3. ___ pupils speak English as fluently as she does. 4. There were very ___ people in the streets. 5. We can’t play because we have too ___ time. 6. Give me ___ apples. 7. They spent ___ days in the country and then returned to Kharkiv. 8. Ask Ann to help you to translate the letter; she knows French ___. 9. Mary works hard at her English. She makes ___ mistakes in her speech. 10. Can you lend me ___ money?

5.4.4. Неозначені займенники

Займенники *some* та *any* використовуються для позначення **невизначеної кількості**: *some letters, some people, some sand*.

Some використовується в стверджувальних реченнях, а *any* – в питальних та негативних: *I have some time. I don't have any time*.

Any використовується, як правило, в загальних питаннях (*так – ні*), а в спеціальних питаннях і питаннях–проханнях чи пропозиціях використовується *some*: *Do you have any ideas where to go tonight?* (загальне питання); *Where can I get some information on the exhibition?* (спеціальне питання до обставини місця); *Would you add some salt to the salad?* (питання–прохання); *Do you want some more coffee?* (питання–пропозиція).

У стверджувальних реченнях *any* означає *будь-який*: *Any help will be welcome*.

No означає *ніякий, ніякі*: *I have no ticket. No comments*.

Похідні займенники від *some, any, no* мають аналогічні значення:

something – *щось*;

somebody = *someone* – *хтось*;

somewhere – *десь*;

anything – *щось* (у питальних та негативних реченнях); *що-завгодно* (в стверджувальних реченнях);

anybody = *anyone* – *хтось* (у питальних та негативних реченнях); *хто-завгодно* (в стверджувальних реченнях);

anywhere – *десь* (у питальних та негативних реченнях); *де-завгодно* (в стверджувальних реченнях);

nothing – *ніщо, нічого*;

nobody = *no one* – *ніхто*;

nowhere – *ніде*.

Вправа 7. Заповніть пропуски займенниками *some, any, no* або їх похідними.

1. There were ____ of my friends there. 2. Well, anyway, there is ____ need to hurry, now that we have missed the train. 3. Have you ever seen ____ of these pictures before? 4. There is ____ water in the kettle: they have drunk it all. 5. We could not buy cherries, so we bought ____ plums instead. 6. Can I have ____ milk?

– Yes, you can have _____. 7. Have you bought _____ cheese? 8. Give me _____ books, please. I have _____ to read at home. 9. Put _____ sugar in her tea: she does not like sweet tea. 10. Is _____ the matter with you? Has _____ offended you? I see by your face that _____ has happened. 11. We did not see _____ in the hall. 12. _____ was present at the lesson yesterday. 13. He is busy. He has _____ time to go to the cinema with us. 14. Do you need _____ books to prepare for your report? 15. Do you have _____ questions? Ask me _____ you like, I will try to answer _____ of them. 16. _____ liked that play: it was very dull.

5.5. Домашнє завдання

Вправа 8. Перефразуйте речення відповідно до зразків.

Model 1. *This is my coat. – This coat is mine.*

1. This is our university. 2. This is my note-book. 3. This is your desk. 4. This is his bicycle. 5. This is her bag. 6. This is their classroom. 7. This is our tram. 8. This is her idea.

Model 2. *Your room is large. Jane's room is larger. – Jane's room is larger than yours.*

1. My watch is good. Your watch is better. 2. My pen is bad. His pen is worse. 3. Their house is old. Our house is older. 4. His camera is dear. Nick's camera is dearer. 5. Her story is interesting. Her friend's story is more interesting. 6. Our teacher is young. Your teacher is younger.

Вправа 9. Доповніть речення зворотними займенникам.

Model. *I've repaired my TV set. – I've repaired my TV set myself.*

1. I'll go to the post-office _____. 2. She cooks breakfast _____. 3. We'll water the flowers _____. 4. The soldiers built the bridge _____. 5. Mother said to the boy, "You must always make the bed _____." 6. If I were you, I would go there _____. 7. The chief engineer went to the conference _____.

Вправа 10. Замініть українські слова словами *many, much, few, little, a few, a little*.

1. There is (мало) meat in the soup. 2. I do not eat (багато) bread. 3. I have (трохи) money. 4. There is (мало) salt in the salad. 5. There is not (багато) fish on the table. 6. There is (мало) ink in the ink-stand. 7. There is not (багато) air in the room. 8. Are there (багато) cups on the table? 9. We do not spend

(багато) time for cooking. 10. Is there (багато) coffee in the cup? 11. There are (мало) things in my back-pack. 12. He has not (багато) friends. He has only (декілька).

Вправа 11. Заповніть пропуски займенниками *some, any, no* або їх похідними. Перекладіть рідною мовою.

1. Virtual visitors of the exhibition can navigate through different booths ____ time of the day. 2. Fear of having a bad time is enough to make ____ people stay at home. 3. At the party John didn't recognize _____. 4. Chimpanzees know when ____ else's thinking is wrong. 5. ____ who can ride a bicycle can understand how it works. 6. Are there ____ letters for me? 7. You look worried. Has ____ happened? 8. Bicycles generate ____ air or noise pollution. 9. Would you like ____ milk to your coffee? 11. I haven't got ____ money at the moment. Would you lend me _____?

Вправа 12. Перекладіть текст англійською.

Я навчаюсь у Харківському державному технічному університеті на першому курсі. Окрім спеціальних предметів, я вивчаю англійську мову. Кожного дня я ходжу на лекції та практичні заняття. Двічі на тиждень у нас лабораторні роботи. Кожна лабораторна робота триває 45 хвилин.

Мій друг – також студент нашого університету. Він звичайно дістається до університету автобусом і витрачає на це півтори години. Він встає дуже рано, щоб не запізнитися на заняття. О першій дня у нас звичайно обід. Він обідає в їдальні. Я не ходжу в їдальню.

Я живу у гуртожитку. Я повертаюсь з університету о 7-й вечора, вечеряю, іноді дивлюсь цікавий фільм. Перед сном я люблю трохи погуляти. Часто до мене приходять одногрупники. Минулої неділі ми ходили з ними в парк. Нам дуже сподобалася наша прогулянка.

Lesson 6. Hobby

6.1. Усна тема. Моє хобі

MY HOBBY

What is a hobby? It is what you can and like to do, when you have free time. We choose a hobby according to our character and taste. When we have a

hobby, our life becomes more interesting. Very often our hobby helps us to choose our future profession because we learn a lot of new things. Many people are interested in music. They collect records. Others like to read and collect books. People living in cities and towns like to be closer to nature and they spend their free time in the country. Some of us go on hikes, others prefer working in their gardens, taking photographs or knitting. For example, gardening and growing roses is the most common hobby among Englishmen.

Вправа 1. Складіть розповідь про своє хобі, використовуючи такі фрази.

When I have free (spare) time ...; I have chosen my hobby because ...; I started ... when I was ...; I like (to do) / like (doing) ...; I prefer (doing something) ...; I am interested in (something) (doing something) ...; I am fond of (something); The most common hobby among (somebody) is ...; My hobby plays an important part in ...; I spend much (little) time on (doing something); I'm keen on (something) (doing something); I'm into (something) (doing something); I enjoy (something) (doing something); I relax by (doing something).

Прочитайте назви найбільш популярних хобі у додатку (Appendix I).

6.2. Читання

Прочитайте текст зі словником.

An Unusual Hobby

Hi, I'm Ron Hawker. I started riding the unicycle when I was 11 years old. My mother gave me a unicycle as a Christmas present. I have never been a good athlete, so it took me a long time to learn how to ride. At first, my mother used to fight me because all the walls of my house were decorated with my fingerprints.

In a month, I could ride around the block (about half a mile) falling about 3 times. It took me several weeks to learn how to freemount. I taught my brother and a couple of my friends unicycling. Since the first day, my father was extremely supportive and always found ways to keep me involved in different unicycling activities.

Training for my first unicycling competition was interesting. My coach David used to wake me up at 5:00 a.m. every morning, to run 5 miles. At first it was very hard and even I was not sure if the whole thing was worth it ... now I know that it definitely was.

A few months later, I went with my father to Nassau County, in Long Island, New York. I never thought I was good enough to compete in an international competition. When the race started, I decided to do what my trainer, David, told me: I had to follow the first rider in order to have him (her) cut the wind. At the end of the race, I discovered that I could go faster than the first rider and I decided to pass her. As I was passing her, I fell from my unicycle but I managed to get back on and still win the race. I was VERY excited. That was my first international race and I won!!!

6.3. Письмові завдання

Вправа 2. Складіть заперечні речення до тверджень щодо прочитаного тексту “An unusual hobby” за зразком: *The text is about the weather.* – *The text is not about the weather. The text is about a hobby.*

1. The boy's name is John Brown. 2. His hobby is riding a bicycle. 3. He started riding at the age of 13. 4. This strange vehicle was his father's New Year present. 5. Ron has a sister. 6. Ron's trainer is Thomas. 7. While training Ron had to get up at 7 o'clock in the morning. 8. Ron went to competitions to New York city. 9. He was sure he would win. 10. Ron was following the first rider, who was an old man. 11. Ron lost the competitions.

☺ **Smile!**

You are an Internet Addict if ...

- Your nightmares are in HTML and GIFS.
- You start introducing yourself as “Jim at net dot com.”
- Your heart races faster and beats irregularly each time you see a new WWW site address on TV.
- All of your friends have an @ in their names.
- Your dog has its own home page.

6.4. Граматика. Багатофункціональні слова. Словотвір

6.4.1. Багатофункціональні слова *that, one та інші*

as

as (прислівник) – як, у якості: He works as a doctor.

as (сполучник) – коли: As he came in, everybody stopped talking.

as (сполучник) – оскільки: I didn't go to the cinema as I was too busy.

for

for (прийменник) – для, заради: He bought flowers for his granny.

for (прийменник) – протягом: I have been studying English for 10 years.

for (сполучник) – оскільки: He has missed the train for he got up late.

it

it (особовий займенник) – він, вона, воно: I have a car. It is red.

it (неособовий займенник) – не перекладається: It is raining.

it is (was) ... that (who) – саме: It is him who did it.

one

one (кількісний числівник) – один: I have only one English dictionary.

one (замінює іменник) – The new car runs faster than the old one.

one (неозначений займенник) – вживається в неозначено-особових реченнях, не перекладається: One can find any information in the Internet.

since

since (прийменник) – після, з: I have been waiting for you since 2 p.m.

since (сполучник) – відтоді, оскільки: He was absent since he was ill.

that

that (вказівний займенник) – той: That building is very old.

that (займенник) – замінює іменник, щоб уникнути повторення: The climate here is like that in France.

that (відносний займенник) – який: This is the letter that came yesterday.

that (сполучник) – що, щоб: I know that he is fond of roller-skating.

Вправа 3. Перекладіть речення.

1. As a rule one may determine the applied forces from the conditions of the problem. 2. Space flights prove that. 3. As I didn't have enough money for a taxi, I went home on foot. 4. Jane dropped her bag as she was getting out of the car. 5. The work of the new device is much more efficient than that of the old

one. 6. It is physics that has given us countless inventions. 7. By the street of by-and-bye one arrives at the house of Never. 8. The principle of conservation of energy states that energy is uncreatable and indestructible; it states that in everything that occurs in the world a transformation of energy is all that takes place.

Вправа 4. Вставте *for, that, it, one, since, as*.

1. ___ part of atmosphere which is higher than seven miles over the Earth is called stratosphere. 2. ___ is water ___ is the most common substance in our life. 3. Magnesium is a very light metal, ___ which we find more and more applications. 4. I haven't seen him ___ that time. 5. A kettle half full of water can be boiled in half the time required for a full ___. 6. ___ mercury is commonly used in barometers, air pressure is often recorded in centimetres of mercury.

6.4.2. Словотвір

Утворення прикметників

іменник + суфікс					
-al formal	-ful useful	-ous dangerous	-y rainy	-less – з заперечним відтінком: useless	-ic magnetic

дієслово + суфікс		
-able, -ible changeable	-ant, -ent different	-ive attractive

префікс + прикметник		
in-, im-, il-, ir- (з заперечним відтінком) indefinite, impossible, illegal, irregular	un- (з заперечним відтінком) unexpected	dis- (з заперечним відтінком) disproportional

Утворення прислівників

Іменник + -ly	Прикметник + -ly	Числівник + -ly
weekly	highly	firstly

Ⓜ Запам'ятайте! Буква у перед суфіксом **-ly** змінюється на **i**:
happy – happily.

Деякі прислівники в англійській мові збігаються за формою з прикметниками: *fast* – швидкий, швидко; *early* – ранній, рано; *loud* – голосний, голосно. Їх легко відрізнити, тому що прислівник, як правило, відноситься до дієслова або прикметника, а прикметник – до іменника.

Вправа 5. Утворіть прикметники за допомогою суфіксів.

To change, comfort, agriculture, history, biology, centre, nature, geography, industry, post, to type, talent, gift, skill, beauty, care, event, joy, peace, to act, atom, electron, hero, to create, to express, end, friend, hope, help, danger, victory, noise, cloud, wind, rain.

Вправа 6. Утворіть прикметники з протилежним значенням за допомогою префіксів.

Possible, known, mobile, interesting, obedient, probable, comfortable, usual, polite, expected, connected, happy, important, honest, healthy, skilled, legal, similar, regular.

6.5. Домашнє завдання

Вправа 7. Запишіть 10 англійських слів, які є одночасно і іменниками, і дієсловами, наприклад: *work* (праця – працювати), *study* (кабінет – навчатися), *head* (голова – прямувати).

Вправа 8. Утворіть іменники від прикметників.

Distant, independent, scientific, creative, universal, practical, planetary, peaceful, mathematical, physical, electrical, chemical, biological, difficult.

Вправа 9. Перекладіть речення англійською. Зверніть увагу на переклад багатозначних слів.

1. Дайте мені той підручник, будь ласка. Він поряд з вашим портфелем.
2. Неможливо жити без води. 3. Хімія – такий же цікавий предмет, як і математика. 4. У мене немає словника. Я маю його купити. 5. Саме енергія руху часток у випадковому напрямку утворює тепло.

Вправа 10. Складіть розповідь про своє хобі, використовуючи активну лексику.

UNIT 2. SOCIAL CONTACTS

📌 Active Vocabulary of the Unit:

traffic lights, block, passer-by, bus, trolley-bus, tram, taxi, underground, fare, to get to, to get off, to reach, to cross, to change, to miss, to go by bus, to go on foot; booking-office, ticket-machine, jet-plane, flight, seat belt, pilot, stewardess, to take off, to land, delay, carry-on, luggage, on board a plane (ship), compartment, berth, platform, passenger; customs officer, to declare, smuggling, to go through customs, entrance, visa, gift, to be liable to duty, duty free, currency; to check in, guest, reception-desk, accommodation, single / double room, suite, to reserve, to book, to sign in (out); receiver, dial, telephone directory, buzz, to ring smb. up, to telephone, to make a call, to put through, to disconnect, to leave the message; appointment, hand language, gesture, to signify, approval, insult.

Lesson 7. Asking the Way

7.1. Розмовна тема. Орієнтування в місті

📌 Active Vocabulary:

to cross – переходити; crossing – перехрестя; block – квартал; traffic lights – світлофор; subway station – станція метро; right down the street – в кінці вулиці; round the corner – за рогом; right across the square (street) – прямо через майдан (вулицю); to turn left (right) – повернути ліворуч (праворуч); to get to the post-office – потрапити на пошту; terminal – вокзал; to take (about transport) – сідати; to get off – виходити; to take (about time) – займати.

Прочитайте та перекладіть діалоги.

1. – I beg your pardon. Where's the nearest subway station? – It's right down the street. – Thank you. You've been very helpful. – That's all right.
2. – Excuse me, please. What's the way to the post office? – It's two blocks from here. Go straight on, then turn right at traffic lights. – Thanks a lot. – You are welcome.
3. – Excuse me, sir. Could you tell me how to get to the bus terminal? – Turn round the corner.
4. – How can I get to the British Museum? – Cross the street and keep to the left.

5. – Will you show me the way to the University? – Take bus No. 34 and get off at the stop Derzhprom. – How long does it take? – It will take you about 10 minutes. – Thank you very much. – Welcome.

Вправа 1. Складіть коротенькі діалоги, використовуючи такі словосполучення.

Для ввічливого звернення: Excuse me, please; Pardon me, sir; Could you tell me; I beg your pardon.

Для запитання дороги: Is it far from; How to get to; How can I get to; Is this the right way to; Where is the nearest; What's the way to.

Для відповіді: Cross the street; Go straight on; Right down the street; Across the square; Keep to the left (right); Turn left (right); Take bus (tram).

7.2. Читання

Прочитайте та перекладіть текст рідною мовою. Складіть власну розповідь про подорож літаком, використовуючи підкреслені вирази.

Travelling by Air

📖 Active Vocabulary:

to travel – подорожувати; to fly – літати; a flight – рейс; to catch a plane – встигнути на літак; to miss a plane – запізнитись на літак; to board a plane – сідати на літак; a boarding card – посадочний талон; a handbag – ручний багаж; an airhostess (stewardess) – бортпровідниця; seat belts – пристібні реміні; to take off – злітати; to land – приземлятися; to go down – знижуватись; to be air-sick – страждати від повітряної хвороби; to arrive at one's destination – прибувати до місця призначення.

Modern life is impossible without traveling. To understand whether it is really true, you only have to go to a railway station, a port or an airport. There you will see hundreds of people hurrying to catch a train, a ship or a plane, all wanting to go somewhere and to get there as quickly as possible. For us, there is nothing like travel by air: it is more comfortable and far quicker than any other means of traveling. When you board a plane with your handbag and boarding card, the airhostess greets you and shows you to your seats. She asks the passengers to fasten their seats belts and not to smoke when the plane is on the ground,

while it is taking off or landing. She gives information about the flight (speed, altitude, t° outside and so on) and offers the passengers some mineral water, lemonade or pepper mints if you are air-sick. The seats on the plane are comfortable, and you can relax either reading or looking through the window, or watching films on TV, if you don't want to sleep. When there is a long-distance flight, you'll be provided with excellent meals. Thus, the Airline Service does its best for you to enjoy the flight. Look onto the ground when the plane is going down. On and on you fly with the ever-changing scenes below – villages, fields and hills, rivers and valleys, each following the other with great speed, till you arrive at your destination and safely land at an airport. In fact, there's no better way of traveling than by air.

☺ **Smile!**

Some Murphy Laws For Frequent Flyers

- No flight ever leaves on time unless you are running late and need the delay to make the flight.
- If you are running late for a flight, it will depart from the farthest gate within the terminal.
- If you arrive very early for a flight, it inevitably will be delayed.
- Flights never leave from Gate #1 at any terminal in the world.
- If you must work on your flight, you will experience turbulence as soon as you touch pen to paper.
- The crying baby on board of your flight is always seated next to you.
- The less carry-on luggage space is available on an aircraft, the more carry-on luggage passengers will bring aboard.

7.3. Письмові завдання

Вправа 2. Уявіть, що ви зустріли іноземного студента, який приїхав на студентську конференцію. Дайте відповіді на його запитання.

1. Could you tell me how to get from Pushkinskaya metro station to Shevchenko garden? 2. What's the shortest way from NTU "KhPI" to the Historical Museum? 3. Where is the nearest Information office? 4. Would you show me the way to the Students' Palace?

7.4. Граматика. Система видових та часових форм англійського дієслова. Present Simple Tense.

Типи речень

7.4.1. Система видових та часових форм англійського дієслова. *Present Simple Tense*

Основні форми англійського дієслова	Приклади
Інфінітив (Infinitive)	to work; to write
Минулий неозначений час (Past Simple)	worked; wrote
Дієприкметник минулого часу (Past Participle)	worked; written
Дієприкметник теперішнього часу (Present Participle)	working; writing

Два види стану дієслова	Приклади
Активний стан (Active Voice)	He often opens the window.
Пасивний стан (Passive Voice)	The window is opened very often.

Present Simple

Випадки вживання	Приклади
Загальновідомі факти та істини	The sun rises in the east. – Сонце підіймається на сході.
Повсякденні дії, що повторюються	I wake up at 7.00 every morning. – Я прокидаюся кожного ранку о сьомій.
В складних реченнях після <i>if</i> – як-що, <i>in case</i> – у випадку, <i>when</i> – коли	I'll help you if I have time. – Я допоможу тобі, якщо матиму час.

Форма стверджувального речення

I (you, we, they, my parents) work.

He (she, it, my brother) works.

Форма заперечного речення

I (you, we, they, my parents) do not work.

He (she, it, my brother) does not work.

do not = don't

does not = doesn't

Форма питального речення

Do I (you, we, they, my parents) work?

Does he (she, it, my brother) work?

7.4.2. Типи речень

В англійській мові виділяють 4 типи речень.

1) Стверджувальне:

The students work in the laboratory twice a week.

2) Заперечне:

The students do not work in the laboratory twice a week.

3) Питальне:

Do the students work in the laboratory twice a week?

4) Спонукальне:

Send me this document by E-mail.

Do not touch this button.

У перших двох типах речень використовується **прямий порядок слів**, при якому підмет стоїть перед присудком. У питальному реченні – **зворотний порядок слів**, тобто присудок (дієслово або допоміжне дієслово) стоїть перед підметом.

Вправа 3. Розкрийте дужки, використовуючи дієслова у Present Simple.

1. My little sister (to go) to bed at nine o'clock every day. 2. We (to wash) our faces every morning. 3. She (not to have) maths lessons every day. 4. Your sister (to go) to school every day? – Yes, she _____. 5. My brother (not to like) drinking coffee. 6. My mother always (to take) a bus to get to work. 7. My friend (to live) near his office, he usually (to walk) there. 8. You (to talk) to the members of your family every day? – Yes, I _____. 9. I (to be) very tired, I (not to want) to have dinner. 10. You (to come) home at six o'clock? – No, I _____.

Вправа 4. Запишіть речення у питальній та заперечній формах. Перекладіть речення.

1. The students usually greet this famous lecturer warmly. 2. When I fall ill, my mother sends for the doctor. 3. She looks after the patients well. 4. My father looks through newspapers every morning. 5. He gives my brother English lessons. 6. We turn on the light when it is dark. 7. Betty often takes her younger brother for a walk. 8. Nina mispronounces a lot of words. 9. He finishes his work at about seven o'clock.

Вправа 5. Складіть речення з поданих нижче слів.

1. in, Were, ago, a, London, you, year? 2. abroad, Your, live, parents, don't.
3. computer, works, My, at, company, a, uncle. 4. the, doesn't, The, rise, in, sun,
west. 5. you, Do, in, country, live, the, in, city, the, or? 6. Where, you, last, did,
Sunday, go?

7.5. Домашнє завдання

Вправа 6. Підберіть відповіді до запитань, наприклад: 1 – i.

1	<i>Do you change for the subway?</i>	a	Not, yet. I have no small change.
2	Where can I take a bus?	b	No, just on the contrary, you should turn left.
3	Will you go home on foot?	c	Take bus number 3 and get off at the second stop.
4	Will you please change me a dollar?	d	The tram stop is just round this corner.
5	Where shall I change for tram number 2?	e	At Lincoln Center, not far from here.
6	Has she got on a bus?	f	Yes, certainly. I'm not a bit tired.
7	Shall I keep to the right?	g	With pleasure, I have a lot of change.
8	How can I get to the zoo?	h	No, I'm getting off here.
9	Have you paid your fare?	i	<i>Yes, I do. I can get to the university only by the subway.</i>
10	Will you get off at the next stop?	j	Yes, she has just engaged a seat.

Вправа 7. Поставте дієслова в дужках у потрібній формі Preset Simple.

1. My sister (to get) up at eight o'clock. 2. She (to be) a school-girl. She (to go) to school in the afternoon. 3. Jane (to be) fond of sports. She (to do) her morning exercises every day. 4. She (to have) two eggs, a sandwich and a cup of tea for breakfast. 5. After breakfast she (to go) to school. 6. It (to take) her two hours to do her homework. 7. She (to speak) French well. 8. My working day (to begin) at seven o'clock. I (to get) up, (to switch) on the radio and (to do) my morning

exercises. It (to take) me fifteen minutes. At half past seven we (to have) breakfast. My father and I (to leave) home at eight o'clock. He (to take) a bus to his factory. My mother (to be) a doctor, she (to leave) home at nine o'clock. In the evening we (to gather) in the living-room. We usually (to watch) TV and (to talk). 9. My grandma (to live) in the country. She (to be) a pensioner.

Вправа 8. Складіть розповідь про те, як ви дістаєтесь з дому до свого ВНЗ, використовуючи такі вирази.

I live in (the district of the city).

Usually I go to the University by (bus, metro, etc.).

First, I walk to

I take bus (trolleybus, ...) number

I get off at the stop (station)

Then I change to

When I come to ... stop (station), I cross

Then I go on foot for ... (time).

It takes me ... (time) to get to the University.

Lesson 8. Travelling

8.1. Розмовна тема. Подорожі

📖 Active Vocabulary:

at the disposal – у розпорядженні; discount – знижка; journey – подорож; booking office – білетна каса; to board – сідати (у вагон, на літак); car – вагон; compartment – купе; luggage – багаж; berth – полка в купе; departure – відправлення; charge – вартість; single (return) ticket – білет в одну (дві) сторони.

There are various means of transport at the disposal of those who travel either for pleasure or on business. If you don't like travelling on foot you can also use bicycle or a motor-bike. With motor-car one can travel comfortably for long distances. You can also travel by sea in big cruise liners or small ships and by air on board modern airliners. But a lot of people prefer using trains for long-distance journeys. The first thing we do when we want to go somewhere far away is buying a ticket at a booking office (though now you can do it using a ticket-machine or even through the Internet).

Dialogue at a booking office

- Good afternoon. Can I help you?
- Hello, I'd like to book a ticket to Kiev.
- What date do you want to leave?
- On the 25th of November.
- Single or return?
- Single, please.
- Do you prefer lower or upper berth?
- Lower, please. I've always been afraid of falling down. How much is the ticket?
- It depends on the class of the car. What class would you like?
- Second, certainly. I am a student. By the way, do you have discounts for students?
- Sure, it's half the price of the ticket. So your charge is 60 hryvnyas.
- Here you are. And what time does the train start?
- It starts at 10.30 p.m. All the information you need is on your ticket: the date and time of departure, the car and place number, the charge and so on.
- Thanks a lot.
- Welcome. Have a nice journey.

Вправа 1. Висловіть свою думку про подорожі різними видами транспорту, використовуючи такі фрази.

To start with ____; I think (I believe) ____; As far as I know ____; The thing is ____; I doubt that ____; To tell the truth ____; As for me ____; The trouble is ____; I'm afraid ____; I must confess ____.

8.2. Читання

The Benefits of a Cruise Holiday

📖 Active Vocabulary:

to be faced – стикатись; prospect – перспектива; quandary – скрутне становище; available – що є в наявності; span – короткий відрізок часу; itinerary – маршрут; cabin – каюта; ashore – на березі; to dock – причалювати; arcade game – гральний автомат; to be likely – скоріш за все; like minded people – однодумці; to encourage – заохочувати; mingling – змішування.

Вправа 2. Знайдіть слова в тексті, що відповідають визначенням:

1) a period in which a break is taken from work or studies for rest, travel, or recreation; 2) a trip by sea in a liner for pleasure, usually calling at a number of ports; 3) a plan or line of travel; 4) a room used as an office or living quarters in a ship; 5) a short outward and return journey, esp. for relaxation, sightseeing, etc.; 6) a structure that has been built and filled with water for people to swim in; 7) a particular incident, feeling, etc., that a person has undergone.

More often than not, when you are faced with a prospect of planning a vacation, you find yourself in a quandary. A lot of options are available to you, whether these are railroad trips, vacations in hilly stations, beaches or trekking or even spending time at your parents'. Here, I am going to tell you what you will gain if you choose a cruise above all these. It offers you a big opportunity to go to a large number of places in a short span of time which you otherwise cannot visit. Often it depends on what the itinerary is and what cruise liner you choose.

The best thing is that a cruise package comes with food and it's especially good for people who tend to eat "more". In a cruise, you also need to get settled at one place only, in your cabin. You can go ashore to all places from here, and finally at the end of the day come back and rest here. There is no need to go and try to settle yourself at various hotels.

A lot of cruises also come with packages that plan your onshore activities, places you visit and your guides. Before you dock at a place, it tells you of the importance of the place you are going to visit, and the places recommended to visit. Once you are on the shore, there will be people present to guide you through the whole excursion. This tends to make your experience a pleasant and memorable one.

On board time also can be spent in a variety of wonderful ways. There will be different types of activities for people with a wide range of interests. It may be arcade games and libraries for the quiet, or pools and parks for the more active ones. There are also special 24-hour bars and clubs for young people and all day activity packages suitable for them. Golf, aerobics, theater, comedy, shopping – you get them all here.

Finally, you are likely to spend the time in your cruise with like minded people and you have a great opportunity to make lifelong friends. Most of the activities are tailored to let people come closer to each other and encourages “social mingling” among the people.

A cruise guarantees a great experience for you.

☺ **Smile!**

From a passenger cruise ship, everyone can see a bearded man on a small island who is shouting and desperately waving his hands. “Who is it?” a passenger asks the captain. The cruise ship captain replied, “I’ve no idea. Every year when we pass, he goes nuts.”

8.3. Письмові завдання

Вправа 3. Підберіть відповіді до реплік, що наведені нижче.

1. – Can I help you? – ____ – Single or return? – ____ – Here you are. And your change, please.
2. – Would you like sleepers, sir? – ____ – Upper or lower berths? – ____ – Here you are.
3. – When do you want to go, sir? – ____ – When are you going to come back? – ____ – Here you are. Have a nice trip.

a) Single, please. b) I'd like to book 2 train tickets to Paris. c) On September, 15th. d) Yes, please. e) Lower, please. f) On August, 19th.

8.4. Граматика. The Past Simple Tense. Regular and Irregular Verbs. The Future Simple Tense

The Past Indefinite (Simple) Tense

Випадки вживання	Приклади
Дії, що відбувалися у минулому, або факт, що мав місце в минулому (показники минулого часу: last year, in 1999, yesterday, etc.).	He got a Bachelor's degree in 2000. – Він отримав диплом бакалавра в 2000 році.

Форма минулого часу для **правильних** дієслів утворюється додаванням закінчення **-ed**. Форма минулого часу для **неправильних** дієслів утворюється різними способами (див. таблицю неправильних дієслів (Appendix II) другий стовпчик).

Форма стверджувального речення

I (he, you, we, they, my friend) studied at the University 10 years ago.

I (he, you, we, they, my friend) sent the letter yesterday.

Форма заперечного речення

I (he, you, we, they, my friend) did not study at the University 10 years ago.

I (he, you, we, they, my friend) did not send the letter yesterday.

did not = didn't

Форма питального речення

Did I (he, you, we, they, my friend) study at the University 10 years ago?

Did I (he, you, we, they, my friend) send the letter yesterday?

The Future Indefinite (Simple) Tense

Випадки вживання	Приклади
Дія відбудеться у майбутньому (tomorrow, in a few days, next week, one day, etc.).	One day I'll get married. – Колись я стану одруженим.

Форма стверджувального речення

I (he, you, we, they, my friend) will study at the University next year.

Форма заперечного речення

I (he, you, we, they, my friend) will not study at the University next year.

will not = won't

Форма питального речення

Will I (he, you, we, they, my friend) study at the University next year?

Таблиця часових форм дієслова наведена у додатку (Appendix III).

Увага! В сучасній англійській мові для формування майбутнього часу дієслів у першій особі частіше використовується допоміжне слово *will*, а не *shall*. Наприклад: I *will see* him next week. We *will join* you soon.

☺ **Smile!**

A rich London banker **asked** a well-known painter to do a little thing for his album. The painter **did** it and **asked** one hundred pounds. “Why?” **cried** the banker, “it **took** you only five minutes to do it.” “Yes,” **answered** the painter, “but it **took** me twenty years to learn how to do it in five minutes.”

Вправа 4. Перепишіть текст у минулому (майбутньому) часі.

Boris wakes up when it is already quite light. He looks at his watch. It is a quarter to seven. Boris jumps out of bed and runs to the bath. He has just time to take a cold shower and a cup of tea with bread and butter. He is in a hurry to catch the eight o'clock train. At the railway station he meets three other boys from his group. They all have small backpacks and fishing-rods. In less than an hour they get off the train at a small station near a wood. They walk very quickly and soon find themselves on the shore of a large lake. The boys spend the whole day there fishing, boating and swimming. They return home late at night, tired but happy.

Вправа 5. Розкрийте дужки, використовуючи дієслова в Present, Past або Future Indefinite.

1. I (to go) to bed at ten o'clock every day. 2. I (to go) to bed at ten o'clock yesterday. 3. I (to go) to bed at ten o'clock tomorrow. 4. I (not to go) to the cinema every day. 5. I (not to go) to the cinema yesterday. 6. I (not to go) to the cinema tomorrow. 7. You (to watch) TV every day? 8. You (to watch) TV yesterday? 9. You (to watch) TV in the evening? 10. When you (to leave) home for institute every day? 11. When you (to leave) home for institute yesterday? 12. When you (to leave) home for institute tomorrow? 13. My brother (to go) to work every day. He (to leave) home at a quarter past eight. As the office he (to work) at (to be) near our house, he (to walk) there. He (not to take) a bus. Yesterday he (not to go) to work. so he (to get) up at half past nine. 14. You (to have) a PT lesson yesterday? No, I _____. 15. What you (to buy) at the shop yesterday? – I (to buy) a book. 16. Yesterday my father (not to read) newspapers because he (to be) very busy. He (to read) newspapers tomorrow.

8.5. Домашнє завдання

Вправа 6. Поставте дієслова у потрібні часові форми. Перекладіть речення.

1. At last he (to give) the last kiss to well-wishers and (to get) on deck. 2. These boys and girls (to study) at an English technical college in a year. 3. I (to test) the device tomorrow. 4. Teachers sometimes (to hang) tables and diagrams before their lectures. 5. The students (to go) to the institute on the first of September. 6. He always (to wait) for his girl-friend. 7. I (to translate) this article 2 days ago. 8. My daughter (to leave) France at the age of 5. 9. The scientist (to make) a very interesting experiment last week. 10. My father usually (to stay) at this hotel.

Вправа 7. Дайте відповіді на запитання, користуючись зразками.

1. I like travelling by sea, and you? – So do I.

2. He can't stand sea voyages, and you? – Neither can I.

1. I don't know our ports of call, and you? – I я також. 2. A friend of mine enjoys travelling by sea, and you? – I я також. 3. I had a nice trip last summer, and you? – I я також. 4. I am a poor sailor, and you? – I я також. 5. I won't go sightseeing at every port of call, and you? – I я також. 6. I think a sea voyage is rather boring, and you? – I я також. 7. My brother doesn't like travelling by sea, and you? – I я також.

Вправа 8. Складіть розповідь про подорож одним з видів транспорту, використовуючи активні слова та словосполучення.

Lesson 9. At the Customs

9.1. Розмовна тема. На митниці

Прочитайте та перекладіть наступні діалоги. Вивчіть їх напам'ять.

I. – Excuse me! Where is the customs control?

– Over there, to the left.

– Could you tell me whether used things and gifts are liable to duty?

– As far as I know, they are not.

– Oh, thanks a lot.

- II. – Where is your passport? The passport control officer is coming.
– Here it is.
– What is the purpose of your visit?
– It's a business trip.
– Could you produce your visa and declaration form?
– Here they are.
- III. – Where is your luggage, sir?
– Here it is. A suitcase and a bag. Which one do you want me to open?
– Open the suitcase, please. Have you got anything to declare?
– I do not think so. I have only my personal belongings. By the way, shall I submit my PC discs for inspection?
– No need, sir, thank you.
- IV. – Are you British?
– No, I'm Ukrainian.
– Which flight have you just arrived on?
– From Kharkiv, Ukraine.
– Your passport, sir ... Thank you. Have you got anything to declare?
– No, I haven't.
– You should realize that Britain imposes severe penalties for drug smuggling.
– Oh, I haven't got anything like that.
– Would you mind opening this suitcase? What have you got in it?
– Only my personal effects ... and a box of chocolates.
– That's fine. Thank you.

9.2. Читання

Going Through the Customs

Прочитайте та перекладіть текст.

Nowadays travelling abroad is very popular. Some people prefer travelling by plane, especially businessmen, because it is the fastest means of transportation. Those who are not short of time usually travel by train or by ship. It takes more time but gives the opportunity to see the country you travel through, its picturesque landscapes and nature.

While travelling abroad you have to go through the customs and passport control, sometimes several times. As a rule the passport control officers check your passports and visas if they are required. When coming to some countries you may need a health certificate or a certificate of vaccination. If you have got anything to declare, then you are to fill in the declaration form.

The customs officers may ask you to show your luggage to them. Usually personal belongings and used items and gifts are not liable to duty anywhere. If you are carrying much currency you should also declare it. If you are carrying weapons you need a permit. Although some items are liable to duty, if you carry only a small amount of them, they are duty free.

Occasionally the customs officers may take some of your things for a more detailed inspection. But usually they return them soon.

Do not try to break the customs rules and regulations because you may have a lot of troubles.

Вправа 1. Складіть діалоги з наведеними виразами.

Here is my passport (visa, health certificate, certificate of vaccination, declaration form). Have you got anything to declare? Is there anything liable to duty? I have got nothing to declare. There is nothing liable to duty. Are these things liable to duty? These things are duty free. Are you carrying any currency? I have only some used things and gifts. I have only my personal belongings.

9.3. Письмові завдання

Вправа 2. Перекладіть речення англійською письмово.

1. – Де Ваш паспорт? – Ось він. Я їду до Лондона. – Як довго Ви збираєтесь там пробути? – Моя віза на три місяці, але я їду на два тижні. 2. – Чи мені показувати Вам усі речі? – Ні, відкрийте, будь ласка, цю валізу. – Тут лише мої особисті речі та одяг. – У Вас є речі які підлягають обкладанню митом? – Не думаю. Я везу лише подарунки та речі, які були в ужитку. 3. – Чи цигарки підлягають обкладанню митом? – Так, якщо Ви провозите їх більше як 200 штук. – Скільки мені треба сплатити за провіз додаткових двохсот цигарок? – На жаль, я не знаю. Запитайте в митного службовця, він Вам відповість.

9.4. Граматика. The Present, Past, Future Continuous Tenses

Спосіб утворення

to be+Participle I

The Present Continuous Tense (Теперішній тривалий час)

Випадки вживання	Приклади
а) Дія, яка відбувається в момент розмови (now – зараз, at this moment – у цей момент).	He is sleeping now. – Він зараз спить.
б) Дія, яка відбувається в поточний період часу (this week – цього тижня, this month – цього місяця).	We are studying English tenses this term. – Ми вивчаємо англійські часи у цьому семестрі.
с) Дія, яка планується на майбутнє.	I am leaving tonight. – Я вирушаю сьогодні ввечері.

The Past Continuous Tense (Минулий тривалий час)

Випадки вживання	Приклади
а) Тривала дія, яка відбувається в деякий момент часу в минулому (at 5 o'clock yesterday – о п'ятій годині вчора; at this time yesterday – в цей час вчора).	At this time yesterday I was watching TV. – В цей час вчора я дивився телевізор.
б) Тривала дія, яка відбувається одночасно з деякою дією в минулому (when I came – коли я прийшов).	When I came home my family was having dinner. – Коли я прийшов додому, моя сім'я снідала.
с) Тривала дія, яка відбувається протягом деякого періоду часу в минулому (from 6 till 7 yesterday – вчора з шостої до сьомої; the whole day yesterday – цілий день вчора).	We were preparing for the test the whole last week. – Весь минулий тиждень ми готувались до тесту.

The Future Continuous Tense (Майбутній тривалий час)

Випадки вживання	Приклади
а) Тривала дія, яка відбувається в деякий момент часу в майбутньому (at 5 o'clock tomorrow – о п'ятій годині завтра; at this time tomorrow – в цей час завтра).	At this time tomorrow we will be walking in the park. – В цей час завтра ми будемо гуляти в парку.
б) Тривала дія, яка буде відбуватися одночасно з деякою дією в майбутньому (when you come – коли ви прийдете).	When you come tomorrow we will be still working. – Коли ви прийдете, ми все ще будемо працювати.
с) Тривала дія, яка буде відбуватися протягом деякого періоду часу в майбутньому (from 6 till 7 tomorrow – завтра з шостої до сьомої; the whole evening tomorrow – цілий вечір завтра).	I think we will be discussing this problem for a long time. – Я гадаю, ми будемо обговорювати цю проблему довгий час.

📌 Запам'ятайте!

Дієслова, які виражають почуття: (*to love* – любити), сприймання (*to see* – бачити, *to feel* – почувати), розумові процеси (*to know* – знати, *to understand* – розуміти), **не вживаються** в Continuous Tenses.

☺ Smile !

A man travelling at 130 miles per hour on the motorway was stopped by the police. "Sorry, officer," said the driver, "**was I driving** too fast?" – "No, Sir. You **were flying** too low."

Вправа 3. Перепишіть речення у минулому та у майбутньому часі.

1. I am learning grammar rules. 2. Your friends are writing a letter to the President. 3. What are you doing now? 4. He is not sleeping. 5. Who are you waiting for? I am waiting for my friend. 6. She is not listening to the news now. 7. We are looking for our grandma's glasses.

Вправа 4. Поставте дієслово у дужках у необхідну часову форму.

1. When he met me I (to walk) to the Institute and had little time to talk to him.
2. What your sister (to do) now? She (to play) tennis. 3. The whole next week

we (to prepare) for the test in physics. 4. Look! Nick (to swim) across the river. 5. Our grandmother (to cook) dinner from two till three yesterday. 6. He (to discuss) the problem with his group-mates when the teacher came. 7. They (to discuss) the plans for the next year at this moment. 8. Do you know who (to sing) in the yard the whole evening yesterday? 9. I don't know which book he (to read). 10. Can you tell me who (to sit) next to you at the last concert? 11. My telephone (to charge) from 5 till 6 yesterday.

9.5. Домашнє завдання

Вправа 5. Розкрийте дужки, використовуючи дієслова у Present Indefinite або Present Continuous.

1. It (to take) me forty minutes to get to school. 2. Hello, Pete, where you (to go)? – I (to hurry) to school. 3. When your lessons (to begin) on Monday? – They (to begin) at nine o'clock. 4. Where your sister (to be)? – She (to do) her homework in the next room. 5. It usually (to take) me an hour to do my written exercises. 6. Where Boris (to be)? I (to look) for him. – He (to have) lunch at the canteen. 7. In the evening I often (to go) to see my friends. 8. On Sunday we sometimes (to go) to the cinema or to a disco club. 9. Andrew (to get) up very early as he (to live) far from school. He (to be) never late. 10. It (to be) six o'clock in the evening now. Victor (to do) his homework. His sister (to read) a book. His mother and grandmother (to talk).

Вправа 6. Розкрийте дужки, використовуючи дієслова у Past Indefinite або Past Continuous.

1. They (to have) tea when I (to come) home. 2. He (to walk) along the river when a boat (to pass). 3. We (to listen) to an interesting lecture on UFOs yesterday. 4. When I (to enter) the classroom, the teacher (to write) words on the blackboard and the pupils (to copy) them into their exercise-books. 5. They (to get) ready to go out when it (to begin) raining. 6. Yesterday at one o'clock I (to have) lunch. 7. When he (to come) in, I (to do) my exercises. 8. What you (to do) at eight o'clock yesterday? 9. At this time yesterday I (to ride) home by my bicycle. 10. You (to sleep) when I (to go) out. 11. I (to walk) along the street with my friend when a tram (to pass). 12. We (to discuss) our plans for the

weekend when Nick (to rush) into the room. 13. I (to copy) files from my flesh-card when suddenly the computer (to hang). 14. Yesterday my sister (to celebrate) her birthday. The telephone (to ring) the whole day. 15. The doctor (to examine) the patient the whole week but (not to find) the cause of his pains.

Вправа 7. Вивчіть напам'ять один з діалогів розділу 9.1.

Lesson 10. Speaking Over the Telephone

10.1. Розмовна тема. Телефонна розмова

I. Прочитайте текст.

📞 Active Vocabulary:

telephone directory – телефонний довідник; receiver – телефонна трубка; buzz – гудіти; dial – диск телефону, набирати номер; engaged – зайнятий; to hold the wire (line) – бути на лінії; interrupt – переривати; avoid – запобігати.

The Procedure of Telephoning

Telephoning is very simple. You look up the necessary number in the telephone directory; then you pick up the receiver and wait for the signal (buzz, buzzing sound). Next you make the necessary turns of the dial, according to the number required, and you will know at once whether the line is clear or engaged (*Am. busy*) from the buzz given automatically.

If you hear a prolonged buzzing, hold the wire and your number will answer in a moment. A frequent high tone buzzing means that the line is engaged. In this case you must put down or hang up the receiver and wait for a couple of minutes.

If you wish to interrupt a conversation for a couple of minutes, you say, “Please hold the line”, and put the receiver on the desk. In this way you avoid being cut off (disconnected). Having finished speaking you put the receiver on its rest.

Дайте відповіді на запитання.

1. What do you do when you want to telephone? 2. What do a prolonged buzzing and a frequent high tone buzzing mean? 3. What do you do when you wish to interrupt a conversation?

II. Прочитайте і перекладіть діалог.

Telephone Conversation

– Stanley Hydraulic Tools. Can I help you? – I'd like to speak to Mr. Warner, please. – Mr. Warner? What is your name, please? – This is Boris Frolov, from HM Systems. – Would you spell your name, please? – F-r-o-l-o-v. – Thanks. Hold on, please. I'll find out if he is in. – What is it, Miss Murray? – Mr. Frolov wants to talk to you, sir. – I'm very busy at the moment. Ask him to phone later. – Yes, sir. – Oh ... wait a minute, Miss Murray. What is Mr. Frolov? – He said he was from HM Systems. – From HM Systems? ... Oh, ask him what his telephone number is. I'll ring him back.

– Hello? This is Mr. Warner's secretary speaking. – Yes, Frolov here. – I'm sorry. Mr. Warner's very busy at the moment. Can you tell me your telephone number, Mr. Frolov? Mr. Warner will call you back later. – Of course. Double five-nine-three-six-four-two. – ... and where are you calling from? – From Kiev, Ukraine. – Could you tell me the code for Kiev? – Three-eight-zero-double four. – Thank you, Mr. Frolov.

10.2. Читання

Interesting Facts about Telephones

- Valdemar Poulsen, the Danish telephone engineer and inventor, patented what he called a “telegraphone” in 1898. The telegraphone was the first practical apparatus for magnetic sound recording and reproduction, and enabled telephone conversations to be recorded. This was followed by Willy Müller who invented the automatic answering machine in 1935.
- Alexander Graham Bell suggested the word “ahoy” for telephone greeting (as used in ships), but it was later superseded by Thomas Edison, who suggested “hello” instead.
- The very first phone call was “Watson come here, I want you!”. It was made on March, 10, 1876 in Boston, Massachusetts, between Alexander Graham Bell and his assistant Thomas A. Watson.
- The first transatlantic telephone cable was used in 1956. A telephone cable was run across the ocean floor and lies as deep as 12,000 feet. The cable runs across the Atlantic Ocean from Canada to Scotland.

Вправа 1. Дайте відповіді на запитання.

1. What was the name of Bell's assistant? 2. Who made the first telephone call ever and when? 3. How deep does the transatlantic telephone cable lie? 4. What was the initial word used for greeting on the telephone? 5. When was the first answering machine invented?

10.3. Письмові завдання

Вправа 2. Складіть діалог з уявним діловим партнером з Великої Британії. Поставте йому такі запитання:

1) дізнайтесь його ім'я та попросіть вимовити його по літерах; 2) спитайте, в якій компанії він працює; 3) попросіть вибачення, скажіть, що ви зайняті; 4) дізнайтесь, з якого питання він дзвонить; 5) спитайте, з якого міста він дзвонить, його телефонний номер та код міста; 6) скажіть, що передзвоните йому через 2 години.

☺ **Smile!**

- Harry was madly in love with Betty, but couldn't find enough courage to raise the question face to face. Finally he decided to ask her on the telephone. "Darling!" he blurted out, "will you marry me?" – "Of course, I will, you silly boy," she replied, "who is it speaking?"
- No, I'm sorry, I can't **put you through** to Mrs Porter. I can't **connect** you to anyone ... No, I'm afraid you can't **hold on** ... No, she won't **call you back**. She can't **ring you back** and nobody is going to **return your call** ... And no, I can't **transfer** you to another line ... Why not? Because Mrs Porter doesn't work here. In fact, nobody works here ... You have got the wrong number!!!

10.4. Граматика. The Present, Past, Future Perfect Tenses

Спосіб утворення

to have + Participle II основного дієслова

Participle II утворюється за допомогою закінчення **-ed** для правильних дієслів і має спеціальну форму для неправильних дієслів (дивись таблицю неправильних дієслів (Appendix II) – третій стовпчик)

The Present Perfect Tense (Теперішній перфектний час)

Випадки вживання	Приклади
а) Завершена дія, точний час якої не вказується, а більше уваги приділяється результату.	I have left my textbook at home. – Я залишив свій підручник вдома.
б) Дія, яка закінчилась до моменту розмови, а час дії позначений невизначеними дієприслівниками (already – вже, just – тільки-но, recently – нещодавно, ever – коли-небудь).	He has already come. – Він вже прийшов. Have you ever been to France? – Ви коли-небудь були у Франції?
с) Дія, яка завершилась в ще незакінчений інтервал часу (this week – цього тижня, this month – цього місяця).	We have passed two exams this week. – Цього тижня ми склали два екзамени.

The Past Perfect Tense (Минулий перфектний час)

Випадки вживання	Приклади
а) Дія, яка закінчилась до деякого моменту у минулому (by 5 o'clock yesterday – до 5 години вчора).	He had finished his work by 6 o'clock in the evening. – Він закінчив роботу до 6 години вечора.
б) Дія, яка закінчилась до деякого моменту у минулому, який виражений іншою дією (before he came – до того, як він прийшов).	Before he came, we had already planted all the trees. – До того, як він прийшов, ми вже посадили всі дерева.

The Future Perfect Tense (Майбутній перфектний час)

Випадки вживання	Приклади
Дія, яка закінчиться до деякого моменту у майбутньому (by 5 o'clock tomorrow – до 5 години завтра).	He will have finished his work by 6 o'clock tomorrow. – Він закінчить роботу до 6 години завтра.

☺ **Smile!**

Doctor's wife: "Now, my dear, you must forget your profession if you go to see our friends with me."

Her husband: "What **have I done?**"

Doctor's wife: "Why, you feel the pulse of everyone who gives you his hand."

Вправа 3. Поставте дієслово в дужках у Present Perfect, Past Perfect або Future Perfect.

1. My room-mates (to do) their homework. Now they can go to a skating-rink with me. 2. The pupils (to translate) the text before the bell rang. 2. You (to be) to Warsaw? 3. He (to receive) the telegram by tomorrow. 4. I already (to send) the message. 5. Yesterday Kate (to do) her lessons by eight o'clock. 6. By this time tomorrow you (to take) your examination. 7. We (not to receive) any letters from her lately. 8. The girls (to clean) the room by the time their mother came back home. 9. The children (to fall) asleep by ten o'clock. 10. I just (to see) him. 11. We (to reach) the village by the sunset. 12. You (to have) breakfast yet? 13. The teacher (to correct) our dictations by the next lesson. 14. They already (to plant) several hundred trees this year. 15. At last I (to write) the composition; now I'll go for a walk. 16. He just (to leave). 17. She already (to answer) the letter. 18. You (to switch off) the light before you left the house? 19. I already (to show) him the photos. 20. Here is your watch. I just (to find) it in the fridge.

10.5. Домашнє завдання

Вправа 4. Складіть телефонну розмову за однією з тем.

1. You've read an advertisement in a newspaper about a job and would like to apply. Call up the office and arrange a meeting for the interview. 2. You are arriving tomorrow by plane and would like to be met. You are making a telephone call to your relatives, but the line is too bad. Be patient! 3. You have an urgent talk to Mr. Brown, who is not in at the moment. Leave a message to him with his secretary. 4. You and your friends are hungry. Call to a pizzeria and order as much food as you can afford.

Вправа 5. Перекладіть англійською.

1. Я залишив свій зошит вдома. 2. Скільки нових слів ви вивчили в цьому місяці? 3. Я не можу їхати з тобою додому. Я ще не склав екзамену з фізи-

ки. 3. Ми щойно прочитали телеграму. 4. Нарешті ми закінчили роботу. Тепер ми можемо відпочити. 5. Студент переклав текст до закінчення заняття. 6. Після того, як мій товариш пішов додому, я згадав, що забув показати йому нові марки. 7. Чому тут так темно? – Я забув купити нову лампочку. 8. Ми закінчимо обговорення доповіді до четвертої години.

В п р а в а 6. Розкрийте дужки, використовуючи дієслова у Present Perfect або Past Indefinite.

1. The sun (not to rise) yet, but the sky in the east is getting lighter every minute. 2. I (to see) you walking along the street the other day with a heavy bag. 3. I (not to read) the newspaper today. 4. It is very late, and trams (to stop) running: we must find a taxi to get home. 5. How many times you (to be) to Kiev? 6. At last I (to translate) this article: now I will have a little rest. 7. We (to go) to the country yesterday, but the rain (to spoil) all the pleasure. 8. My watch was going in the morning, but now it (to stop). 9. The lecture (not yet to begin) and the students are talking in the classroom. 10. She just (to go) out. 11. She (to leave) the room a moment ago. 12. We (not yet to solve) the problem. 13. When it all (to happen)? 14. The morning was cold and rainy, but since ten o'clock the weather (to change) and now the sun is shining brightly. 15. Show me the dress which you (to make). 16. Oh, how dark it is! A large black cloud (to cover) the sky. I think it will start raining in a few minutes.

Lesson 11. Staying at a Hotel

11.1. Розмовна тема. Реєстрація в готелі

I. Прочитайте та перекладіть діалог. Запам'ятайте підкреслені слова.

– I'd like to have a double room with bath. – Have you reserved one? – No, I haven't. – I can give you an outside room on the seventh floor. How long are you going to stay? – I think we'll stay for about two weeks. How much is the room? – It's \$80 a day. The charge includes breakfast. – Are there all conveniences in the room? – Sure. All rooms are equipped with a colour TV, a telephone, a bath, and a hair dryer. – And do you have a laundry in your hotel? – Yes, we do. It is in the basement. You can find there anything you need: a washing machine, a drying machine, an iron and all kinds of detergent. – That's fine. Shall I pay now? – No, you may pay the day you

leave. Here is the registration form. Fill it in, please. – Here you are. – Thanks.

II. Прочитайте інформацію з сайту одного з готелів Лондона

Clifton Ford Hotel – London

(www.otshotels.com)

The hotel building was constructed in 1960 and renovated in 2002. It consists of 7 floors and 255 rooms, of which 14 are singles, 182 are doubles as well as 3 suites. Guests are provided with an entrance hall with a 24-hour reception desk, a safe, a currency exchange facility, a cloakroom, a hairdresser, a nightclub and a bar. The air-conditioned restaurant is fitted with a non-smoking area for guests. Additional services include an Internet terminal and laundry service.

Check in Date:

Check Out Date:

1) Hotel Amenities

- | | | |
|---------------------|--------------------|--------------------------|
| • Bar & Restaurant | • Swimming Pool | • Handicapped Facilities |
| • Luggage Room | • Gymnasium | • Pets Allowed |
| • Garage / Car-park | • Sauna | • Non-Smoking Rooms |
| • Laundry Service | • Hairdresser | • Internet Access |
| • Room Service | • Tennis Court | • Buffet Breakfast |
| • Jacuzzi | • Terrace Solarium | • Money Exchange |

2) Room amenities

- | | | |
|-----------------------------|-------------------------|-----------------|
| • Private Bathroom / Shower | • Satellite TV Channels | • Hair Dryer |
| • Telephone | • Mini-Bar / Fridge | • Ironing Board |
| • Central Heating | • Terrace/Balcony | • Kitchenette |
| • Air conditioning | • Safety Deposit Box | • Piped Music |

Вправа 1. Знайдіть англійські відповідники із списку:

1) камера схову; обмін валют; басейн; ресторан; гімнастичний зал; кімнати для некурців; сауна; дозволено зупинятися с домашніми тваринами; обслуговування номерів; доступ до Інтернету; солярій; завтрак в буфеті; джакузі; бар; послуги пральні; тенісний корт; перукарня; облаштування для інвалідів.

2) тераса/балкон; міні-кухня; супутникові телеканали; фен; центральне опалення; міні-бар / холодильник; музика, що передається по радіо;

прасувальна дошка; камера-сейф; телефон; персональна ванна / душ; кондиціонер;.

11.2. Читання

Some Tips on Staying at a Hotel

When travelling, people almost always stay at hotels. It is advisable, therefore, to remember the following:

1. The first thing to do is to book a room in advance either by letter, telephone, fax or Internet. Otherwise you may arrive at the hotel and be told that it is full.

2. On arrival at the hotel go to the reception desk in the lobby and confirm your reservation. The clerk will then give you a registration form to fill in and sign (the form is filled in block letters). In smaller hotels you simply sign the visitor's book and give your permanent address.

3. In large hotels you may ask for any service by telephone. You tell the operator if you wish to be called at a certain time. You call room service when you want a meal or drinks sent up to your room, and you can have a lot of maid service if you need something (a suit or dress) cleaned or pressed.

4. Let the hotel management know well in advance the day and time of your departure.

Дайте відповіді на запитання.

1. What are the ways to reserve a room at a hotel? 2. What do you do first of all when you arrive at a hotel? 3. Do you need to have your passport with you when you check in at a hotel? 4. What does the receptionist do in a hotel? 5. What kind of service may you ask for by telephone in large hotels?

11.3. Письмові завдання

Вправа 2. Перекладіть речення з діалогу, використовуючи активну лексику за темою “Staying at a Hotel”.

– What can I do for you, sir? – Моє прізвище Джонсон. Я зарезервував номер. – Just a moment, I'll have a look. Yes, sir, you want a single room for three nights, don't you? – Так. – We reserved room 65 on the seventh floor. – Чи

можу я подивитись її? – Yes, certainly. The porter will take you there. You’d better fill in this form first. – Так, звичайно. Спасибі.

Вправа 3. Доповніть діалог фразами за темою “Staying at a Hotel”.

– What can I do for you, sir? – ____ – We have a double room on the third floor.

– ____ – It’s \$40 a day. How long are you going to stay? – ____ – Welcome. Here is your key.

11.4. Граматика. The Present, Past, Future Perfect Continuous Tenses

Спосіб утворення

to have + been + Participle I основного дієслова

The Present Perfect Continuous Tense (Теперішній перфектно-тривалий)

Випадки вживання	Приклади
Незавершена дія, яка почалась у минулому і триває дотепер, або тількино закінчилась. Зазвичай вказується інтервал часу, протягом якого виконується дія (since – з; for – протягом).	I have been studying English for 3 years (since my childhood). – Я вивчаю англійську протягом трьох років (з дитинства).

The Past Perfect Continuous Tense (Минулий перфектно-тривалий)

Випадки вживання	Приклади
Незавершена дія, яка почалась у минулому і триває до певного часу у минулому. Зазвичай вказується інтервал часу, протягом якого виконується дія (since – з; for – протягом).	He had been writing the letter for half an hour before I came. – Він писав листа вже півгодини, до того як я прийшов.

The Future Perfect Continuous Tense (Майбутній перфектно-тривалий)

Випадки вживання	Приклади
Дія, яка триває і закінчиться до деякого моменту у майбутньому (since – з; for – протягом).	Tomorrow he will have been traveling for a year. – Завтра виповнюється рівно рік, як він подорожує.

Вправа 4. Розкрийте дужки, використовуючи дієслова у Present Indefinite, Present Continuous, Present Perfect, Present Perfect Continuous.

1. He (to run) now. He (to run) for ten minutes without any rest. 2. What they (to do) now? – They (to work) in the reading-room. They (to work) there for already three hours. 3. Where he (to be) now? – He (to be) in the garden. He (to play) volley-ball with his friends. They (to play) since breakfast time. 4. I (to live) in Kiev. I (to live) in Kiev since 1990. 5. She already (to do) her homework for two hours; but she (not yet to do) half of it. 6. I (to wait) for you since two o'clock. 7. What you (to do)? – I (to read). I (to read) for already two hours. I already (to read) sixty pages. 8. This man (to be) a writer. He (to write) books. He (to write) books since he was a young man. He already (to write) eight books. 9. What you (to do) here since morning?

Вправа 5. Розкрийте дужки, використовуючи дієслова у Present Indefinite, Present Continuous, Present Perfect, Present Perfect Continuous.

1. This is the factory where my father (to work). He (to work) here for fifteen years. 2. You (to find) your note-book? – No! I still (to look) for it. I already (to look) for it for two hours, but (not yet to find) it. 3. You (to play) with a ball for already three hours. Go home and do your homework. 4. Wake up! You (to sleep) for ten hours already. 5. I (to wait) for a letter from my cousin for a month already, but (not yet to receive) it. 6. It is difficult for me to speak about this opera as I (not to hear) it. 7. I just (to receive) a letter from my granny, but I (not yet to receive) any letters from my parents. 8. The weather (to be) fine today. The sun (to shine) ever since we got up. 9. Every day I (to wind) up my watch at 10 o'clock in the evening. 10. Come along, Henry, what you (to do) now? I (to wait) for you a long time.

11.5. Домашнє завдання

Вправа 6. Заповніть пропуски одним зі слів у дужках.

1. I have got ____ (a reservation, a manager, a hotel). 2. Let the hotel ____ (room, key, manager) know well in advance the day and time of your departure. 3. The clerk says he can give me ____ (a confirmation, a porter, a room) on the third floor. 4. I ask the hotel ____ (form, register, porter) to carry my luggage to the room. 5. When travelling people almost always stay at a ____ (laundry, luggage, hotel).

Вправа 7. Перекладіть англійською.

1. Коли я прийшов, хлопці грали в футбол вже дві години. 2. Ми з ранку чекаємо потяга на вокзалі. 3. В кінці грудня буде вже чотири місяці, як ми вивчаємо англійську в університеті. 4. Том дивиться телевизор вже три години. 5. До вступу в університет моя сестра два роки працювала на заводі. 6. Вони проживають у готелі з минулого тижня.

Вправа 8. Складіть діалог з адміністратором готелю, використовуючи активні слова та словосполучення.

Lesson 12. Cross-cultural Communication

12.1. Розмовна тема. Традиції та звички іноземців

Customs and Traditions around the World

📌 Active Vocabulary:

custom – традиція; queue – черга; appointment – призначена зустріч; chopstick – паличка; toe – палець ноги; social insult – соціальна образа.

England

The first thing you should remember when in England is always to say “please” and “thank you”. Never push into a queue of people or they will get angry. Don’t be late for appointments and don’t talk with your mouth full. Remember – always ask before smoking in someone’s house.

China

When in China, don’t kiss anyone in public – it’s very rude. Never be late for appointments, and don’t tell jokes to people you don’t know very well. Be careful when you are eating, too – never leave your chopsticks pointing upwards in your rice because this makes people very upset. A last tip – when you give someone a present, give it with both hands.

Japan

When you visit someone in Japan, it is polite to take a gift. Remember to take your shoes off as you enter the house – hosts will give you special slippers to wear instead. Leave your shoes at the door, but make sure the toes are pointing towards the door. When you are in the living-room, don’t sit anywhere you like – wait until someone shows you where to sit. Also, don’t blow your nose in public – find a place where you can do it alone. Showing the soles of your feet is

the height of bad manners. So, never put your feet on the desk as the Americans like to do. It is a social insult for Japanese people.

What advice can you give to visitors of England, China, and Japan? Give at least three pieces of advice for each country using the structure: When in ..., you should (shouldn't) ...

Вправа 1. Визначте країну, в якій діють такі правила поведінки.

1. Ask before smoking in someone's house. 2. When you visit someone, take a gift with you. 3. Take your shoes off as you enter the house. 4. Don't put your feet on the desk. 5. Always say "please" and "thank you". 6. Don't blow your nose in public and never show the soles of your feet. 7. Never leave your chopsticks pointing upwards in your rice. 8. Never push into a queue of people. 9. Make sure the toes of your shoes are pointing towards the door. 10. Don't be late for appointments. 11. Don't tell jokes to people you don't know very well. 12. Don't talk with your mouth full.

📌 Запам'ятайте прислів'я!

When in Rome, do as the Romans do.

12.2. Читання

Gestures in Different Cultures

Nowadays people enjoy travelling throughout the globe getting to its farthest corners. It often happens that they are unfamiliar with the language of the country they are visiting. And then hand-language may appear rather helpful. But you should be aware that hand gestures in different cultures may imply different meanings. It is very important to understand the meaning of different gestures, if you happen to visit a new country.

Peace Sign

The peace sign, or victory symbol, is created when an individual balls up his hand, extending the index and middle fingers to form a V. The sign is usually shown with the palm facing outward. This sign was made famous by Winston Churchill during World War II, when he used it to signify victory. Americans in the 1960s used it to signify peace. If a European uses the sign, but turns the palm to face inward, the gesture becomes vulgar.

Signaling Okay

Place the thumb and the index finger in an “O” shape, and extend the rest of the fingers into the air. The resulting gesture means “Okay” or signifies approval in the United States. In Japan, however, it signifies money, and in Brazil or Germany, it’s downright rude. Nod head up and down to say “Yes.” In Bulgaria and Greece, this gesture means “No.”

Thumbs Up

The thumbs-up sign is simply a balled fist with the thumb extended into the air. Americans and Europeans use this gesture as a sign of approval. They also use this gesture to try to get a ride in a passing vehicle. Other cultures, however, find the sign insulting.

Pointing Finger

A pointed finger has mixed messages for many cultures, even Americans. When the hand is balled into a fist with the index finger extended, the gesture may be used to indicate an item at a distance. If the finger is pointed at a person, it is seen as accusatory for some Americans and for Middle or Far East cultures. Other cultures consider the person gesturing to be attempting dominance over the recipient of the gesture.

Crossing your Fingers

Many western cultures make this gesture when wishing for good luck. A hand with the index and middle fingers crossed is even the logo for the UK’s National Lottery. In Vietnam, however, this is an obscene gesture.

Вправа 2. Визначте, чи є вірними такі висловлювання.

1. In Greece, nodding your head means “come here”. 2. Winston Churchill used the V-sign to signify peace. 3. If you are in America and want somebody to give you a lift, wave your hand to the driver. 4. Crossed index and middle fingers mean wishing good luck in Europe. 5. In Japan, “O”-shaped sign means “zero”.

12.3. Письмові завдання

Вправа 3. Заповніть пропуски у питаннях про вашу країну дієсловами: *have, celebrate, open, play, wear (2), lock, take off (2), drive, put on, cover*. Дайте відповіді на запитання.

1. Do families in your country ____ Thanksgiving Day? 2. Do women ____ long skirts? 3. Do families ____ their meals together? 4. Do people ____ their doors

when they aren't at home? 5. Do men ____ hats when they go out and ____ them ____ when they enter the building? 6. Do women ____ their heads with kerchiefs? 7. Do families ____ games together in the evening? 8. Do people ____ their shoes and ____ slippers when they enter a house? 9. Do men ____ doors for women? 10. Do women ____ cars?

12.4. Граматика. Повторення часових форм дієслова

Вправа 4. Розкрийте дужки, використовуючи дієслова у потрібній формі.

1. When I (to come) to his house, they (to tell) me that he (to leave) an hour before. 2. On checking up his answers he (to find) out that he (to make) several mistakes. 3. When I (to leave) home, the snow already (to stop), but a strong wind (to blow). 4. You (to read) this book? – Yes, I (to read) it. I (to think) it (to be) very interesting. 5. What the children (to do) now? – Oh, they (to play) the new table game which I (to buy) them the day before yesterday. 6. They (to reach) the corner of the street by now and (to stand) at the bus stop. 7. We could not go out because it (to rain) hard since early morning. 8. She (to teach) at our school for twenty years now. 9. I (to ring) you up tomorrow. 10. He (to begin) to write his composition at three o'clock. It is already eleven, and he still (to write) it. He says he (to finish) it by twelve. 11. We (to help) our librarian to put the books in the right order for already three days, but we (to arrange) only half the books. 12. How long you (to wait) for me? 13. When I (to come) home yesterday, my sister already (to return) and (to sit) at the fireplace looking through some old photographs. 14. Light (to travel) more quickly than sound. 15. Here you (to be) at last! I (to wait) for you for twenty minutes.

12.5. Домашнє завдання

Вправа 5. Поставте дієслова в дужках у потрібну форму.

1. Yesterday Tom (not / to wake up) very early. 2. We (know) our examination results the day after tomorrow. 3. Look! Somebody (to climb) up that tree over there. 4. I (to lose) my key! Can you help me to find it? 5. The Moon (to go) round the Earth. 6. Ann (to wait) for me when I (to arrive). 7. Jim (to play) tennis since 2 o'clock. 8. Before the train came we (to wait) for 2 hours. 9. By this time tomorrow you (to receive) the answer. 10. This supermarket (to work) 24

hours. 11. Jane (to cook) a cake for the dinner when we came. 12. They (to paint) the wall since the morning. 13. It (to rain) now. 14. He (to study) the whole day tomorrow. 15. She always (to read) at mealtime. 16. Before we came, the film (to finish). 17. There (to be) many people at the last party. 18. Please, don't make noise. He (to write) an important document. 19. He never (to be) to London. 20. When we came, Tom (to watch) TV. 21. Tomorrow I (to send) you the letter by E-mail. 22. What you (to do) tonight?

Вправа 6. Поставте запитання до виділених фрагментів речень.

1. He is going to Paris next week. 2. This supermarket works 24 hours. (general question) 3. Tom was cooking a cake for the dinner. 4. They have been painting the wall since the morning. 5. Einstein developed the theory of relativity. 6. When we arrived to Italy the weather was awful. 7. There were three red roses in the vase. 8. He went to his office in the morning. 9. He will arrive at the station at 6 p.m. 10. The scientists are studying the behaviour of elementary particles.

Вправа 7. Знайдіть три англійських прислів'я, що характеризують національні традиції та звички.

Here are some final tips for travellers

- In France you shouldn't sit down in a cafe until you've shaken hands with everyone you know.
- In Afghanistan you should spend at least five minutes saying hello.
- In Pakistan you mustn't wink. It is offensive.
- In the Middle East you must never use the left hand for greeting, eating, drinking, or smoking. Also, you should take care not to admire anything in your hosts' home. They will feel that they have to give it to you.
- In Russia you must match your hosts drink for drink or they will think you are unfriendly.
- In Thailand you should clasp your hands together and lower your head and your eyes when you greet someone.
- In America you should eat your hamburger with both hands and as quickly as possible. You shouldn't try to have a conversation until it is eaten.

UNIT 3. UKRAINE IN EUROPEAN EDUCATIONAL ENVIRONMENT

📖 Active Vocabulary of the Unit:

government, to border on, area, capital, mountain, fertile, black soil, agricultural, to be rich in, to be subdivided, equipment, instrument, consumer goods, legislative, executive, judicial; nursery school, primary education, secondary education, higher education, curriculum, vocational education, to graduate from, post-graduate, higher educational establishment, compulsory, fee, applicant, alumnus, extramural department, bachelor's degree, master's degree, doctor's degree; employee, in the field of, enterprise, development, research work.

Lesson 13. Ukraine

13.1. Розмовна тема. Україна

📖 Active Vocabulary:

government – уряд; anthem – гімн; to border on – межувати з; total area – загальна площа; mountain – гора; tributary – приток; moderate – помірний; fertile – родючий; black soil – чорнозем, agricultural – сільсько-господарський; to be rich in – бути багатим; equipment – устаткування; instrument – прилад; consumer goods – споживчі товари; legislative – законодавчий; executive – виконавчий; judicial – судовий; to be elected – бути обраним.

Ukraine is situated in the south-eastern part of Central Europe and has its own territory, government, national emblem, flag and anthem. It borders on Russia, Byelorussia, Moldova, Slovakia, Romania, Hungary and Poland on land and Russia and Romania on sea. The population of Ukraine is about 47 million. The total area of the country is 603,700 km² (45th country in size). The capital of Ukraine is Kyiv.

The territory of Ukraine is mostly a level, treeless plain, called “steppe”. There are the Crimean Mountains in the Crimean peninsula and the Carpathians in the west, but they are not very high. The territory of our country has an astonishing variety of landscapes. We have high mountains, vast steppes, endless forests, beautiful rivers and lakes. The largest lake of Ukraine is Svytyaz, its total area is 24.2 square kilometres and the depth is 58.5 metres. Ukraine has 131 rivers, among them are the Dnieper with its tributaries such as the Desna, the Pryp-

yat, the Dniester, the Bug, the Donets. The flora and fauna of our country are extremely rich. Almost all kinds of European animals and birds can be found on the territory of our vast land. Ukraine has inexhaustible natural wealth. It possesses enormous tracts of woodland, vast tracts of fertile arable lands and fine pastures.

The climate of the country is moderate. Winter is rather mild, with no severe frosts but with regular snowfalls everywhere except the south. The rivers and lakes freeze in winter. The average winter temperature varies from -20 Centigrade in the north to -5 in the south. Summer is quite hot and dry, with occasional showers and thunderstorms. The fertile black soil is well watered in spring and autumn and gets plenty of sunshine in summer.

The country is rich in natural resources, such as iron ore, coal, colour metals, oil, gas, mineral salts, clay and potential water power. It has developed a varied industry, concentrated mostly in and around such big cities as Kyiv, Zaporizhzhya, Dnipropetrovsk, Dniprodzerzhynsk, Odesa, Kharkiv, Lviv, Myckolayiv and others. It produces planes and ships, lorries and busses, motorcars and locomotives, computer and electronic equipment, precision instruments and agricultural machines, TV and radio sets, chemicals and textiles and various consumer goods. Odesa, Sevastopol, Myckolayiv, Kherson and Kerch are main Ukrainian ports.

Due to the favorable climatic conditions, Ukraine is traditionally an agricultural area. It grows wheat, maize, buckwheat and other corn, red and green vegetables, all kinds of fruit, melons and berries. Ukraine is one of the world's main centers of sugar production. It produces sugar both for its own needs and for export.

Ukraine is a presidential-parliamentary democracy with separate legislative, executive, and judicial branches. The Declaration of Ukrainian Independence was proclaimed on August 24, 1991 by the Ukrainian Parliament. The President of Ukraine is elected by countrywide popular vote and is the head of the executive branch. The Prime Minister is appointed by the 450-seat parliament, the Verkhovna Rada. The parliament also approves the Cabinet of Ministers, offered by the Prime Minister and the President. The heads of all central agencies and regional and district administrations are appointed by the President.

Ukraine is subdivided into twenty-four oblasts (provinces) and one autonomous republic, the Crimea. Additionally, two cities, Kiev and Sebastopol, have a special legal status.

Ukraine has its own original culture and art. Ukraine has many professional theatres and Philharmonic societies. The National Symphony Orchestra of Ukraine, the Gryhory Veryovka Ukrainian People's Choir, the Dance Company of Ukraine are known not only in the country but all over the world.

📌 Запам'ятайте зразки виразів для розповіді про країну.

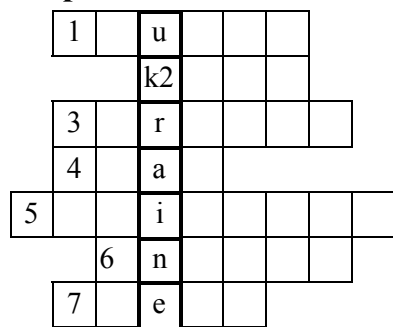
U. is situated in ____; U. is washed by ____; U. borders on ____; the total area of U. is ____; the population of U. is ____; the capital of U. is ____; the main rivers are ____; the climate is mostly ____; U. is rich in ____; the main industrial centres are ____; U. produces ____; as an agricultural country U. grows ____; as for political system U. is a ____; the head of the state is ____; U. is subdivided into ____; U. is also famous for its ____.

Вправа 1. Доповніть речення словами: *rivers; proclaimed in 1991; state power; various mineral resources; 47 million; agriculture.*

1. Ukraine has its own territory, higher and local bodies of ____.
2. The geographical position of Ukraine is favourable for ____.
3. The population of Ukraine is about ____.
4. The declaration of Ukrainian independence was ____.
5. The Dnieper, the Bug, the Danube are the major ____.
6. Ukraine is rich in ____.

13.2. Письмове завдання

Вправа 2. Заповніть кросворд словами з тексту про Україну:



1. The total area of the country is 603,700 ____ kilometres.
2. The capital of Ukraine is ____.
3. Ukraine's black soil is rather ____.
4. ____-mining is one of the main industries in Ukraine.
5. The Crimean Mountains are situated on the Crimean ____.
6. The music of Ukrainian ____ was written by Mikhail Verbitskiy.
7. ____ is one of the main agricultural crops.

13.3. Читання

Прочитайте текст зі словником.

Five Subatomic Particles in a Nutshell

Ancient Greeks philosopher Leucippus and his pupil Democritus first spoke out the idea that all substances consisted of invisible “atomos,” or atoms, as we know them today. They believed these atomos could be divided into smaller and smaller particles until they reached a point that they could no longer be divided. Although they couldn’t see the particles, Leucippus and Democritus tapped into a fundamental truth about our existence: The universe is made up of atoms and these atoms are responsible for life on Earth.

After considerable research and experiments, we now know that atoms can be divided into subatomic particles – protons, neutrons and electrons. Held together by electromagnetic force, these are the building blocks of all matters. Advances in technology, namely particle accelerators, also known as atom smashers, have enabled scientists to break subatomic particles down to even smaller pieces, some in existence for mere seconds. Subatomic particles have two classifications – elementary and composite. Luckily for us, the names of categories can go a long way in helping us understand their structure. Elementary subatomic particles, like quarks, cannot be divided into simpler particles. Composite subatomic particles, like hadrons, can. All subatomic particles share a fundamental property: They have “intrinsic angular momentum”, or spin. It means they rotate in one direction, just like a planet. Oddly enough, this fundamental property is present even when the particle isn’t moving. It’s this spin that makes all the difference.

Виберіть правильний варіант.

1. Leucippus and Democritus who first suggested the idea of atoms were ____ philosophers.
a) Greek b) Roman c) German
2. The atom consists of three main subatomic particles: ____.
a) neutron, electron, quark b) hadron, neutrino, boson c) proton, neutron, electron
3. The main property of all subatomic particles is the presence of ____.
a) spin b) speed c) spark

13.4. Граматика. Повторення часових форм дієслова: групи Indefinite, Continuous, Perfect, Perfect Continuous

Вправа 3. Заповніть пропуски одним з варіантів.

1. Mr. Black always ____ on a drawing board.
a) is drawing b) have drawn c) draws
2. These young men ____ at an English technical college in 2002–2004.
a) studied b) studies c) will study
3. I ____ the device when you come.
a) will be testing b) have tested c) will test
4. Teachers sometimes ____ tables and diagrams before a lecture.
a) hangs b) hang c) hanging
5. The students ____ to the institute by tram tomorrow.
a) go b) will go c) have gone
6. You ____ for your girl-friend now.
a) are waiting b) is waiting c) waits
7. I ____ for 2 hours when she drops in tomorrow.
a) translated b) will translate c) will have been translating
8. My daughter ____ French for 5 years.
a) have been learning b) has been learning c) learns
9. The scientist ____ a very interesting experiment when we entered the lab.
a) was making b) is making c) were making
10. She ____ to a friend of mine at the moment.
a) talked b) talks c) is talking
11. Researchers of this laboratory ____ new equipment for TV communication via outer space.
a) have developed b) has developed c) developing
12. The scientist ____ his research by the beginning of the conference.
a) have completed b) had completed c) will complete
13. They ____ their translation of the texts before you return.
a) finish b) will have finished c) will finish
14. He ____ a letter for an hour when I came.
a) wrote b) was writing c) had been writing
15. My father ____ from a business trip.
a) has just returned b) have just returned c) just returns

Вправа 4. Визначте часову групу. Запишіть речення у Past та Future.

1. The job **gives** her satisfaction. 2. Students **are making** an experiment in the laboratory. 3. We **have already finished** our experiments. 4. He **has been working** at this problem for two years.

13.5. Домашнє завдання

Вправа 5. Поставте дієслова в дужках у потрібну часову форму.

1. They already (to apply) new methods in their research. 2. Our country (to develop) into a powerful state and (to make) great progress in all fields of industry, technology and science. 3. By the end of the 19th century scientists (to make) the first attempts to obtain synthetic materials. 4. The workers (to build) this new house by the beginning of the next year. 5. These shops (to produce) some new chemical apparatus now. 6. The water in the tube (to boil) at the moment. 7. The laboratory assistant (to write) down all the data during the whole experiment yesterday. 8. They (to mount) the machine-tools from 2 to 7 o'clock tomorrow.

Вправа 6. Перекладіть речення. Зверніть увагу на вживання різних часових форм.

– Чим ти займаєшся? – Перекладаю текст.

– Ти часто перекладаєш тексти? – Так.

– Як часто ти робиш переклади? – Я звичайно перекладаю один текст на день.

– Як давно ти робиш переклади з іноземної мови? – Я перекладаю тексти з того часу, як почав учити англійську.

– Ти сьогодні переклав які-небудь тексти? – Так, я сьогодні переклав один текст і завтра збираюсь перекласти ще один.

– Коли ти завтра будеш робити переклад? – Завтра я буду перекладати текст з другої до третьої години.

Вправа 7. Складіть листа з розповіддю про свою країну, використовуючи активні слова та вирази (7–10 речень).

Lesson 14. Education in Ukraine

14.1. Розмовна тема. Освіта в Україні

📖 Active Vocabulary:

Pre-school education; compulsory education; fee-paying education; obligatory subjects; slant; optional courses; gymnasium; lyceum; extra-curricular activities; vocational training school; postgraduate education; applicant.

Present day independent Ukraine has a well-developed system of education which matches the standards of the developed countries. Pre-school education is not compulsory and is fee-paying. Most parents take their children to nursery schools or kindergartens at the age of 3. Up to the age of 5 children mostly eat, sleep and play there, but in senior groups they are taught the basics of arithmetic, reading, writing, and arts and foreign languages in some schools.

Compulsory secondary education begins at the age of 6–7 and is free in state schools and fee-paying in private ones. Some schools, especially those with language slant, have preparatory classes. Secondary education includes three stages: primary (1st – 4th grades), basic (5th – 9th grades) and senior (10th – 11th grades). Recently new types of schools have appeared: gymnasiums and lyceums. In addition, there are schools with advanced learning of sciences, computers, law, and art. All the subjects in the secondary schools are obligatory but there are optional courses that students of senior grades can take in addition to the required ones.

Extra-curricular activities usually include a variety of sports and drama clubs, interest groups and various school parties.

Those senior students, who want to get qualification alongside the secondary education, can go to vocational training school. Post-secondary education is provided by technical schools and colleges that train young specialists in different trades.

Institutions of higher learning (higher educational establishments) include universities, academies, institutes and conservatories. To enter a higher educational institution all applicants have to pass special tests in various subjects. Shevchenko Kyiv National University, Kyiv National Technical University, Karazin National University, National Technical University “KhPI” and many others are among the best known higher educational establishments.

Postgraduate education begins after the last year of studies and usually results in a thesis on the chosen scientific theme and the degree of Candidate of Sciences. Doctor's Degree is awarded for outstanding scientific research.

Вправа 1. Доповніть речення інформацією з тексту.

1. There are some stages of education in Ukraine, they are: _____. 2. Compulsory secondary education begins _____ and is _____ in state schools but _____ in private schools. 3. Vocational schools provide _____ education and train specialists in different _____. 4. Institutions of higher education include _____. 5. The most famous higher educational establishments are _____. 6. _____ begins after the last year at University.

14.2. Письмове завдання

Вправа 2. Перекладіть англійською.

1. Більшість вищих навчальних закладів пропонують п'ятирічну програму навчання. 2. Учні не повинні носити шкільну форму. 3. Приватна освіта – платна. 4. Обов'язкова середня освіта представлена державними загально-освітніми школами та приватними школами. 5. Дошкільну освіту малята отримують у дитячих садочках, за які батьки мають платити. 6. Освіта в незалежній Україні добре розвинена і відповідає стандартам країн Західної Європи.

14.3. Читання

Прочитайте текст без словника.

What are the Smallest Particles We Know about?

For many years, the only known subatomic particles were protons, neutrons and electrons. By the 1960s, however, advancements in particle accelerator technology had shown evidence of hundreds of smaller constituent particles. These particles fall into several main categories.

Fermions are the building-block particles. There are two types of material fermions: quarks, which work to hold the nucleus of an atom together, and leptons, which do not.

Hadrons are composite particles made of smaller particles. A proton, for example, is a hadron made from a combination of different quarks.

Bosons are subatomic particles that carry force.

Виберіть правильний варіант.

1. The existence of many elementary particles was proved in ____.
a) the middle of the 20th century b) in the 18th century c) last year
2. There are ____ of fermions.
a) hundreds of types b) two types c) five types
3. Bosons are elementary particles that carry ____.
a) light b) mass c) force

☺ **Smile!**

One student in Rutherford's lab was very hard-working. Rutherford had noticed it and asked one evening:

- Do you work in the mornings too?
- Yes, – proudly answered the student sure he would be commended.
- But when do you think? – amazed Rutherford.

14.4. Граматика. Пасивний стан дієслова груп Indefinite

Пасивний стан (Passive Voice)

Стан – це категорія дієслова, яка демонструє відношення дії до суб'єкта чи об'єкта дії.

Пасивний стан показує, що дія направлена на предмет або особу, які є підметом (статтю перекладено, дім будується).

Наприклад:

Rorov invented the radio. – активний стан (Active Voice) – Попов винайшов радіо.

The radio was invented by Rorov. – пасивний стан (Passive Voice) – Радіо було винайдено Поповим.

Пасивний стан – це складна аналітична форма, яка утворюється за допомогою допоміжного дієслова *to be* у відповідному часі, особі та числі та дієприкметника минулого часу (Participle II):

<i>to be</i> + Participle II

📌 **Запам'ятайте!** Вживання часів пасивного стану відбувається за такими ж правилами, як і часів активного стану.

Приклади речень у Passive Voice

Стверджувальна форма

The letter **is** written (every day).
The letter **was** written (yesterday).
The letter **will be** written (tomorrow).
The letter **is being** written (now).
The letter **was being** written (at 5 o'clock yesterday).
The letter **has been** written (already).
The letter **had been** written (by 5 o'clock yesterday).
The letter **will have been** written (by 5 o'clock tomorrow).

Питальна форма

У питальній формі змінюється порядок слів: перед підметом ставиться перше допоміжне дієслово.

Is the letter written (every day)?
Was the letter written (yesterday)?
Will the letter **be** written (tomorrow)?
Is the letter **being** written (now)?
Was the letter **being** written (at 5 o'clock yesterday)?
Has the letter **been** written (already)?
Had the letter **been** written (by 5 o'clock yesterday)?
Will the letter **have been** written (by 5 o'clock tomorrow)?

Заперечна форма

Заперечна частка **not** ставиться після першого допоміжного дієслова.

The letter **is not** written (every day).
The letter **was not** written (yesterday).
The letter **will not be** written (tomorrow).
The letter **is not being** written (now).
The letter **was not being** written (at 5 o'clock yesterday).
The letter **has not been** written (already).
The letter **had not been** written (by 5 o'clock yesterday).
The letter **will not have been** written (by 5 o'clock tomorrow).

📌 **Запам'ятайте!** У пасивному стані лише допоміжне дієслово змінюється за часом.

Див. таблицю часових форм дієслів у пасивному стані в додатку 3 (Appendix III).

📌 **Запам'ятайте прислів'я з Passive Voice!**

Marriages are made in heaven.

The road to hell is paved with good intentions.

Вправа 4. Заповніть пропуски дієсловом *to be* у потрібній формі та перекладіть речення.

1. Our laboratory ___ provided with all necessary equipment next year. 2. These modern houses ___ built last year. 3. My friend ___ asked at the lesson yesterday. 4. The old houses ___ reconstructed in our city now. 5. We ___ offered an interesting work tomorrow. 6. This novel ___ written by Charles Dickens. 7. When ___ Kharkiv Polytechnic Institute founded? 8. The newspapers ___ usually brought in the morning. 9. An interesting problem ___ discussed at the last lecture. 10. The academic year ___ divided in two terms. 11. The experiments ___ completed by the end of the week. 12. Metallic objects ___ attracted by a magnet.

Вправа 5. Змініть речення з активу в пасив, не змінюючи часової форми дієслова.

1. Bob mailed the package yesterday. – The package ___ by Bob yesterday. 2. Mr. Butler delivers mail. – Our mail ___ by Mr. Butler. 3. The children have eaten the cake. – The cake ___ by the children. 4. Linda is writing a letter at the moment. – A letter ___ by Linda at the moment. 5. The jeweler is going to fix my watch. – My watch ___ by the jeweler. 6. Ms. Bond will teach our class. – Our class ___ by Ms. Bond. 7. That company employs many people. – Many people ___ by that company. 8. The secretary is going to fax the letters. – The letters ___ by the secretary. 9. Microsoft Company has hired Sue. – Sue ___ by Microsoft Company. 10. Our university students took the exams last week. – The exams ___ by our university students last week. 11. Mr. Adams had done the work by Friday. – The work ___ by Mr. Adams by Friday. 12. Mrs. Fox is washing the windows now. – The windows ___ by Mrs. Fox now.

14.5. Домашнє завдання

Вправа 6. Перепишіть речення у пасивному стані.

1. The Earth attracts the Moon. 2. Shevchenko wrote “Kateryna”. 3. They will build the palace. 4. Students have translated the texts at home. 5. The teacher is examining the student at the moment. 6. The BBC was broadcasting the news from 8 till 8-30 p.m. 7. They had tested the device by 6 o'clock. 8. The antivirus programme will check all the files only by the evening.

Вправа 7. Розкрийте дужки та поставте дієслова у потрібній формі пасиву.

1. Those books (to return) to the library yesterday. 2. The patient (to take) to the hospital last week, and (to operate) on tomorrow morning. 3. This instrument (to check) two times a year. 4. Litter must not (to leave) here. 5. This newspaper (not to read) because the pages (not to cut). 6. Dictionaries may not (to use) at the examination. 7. Usually the experiments (to carry out) every day, but they (not to make) yesterday. 8. Thousands of new houses (to build) every year. 9. These methods often (to apply) in production.

Вправа 8. Складіть розповідь про освіту в Україні, використовуючи активні слова та словосполучення.

Lesson 15. Our Alma Mater

15.1. Розмовна тема. Наш університет

National Technical University “KhPI”

Active Vocabulary:

respectively – відповідно; outstanding scientist – видатний вчений; to admit – приймати; Academic Council – вчена рада; employee – робітник; design – проектування; to contribute – робити внесок; to appoint – призначати; position – посада; to grant – надавати; recognition – визнання; contribution – внесок; development – розвиток; extramural department – заочне відділення; alumnus (pl. alumni) – випускник; thin film – тонка плівка; strength of materials – опір матеріалів.

The history of National Technical University “KhPI” goes back to the year of 1885. It is that year when Kharkiv Institute of Technology, or KhIT (the original name of our University), was founded. The KhIT was the first technical higher educational institution in the south of the Russian Empire. When the Institute was opened it had only two faculties: mechanical and chemical and 125 students (85 at the mechanical and 40 students at the chemical faculties respectively). The founder and the first director of our Institute was Professor V.L. Kirpichov, an outstanding scientist in the field of mechanics.

By the beginning of the 20th century the students’ body of the KhIT had already numbered 1,000 students and 250 students were admitted each year. A lot of outstanding scientists whose names are known all over the world worked in KhIT at that time. They were: A.M. Lyapunov, V.A. Steklov, N.N. Beketov, K.A. Zvorikin, N.D. Pilchikov and many others. The Institute also had close contacts with such great world known scientists as D.I. Mendeleyev and N.A. Zhukovsky who were elected Honorary Members of the Academic Council of our Institute in 1904 and in 1911 respectively.

In 1930 five independent higher educational institutions for mechanical engineering, electrical technology, chemical technology, engineering & construction and aviation were set up on the basis of five separate faculties of the institute.

During the years of the World War II over three thousand professors, students and employees of the institute joined the Army. Evacuated to the cities of Krasnoufimsk and Chirchik, the institute not only continued training engineering staff, but also solved urgent scientific problems related to strengthening the defense of the country (such as contributing to the tank design work led by Alexander Morozov, one of the key experts in the development of T-34 tank).

In 1949 four higher educational establishments, namely the institutes for mechanical engineering, chemical technology, electrical technology and the institute of the cement industry reunited into the V.I. Lenin Kharkiv Polytechnic Institute. Professor Mikhail Semko was appointed its rector and stayed at this position for 30 years.

In April 1994 the Cabinet of Ministers of Ukraine granted Kharkiv Polytechnic Institute the university status, so it was renamed to Kharkiv State Polytechnic University (KhSPU).

On the 11th of September 2000 (two thousand) our Institute was given the name of National Technical University “Kharkiv Polytechnic Institute”. The status of “National” is a recognition of our Institute contribution to the development of national higher education, science and economy.

NTU “KhPI” is one of the leading higher educational establishments of Ukraine. It is also one of the largest and oldest not only in our city but in our country as well. There are more than 20 departments training students for more than 90 specialities (at day-time and extramural departments). During its glorious history our Polytechnic has trained more than 130,000 specialists. Among them are such noted alumni and employees as Lev Landau, Soviet physicist, Nobel Prize winner (1962); Nikolay Beketov, Russian physical chemist; Mikhail Gurevich, Soviet aircraft designer; Anton Valter, Soviet nuclear physicist, one of the founders of the Ukrainian Institute of Physics and Technology and many others.

Scientific schools well-known all over Ukraine and the world are developed in the fields of physics of thin films, dynamics and strength of materials, cutting machinery, design and production of turbines etc.

Many University departments cooperate with foreign countries: Germany, Hungary, Austria, France and America in various fields of modern technology and business.

Вправа 1. Дайте відповіді на запитання.

1. When was our university founded?
2. Who was the founder and the first director of our university?
3. What outstanding scientists worked at our university at the beginning of the 20th century?
4. When was our Institute given the name of National Technical University “Kharkiv Polytechnic Institute”?
5. How many departments are there in NTU “KhPI”?
6. What scientific schools are developed in our university?
7. What foreign countries does our University cooperate with?
8. What famous alumni of NTU “KhPI” do you know?

Вправа 2. Доповніть діалоги, розіграйте їх у парах.

1. – I am going to be a/an ____ – Why? – For a number of reasons. – What reasons? – The main one is ____.
- Where are you going to study? – I am going to study ____.

2. – Have you passed your exams? – Yes, it was not very difficult. – It is because you worked _____. – Well, it was all right in _____, but I did not do so well in _____. – And what about your _____? – Not so bad, _____.

15.2. Письмове завдання

Вправа 3. Поставте запитання до стверджувальних речень за темою «Наш університет».

1. The history of National Technical University “KhPI” goes back to the year of 1885. 2. A lot of outstanding scientists worked in the KhIT. 3. By the beginning of the 20th century the students’ body of the KhIT had already numbered 1,000 students. 4. The KhIT was the first technical higher educational institution in the south of Russian Empire. 5. Professor M.F. Semko was appointed the Rector of the Polytechnic Institute. 6. The Institute had close contacts with such great world known scientists as D.I. Mendeleyev and N.A. Zhukovsky.

Вправа 4. Заповніть пропуски у тексті (лист до друга з розповіддю про навчання в НТУ „ХПІ”).

September, _____, 20_____.

My dear friend _____,

I want to tell you a few words about my university.

I am a first-year student of _____ University. My University is in _____ *street / square* next to the _____ *Metro station / bus / tram stop*. My University *is / is not* large. There are *few / quite a few* lecture halls, rooms for studies and laboratories there. Its research laboratories *are / are not* provided with the most up-to-date equipment. The scientists of our University carry out research in various fields such as _____. There are very *many / some / no* well-known scientists working at our University.

My major is _____. As a first-year student I am not doing any research yet but I am planning to take part in the research activities of our department *next year / in a year / in the third year*. I am going to graduate from the University in _____.

Now I live in a hostel *quite near to / rather far away from* the University. I share the room with *first year / graduate* students. They are *quite / not really* friendly. Along with studying I am also interested in _____. We have all the opportunities to train any kind of sports at our sports grounds and special facilities.

I would like to know about your student's life and your educational establishment. I'm looking forward to hearing from you soon.

Love. Your friend ____.

15.3. Читання

Прочитайте текст зі словником.

What's a Neutrino?

A neutrino, an elementary particle, whose existence was first suggested by physicist Wolfgang Pauli in 1930, is electrically neutral and can pass through ordinary substances intact, rarely interacting with other particles. Neutrinos are believed to have a very small mass or possibly no mass whatsoever.

Neutrinos are one of the fundamental particles which make up the universe. They are also one of the least understood. Neutrinos are similar to the more familiar electron, with one crucial difference: neutrinos do not carry electric charge. Because neutrinos are electrically neutral, they are not affected by the electromagnetic forces which act on electrons. Neutrinos are affected only by a "weak" sub-atomic force of much shorter range than electromagnetism, and are therefore able to pass through great distances in matter without being affected by it. If neutrinos have mass, they also interact gravitationally with other massive particles, but gravity is by far the weakest of the four known forces.

Three types of neutrinos are known; there is strong evidence that no additional neutrinos exist, unless their properties are unexpectedly very different from the known types. Each type of neutrino is related to a charged particle (which gives the corresponding neutrino its name). Hence, the "electron neutrino" is associated with the electron, and two other neutrinos are associated with heavier versions of the electron called the muon and the tau (elementary particles are frequently labelled with Greek letters, to confuse the layman).

Виберіть правильний варіант.

1. The existence of a neutrino was predicted by physicist ____.

a) Enrico Fermi b) Niels Bohr c) Wolfgang Pauli

2. Neutrinos are ____.

a) electrically neutral b) positively charged c) negatively charged

3. There are ____ types of neutrinos.

a) seven b) two c) three

4. It is considered that a neutrino has a very small ____.

a) mass b) energy c) size

☺ **Smile !**

– How many programmers does it take to change a light-bulb?

– None. It's a hardware problem.

15.4. Граматика. Особливості вживання пасивного стану

Речення у пасивному стані в англійській мові вживаються значно частіше, ніж в українській. Підметом речення в пасивному стані може бути прямий, непрямий, а також прийменниковий додаток.

Реченню в активному стані з двома додатками відповідають 2 речення в пасивному стані, наприклад:

The teacher showed **us the new book**. – **We** were shown the new book.

The new book was shown to us.

При перетворенні в пасивний стан речення з **прийменниковим додатком** прийменник залишається на своєму місці – після дієслова:

Everybody was looking **at him**. – **He** was being looked **at** by everybody.

Вправа 5. Перепишіть речення в пасивному стані у 2-х варіантах.

1. They showed him the way to the station. 2. Mother told her the news when she returned home. 3. The company offers us the goods at low prices. 4. The chief has given the workers the detailed instructions. 5. They promised him immediate help. 6. The friends presented her a new smartphone. 7. You will send me all the necessary data. 8. They have given him 2 hours to make his decision. 9. We paid the lawyers \$200 for their job. 10. He made her a proposition yesterday.

Вправа 6. Перепишіть речення у пасивному стані.

1. We use these clothes only on special occasions. 2. He published the book last year. 3. Somebody has opened the door and turned on the light. 4. They will answer you in some days. 5. Who wrote this novel? 6. They showed her the easiest

way to do it. 7. We have looked for the wallet everywhere. 8. Nobody has visited him. 9. They will have finished the work by twelve. 10. The students are taking the exams now. 11. The nurse is looking after the children.

Вправа 7. Перекладіть речення. Визначте час та стан присудка у кожному реченні.

1. The Nobel Prize was awarded to British scientists for this outstanding discovery. 2. Lasers have been used by communication and building workers, drillers etc. They are also designed to help doctors and scientists in their research. 3. Experts believe that by the end of the decade lasers will have been used in more spheres. 4. When computers were designed they found wide application in industry. 5. Polypropylene resins are being used in films, tubes and hundreds of other industrial articles. 6. Polymers are machined much easier than wood, stone or metal, therefore so much attention is being paid to these man-made materials at present. 7. The construction of the road was being completed when the chief arrived.

15.6. Домашнє завдання

Вправа 8. Поставте присудок у реченнях в усі форми пасивного стану. Виберіть необхідний індикатор часу: *always, often, in 2001, yesterday, at five o'clock tomorrow, in a week, today, by the end of the month, when I came in, by the time of our arrival, at the moment, during the break, just.*

1. The articles are translated by Peter. 2. The devices are constructed by our engineers.

Вправа 9. Перепишіть речення у пасивному стані в 2-х варіантах.

1. The scientists are explaining us the situation on the steel market. 2. He will prove them the possibility of using these materials. 3. The reporter showed the audience the charts and diagrams. 4. She gives me a nice example of creative work. 5. The parents have sent him some money.

Вправа 10. Складіть розповідь про свій вищий навчальний заклад з використанням активних слів та виразів.

Lesson 16. My Department

16.1. Розмовна тема. Мій факультет

Вправа 1. Доповніть текст даними про ваш факультет.

The department of ____ was founded in ____.

It trains specialists for ____ industry.

It closely cooperates with industrial enterprises such as ____.

Besides training specialists our department conducts research and scientific work.

Many well-known scientists such as ____ worked at our department.

At present time the department trains specialists in ____ specialities. These specialities are: ____.

Graduates of our department work at ____.

Прочитайте про різні факультети деяких університетів світу (див. Appendix I).

16.2. Письмове завдання

Вправа 2. Дайте відповіді на запитання про один з факультетів вашого ВНЗ.

1. When was the department founded? 2. What industry does it train specialists for? 3. What industrial enterprises does it cooperate with? 4. Who of well-known scientists worked at the department? 5. How many specialities are there at the department? 6. Where do graduates of the department work at?

16.3. Читання

Прочитайте текст зі словником.

What Does the Large Hadron Collider Do?

The Large Hadron Collider (LHC) is currently being installed in a 27-kilometer ring buried deep below the countryside on the outskirts of Geneva, Switzerland. It started its operation in 2007, and became the world's most powerful particle accelerator. During the experiments, high-energy protons in two counter-rotating beams are smashed together in a search for signatures of supersymmetry, dark matter and the origins of mass.

The beams are made up of bunches containing billions of protons. Traveling at a whisker below the speed of light they are injected, accelerated, and kept circulating for hours, guided by thousands of powerful superconducting magnets.

The experiments' detectors will watch carefully as the energy of colliding protons transforms into thousands of exotic particles. The detectors could see up to 600 million collision events per second, with the experiments trying to obtain the data for signs of extremely rare events such as the creation of the much-sought Higgs boson.

Виберіть правильний варіант.

1. The Large Hadron Collider is a powerful ____.
a) laser b) particle accelerator c) atomic power plant
2. The LHC is built in ____.
a) Switzerland b) France c) America
3. During the experiments, the beams of high energy ____ collide.
a) molecules b) protons c) electrons
4. The scientists try to observe the creation of ____.
a) Dirac's positron b) Rutherford's atom c) Higgs boson

16.4. Граматика. Особливості перекладу пасивних конструкцій

В англійській мові пасивний стан вживається частіше, ніж в українській. Існує декілька випадків, коли переклад присудка у пасивному стані становить певні труднощі.

1. Якщо у пасивному стані є носій дії (**by somebody**), то при перекладі можна вживати особову форму дієслова в активному стані:

The news is brought by my sister. – Новину принесла моя сестра.

2. Якщо присудок у пасивній конструкції виражений дієсловом з прийменником, то підмет перекладають додатком з відповідним прийменником, а присудок – неозначено-особовою формою дієслова.

The doctor was sent for. – Послали за лікарем.

The child is being looked after. – За дитиною доглядають.

📌 Запам'ятайте дієслова з прийменником!

to look for – шукати	to wait for – чекати
to look through – переглядати	to pay attention to – звертати увагу на
to work on – працювати над	to listen to – слухати
to refer to – посилається на	to rely on – покладатися на

3. Безособові конструкції перекладають наступним чином:

It is known that ... – Відомо, що ...	It is expected that ... – Чекають, що ...
It is said that ... – Говорять, що ...	It should be mentioned that ... – Слід згадати, що ...

Вправа 3. Перекладіть речення. Зверніть увагу на дієслова, які потребують після себе прийменника.

1. He was listened to with great attention. 2. The child was looked for everywhere. 3. The documents were sent for a week ago. 4. Her children will be taken care of. 5. She is always waited for. 6. Tsiolkovsky's works are often referred to at present. 7. He doesn't like to be laughed at. 8. The results of the last experiment were constantly referred to by the professor.

Вправа 4. Поставте дієслово в дужках у необхідному часі.

1. The inventor of the radio, Popov, (to bear) in 1859. 2. The work (to do) by students at the laboratory. 3. The mother (to tell) not to worry about her sick boy. 4. He (to examine) soon by the doctor. 5. The cat (to call) Pussy, but my little sister (to call) it Push. 6. Great progress (to make) in radio engineering since that time. 7. The first two-electrode valve (to make) in 1904. 8. Great progress (to achieve) in the field of electronics. 9. I (to give) a kitten last week.

Вправа 5. Розкрийте дужки та поставте дієслова у Passive Voice.

1. Soon he (to send) to a sanatorium. 2. The book (to discuss) at the next conference. 3. The composition must (to hand) in on Wednesday. 4. Yesterday he (to tell) to prepare a speech. 5. The article (to publish) last week, if I am not mistaken. 6. The lectures (to attend) by all of us. 7. A taxi (to call) fifteen minutes ago, so we are expecting it any moment. 8. The young man (to introduce) to me only a couple of hours ago, but it seems to me that I've known him for years.

Вправа 6. Передайте речення у Passive Voice.

1. They broke the window last week. 2. When I came home, they had eaten the sweets. 3. We will do the work in the evening. 4. He wrote this book in the 19th century. 5. They were playing tennis from four till five. 6. They have made a number of important experiments in this laboratory. 7. Livingstone explored Central Africa in the 19th century. 8. By the middle of autumn we had planted all the trees in the orchard. 9. They will stage this play at the beginning of the next season. 10. They have forgotten the story.

Вправа 7. Перекладіть речення англійською.

1. Вже послали за ліками? – Так, їх зараз шукають. 2. Його виховала сестра. 3. Не турбуйся, йому допоможуть в роботі. 4. Нажаль, в нашому районі вирубують багато дерев. 5. Цей міст ще будується. Він вже будувався, коли я побачив його вперше. 6. Коли файл копіювався, раптом виключили електрику. 7. Коли я прийду додому, обід ще буде готуватись. 8. Це явище широко обговорювалось у науковій пресі.

16.5. Домашнє завдання

Вправа 8. Трансформуйте речення з активного у пасивний стан. Перекладіть речення.

1. They deliver all the mail at half past nine. 2. This engineer is writing the letter in English. 3. William taught this group of children. 4. The students will buy the theatre tickets next week. 5. They have published this booklet. 6. They had built this block of flats by the end of the year. 7. Mary was writing the article for the journal from five till eight. 8. Everybody knows you. 9. Everyone hears our broadcasts. 10. We will have finished the work by Saturday.

Вправа 9. Назвіть номери речень, присудок яких стоїть у пасивному стані.

1. May 7, 1895 **has entered** the history of science as the date of the invention of radio. 2. In 1938 the first TV station **came** into being in Moscow, but the war **stopped** the development of television. 3. The international exchange programmes **will be developed** still further in future. 4. Some powerful radio stations **have** recently **been built** in the northern regions. 5. Much attention **is being paid** to the development of three-dimensional television.

Вправа 10. Виберіть правильний переклад присудка.

1. The machine tool **measures** its production itself.
2. The machine tool **will measure** its production itself.
3. The part **is measured** with great accuracy.
а) виміряли; б) виміряє; с) виміряється; d) буде виміряти.
4. The builders **are planning** to build the road.
5. The building of the road **is being planned**.
6. The building of the road **was being planned**.
а) планується; б) планують; с) спланували; d) планували.
7. The tests **have been carried out** well.
8. The tests **were being carried out** well.
9. The tests **are being carried out** well.
а) виконуються; б) виконувались; с) виконані; d) будуть виконані.

Вправа 11. Складіть розповідь про свій факультет з використанням активних слів та виразів.

Lesson 17. My Major

17.1. Розмовна тема. Моя спеціалізація

Вправа 1. Прочитайте розмовні формули для розповіді про будь-яку спеціальність та складіть розповідь про власну спеціальність.

I am a first year student of NTU “KhPI”.

I study at ____ Department.

I major in ____.

Besides my speciality at our department there are such specialities as ____.

In ____ I will gain a Bachelor’s Degree.

After graduating from the University I am going to be an engineer (technologist, designer, etc.) and work in (at) ____.

17.2. Письмове завдання

Вправа 2. Заповніть пропуски словами зі списку: *what, courses, it’s, you, does, include, little, to highlight, to, field, school, because, for, fascinates*.

There are two reasons to choose a major: to prepare for a specific ____ or job, or to immerse yourself in a subject that ____ you.

Some students choose a major because it will prepare them for a specific career path. Career-focused majors ___ engineering, business, or education. Other students choose a major simply ___ they love the subject. If you choose this path, you may pursue a career that has ___ to do with what you studied in college. Here are some ideas on how to start your search ___ the right major.

Forget high ___. College is a whole new ball game. Subjects you hated as a high school student might turn out to be completely different in a new educational setting. Make the most of the general education ___ you're required to take. Don't just pick whatever's easiest; choose ones that appeal to ___, even if they are upper-level courses. You don't yet know what will really compel you.

Talk to your advisors. They know what it takes to tackle certain academic disciplines. Tell them your strengths and your interests. They'll be able ___ courses that might excite you as well as classes that are popular with other students.

Check the syllabus. What are the assignments? The books? The requirements? Does the material seem compelling to you? If you start nodding off while reading the course catalogue, perhaps ___ best to cross that field off your list.

Ask upperclassmen. They are the real experts at your college, and they have faced the daunting task of declaring a major themselves.

Engage professionals in fields you find interesting. Ask them exactly ___ their jobs entail and how their careers do (or don't) relate to their majors.

But the main thing to remember is that your major ___ not determine your life. You should choose a subject that interests you and that has some connection to the post-collegiate life you want to build for yourself. But keep the decision in perspective; you can always change careers or go back ___ school.

17.3. Читання

Прочитайте текст.

What is Classical Physics?

Classical physics is a branch of physics in which matter and energy are two separate concepts. Based primarily on Sir Isaac Newton's laws of motion and James Clerk Maxwell's theory of electromagnetic radiation, classical physics is

generally divided into several different areas. These areas include mechanics, dynamics, hydrodynamics, statics, optics, thermodynamics and acoustics, as well as the study of magnetism and electricity. The laws of conservation of mass, conservation of energy and conservation of momentum are also very important to classical physics. They state that mass and energy can be neither created nor destroyed, and the momentum of an object will only be changed if an outside force acts on it.

Виберіть правильний варіант.

1. Classical physics deals with matter and energy as ____.
a) two separate concepts b) a single notion c) the only things worth studying
2. The “parents” of classical physics are Newton and ____.
a) Faraday b) Einstein c) Maxwell
3. Classical physics also studies the law of ____.
a) transition from quantity to quality b) conservation of energy c) supply and demand

17.4. Граматика. Ступені порівняння прикметників і прислівників

I спосіб

Порівняльний ступінь + -er ,		Найвищий ступінь + -est
однокладові	двоскладові, з наголосом на 2 складі	двоскладові, які закінчуються на -er, -ow, -y, -le
big – bigger – biggest high – higher – highest	polite – politer – politest	easy – easier – easiest clever – cleverer – cleverest

II спосіб

more – the most
для багатоскладових та інших прикметників
beautiful – more beautiful – the most beautiful

Приклади утворення

Звичайний ступінь	Порівняльний ступінь	Найвищий ступінь
big	bigger	the biggest
high	higher	the highest
polite	politer	the politest
easy	easier	the easiest
clever	cleverer	the cleverest
wonderful	more wonderful	the most wonderful
tired	more tired	the most tired
soon	sooner	the soonest
hardly	more hardly	the most hardly

📌 Запам'ятайте винятки!

good – better – the best
bad – worse – the worst
little – less – the least
many (much) – more – the most
far – farther / further – the farthest / the furthest
old – older / elder – the oldest / the eldest

Приклади

He is in the farthest corner of the garden. – Він у самому дальньому куточку саду.

Further information will be given later. – Наступну інформацію Ви отримаєте пізніше.

He is 5 years older than me. – Він старший за мене на 5 років.

He is my elder brother. – Він мій старший брат.

📌 Запам'ятайте прислів'я!

East or west – home is best.
Better late than never.
The grass is always greener on the other side.

☺ **Smile !**

Teacher: And as you know, heat causes expansion and cold contraction. Elliot, can you give me an example? – Elliot: Yes, Sir. In summer when it's hot the days are longer than in winter when it's cold.

Вправа 3. Утворіть порівняльний та найвищий ступені порівняння прикметників та прислівників.

1. Hot, long, short, clever, silly, great, red, black, white, thin, thick, fat, nice, warm, cold, merry, small, tall, high, weak, strong, heavy, light, green, dry, clean, dirty, wide, deep, brave.
2. Necessary, quickly, slowly, clearly, well, far, highly, widely, poorly.

Вправа 4. Розкрийте дужки, використовуючи потрібну форму прикметника. Перекладіть рідною мовою.

1. They are not (small) particles, but they are very small.
2. This discovery is much (important) than the previous one.
3. It is (easy) to manufacture parts of plastics than of metal or wood.
4. This is (good) laboratory in our Institute.
5. Aluminum is (light) known metal.
6. This book is (interesting) than that one.
7. That exercise is (easy) of all.
8. Gagarin Avenue is (wide) than Pushkinskaya Street.
9. February is (short) of all the months of the year.
10. Her pronunciation is (good) than Nick's.
11. Our house is (high) than yours.
12. These roses are (beautiful) than those.
13. Russia is a very (large) country.

17.5. Домашнє завдання

Вправа 5. Розкрийте дужки, використовуючи потрібну форму прикметника.

1. Which is (large): the United States or Canada?
2. What is the name of the (big) port in the United States?
3. Kiev is the (large) city in Ukraine.
4. The London underground is the (old) in the world.
5. There is a (great) number of cars in the streets of Kharkiv than in any other neighbouring town.
6. Paris is one of the (beautiful) cities in the world.
7. The rivers in America are much (long) than those in England.
8. The island of Great Britain is (small) than Greenland.
9. What is the name of the (high) mountain in Asia?
10. The English Channel is (wide) than the Strait of Gibraltar.

Вправа 6. Перекладіть речення англійською.

1. Старші студенти дають нам цінні поради. 2. Хімічний корпус найстаріший в нашому університеті. 3. Найкращі роботи будуть відіслані на конкурс. 4. Мій молодший брат ще не вирішив, яку спеціальність обрати. 5. Футбол – найпопулярніший вид спорту в Україні. 6. Синоптики обіцяють, що погода стане гіршою за два дні.

Вправа 7. Складіть розповідь про свій факультет з використанням активних слів та виразів (7–10 речень).

Lesson 18. The City of Science and Education

18.1. Розмовна тема. Місто науки та освіти

📖 Active Vocabulary:

crossroads – перехрестя; route – шлях; civil engineering – громадянське будівництво; jet aircraft – реактивний літак; control system – система керування; carrier rocket – ракета-носіїв; vehicle – транспортний засіб; to constitute – становити; core – ядро; solid-state physics – фізика твердого тіла, labour pool – трудовий резерв.

Industry, Science and Education in Kharkov

The city of Kharkiv was founded over 350 years ago at the crossroads of major transportation routes. It has now become one of Ukraine's largest centres for science, industry and culture.

There are about 250 large industrial enterprises in the city, the most important of which are in mechanical engineering and metal working, electrical power engineering and construction materials industries. The chemical, printing and woodworking industries are also well developed, and the city has a highly developed civil engineering industry.

The products of Kharkiv companies are well known in Ukraine and abroad. They include tractors and turbines, jet aircrafts, automated machine tools, electrical motors and engines for agricultural machinery, TV sets and electrical devices, medical equipment and pharmaceuticals.

Specialists from Kharkiv have contributed greatly to rocket engineering and space exploration. Control systems for carrier rockets and space vehicles, as well as several generations of rocket systems, have been developed by research

and engineering specialists from Kharkiv. These systems constitute the core of the CIS space program.

The research and development potential of the city is represented by its research and design institutes and design offices. Kharkiv is the largest regional centre for the Ukrainian Academy of Sciences, and over 150 institutions in Kharkov deal with science and research work.

Fundamental research schools and universities in Kharkiv are leaders in the country. Investigations by Kharkiv scientists in the fields of solid-state physics, cryobiology and cryomedicine, radio electronics, crystal synthesis, low temperature physics, genetics and selection are known worldwide.

Specialists in various fields of knowledge are trained in Kharkiv state institutions including 6 academies, 10 universities and 8 institutes. Institutions such as Kharkiv National University, NTU “KhPI”, State Law Academy, Engineering and Pedagogic Academy, and Pharmaceutical Academy are well known and respected. There is also a growing number of private educational institutions.

The high educational level of the population is a major factor of the city’s progress.

The city has 193 elementary, middle and high schools, 8 college preparatory high schools, 37 vocational schools and 4 junior colleges. The students of these schools provide a highly qualified labour pool for business enterprises and institutions.

Дайте відповіді на запитання.

1. When was Kharkiv founded? 2. Is Kharkiv the largest Ukrainian industrial centre? 3. How many industrial enterprises are there in Kharkiv? 4. What industries are presented in Kharkiv? 5. What products do Kharkiv enterprises manufacture? 6. What is Kharkiv’s contribution to the space exploration? 7. How many institutions in Kharkiv deal with science and research work? 8. What fields of science are the most developed in Kharkiv? 9. How many and which state institutions of higher education are there in Kharkiv?

18.2. Письмове завдання

Вправа 1. Заповніть пропуски в тексті такими словами та словосполученнями: *leading, Peninsula, based on, education, city, globally, school, England, center, population, students, the United States, tourists.*

Boston is the capital of and largest ____ in Massachusetts, and is one of the oldest cities in _____. The city has a ____ of about 618,000 people. In 1630, Puritan colonists from ____ founded the city on the Shawmut _____. Its rich history now helps attract over 20 million ____ every year. The city was the site of several “firsts”, including America’s first public ____, Boston Latin School (1635), and the first subway system in the United States (1897). With many colleges and universities within the city and surrounding area, Boston is an international ____ of higher ____ and a center for medicine. More than 100 colleges and universities are located in the Greater Boston Area, with more than 250,000 ____ attending college in Boston and Cambridge alone. The city’s economy is also ____ research, electronics, engineering, finance, and high technology – principally biotechnology. Besides, the city is a ____ finance center. The city was also ranked number one for innovation, both ____ and in North America.

18.3. Читання

Прочитайте текст.

What is Fiber Optics?

Fiber optic technology allows humans to control the path of a beam of light by confining it within ductile, transparent materials, like cords of plastic and glass. These transparent materials function as pipelines for light, and with their help, light, which usually moves in straight lines, can be sent along curved trajectories or around corners. Optical fibers of very pure glass have a surprisingly massive range, having been observed to carry light across distances greater than 100 miles (160 km) with only slight dimming. Some individual fibers measure less than 0.00015 inches (0.004 mm) wide, which makes them thinner than human hair. The light transmitted by optical fibers can be used for simple illumination, or to transmit signals and data. Though there was some practical application of fiber optic technology as early as the 1950s, major commercial implementation began in the 1980s.

Виберіть правильний варіант.

1. In fiber optic technology, such materials as ____ are used to transmit light.
a) wood b) plastic c) metal
2. Optical fibers can carry light over the distances of ____.
a) 1,000 km b) 100 km c) 10,000 km

3. The thickness of a single fiber is ____.
- a) that of a match b) less than that of a human hair c) 3 inches
4. The commercial application of fiber optic began in the ____.
- a) 1950s b) 1980s c) 21st century

18.4. Граматика. Порівняльні конструкції

as ... as, not so ... as, the ... the та інші

1)	the ... , the...	чим ... тим
----	------------------	-------------

The more, the better. – Чим більше, тим краще.

2)	as ... as	такий же ... як
----	-----------	-----------------

It is as cold today as it was yesterday. – Сьогодні так само холодно, як вчора.

📌 **Запам'ятайте!**

This box is twice (three times) as heavy as that.	Ця коробка вдвічі (втричі) важча , ніж та.
--	--

3)	not so ... as	не такий ... як
----	---------------	-----------------

It is not so cold today as it was yesterday. – Сьогодні не так холодно, як учора.

4)	than	ніж
----	------	-----

He did more than she did. – Він зробив більше, ніж вона.

☺ **Smile !**

Did you hear about the man who went to see the optician because he saw spots in front of his eyes?

The optician gave him glasses, and now he can see the spots **much better**.

Вправа 2. Використайте конструкції *as ... as* або *so ... as*.

1. Mike is ___ tall ___ Pete. 2. Kate is not ___ nice ___ Ann. 3. My room is ___ light ___ this one. 4. This book is not ___ thin ___ that one. 5. Sergei is ___ old ___ Michael. 6. She is ___ young ___ Tom's brother. 7. Nick's English is not ___ good ___ his friend's. 8. ___ far ___ I know, your sportsmen won not ___ many medals ___ ours. 10. His textbook is twice ___ thick ___ mine.

Вправа 3. Перекладіть речення, звертаючи увагу на порівняльну конструкцію *the ... the*.

1. The shorter the half-life period of an element, the greater its radioactivity. 2. The faster the object moves, the greater the air resistance. 3. The higher the temperature of a metal, the higher its resistance. 4. The more you read, the more you learn. 5. The larger the water-pipe, the more water passes through it. 6. The shorter the wire, the less its resistance to current. 7. The greater the number of free electrons in a substance, the better that substance conducts electricity.

Вправа 4. Перекладіть рідною мовою.

1. The less you say, the better. 2. Unfortunately I couldn't come as early as I had promised. 3. The cat fell off the roof but it feels none the worse for it. 4. The room is nice, but not as nice as I should like. 5. The more one has, the more one wants. 6. He is not as experienced as you are. 7. The weather is changing for the better. 8. The window is as narrow as the door. 9. The soup smells good, but it tastes better. 10. How can I get to the nearest post-office? 11. If he helps us, so much the better. 12. If he doesn't do his home tasks, so much the worse for him. 13. The sooner you do it, the better. 14. He is getting still weaker. 15. This time you've made fewer mistakes. 16. The more we study, the more we know. 17. He is not so industrious as his brother. 18. My train starts in a minute. I can't wait for him any longer.

Вправа 5. Вставте *as ... as*, *so ... as* або *than*.

1. Our house is not ___ big ___ yours. 2. The new cinema in our district is much bigger ___ the old one. 3. We are ___ proud of our district ___ you are of yours. 4. The house I live in is two times ___ old ___ the one my sister lives in. 5. Exercise 2 is easier ___ exercise 3. 6. This song is more beautiful ___ that one. 7. My composition is not ___ long ___ yours.

Вправа 6. Поставте слова у дужках у потрібний ступінь порівняння.

1. This railway is (long) in the world. 2. Silver is (heavy) than copper. 3. The twenty-second of December is (short) day in the year. 4. The (big) problem facing the technology is cost-effectiveness. 5. Elbrus is (high) peak in the Caucasus. 6. One of the (good) parts of my job is having an opportunity to meet with interesting people. 7. The maintenance costs become (high) each year. 8. The flexible solar panel is a little (thick) than photographic film. 9. This technology will be a lot (easy) to handle. 10. The (good) solar cells are now working at efficiencies about 20%.

Вправа 7. Перекладіть речення англійською.

1. В інституті перерви між заняттями довші, ніж у школі. 2. Земля важча за Місяць приблизно в 80 разів. 3. Його собака такий же лінивий, як його кіт. 4. Чим більше мов знає людина, тим краще. 5. Цей телефон не такий дорогий, як я думав. 6. В Харкові більше навчальних закладів, ніж у Донецьку.

18.5. Домашнє завдання

Вправа 8. Перекладіть речення, звертаючи увагу на контрукцію *the ... the*.

1. **The nearer** the Earth, **the denser** the atmosphere. 2. **The more** experiments scientists make, **the greater** is their knowledge of the structure of matter. 3. **The bigger** the mass, **the bigger** the weight of the body. 4. **The nearer** the centre of the Sun, **the higher** the temperature. 5. **The more** the scientist studied the problem, **the better** he understood its importance for man. 6. **The stronger** the magnet, **the greater** the distance through which it acts.

Вправа 9. Перепишіть речення як показано у прикладі: *Jack is younger than he looks.* – *Jack isn't as old as he looks.*

1. It's warmer today than yesterday. It isn't _____. 2. The station was nearer than I thought. The station wasn't _____. 3. The hotel is cheaper than I expected. The hotel isn't _____. 4. There were fewer people at this meeting than at the last one. There weren't _____. 5. The maths test was easier than we expected. The maths test wasn't _____. 6. My brother is taller than me. My brother isn't _____. 7. Ice is harder than snow. Ice isn't _____.

Вправа 10. Перекладіть англійською.

1. Ця робота не така важка, як ви вважаєте. 2. Ці частинки не настільки добре вивчені, як інші. 3. Наші знання про деякі космічні об'єкти стали значно глибшими. 4. Чим важчі ядра, тим більша їхня потенційна енергія. 5. Кисень – один з найпоширеніших елементів на Землі. 6. Завдяки новому обладнанню робота проводиться набагато інтенсивніше. 7. Вода в цій посудині чистіша, ніж у водовідному крані. 8. Після додавання цієї речовини рідина стала менш прозорою. 9. Сонце в 330 тисяч разів більше Землі.

Вправа 11. Складіть розповідь про своє місто або будь-який інший науковий та промисловий центр з використанням активних слів та виразів (7-10 речень).

☺ **Time for Fun**

- One day a professor was discussing a particularly complicated physics concept. A pre-med student rudely interrupted to ask, “Why do we have to learn this pointless information.”

“To save lives,” the professor responded quickly and continued the lecture.

A few minutes later, the same student spoke up again. “So how does physics save lives?” he persisted.

“It keeps the ignoramuses like you out of medical school,” replied the professor.

- Two things are infinite: the universe and human stupidity; and I’m not sure about the universe. (Albert Einstein)

- French physicist Ampere (1775–1836) had two cats, one big and a one small, and he loved them very much. But when the door was closed cats couldn’t enter or exit the room. So Ampere ordered two holes to be made in his door: one big for the big cat, and one small for the small cat.

- What’s the difference between mechanical engineers and civil engineers?
Mechanical engineers build weapons. Civil engineers build targets.

UNIT 4. EUROPEAN AND INTERNATIONAL EDUCATIONAL ENVIRONMENT

🔗 Active Vocabulary of the Unit:

The United Kingdom of Great Britain and Northern Ireland (the UK), the United States of America (the USA), to occupy, island, to be washed by, to have large deposits of, branch of industry, to consist of, urban, surface, maritime, parliamentary monarchy, fog, desert, valley, highland, lake, waterfall, in honor of, leap year, independence; landmark, tower, fortress, contemporary, sky-scraper, suburbs, inhabitant; to attend, public school, boarding school, GCSE, curriculum, to enroll, interview, free of charge, requirement, high school, campus.

Lesson 19. Great Britain

19.1. Розмовна тема. Велика Британія

Прочитайте текст та знайдіть переклад підкреслених слів у словнику.

Great Britain, formally known as the United Kingdom of Great Britain and Northern Ireland, is situated on the British Isles. The British Isles consist of Great Britain, Ireland and some 5,500 smaller islands. The total area of the United Kingdom is 244,027 square kilometres. It is seventy-fifth in size among the countries of the world and it is less than two percent of the world's land area. The population of Great Britain is over 58 million people. About four fifths of the population is urban. The largest island in north-west Europe – Great Britain – is separated from Ireland by the Irish Sea and from the Continent by the English Channel (La Manche) and the Strait of Dover (Pas de Calais).

The surface of England and Ireland is rather flat. The highest mountain in the United Kingdom is Ben Nevis in Scotland (1343 m). There are many rivers in Great Britain but they are not very long. The rivers are deep and do not freeze in winter. The chief rivers are the Severn (220 miles) and the Thames (215 miles). Great Britain is known for its typically maritime climate with frequent rains, strong winds and continuous fogs.

Great Britain consists of four administrative parts: England, Wales, Scotland, and Northern Ireland. England is the heart of Britain. It is the richest, the most fertile and most populated in the country. The north and the west of England are mountainous, but all the rest of the territory is a vast plain. In Northwest

England, there are many beautiful lakes with green, wooded or grassy shores and grey mountains all around. It is called Lake District. The national symbol of England is red rose.

Wales is the smallest land of the United Kingdom. The capital of Wales is Cardiff, an important industrial centre and port. Most people in Wales live in the costal plains. The national symbol of Wales is a leek or a daffodil.

Scotland is a land of mountains, wild moorlands, narrow valleys, famous lakes and no end of large and small islands off the coast. The Highlands of Scotland are among the oldest mountains in the world. One-third of the people in Scotland live in or near its capital, Edinburgh, and its great industrial centre, Glasgow. The national symbol of Scotland is a thistle.

Northern Ireland was a part of Ireland as a whole before the early 20th century. The territory is small. It is a land of lakes, rivers and a varied sea coast. The capital city is Belfast. The national symbol of Ireland is shamrock.

Great Britain is a parliamentary monarchy. Queen Elizabeth II is the head of the state. In practice she reigns but does not rule. The country is governed in her name by the Government. Parliament is the supreme legislative body. It consists of two Houses: the House of Commons and the House of Lords. The Prime Minister is usually the head of the party which is in power.

The UK's flag is often called the Union Jack.

Great Britain is a highly developed industrial country. Shipbuilding is one of the principal industries of Great Britain. For centuries Britain has been the leading shipbuilder in the world.

Coal is the main source for the development of British industry. The biggest centres of iron and steel industries are situated in the neighbourhood of coal basins. They are Newcastle, Cardiff, Glasgow, and Sheffield. The district around Birmingham is a land of factories and mines. Coal-mining, metallurgy, textile, shipbuilding are the older branches of industry. The new industries are the chemical, electrotechnical, automobile, aviation, and electronics. The new industries have developed hand in hand with science and technology and are equipped to meet present technical demands. London, Liverpool and Glasgow are the biggest English ports. The products of Britain's economy, e.g. automobiles, textile, machinery, electronic equipment and many others, are exported to many countries of the world.

Agriculture is one of the largest and most important activities in Great Britain. The greater part of the land here is used for sheep-, cattle-, and dairy farming. Vegetables are grown in all parts of the country. The chief grain crops are wheat and barley.

Great Britain is a country of high culture. There are many universities, colleges and scientific institutes here. Such English scientists of the past as Newton, Faraday, Darwin, Rutherford and others greatly contributed to world science. English writers Shakespeare, Byron, Dickens, B. Shaw and many others enriched world literature.

Визначте, чи правильні висловлювання. Якщо дані не відповідають наведеним у тексті, дайте правильний варіант.

1. The total area of the United Kingdom is more than 200,000 square kilometres.
2. Great Britain is separated from the continent by the Suez Canal.
3. The highest mountain in the United Kingdom is Everest.
4. England, Wales, Scotland, and Northern Ireland are the parts of Great Britain.
5. The population of Great Britain is greater than that of Ukraine.
6. All the territory of England is flat.
7. The capital of Wales is Cardiff.
8. Highlands is the name of the group of lakes in Northern Ireland.
9. The national symbol of Scotland is red rose.
10. The head of the state is Queen Margaret II.
11. British Parliament consists of two Houses: the House of Commons and the White House.
12. The UK's flag is called the Black Jack.

19.2. Письмові завдання

Вправа 1. Заповніть пропуски в реченнях.

Great Britain ____ by the Atlantic Ocean. Great Britain ____ from Europe by the North Sea and the English Channel. The British Isles are known to have ____ climate. The United Kingdom of Great Britain and Northern Ireland consists of England, Wales, _____. The British Isles ____ Great Britain and Ireland, the Isle of Man and the Channel Islands. Scotland ____ an area of 78,800 square kilometers and has ____ of 5.2 million. The oldest industries are ship-building and _____. The political party, which wins popular ____ to the House of Commons, forms the government. Such English scientists of the past as ____ greatly contributed to the world science.

19.3. Читання

Some Interesting Facts About Australia

- The black box flight recorder for aircraft was invented in Australia in 1958 by the Aeronautical research scientist David Warren.
- The first official world surfing championship was held in Sydney in 1964.
- Over 90% of the world's opals are mined in Australia.
- A resident of Sydney is called a Sydneysider.
- In 1926, New South Wales became the first government in the world to pay pensions to women.
- Eucalyptus was first used as a medicine by Aborigines, to treat coughs, fevers and asthma.
- Australia is the only continent without an active volcano.
- Dutch explorers arrived in Australia before James Cook claimed it for England and named it New Holland.
- The longest fence in the world is located in Australia. It is 5,530 km long and was erected to keep dingoes away from sheep.
- When a specimen of a platypus was first sent to England, the skeptical recipients believed the Australians had played a joke by sticking a duck's bill on a large rat's body.
- Australia is the lowest continent in the world, with an average height of just 330m above sea level.
- Australia is the driest inhabited continent on earth, the driest is Antarctica.
- The Transportation of British convicts to Australia ended in 1868.
- Australia is home to six of the top ten deadliest snakes in the world.

Визначте, чи правильні висловлювання.

1. The highest place in Australia rises only 330m above sea level.
2. Britain stopped deporting its convicts to Australia in early 1900s.
3. A person born in Sydney is called a Sydneier.
4. There are lots of active volcanoes in Australia.
5. The longest fence in the world was built in Australia to protect sheep from dingoes.
6. The Dutch explored Australia before the British.

**19.4. Граматика. Модальні дієслова *can, may*
та їхні еквіваленти на позначення можливості,
дозволу, здатності**

CAN (COULD)	Можливість щось зробити (можу, вмію)
Ствердні речення	
<i>I can play the piano.</i> Я вмію грати на піаніно. <i>He can answer the question.</i> Він може відповісти на запитання. <i>He could play chess when he was five.</i> Він вмів грати у шахи, коли йому було п'ять років.	
Питальні речення	
<i>Can you sing?</i> Ви вмієте співати? <i>Can you help me?</i> Ви можете мені допомогти? <i>Could you help me?</i> Не могли б ви мені допомогти?	
Заперечні речення	
<i>I cannot swim.</i> Я не вмію плавати. <i>He cannot understand the rule.</i> Він не може зрозуміти правила. <i>I could not ski when I was little.</i> Я не вмів кататись на лижах, коли я був малим.	

TO BE ABLE TO	(Еквівалент дієслова CAN)
<i>He is able to do it.</i> Він в змозі це зробити. <i>He was able to do it yesterday.</i> Він зміг зробити це вчора. <i>He will be able to do it tomorrow.</i> Він зможе це зробити завтра. <i>He has been able to swim since childhood.</i> Він вміє плавати з дитинства.	

MAY (MIGHT)	Дозвіл (можна)
<i>You may take my pen.</i> Ви можете взяти мою ручку. <i>You may not touch it.</i> Не можна торкатися цього. <i>May I come in?</i> Можна увійти?	
У непрямій мові: <i>Ann said that I might take her car.</i> Аня сказала, що я можу взяти її машину.	
Припущення (можливо)	
<i>It may rain soon.</i> Можливо (мабуть), скоро піде дощ. <i>Take care, you may fall.</i> Обережно, ви можете впасти.	

TO BE ALLOWED TO	(Еквівалент дієслова MAY)
We are allowed to take these books. Нам дозволяють брати ці книжки.	
We were allowed to take these books. Нам дозволили взяти ці книжки.	
We will be allowed to take these books. Нам дозволять взяти ці книжки.	

📌 Запам'ятайте прислів'я з модальними дієсловами!

Never put off till tomorrow what you **can** do today.

What is done **cannot** be undone.

Little bodies **may** have great souls.

Вправа 2. Складіть всі можливі речення з модальними словами.

I		skate	now
You	can	speak French	already
He	cannot	ride a bicycle	yet
She	could	solve such problems	when a child
We	could not	write computer programmes	last year
They		drive a car	before

Вправа 3. Вставте модальні дієслова *may (might)* або *can (could)*.

1. ___ I use your pen? 2. ___ I take the pen from that table? 3. You ___ read this book: you know the language well enough. 4. You ___ take this book: I don't need it. 5. ___ I help you? 6. ___ I ask you to help me? 7. ___ you help me to move this suitcase? 8. I ___ not imagine her speaking in public: I knew that she was so shy. 9. Something was wrong with the car: he ___ not start it. 10. A fool ___ ask more questions than a wise man ___ answer. 11. She asked me if she ___ use my telephone. 12. The school was silent: nothing ___ be heard in the long dark corridors. 13. Waiting ___ be endless, you know. 14. ___ you tell me the nearest way to the museum?

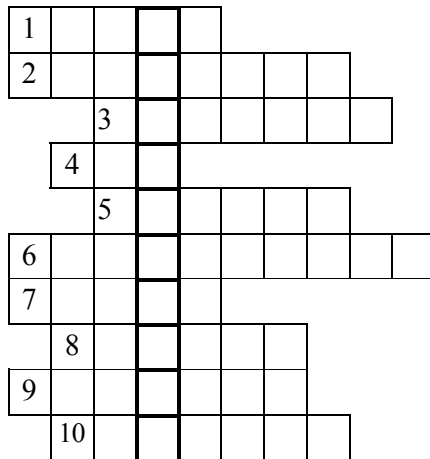
Вправа 4. Перекладіть англійською, використовуючи модальні дієслова.

1. Я вмію розмовляти англійською мовою. 2. Ти вмієш розмовляти французькою? 3. Моя сестра не вміє кататися на ковзанах. 4. Ти вмів плавати минулого року? 5. Місяць тому я не вмів кататися на лижах, а зараз вмію.

6. Ви не могли б мені сказати, де метро? 7. Ти зможеш зробити цю роботу завтра? 8. Я думаю, вона не зможе вирішити цю задачу без допомоги. 9. Завтра я вільний і зможу допомогти тобі. 10. Вчора я не зміг побачити директора, оскільки він був на конференції, але сьогодні після роботи я зможу це зробити. 11. Можна, я увімкну телевизор? 12. Якщо твоя робота готова, можеш йти додому. 13. Лікар каже, що я вже можу не приймати ліки. 14. Якщо ви натиснете цю кнопку, програма може зупинитись. 15. Будь обережним: ти можеш впасти. 16. Розмовляти по мобільному телефону на борту літака не дозволяється. 17. Вчора студентам дозволили самостійно провести експеримент. 18. Коли йому дозволять водити автомобіль?

19.5. Домашнє завдання

Вправа 5. Розгадайте кросворд та у виділеному стовпчику прочитайте назву одного з найзагадковіших місць у Великій Британії.



1. From the west Britain is washed by the ____ sea. 2. ____ lies to the north of England. 3. The British parliament consists of the House of Lords and the House of _____. 4. Big ____ is often considered the symbol of London. 5. The longest river in Britain is the _____. 6. One of the most famous British physicist is Ernest _____. 7. The smallest part of Great Britain is _____. 8. The capital of Great Britain is _____. 9. Great Britain is officially called the United _____ of Great Britain and Northern (10) _____.

Вправа 6. Вставте модальні дієслова *may (might)*, *can (could)*, *to be allowed to*.

1. Elephants ____ live for up to 70 years. 2. When I was 18, I ____ take my parents' car whenever I wanted. 3. Jane's children ____ to watch the film on TV last night. 4. Temperature near South Pole ____ reach minus 43 degrees Centigrade. 5. ____ I ask you a personal question? – Sure, you _____. 6. A hundred years ago ships ____ cross the Atlantic in 10 days. 7. There is somebody knocking at the door. – It ____ be a postman. 8. Anyone ____ make mistakes. 9. Look at these

terrible clouds! It ____ start raining any moment. 10. Dinosaurs ____ grow up to 5 metres long. 11. Camels ____ survive for up to 17 weeks in the desert without water. 12. Why hasn't she come to the party? – She ____ be busy with her diploma project.

Вправа 7. Складіть розповідь про Велику Британію з використанням активних слів та виразів.

Lesson 20. London

20.1. Розмовна тема. Лондон

📌 Active Vocabulary:

observation – спостереження; proximity – близькість; medieval – середньовічний; landmark – архітектурна пам'ятка; renowned – відомий; wealth – багатство; celebrated – славетний; pageantry – урочиста церемонія; fascinating – чарівний.

London is one of the world's greatest capital cities, with so much to see and do that Samuel Johnson's observation that "When a man is tired of London he is tired of life" is just as true today as it was 200 years ago.

London was founded in AD 60 by Romans soon after they invaded Britain and was called Londinium. Remains of the wall Romans built around the city can still be seen today. Ever since its foundation nearly 2,000 years ago, London has been the capital of Britain and, because of its location on the Thames and its close proximity to the continent, it has been an important trading centre. Today it is still a great financial centre, attracting important businesses from all over the world.

London's historic past can still be seen in its busy streets, from Roman walls, medieval churches and Tudor palaces to Georgian squares, Victorian railway stations and modern hi-tech office blocks. Landmarks such as Westminster Abbey, Buckingham Palace, St. Paul's Cathedral, the Tower of London and the Houses of Parliament are high on every visitor's list of places to see, but there is so much more to do.

London is renowned as a world-class cultural centre, with some of the finest museums and art galleries to be found anywhere in the world, including

the British Museum and the National Gallery. Londoners and visitors alike enjoy all that the West End has to offer, with its many fine shops, restaurants and clubs, as well as the wealth of plays and musicals offered by its many celebrated theatres.

Another huge draw is the traditional and colourful pageantry London is so good at, including the Changing the Guard ceremony and the Lord Mayor's Show, two of London's best free shows. But London is also a modern, forward-looking city, and many major new landmarks, such as the London Eye (a 137 meter observation wheel) and the Tate Modern (an exhibition centre of modern arts housed in a converted 1960s power station) take the capital well and truly into the twenty-first century. It is this mix of the traditional and modern which makes London such a fascinating and exciting place to visit.

Дайте відповіді на запитання.

1. How old is London? 2. Who founded London? 3. On what river does London stand? 4. What are the main historical landmarks to see in London? 5. In what part of London are most shops situated? 6. What is the London Eye? 7. In what building is the Tate Modern housed?

20.2. Письмові завдання

Вправа 1. Вставте артиклі, де потрібно. Прочитайте та перекладіть текст.

London, ___ capital of Great Britain, is one of ___ largest cities in Europe and the world. ___ population of London is about nine million. London is also one of ___ oldest cities in Europe. London lies in ___ valley of ___ Thames. Most of ___ streets are narrow. Oxford and Regent Streets are ___ busiest streets: there are ___ lots of shops, department stores and offices there. There are many beautiful old buildings in ___ centre of London. There are also ___ modern buildings there. Most of ___ buildings house ___ offices and hotels.

Londoners are fond of ___ beautiful parks of their city. They spend their week-ends in ___ parks. They come there with ___ children and take ___ lunch baskets with them.

20.3. Читання

London Museums and Art Galleries

📖 Active Vocabulary:

a fortress – фортеця; a manuscript – рукопис; contemporary – сучасний; armour – лати; twofold – подвійний; garrison – гарнізон; custody – зберігання.

The best London museums and art galleries are in the West End.

The British Museum in Russel Square comprises the National Museum of Archeology and Ethnography, the richest collection of prints and drawings and the National Library. It was founded in 1753 and opened to the public on the 15th of January, 1759. The Library of the British Museum is one of the largest collections of books and manuscripts in the world.

The Natural History Museum in Cromwell Road is the home of the national collections of animals and plants, and of minerals and rocks from which the Earth is built up. It has a twofold function: to increase man's knowledge of the animal, plant and mineral Kingdom as an institution for scientific research, and to spread knowledge of natural history as widely as possible.

The Tower of London was once a fortress. Kings of England, when the battle turned against them, often found safety in the Tower. From Norman days the Tower had been a state prison; it had been a place of torture and execution. Continuously from the 11th century the Tower has held a military garrison. Arms and armour have always been stored there and today it contains the National Collection of them. Nowadays the Tower is a museum visited by tourists. As it was the strongest fortress in the land, the safe custody of the Crown jewels has been entrusted to it since the time of Henry III.

The National Gallery offers a wonderful variety of pictures. Everyone can find some kind of picture to enjoy. It was opened to the public in 1824 and in 1836 after series of troubles the collection of pictures of the National Gallery was established at Trafalgar Square.

The Tate Gallery from the very beginning was intended as a collection of contemporary British painting only. It became the national collection of British painting of all periods, and in addition – the national collection of modern foreign painting and of modern sculpture, both British and foreign.

The Science Museum exhibits machinery, scientific instruments and devices for research and educational purposes.

Вправа 2. Згадайте, в якому музеї знаходяться такі об'єкти:

1) the collection of the Crown jewels; 2) the collection of prints and drawings; 3) the collection of pictures; 4) the collection of books and manuscripts; 5) the collection of contemporary British painting; 6) the collection of animals, plants and minerals; 7) the collection of arms and armour; 8) the collection of machinery and scientific instruments.

20.4. Граматика. Модальні дієслова *must, should, ought to, need* та їхні еквіваленти на позначення необхідності, обов'язку, поради тощо

MUST	Обов'язок
You <i>must</i> respect your parents. Ви повинні поважати своїх батьків.	
You <i>must not</i> go there. Не можна ходити туди.	
<i>Must I</i> learn it by heart? Чи повинен я вивчити це напам'ять?	
Припущення (мабуть, напевно)	
It <i>must</i> be cold outside. Напевно, на вулиці холодно.	

TO HAVE TO	(Еквівалент дієслова MUST)
I <i>have to</i> go there. Мені треба туди йти.	I <i>don't have to</i> go there. Мені не треба йти туди.
I <i>had to</i> go there. Мені довелося піти туди.	I <i>didn't have to</i> go there. Мені не довелося йти туди.
I <i>will have to</i> go there. Мені доведеться піти туди.	I <i>won't have to</i> go there. Мені не доведеться йти туди.
<i>Do you have to</i> go there? Вам треба йти туди?	
<i>Did you have to</i> go there? Вам довелося йти туди?	
<i>Will you have to</i> go there? Вам доведеться йти туди?	

SHOULD, OUGHT TO	Порада, рекомендація (слід, краще)
You <i>ought to</i> be more attentive. Вам слід бути більш уважними.	
You <i>should</i> water these plants. Вам слід полити ці рослини.	

NEED? NEEDN'T	Чи треба? Не треба
Need I learn this poem by heart? Мені треба вчити цей вірш напам'ять?	
You needn't come so early. Вам не обов'язково приходити так рано.	

📌 **Запам'ятайте прислів'я з модальними дієсловами!**

Everything must have a beginning.
If two men ride on a horse, one must ride behind.
Books and friends should be few but good.
Those (people) who live in glass houses should not throw stones.
Love is like the measles; we all have to go through it. (K. Jerome)

Вправа 3. Складіть речення з модальними словами.

I	must	stop talking
You	mustn't	stay away from high-voltage cables
He	have (has) to	come so early at the University
She	should	take care of these plants
We	shouldn't	speak over the telephone at the lessons
They	needn't	tell him everything
		work hard at your English
		be on time for the classes

Вправа 4. Перекладіть рідною мовою.

1. According to the law of conservation of energy, the energy spent in starting the body must be equal to that derived from the body when it is stopped. 2. The wire used should have as large a cross-section as possible when it is desirable to keep resistance as low as possible. 3. We will have to work out an experiment in which we will be able to keep the particles in the plasma, that is deprive them of the possibility of transmitting the heat to the walls of the container. 4. You ought to stay longer: the most interesting things are still to come. 5. You needn't shout, I can hear quite well. 6. One shouldn't swap horses in midstream. 7. With his voice he ought to try out for radio. 8. You must check in at the airport an hour before your plane leaves.

Вправа 5. Вставте модальні дієслова *must, have to, should, need*.

1. He was sleeping heavily and didn't hear the alarm clock. So to be in time for the train he ____ call a taxi. 2. If you want to drive a car you ____ get a driving license. 3. You ____ not be in a hurry. The train starts in an hour. 4. You ____ listen to the advice of your parents. 5. On Sundays I ____ not get up early. 6. The performance is great. You ____ go and see it. 7. My sister has got a job in Kiev, so she will ____ leave Kharkov soon.

20.5. Домашнє завдання

Вправа 6. Заповніть пропуски модальними дієсловами *can, may, must*.

1. What ____ we see on this map? 2. ____ you speak Spanish? – No, unfortunately I _____. 3. At what time ____ you come to school? 4. Dear aunt, ____ we stay at your place for another week? We would like to see more sites of your beautiful city. 5. You ____ not smoke here. 6. ____ I take your book? – I am afraid not: I need it. 7. He ____ not speak English yet. 8. I have very little time: I ____ go. 9. They ____ not go to the park today because they are busy. 10. You ____ read this text: it is easy enough.

Вправа 7. Перекладіть англійською, використовуючи модальні дієслова.

1. Усі повинні виконувати закони. 2. Вам не потрібно перекладати цей текст. 3. Він, напевно, все ще в бібліотеці. 4. Вам не слід їсти так багато цукерок. 5. Вам необхідно відправити лист негайно. 6. Вам не слід говорити йому про це. 7. Вам доведеться переписати контрольну. 8. Я поспішав, і мені довелося взяти таксі. 9. Потяг повинен прийти через п'ять хвилин. 10. Мені потрібні кольорові олівці.

Вправа 8. Заповніть пропуски у реченнях словами: *is situated, commercial, places of interest, educational, a seaport*.

1. There are very many famous ____ in London. 2. The capital of Great Britain is not only a large city but also _____. 3. One of the districts in London, the City, is a business and ____ centre of the country. 4. London ____ on the Thames. 5. London is also a large ____ and scientific centre of the country.

Вправа 9. Складіть розповідь про Лондон з використанням активних слів та виразів.

Lesson 21. Education in Great Britain

21.1. Розмовна тема. Освіта у Великобританії

Прочитайте текст і знайдіть підкреслені слова у словнику.

Education in Great Britain has several stages. Three- and four-year-old children may start education in nursery schools and about 47% of underfives attend them. But this kind of education is voluntary. From 5 to 7 children go to infant school. At the age of 7 they move to junior school where they learn to write, to read, and to do mathematics. Boys and girls study at junior school for four years till they are 11. Then they enter the secondary school where they study up to 16. Education from 5 to 16 is compulsory.

There are two types of secondary schools in Great Britain: state schools, which are free of charge, and private schools, where parents pay fee for their children. They are called public schools and about 7% of students attend them. Most of public schools, like Eaton and Harrow, are single-sex boarding schools where students live during term-time.

The National Curriculum sets out in detail the subjects that children should study and the levels of achievement they should reach by the ages of 7, 11, 14 and 16. Under the National Curriculum schoolchildren must study English, Mathematics, Science (the core subjects), Technology, a foreign language, PT (physical training), History, Geography, Art, and Music. But the schoolchildren may choose the set of subjects to study according to their preferences: it may be either Arts or Science.

At the age of 16 all schoolchildren take their GCSE (General Certificate of Secondary Education) exams. After that the pupils have 4 main “roads” of their next life: they can leave the school, stay at school in so-called “sixth form”, move to a college as a full-time student, and combine part-time study with a job. Those who choose to stay on at school after GCSE usually study for two further years for Advanced level (A-level) exams in two or three subjects. When the pupils are 18 they can enter the university, Polytechnics or college of higher education.

Вправа 1. Дайте відповіді на запитання, які починаються фразою *How do they call ...*. Зразок: How do they call a person that studies at school? – A person that studies at school is called a pupil.
How do they call ...

1) the schools that parents pay for? 2) the schools that children go to up to 5 years old? 3) the schools where students live during a term? 4) the money that parents pay for the education of their children? 5) the exams that a pupil has to pass to enter a university? 6) a plan of studying?

1.2. Письмові завдання

Вправа 2. Знайдіть закінчення речень.

1.	Children's education in England is normally divided into	a	Christmas – 2 weeks, Spring – 2 weeks, Summer – 6 weeks.
2.	Most schools in England require children	b	by the local authority or the governing body of a school, or by the school itself for independent schools.
3.	Full-time education is compulsory	c	General Certificate of Secondary Education exams.
4.	6 per cent of pupils attend	d	to wear a school uniform.
5.	All government-run schools, state schools, follow	e	for all children aged between 5 and 16.
6.	The school year runs	f	the same National Curriculum.
7.	The dates for school terms and holidays are decided	g	leave school, others go onto technical college, whilst others continue at high school for two more years.
8.	The main school holidays are:	h	in English and mathematics at the ages of 7, 11 and 14.
9.	At the age of 16, students in England, Wales and Northern Ireland take	i	primary education (age 5 – 11) and secondary education (age 11 – 16).
10.	After completing the GCSE, some students	j	which determine whether a student is eligible for university.

11.	At 18, a student takes A-level exams in three or four subjects,	k	from September to July and is 39 weeks long.
12.	All children in state schools are tested	l	independent fee paying schools or homeschooling.

21.3. Читання

Прочитайте текст і знайдіть підкреслені слова у словнику.

Universities in Great Britain

There are 46 universities in Britain. The oldest and best-known universities are located in Oxford, Cambridge, London, Manchester, Liverpool, Edinburgh, Bristol, and Birmingham. Oxford & Cambridge Universities date back from the 12th and 13th centuries. They are known all over the world and are the oldest and most prestigious universities in Britain. They are often called collectively Oxbridge, but both of them are completely independent.

Good A-level results in at least 2 subjects are necessary to get a place at a university. However, good exam passes alone are not enough. Universities choose their students after interviews.

After three or four years of study a university graduate will leave with the Degree of Bachelor of Arts, Science, Engineering, Medicine, etc. Later he may continue to take Master's Degree and then a Doctor's Degree.

There are about 30 Polytechnics in Great Britain. The Polytechnics, like the universities, offer first and higher degrees. Some of them offer full-time and sandwich courses (for working students).

Some school leavers at the age of 16 may go to a further education college where they can follow a course in typing, engineering, town planning, cooking, or hairdressing, full-time or part-time. Further education colleges have strong ties with commerce and industry.

There's an interesting form of studies which is called the Open University. It has a correspondence system and is particularly designed for adults who missed the opportunity to study earlier or who are interested in some particular subjects. The Open University is free of charge.

Вправа 3. Заповніть пропуски словами з тексту.

1. There are ____ universities in Britain. 2. Oxford University was founded in the ____ century. 3. Oxford & Cambridge Universities are often called collectively _____. 4. To enter a university it is necessary to have good results of ____ exams in at least ____ subjects. 5. You can receive the Degree of Bachelor after ____ years of study. 6. Some of higher educational institutions offer full-time and ____ courses (for working students). 7. The Open University has a ____ system and is particularly designed for adults who missed the opportunity to study earlier.

21.4. Граматика. Модальні дієслова з Perfect Infinitive

must (певно, можливо)	+ Perfect Infinitive (have + Participle II)	Our engineer must have repaired this device. Певно, наш інженер вже відремонтував цей прилад.
may, might (можливо)		He may have returned home already. Можливо, він вже повернувся додому.
could, might (міг би)		They could have done it themselves. Вони могли б зробити це й самі.
should (слід було)		You should have helped him. Вам слід було допомогти йому.
needn't (не треба було, можна було й не)		They needn't have got up so early. Їм не треба було вставати так рано. (Їм можна було й не вставати так рано.)
can't (не може бути, що)		They can't have finished this experiment. Не може бути, щоб вони закінчили цей експеримент.
can (?) (невже)		Can he have done it himself? Невже він зробив це сам?

Вправа 4. Перекладіть рідною мовою.

1. He must have translated that article yesterday. 2. They must have forgotten all about it. 3. The discussion must have been very interesting. It's a pity I could not stay. 4. The students may have translated these articles last month. 5. They may have returned home already. 6. My friend may have left two days ago. 7. They could have taken their exam in English yesterday. 8. She could have arrived some days ago. 9. He might have left his book in some other place. 10. She might have come if you had asked her. 11. I should have done it before. 12. You should have translated those articles long ago. 13. You could have informed me in time. 14. A specially designed computer should have been used in the equipment of the meteo probe. 15. You might have known that to stop the flow of electricity you have to use a switch. 16. The article should have been translated long ago, where is the translation?

Вправа 5. Перефразуйте речення як показано у зразку: *Perhaps he has forgotten the rule. – He may (must) have forgotten the rule.*

1. Perhaps you left your umbrella in the bus. 2. Perhaps he made his report last week. 3. Perhaps it was Helen who rang you up. 4. Perhaps they came by plane. 5. Perhaps she had a very good English teacher. 6. Perhaps the device broke because of short circuit. 7. Probably a virus damaged our files. 8. Possibly they did not see us in the crowd. 9. Perhaps Robert used a dictionary. 10. Possibly Mary misunderstood you. 11. Perhaps Tom has already passed his exam.

21.5. Домашнє завдання

Вправа 6. Перекладіть англійською, використовуючи модальні дієслова з перфектним інфінітивом.

1. Не може бути, щоб він сказав це. 2. Чому ви так рано пішли? Ви могли б залишитись довше. 3. Можливо, ви залишили вашу парасольку в магазині. 4. Певно, він не чув будильника. 5. Мабуть, я забув виключити світло в лабораторії. 6. Вам не слід було пити так багато вина. 7. Вчора було дуже холодно. Вам слід було вдягнути більш тепле пальто. 8. Невже він відмовився вам допомогти? 9. Вам можна було не приїжджати так рано. Поїзд вирушає тільки через годину.

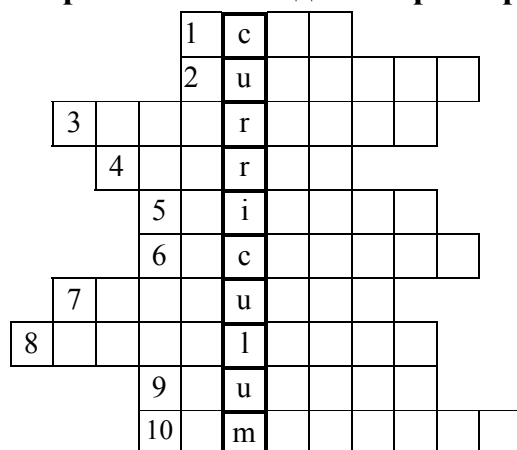
Вправа 7. Прокоментуйте наступні дії, вживаючи модальні дієслова *should, shouldn't or needn't*. Examples:

- 1) A boy was impolite to a girl and did not apologize. – You should have apologized to the girl.
- 2) A pupil did all the exercises in writing, even those which were meant for oral practice. – You needn't have done all the exercises in writing.
- 3) Your aunt is running a temperature. – You should consult the doctor.

What will you say to the person who:

- 1) bought bread which was not necessary?
- 2) was not present at the meeting?
- 3) sent a telegram which was quite unnecessary?
- 4) went out without his coat and caught cold?
- 5) apologized for asking you a question?
- 6) didn't attend a very important lecture?
- 7) got up at six o'clock on Sunday morning, which was not at all necessary?
- read till two o'clock in the morning?
- 8) copied the whole text into his exercise-book?
- 9) watered the garden, and it is raining now?
- 10) hasn't returned the books to the library?
- 11) crossed the street under the red light?
- 12) doesn't cross the street when the lights are green?

Вправа 8. Розгадайте кросворд.



1. At the age of 16 all British pupils take ___ exams.
2. Some children under 5 attend ___ schools.
3. Universities choose their students after an ___.
4. Advanced scientific research may lead to a Doctor's ___.
5. Some schools require students to wear ___.
6. The first degree a student gets at a University is a ___'s degree.
7. After graduation from a University you may continue education at post-___ courses.
8. Secondary education in Great Britain is ___.
9. Any person that studies is a ___.
10. One of the oldest universities in Great Britain is ___.

Вправа 9. Складіть розповідь про систему освіти у Великій Британії з використанням активних слів та виразів.

Lesson 22. The United States of America

22.1. Розмовна тема. Сполучені Штати Америки

Прочитайте текст і знайдіть підкреслені слова у словнику.

The United States of America popularly called “The States”, “the USA”, “The Land of Liberty” is one of the most powerful countries in the world. Since 1492, when Columbus discovered America, people from every country of the world have come to make their homes in America. Besides, the USA is often called “a nation of immigrants” because the country was settled, built, and developed by generations of immigrants and their children.

The United States of America is the fourth largest country in the world (after Russia, Canada and China). It occupies the southern part of North America and stretches from the Pacific to the Atlantic Ocean. It also includes Alaska in the north and Hawaii in the Pacific Ocean. The total area of the country is about 9.5 (nine and a half) million square kilometers. The USA borders on Canada in the north and on Mexico in the south. It also has a sea-border with Russia. The population of the country is more than 270 million.

The geography and the climate of the US is so varied that you can find there any landscape and weather. You can see enormous forests, snow-topped mountain peaks, gently rolling meadows with many streams, sea cliffs, wide grass savannas and even deserts there. The country can be nominally divided into three areas: Eastern area is a highland, central area is a plain and Western area is mountains including the Rocky Mountains, the Cordilleras and the Sierra Nevada.

There are five Great Lakes in the northern part of the USA. They are: Huron, Michigan, Superior, Ontario and Erie. The world-famous water-fall called Niagara Fall is situated there. There are a lot of rivers in the US. The Mississippi together with its tributary the Missouri is one of the longest rivers in the world.

The USA is among the greatest industrial nations. Large deposits of oil, coal, iron and other minerals are solid base for the development of American in-

dustry. The US produces about 25% of the world's industrial products, agricultural goods, and services. The US is the world's leader in many branches, e.g. biochemical and genetic engineering, aerospace research, communications, computer and information services, and similar high-tech fields. The USA is also the world's leading agricultural nation, which not only feeds her own people but exports the products abroad.

Washington, the capital of the USA, is situated in the District of Columbia (DC), named after Columbus, the discoverer of America. The city is named in honour of the first President George Washington who selected the location for the capital. Washington has been the capital of the USA since 1800.

The United States is a federal union of 50 states, each of which has its own government. The seat of the central (federal) government is the capital of the US – Washington, DC. This district is a piece of land which doesn't belong to any state. According to the US Constitution the power in the country is divided into 3 branches: the executive, headed by the President, the legislative, exercised by the Congress, and the judicial. The Congress consists of the Senate and the House of Representatives. The seat of the Congress is the Capitol. The US President is chosen by electors from each state and holds office for 4 years. Nowadays the President may be elected for two terms only. The President must be a U.S. citizen by birth, resident in the country for 14 years, and at least 35 years old. The presidential election is held every fourth year (leap year) on the first Tuesday in November. The official residence of the US President is the White House, where he works in the Oval Office.

The national banner of the United States of America, commonly known as “The Stars and Stripes” or “Old Glory”, is a flag bearing 50 stars and 13 stripes. Each star represents a present-day state and each stripe stands for one of the 13 original colonies. The national symbol of the US is the eagle.

Виберіть правильний варіант.

1. The discoverer of America was (Amerigo Vespucci, Christopher Columbus, Captain John Smith). 2. In the west the USA is washed by (the Atlantic Ocean, the Arctic Ocean, the Pacific Ocean). 3. The US is the (fourth largest, smallest, largest) country in the world. 4. In the south the US borders on (Canada, Russia, Mexico). 5. The Great Lakes are situated in the (eastern, northern, western) part

of the country. 6. The capital of the USA is (San Francisco, New York, Washington). 7. The American President is elected for (4, 5, 15) years. 8. The seat of the Congress is (the White House, the Capitol, the Empire State building). 9. The presidential elections are held on (the first Tuesday in November, the first Sunday in January, the first of May). 10. The American flag is called ("The Union Jack", "The Maple Leaf", "The Stars and Stripes").

22.2. Письмові завдання

Вправа 1. Заповніть пропуски словами: *large cities, the greatest, mountains, borders on, rivers, subtropical, fifty states, situated, Federal district of Columbia, the largest city, washed by, very changeable, cities, cold weather, stands, the Appalachians, capital.*

1. The United States of America is one of ___ countries in the world. 2. It is ___ on the North America continent and is ___ two oceans: the Pacific and the Atlantic. 3. The USA ___ only two countries – Canada and Mexico. 4. This great country has a lot of ___, rivers and lakes. 5. The main mountains are ___ and the Cordilleras. 6. The longest ___ are the Mississippi and its tributary, the Missouri. 7. The climate of the country is ___. 8. In the southern part the climate is ___ while the northern part has very ___ in winter. 9. America has ___ and one ___, where the capital of the USA is situated. 10. The ___ of the USA is Washington. 11. It ___ on the Potomac river in the eastern part of the country. 12. The main ___ are located at the Pacific and Atlantic coasts. 13. New York, ___ of the country, is situated on Manhattan Island. 14. Other ___ are San Francisco, Los Angeles, Detroit, Chicago, Phoenix and Dallas.

22.3. Читання

Прочитайте текст і дайте відповіді на запитання.

What Is the Big Deal about Quantum Theory?

Quantum theory is the theory that radiant energy is given off and absorbed in units, sort of like bullets from a gun, rather than a steady stream, like a water hose. It was originated by Max Planck, a German physicist, in 1900 through studies he made on radiant energy. Before his discovery, scientists thought that energy, like all other physical processes, was emitted and absorbed conti-

nuously. In 1905, Albert Einstein took it a step further and established quantum theory by showing that the energy of light is concentrated in particle-like quanta, rather than in a continuous wave. Today, physicists generally treat light as a wave in processes that involve its transmission, and as quanta, called photons, in processes involving emission or absorption. Quantum theory completely changed the study of physics and paved the way for discoveries about photoelectricity, photochemistry, and the structure and activities of atoms.

Виберіть правильний варіант.

1. Quantum theory deals with ____.
a) radiant energy b) nuclear energy c) kinetic energy
2. The author of this theory was ____.
a) Mark Twain b) Max Planck c) Pierre Curie
3. Photons are quanta of ____.
a) energy b) sound c) light

22.4. Граматика. Повторення модальних дієслів з перфектним інфінітивом

Вправа 2. Заповніть пропуски дієсловами *might not* або *couldn't*.

1. Do you think she saw you? – No, she was too far away. She **couldn't have seen** me.
2. I wonder why she didn't say hello. Perhaps she didn't notice me. – That's possible. She ____.
3. I wonder why Ann didn't come to the party. Perhaps she wasn't invited. – Yes, it's possible. She ____.
4. Tom loves parties. I'm sure he would have come to the party if he'd been invited. – I agree. He ____.
5. I wonder how the fire started. Do you think it was an accident? – No, the police say it ____.
6. How did the fire start? I suppose it was an accident. – Well, the police aren't sure. They say it ____.

Вправа 3. Заповніть пропуски дієсловами а) *should*; б) *shouldn't*; в) *must*; г) *mustn't*; е) *needn't*.

1. You ____ think about the future and not about the past.
2. You ____ have a visa to travel to some countries. However, if you come from an EEC country and you want to travel to another one, you ____ worry about visas. You ____ even take your passport.
3. If you are travelling by air, you ____ carry anything in your

luggage that could be used as a weapon, such as a knife or even a pair of scissors. 4. You ___ use your energy unless you have to. 5. Books ___ be returned on or before the date stamped below. 6. They look alike. They ___ be twins. 7. Do you know how it ___ be done? 8. You ___ walk alone around the town late at night. 9. We ___ have taken a wrong map. 10. I think you ___ have told her you were sorry.

22.5. Домашнє завдання

Вправа 4. Перекладіть англійською, вживаючи модальні дієслова (*can, can't, may, must, needn't, shouldn't*).

1. Вона, напевно, вдома зараз. 2. Вона, напевно, була на конференції вчора. 3. Можливо, ми прийдемо до вас завтра. 4. Можливо, вони приходили до нас вчора, але нас не було вдома. 5. Він, напевно, бачив цей пам'ятник, коли був в нашому місті минулого разу. 6. Вони, напевно, вже спилили всі дерева. 7. Не може бути, що він знає номер мого телефону. 8. Не може бути, що він бачив цю картину. 9. Ти можеш піти туди ввечері, я не заперечую. 10. Ти зможеш дійти туди пішки: це зовсім близько. 11. Ти не можеш піти туди: ти не знаєш адреси. 12. Ти можеш не ходити туди: я можу їм подзвонити. 13. Ти не повинен ходити на збори: це не обов'язково. 14. Ти міг і не ходити туди вчора. 15. Тобі слід піти туди: вони тебе чекають. 16. Тобі слід було піти туди вчора. 17. Тобі не слід було ходити туди вчора.

Вправа 5. Доповніть речення відповідним прийменником.

1. The main land mass ___ the United States ___ America lies ___ the central part ___ the North American continent. 2. The United States borders ___ Canada ___ the north. 3. The national government consists ___ executive, legislative, and judicial branches. 4. The American Constitution is based ___ the doctrine of the separation of powers. 5. Article I offers all legislative power ___ the Congress. 6. The Constitution was ratified ___ 1788. 7. The USA is rich ___ different mineral resources. 8. The temperature changes little ___ winter and summer there. 9. The US economy is based ___ the free enterprise system. 10. The American way ___ living has been reflected ___ the works ___ American writers such as J. London, M. Twain, Th. Dreiser, E. Hemingway and others.

Вправа 6. Складіть розповідь про Сполучені Штати Америки з використанням активних слів та виразів.

Lesson 23. Washington

23.1. Розмовна тема. Вашингтон

📖 Active Vocabulary:

separate – окремий; to be named in honor – бути названим на честь; to owe – завдячувати; except – окрім; representative – представник; sky-scraper – хмарочос; hollow – пустий; to enjoy – милуватися чимось; to be surrounded – бути оточеним; cherry-trees – вишневі дерева; slave – раб; on the other bank – на іншому березі; cemetery – кладовище.

Washington, the capital of the United States of America, is situated on the Potomac River in the District of Columbia. The district occupies the area of only ten square miles and does not belong to any separate state. It was named in honor of Columbus, the discoverer of America.

The capital owes much to the first President of the USA – George Washington. It was G. Washington, who chose the place for the District and laid in 1790 the cornerstone of the Capitol, where Congress sits.

Washington is not the largest city in the USA. It has a population of 900,000 people.

Washington has many historical places. The largest and tallest among the buildings is the Capitol with its great House of Representatives and the Senate chamber. There are no sky-scrapers in Washington because no other building must be taller than the Capitol.

The White House is the President's residence. All American presidents except George Washington (the White House was not yet built in his time) have lived in the White House. It was built in 1799. It is a two-storeyed white building.

Not far from the Capitol is the Washington Monument, which looks like a very big pencil. It rises 160 meters high and is hollow inside. A special lift brings visitors to the top in 70 seconds from where they can enjoy a wonderful view of the whole city.

The Jefferson Memorial was built in memory of the third President of the USA, Thomas Jefferson, who was also the author of the Declaration of Independence. The memorial is surrounded by cherry-trees.

The Lincoln Memorial is devoted to the memory of the 16th President of the US, the author of the Emancipation Proclamation, which gave freedom to Negro slaves in America.

On the other bank of the Potomac lies the Arlington National Cemetery where President Kennedy was buried. American soldiers and officers, who died in the World Wars I and II are buried there too.

Дайте відповіді на запитання.

1. What city is the capital of the USA? 2. Where is Washington situated? 3. To which state does the city of Washington belong? 4. In whose honor is the district of Columbia named? 5. Who was the first President of the USA? 6. Who chose the place for the District? 7. Is Washington a large city? 8. What is the population of Washington? 9. Why are there no sky-scrapers in Washington? 10. Where is the President's residence? 11. When was the White House built? 12. In whose memory was the Jefferson Memorial built? 13. Who is the author of the Declaration of Independence? 14. Which document gave freedom to Negro slaves in America? 15. Who was buried at the Arlington National Cemetery?

23.2. Письмові завдання

Прочитайте текст, знайдіть у словнику та випишіть підкреслені слова, виконайте завдання після тексту.

Los Angeles

Los Angeles, Spanish for “The Angels”, is the most populous city in California and the second largest in the United States, after New York City, with a population of 3.8 million, on a land area of 498.3 square miles (1,290.6 km²). It is the focal point of the larger Los Angeles – Long Beach Riverside – combined statistical area, which contains nearly 17.8 million people and which is one of the most populous metropolitan areas in the world and the second largest in the United States. Los Angeles is also the seat of Los Angeles County, the most populated and one of the most multicultural counties in the United States. The city's inhabitants are referred to as “Angelenos”. Los Angeles was founded on September 4, 1781 by Spanish governor Felipe de Neve. It was incorporated as a municipality on April 4, 1850, five months before California achieved statehood.

Often known by its initials, *LA*, and nicknamed the *City of Angels*, Los Angeles is a world center of business, international trade, entertainment, culture, media, fashion, science, technology, and education. Los Angeles has been ranked the third richest city and fifth most powerful and influential city in the world, behind only New York City in the United States. As the home base of Hollywood, it is known as the “Entertainment Capital of the World”, leading the world in the creation of motion pictures, television production, video games, and recorded music. The importance of the entertainment business to the city has led many celebrities to call Los Angeles and its surrounding suburbs home. Los Angeles hosted the 1932 and 1984 Summer Olympics. Such famous universities as the University of Southern California and the University of California are situated there, too.

Los Angeles enjoys a Mediterranean climate and sunny weather. It’s a modern city with something for everyone. It’s noisy and crowded but fascinating.

Вправа 1. Визначте, чи правильними є твердження.

1. Los Angeles is Italian for “The Angels”. 2. Los Angeles is the seat of the US government. 3. It is the second largest city in the United States. 4. Los Angeles was founded on September 4, 1781 by Mexican governor Felipe de Neve. 5. The nickname of the city is the *City of Angels*. 6. Los Angeles has taken the third place as the richest city in the world. 7. Hollywood is known as the “Commercial Capital of the World”. 8. Los Angeles has a maritime climate with frequent rains and strong winds.

23.3. Читання

Прочитайте текст і дайте відповіді на запитання.

The Fascinating World of Crystals

Just what are crystals? A crystal is an organized grouping of atoms, or molecules. Each crystal has different properties and shapes. For example, sugar crystals are oblong and slanted at the ends; salt crystals are cubic. Some elements can make more than one crystalline form. Carbon, as graphite, will conduct electricity, act as a lubricant between moving parts, be used as a writing tool (a pencil) and strengthen of steel. As diamond, carbon is used as an industrial cutting tool and as a gemstone in jewelry.

Crystals can be used in many ways. Diamonds, rubies, sapphires, and emeralds have been the showiest use of crystals for thousands of years. They were highly valued due to their beauty and relative small amounts that exist in nature. In recent years chemists have been working on methods of creating some of these crystals in the laboratory with a lot of success.

Each different crystal vibrates at a specific frequency when an electric current is passed through it. The original radios were created using vibrating crystals to create the frequency to transmit signals. As radio technology improved, radio transmitters had several different crystals to allow transmission on different frequencies. Modern radios have large number of different frequencies used by radio stations.

Vibrating crystals can be used for time keeping. A quartz clock uses the vibration of a quartz crystal to measure time. When the crystal has an electric current passed through it, the crystal will vibrate at 60 hertz (60 times per second).

Дайте відповіді на запитання.

1. What shape has a salt crystal?
a) star; b) cubic; c) pyramid.
2. Some crystalline form of carbon is used as a ____.
a) lubricant between moving parts; b) rocket fuel; c) food additive.
3. In the radio, vibrating crystals are used ____.
a) to switch between channels; b) to transmit signals; c) to receive signals.

23.4. Граматика. Функції дієслів *to be, to have*

Форми дієслова *to be*

Present	Past	Future	Participle II
<i>am, is, are</i>	<i>was, were</i>	<i>will be</i>	<i>been</i>

Значення		Приклад
1	Основне дієслово (бути)	<i>I <u>am</u> in the office now.</i>
2	Як дієслово зв'язку	<i>He <u>is</u> a student. They <u>were</u> busy last week.</i>
3	Допоміжне дієслово для групи Continuous	<i>I <u>am</u> waiting for Nick. He <u>is</u> writing a letter.</i>

4	Допоміжне дієслово для утворення пасивного стану	<i>He <u>was asked</u> a difficult question.</i> <i>He has <u>been</u> invited to the party.</i>
5	Модальне дієслово (<i>повинен</i>), якщо є частка to після нього	<i>We <u>are to</u> meet at the station at 7 o'clock.</i>

Форми дієслова *to have*

Present	Past	Future	Participle II
<i>have, has</i>	<i>had</i>	<i>will have</i>	<i>had</i>

Значення		Приклад
1	Основне дієслово (<i>мати</i>) (у цьому значенні може мати форму <i>have got</i>)	<i>I <u>have</u> a good watch.</i> <i>I <u>have got</u> a large family.</i>
2	Допоміжне дієслово для групи Perfect.	<i>He <u>has just returned</u> from a business trip.</i>
3	Стійкі словосполучення.	<i>to have dinner, to have a quarrel, to have a walk, to have a shower</i>
4	Модальне дієслово (<i>повинен</i>), якщо є частка to після нього.	<i>The door was closed and they <u>had to</u> wait at the stairs.</i>

📌 Запам'ятайте прислів'я з дієсловом *to be*!

All is well that ends well.
 Friend is never known till needed.
 Little thieves are hanged, but great ones escape.
 If there were no clouds, we should not enjoy the sun.
 If things were to be done twice all would be wise.

📌 Запам'ятайте прислів'я з дієсловом *to have*!

Walls have ears.
 We know not what is good until we have lost it.
 If my aunt had been a man, she'd have been my uncle.

Вправа 2. Перекладіть речення, звертаючи увагу на переклад дієслів *to be, to have*. Визначте функцію цих дієслів у реченнях: а) основне дієслово; б) допоміжне дієслово; с) модальне дієслово.

1. We have just learned the structure of a diesel engine. 2. She was writing a letter when she realized that she was not alone in the room any more. 3. You have to check the calculations once more before giving them to your teacher. 4. He was asked a difficult question at the exam. 5. Sorry, I didn't come to the meeting because I had much work in the laboratory. 6. Students of our faculty were awarded a prize for their scientific experiments. 7. The conference had been finished by 5 o'clock and I had time to go to the library. 8. He is to come to me tomorrow, he promised.

Вправа 3. Перекладіть речення англійською мовою, звертаючи увагу на переклад дієслів *to be, to have*.

1. В мене є гарна ідея, де відзначити твій день народження. 2. Щоб вступити до університету, учні мають скласти тести. 3. Декан розповів на зустрічі, що Максим був найкращим студентом факультету. 4. Я щойно говорив із завідувачем лабораторії. Тепер ми маємо дозвіл на проведення цього експерименту. 5. Я впевнений, що вона була вдома, коли я приходив. 6. Згідно з білетами ми маємо вирушити до Німеччини завтра вранці. 7. Я забув вдома папку з документами, і мені довелося повертатися. 8. Мені нічого тобі сказати. Я сам ще не бачив результатів іспиту. 9. Після закінчення університету я буду першокласним спеціалістом в цій галузі.

23.5. Домашнє завдання

Вправа 4. Складіть по одному реченню з кожною формою дієслів *to be* і *to have* так, як показано у прикладах в таблицях п. 23.4.

Вправа 5. Знайдіть відповідний переклад речень.

1	There are very many large cities in the USA.	a	У Вашингтоні багато історичних місць.
2	Washington, the capital of the United States of America, is situated on the Potomac River.	b	Столиця багато в чому зобов'язана першому Президенту США Джорджу Вашингтону.

3	In comparison with such ancient historical cities as, say, Rome, London, Moscow or Paris, Washington is quite young.	c	Саме Джордж Вашингтон обрав місце для столиці та в 1790 році заклав перший камінь будівлі Капітолію, де засідає Конгрес.
4	The capital owes much to the first President of the USA – George Washington.	d	Вашингтон, столиця США, знаходиться на річці Потомак.
5	It was George Washington who chose the place for the capital and laid in 1790 the cornerstone of the Capitol where Congress sits.	e	Порівняно з такими старовинними містами, як Рим, Лондон, Москва або Париж, Вашингтон – достатньо молоде місто.
6	Washington has many historical places.	f	У Вашингтоні немає хмарочосів, тому що жодна будівля не повинна бути вищою за Капітолій.
7	The largest and tallest among the buildings is the Capitol with its great House of Representatives and the Senate chamber.	g	У США багато великих міст.
8	There are no skyscrapers in Washington because no other building must be taller than the Capitol.	h	Найбільша та найвища серед будівель – це Капітолій, де містяться Сенат та Палата Представників.

Вправа 6. Складіть розповідь про Вашингтон з використанням активних слів та виразів.

Lesson 24. Education in the USA

24.1. Розмовна тема. Освіта у Сполучених Штатах Америки

Прочитайте текст і знайдіть підкреслені слова у словнику.

The American system of school education differs from the systems in other countries. The United States does not have a national system of education. Each state determines its individual standards and requirements. Though there are enough basic similarities in structure among the various schools and systems.

Elementary education begins at the age of six or seven, when a child goes to the first grade (form). The program of studies in the elementary school includes English, Arithmetic, Geography, History of the USA, Natural sciences and, besides, Physical Training, Singing, Drawing, wood or metal work, etc. Sometimes they learn a foreign language and general history. At the age of fourteen or sixteen schoolchildren leave the elementary school and may continue their education at one of the secondary schools or high schools, as they call them, where they study up to 18. There are almost always required (compulsory) subjects and sometimes students at high school can choose some optional courses. Besides giving general education some high schools teach subjects useful to those who hope to find jobs in industry and agriculture or who want to enter colleges or universities.

After graduating from secondary schools a growing number of Americans go on to higher education. There are more than 3,000 institutions of higher education in the United States with the number of students ranging from fewer than a hundred to 40,000. Young people who want to get higher education must meet some requirements. No student is admitted to a college or university without having completed a four-year course in high school. It means that a student who wants to study at a university or college must begin by doing good work in high school. If his grades in high school are satisfactory, he is admitted to a university or college. Besides, standardized examinations play a decisive role in the admission to most colleges and universities. About 53% of pupils who complete their high school course go on to a college or university.

Institutions of higher learning include a great variety of junior and community colleges, technical and professional schools, which provide two-year programs in such fields as engineering, business, or electronics; and colleges and universities (the former often being a part of the latter), which usually offer four or five-year programs leading to Bachelor of Arts (BA) or Bachelor of Science (BSc) degree, as well as advanced courses leading to a Master's or Doctor's degree. Any of these institutions, in any category, may be either public or private, depending on the source of its funding.

It is common for students to leave home to study, and only about 15 % of all university students live at home while they study. Students may live either in the university campus in one of the dormitories or in private homes in the city in which the University is located.

Вправа 1. Дайте відповіді на запитання.

1. What is the difference between the system of education in the USA and the systems in other countries? 2. What are the stages of education in the USA? 3. How long do American pupils study at school? 4. How many institutions of higher education are there in the USA? 5. How many years do American students study to get a Bachelor's degree? 6. Where do American students usually live while studying at a university or a college?

24.2. Письмові завдання

Вправа 2. Перекладіть речення про освіту у США англійською мовою.

Система освіти в США відрізняється від систем освіти в інших країнах, бо не має загальнонаціональної освітянської програми. У віці 6–7 років діти вступають до першого класу початкової школи, після якої у віці 14–16 років, вони переходять до середньої школи. Програма навчання включає як обов'язкові предмети, так і предмети за вибором. Навчання в державних школах безкоштовне. За навчання в приватних школах та коледжах батьки мають платити. Жоден студент не може бути прийнятий у вищій навчальний заклад без закінчення повного курсу середньої школи. Після 4–5 років навчання в університеті студенти отримують ступінь «бакалавр». Більшість студентів протягом навчання проживають в гуртожитках, або приватних квартирах на території університету.

24.3. Читання

Harvard University

📖 Active Vocabulary:

prominent – видатний; distinctly – виразно; outlook – світогляд; clergy – духовенство; scope – масштаб; to diversify – урізноманітнювати; to command respect – викликати повагу; alumnus (pl. alumni) – колишній студент (випускник); campus – територія університету; to enroll – зараховувати; the Divinity School – факультет богослов'я; vigorous – потужний.

Harvard is more than a university – it's a tradition. No other American institution of higher learning has such a prominent place in the nation's history or

imagination. Harvard, founded in 1636, is the oldest university in the United States (and the oldest corporation in the Americas). It is perhaps the only US university that is both closest to the British model of university education, yet distinctly American in identity and outlook. Harvard was founded as a small institution with the mission of educating Protestant clergy. It grew as the United States did, expanding in size and scope, and diversifying its student and teaching communities. Today a Harvard degree commands respect not only in the United States, but around the world – Harvard counts seven U.S. presidents among its alumni, and over 40 Nobel laureates among its current and former faculty.

Harvard is located in Cambridge, Massachusetts, in a campus just across the Charles River from Boston. This is a highly urban setting that joins colonial-era buildings and landmarks with Massachusetts' hi-tech industry. Harvard is a large university, with high-profile graduate and professional programs. Almost two-thirds of its approximately 19,500 students are enrolled in its professional and graduate schools (which include the world-famous Medical School, the Business School, the Law School, the John F. Kennedy School of Government, the Divinity School, the School of Public Health, and the Graduate School of Education). Connections made at Harvard often last a lifetime, with graduates becoming part of a vigorous network of over 270,000 alumni.

Дайте відповіді на запитання.

1. When was Harvard founded? 2. What was Harvard's initial mission? 3. How many US presidents graduated from Harvard? 4. Where is it located? 5. How many students are enrolled in its schools? 6. How long do the connections made at Harvard last?

☺ Smile !

A young man hired by a supermarket reported for his first day of work. The manager greeted him with a warm handshake and a smile, gave him a broom and said, "Your first job will be to sweep out the store."

"But I'm a Harvard graduate," the young man replied indignantly.

"Oh, I'm sorry. I didn't know that," said the manager. "Here, give me the broom and I'll show you how."

24.4. Граматика. Повторення Passive Voice, Modal Verbs

Вправа 3. Перепишіть речення так, щоб вони виражали можливість, використовуючи модальні дієслова *may, might, must, can't*.

1. They say, it will snow today. 2. Tom will show me the photos tomorrow. 3. This pen is mine. 4. He doesn't own Rolls Royce. 5. They haven't met the Queen. 6. Shakespeare lived there. 7. They are visiting their parents. 8. He is working as a taxi driver. 9. They have come by train. 10. This question will be discussed later. 11. This letter has been sent by e-mail.

Вправа 4. Перекладіть англійською, використовуючи модальні дієслова *can, may, might, could*.

1. Можна задати вам особисте питання? 2. Ви можете зробити переклад за допомогою комп'ютера. 3. Він, можливо, знає мою адресу. 4. Він, можливо, поїде поїздом. 5. Можливо, він забув про нашу сьогоднішню зустріч. 6. Він вміє розмовляти японською. 7. Ви можете підняти цю коробку? 8. Він не міг знати всієї правди. 9. Не може бути, щоб вона забула вимкнути праску. 10. Він зможе перекласти цю статтю французькою. 11. Він умів читати у п'ять років. 12. Чи не могли б ви вимкнути світло?

Вправа 5. Поставте дієслова в дужках у потрібну форму в Passive voice.

1. Several newspapers (to publish) in our city. 2. My flat still (to repair). 3. My flat (to repair) already. 4. The first electric light bulb (to make) in 1800 by Humphry Davy, an English scientist. 5. The question (to discuss) when I came in. 6. The streets (to clean) of snow before we woke up. 7. I hope that this book (to find) soon. 8. The article (to translate) by tomorrow. 9. He never (to listen to). 10. This book much (to speak about) at the moment. 11. The children will (to take care of).

24.5. Домашнє завдання

Вправа 6. Перекладіть англійською, використовуючи модальні дієслова *must, have to, should, need, be to*.

1. Ви повинні запам'ятати це правило. 2. Лист необхідно відправити негайно. 3. Він, напевно, повернувся додому. 4. Вам слід відвідати лікаря.

5. Вам не слід так багато дивитись телевізор. 6. Вам не слід було їхати так швидко. 7. Йому не слід було так хвилюватись. 8. Нам прийшлося піти з вечірки. 9. Нам доведеться йти туди пішки. 10. Вам не потрібно вимикати комп'ютер. 11. Вам не потрібно запам'ятовувати ці правила. 12. Ми повинні зустрітись через годину.

Вправа 7. Поставте дієслова в дужках у потрібну форму в Passive Voice.

1. Don't enter the room! A student (to examine) there. 2. After the accident he (to take) immediately home. 3. The letter (to type) by the typist when I came into the dean's office. 4. I am sure that this work (to finish) by the end of the month. 5. New magazines just (to bring). 6. The exercises usually (to check) at the lessons. 7. The question which (to discuss) now is very important. 8. This bridge (to renovate) in 1970. 9. All the students (to examine) by 5 o'clock. 10. My mobile phone (to charge) already. 11. The letter (to post) as soon as we arrive at the office.

Вправа 8. Підберіть визначення до понять, що стосуються освіти у США.

1.	A yearbook	a	a student teaching other students of the same or similar age or grade level
2.	A freshman	b	a school where students go to learn how to do a particular job
3.	A sophomore	c	a school that gives advanced academic degrees, such as master's degrees and doctoral degrees
4.	A peer tutor	d	a book that students get when they graduate from school (usually at high school or college).
5.	A graduate school (grad school)	e	a type of public education institution; usually provides two-year college education at reasonable tuition fees
6.	An undergraduate	f	a student in the second year
7.	A trade school	g	a time by which some task must be completed (e.g. the time when students must turn in their homework)

8.	A preparatory school	h	a degree a person gets from a university by finishing a doctorate program
9.	A deadline	i	a student in the first year
10.	The Doctor of Philosophy (PhD)	j	a test which measures people's English language skills to see if they are good enough to take a course at university or graduate school in English-speaking countries
11.	Community college	k	a school, especially one that is private, that prepares students for college
12.	TOEFL	l	a student completing a first degree

Вправа 9. Складіть розповідь про освіту в США з використанням активних слів та виразів.

☺ Time for Fun

- Teacher: Which one is closer, Sun or Australia?

Student: Sun.

Teacher: Why?

Student: We can see the sun all the time, but can't see Australia.

- How many Harvard students does it take to change a lightbulb?

Only one: he holds the bulb and the world revolves around him.

- The graduate with a Science degree asks, "Why does it work?"

The graduate with an Engineering degree asks, "How does it work?"

The graduate with an Accounting degree asks, "How much will it cost?"

The graduate with a Philosophy degree asks, "Do you want fries with that?"

- Once some professors were called and asked to sit in an airplane. After they sat, they were informed that the plane is made by their students. All of them ran and got out of the plane except one. People asked him the reason. He said, "If it's made by my students, it will not even start."

UNIT 5. ENVIRONMENTAL PROTECTION

📖 Active Vocabulary of the Unit:

environment, to protect, to cause, to increase, to reduce, to accumulate, to discharge, to emit, to eject, to release, to dump, to threaten, to poison, poisonous, toxic, to pollute, pollution control facilities, pollutants, to contaminate, to damage, to disturb, to maintain balance of nature, to endanger, harmful, noxious, wastes, substance, acid rain, greenhouse effect, smog, global warming, holes in the ozone layer, suspended particles, artificial, exhaust gases (fumes), garbage, trash, litter, junk, purification system, sewage, hazard, soil erosion.

Lesson 25. Ecology

25.1. Розмовна тема. Екологія

Прочитайте текст. Знайдіть у словнику підкреслені слова.

For millennia man had to struggle against nature in order to survive and develop. However, as economy developed and the scientific and technological revolution increased, the correlation of forces between man and nature changed. As a result, economic achievements began to have an increasingly negative effect on nature, on the biosphere.

Road and factory construction and industrial development take away up to 7 million hectares of land every year. Forests disappear at a rate of some 20 hectares a minute. 76 animal species and several hundred plant species of the Earth became extinct in the last 60 years alone. Each year the world economy ejects into the atmosphere over 200 million of carbon monoxide, more than 50 million tons of diverse hydrocarbons, over 120 million tons of ash and nearly 150 million tons of sulphur dioxide. They fall back upon the Earth in the form of “acid rains”.

There are lots of ecological problems: pollution and impoverishment of the seas, oceans, rivers, underground waters; pollution and destruction of woods and agricultural grounds; pollution of the atmosphere; reduction of the protective ozone layer; dramatic changes of climate; rising of the ocean level; accumulation of deadly radioactive substances made by nuclear power stations; impoverishment of the vegetative and animal world; exhaustion of planet's resources.

All these ecological problems are caused by disturbing the natural balance in the Earth's ecosystem. Ecosystem is a community of plants, animals and homo sapiens (as a part of the world ecosystem) within a particular habitat. To study the ecosystem in relation to their environment is the aim of the science called ecology. Today most countries pay great attention to the environmental protection because our everyday life, our health and, in the end, the survival of the mankind depend on the solution of ecological problems facing the man.

Визначте, чи вірними є висловлювання.

1. All ecological problems are caused by solar activity. 2. Carbon monoxide is produced only by cars. 3. People are a part of ecosystem. 4. Ecology is a science studying insects. 5. Economic activity usually has a negative effect on nature.

25.2. Письмові завдання

Вправа 1. Складіть речення з частин, наведених у лівому та правому стовпчиках таблиці.

A drought happens	when there aren't enough trees
A famine happens	when there isn't enough rain
A flood happens	when there is too much carbon dioxide
Trees fall down	when there is too much rain
The world produces less oxygen	when the wind is too strong
The atmosphere becomes warmer	when there is too much ultraviolet radiation
There is more skin cancer	when there isn't enough food

25.3. Читання

Прочитайте текст. Доповніть список необхідних заходів зі збереження довкілля.

People still do not have so much needed ecological conscience and do not see that they are only ones responsible for salvation of our planet. It is probably too painful to admit our own mistakes and try to fix them before it is too late. Some small steps have been already done but it will take much more these steps on global level in order to make the difference. If we realize the coming danger we should find solutions to all ecological problems to survive.

- We must change people's attitude towards the environment.
- We should stop the pollution of air and water.
- We should save more energy and water and try to use other sources of energy (solar and tidal energy, the energy of the wind, subterranean hot waters, etc.).
- We must protect the ozone layer from the harmful industrial products.
- We should protect animals from extinction.

Вправа 2. Продовжіть речення, базуючись на інформації з тексту.

1. We must change people's attitude _____. 2. We should protect animals _____.
 3. We should use other sources of energy such as _____. 4. We must protect the ozone layer from _____. 5. We should solve our ecological problems before _____.

25.4. Граматика. Складне речення. Типи підрядних речень.

Безсполучникові підрядні речення

25.4.1. Типи підрядних речень

Означальні. Вводиться словами *who, whom, which, that, where, whose*.

I know the man who wrote this article.	Я знаю людину, яка написала цю статтю.
He is the writer whom we all know.	Він письменник, якого ми всі знаємо.
It is the article which everybody must read.	Це стаття, яку всі повинні прочитати.
You can easily find the newspaper where his article was printed.	Ви з легкістю можете знайти газету, в якій була надрукована його стаття.
You have to translate everything that is printed on page four.	Вам доведеться перекласти все, що надруковано на четвертій сторінці.
The professor whose textbook we use works at the chair of organic chemistry.	Професор, чий підручник ми використовуємо, працює на кафедрі органічної хімії.

Додаткові. Вводяться зазвичай сполучником *that*.

He says that his father is busy.	Він каже, що його батько зайнятий.
We see that you are busy.	Ми бачимо, що ви зайняті.

Обставинні (часу, місця, причини, умови та ін.).

When you come, we will finish our work.	Коли ти прийдеш, ми закінчимо нашу роботу.
She was standing where everybody could see her.	Вона стояла там, де всі могли її бачити.
She goes to the party because she is invited.	Вона йде на вечірку, тому що її запросили.
If you want, I can read my translation to you.	Якщо хочете, я можу вам прочитати свій переклад.

⓪ **Запам'ятайте!** У підрядних речення **часу** та **умови** не вживається майбутній час. Замість нього вживається теперішній час.

25.4.2. Безсполучникові підрядні речення

Додаткові підрядні речення.

Характеризуються відсутністю сполучника *that*.

I do not think this work was so difficult.	Я не думаю, що ця робота була такою важкою.
I know you are right.	Я знаю, що ви праві.

Означальні підрядні речення.

Характеризуються відсутністю слів *who, whom, which, that*.

The letter he sent me was too long.	Лист, який він мені прислав, був надто довгим.
The work I am doing now is very important.	Робота, яку я зараз виконую, дуже важлива.

У безсполучникових реченнях прийменник може стояти тільки **після** дієслова. Він виділяється наголосом.

The man you were speaking <u>to</u> is our coach.	Чоловік, з яким ви розмовляли, наш тренер.
I want to buy the book you told me <u>about</u> .	Я хочу купити книжку, про яку ви мені говорили.

Вправа 3. Перекладіть речення, звертаючи увагу на переклад підрядних речень.

1. He told me that he would come to see me the next day. 2. We think that she will help us. 3. Tom said that he was going to give up his job. 4. The girl who was injured in the accident is now in the hospital. 5. Nick works for the company which makes computers. 6. The police have caught the man who stole my friend's car. 7. Do you know the three particles that make up an atom?

Вправа 4. Визначте тип підрядного речення та заповніть пропуски необхідними сполучниками: *what, that, whose, why, which, when, who*.

1. ____ he comes, call me at once. 2. The police have caught the criminal ____ robbed the bank last week. 3. You may rely upon ____ he says. 4. I think ____ he is in the library. 5. I will show you the picture ____ I finish it. 6. I cannot really understand the reason ____ he did it. 7. The building ____ you can see over there is very old. 8. This is the writer ____ books are always cited.

Вправа 5. Перекладіть англійською, використовуючи безсполучникові підрядні речення.

1. Готель, в якому ми зупинялись, знаходиться в центрі міста. 2. Я вважаю, що він – найкращий фахівець, який будь-коли працював у нашому інституті. 3. Експеримент показав, що ця речовина має унікальні властивості. 4. Маса атома залежить від кількості протонів та нейтронів, які він містить. 5. Проблема, яку ми будемо обговорювати, пов'язана з новими електронними пристроями. 6. Картина, на яку ви дивитесь, написана у 18 столітті.

25.5. Домашнє завдання

Вправа 6. Складіть по одному реченню англійською на кожний тип підрядного речення (п. 25.4.1).

Вправа 7. Перекладіть речення, звертаючи увагу на безсполучникові підрядні речення. Визначте місця, де могли б стояти слова *which, that, whom*.

1. The papers you must take away and burn are in these boxes. 2. I like the watch my father gave me. 3. I do not think the distance is very great. 4. He says

we'll find these stones later on. 5. I am afraid you will be ill. 6. Don't you know water becomes ice if the temperature is below zero? 7. The girl you are looking at is a young scientist. 8. Where is the umbrella I gave you? 9. What is the name of the river we see in the distance? 10. At the exhibition I saw the picture you like so much.

Вправа 8. Перекладіть англійською.

1. Ми повернемось додому, коли стемніє. 2. Як тільки ви отримаєте відповідь, подзвоніть мені. 3. Історія, яку мені розповів Том, була дуже смішною. 4. В газеті, яку ви мені принесли, багато цікавого. 5. Я вважаю, що він хороший спортсмен.

Вправа 9. Дайте визначення екології, основних екологічних проблем та шляхів їх вирішення.

Lesson 26. Water Pollution

26.1. Усна тема. Забруднення води

Прочитайте текст і знайдіть підкреслені слова у словнику.

Fresh water is fundamental to the survival of humans and most other land-based life forms.

Ninety seven per cent of the earth's water is the salt water of oceans and seas. Most of the remaining 3 per cent is in polar ice caps, glaciers, the atmosphere or underground and hard to reach. Only 0.4 per cent is available for use. However, growing population, increased economic activity and industrialization has resulted in an increased demand for fresh water and has caused a severe misuse of water resources and their increasing pollution.

Following are the main sources of water pollution.

- Oil spills from ships and super-tankers, and from off-shore oil drilling operations. Oil forms a thin layer on top of water. Animals and plants living in the water can't breathe; the oil coats the feathers of water birds, and the fur of animals causing them to become sick or even to die.
- Fertilizers used by farmers. When fertilizers are washed into rivers and streams, the nitrates and phosphates cause excessive growth of water plants. It is

harmful to the fish and other invertebrates that live in water because it makes it hard for them to breathe.

- Sewage and other organic pollutants. When leaves, grass and wastes from farm animals enter the water, they rot and use up the oxygen in the water. A lot of types of fish and other aquatic animals cannot survive. Such microscopic pollutants as bacteria and viruses cause sickness in people and in animals that drink or live in polluted water.
- Chemicals. Chemical pollution entering rivers and streams causes great destruction of water environment. The chemicals can come from factories, construction sites, mining operations, and from homes.
- Plastics. Floating plastic is ugly and harmful to the environment. It can choke animals that try to eat it and drown those that get tangled in it.

Дайте відповіді на запитання.

1. Why is fresh water so important? 2. How much fresh water available to people is there on the Earth? 3. How much salt water is there on our planet? 4. What are the main sources of water pollution? 5. To whom are oil spills mostly harmful? 6. What is caused by fertilizers washed into streams or lakes?

26.2. Письмові завдання

Вправа 1. Перекладіть письмово.

How we use up water

(22 March – world day for water)

- 30 litres of water go down to the drain when you shower for five minutes.
- 80 litres are used in the average bath.
- 5 litres are wasted by running the tap while brushing your teeth.
- 1,000 litres an hour are used by a garden sprinkler.
- 4 litres a day are wasted by a dripping household tap.
- 650 litres of water are used per guest per day in a hotel.
- 10,000 litres a day irrigates an 18-hole golf course.
- 1 flush of the lavatory uses as much water as the average person in the developing world uses for one day's washing, drinking, cleaning and cooking.

26.3. Читання

Прочитайте текст та поставте п'ять запитань до його змісту.

The Black Sea Pollution

The story about the Black Sea pollution starts like almost any other pollution story. Once, about half a decade ago, the Black Sea had very rich and diverse marine ecosystems. It also had major economic benefits in the form of millions of tourists coming from all over the world, not to mention the abundant fisheries.

But in the 1990s, this important natural resource has been brought at the brink of destruction. Once rich biodiversity became only a fond memory, and foreign tourists are no longer coming to enjoy the natural beauties that this area once offered. There is also no more fish, and tragically the Black Sea has become an area to dump all forms of solid and liquid waste.

The Black Sea is full of different pollutants such as toxic metals and agrochemicals. These substances have caused an overproduction of phytoplankton which prevents light from reaching the sea grasses and algae, thus making a huge damage to marine life.

Many tanker accidents caused oil pollution, while coastal industries continue to discharge waste products directly, with little or no treatment. This, along with huge industrial activity in the area, shipping and offshore oil exploration have created critical environmental situation.

In order to fight this pollution, the six surrounding countries signed the Bucharest convention in 1992 but this convention has so far had very little impact because several governments have not yet released the funds needed to fulfill their commitments in fight against the Black Sea pollution.

And so the pollution still continues.

26.4. Граматика. Узгодження часів

📌 **Запам'ятайте!** Якщо у головному реченні використовується присудок у **минулому часі**, то й у підрядному реченні присудок повинен бути в одній з форм **минулого часу**, а саме:

<i>Головне речення в минулому часі</i>		<i>Підрядне речення</i>
Past Simple	1. для одночасної дії (в укр. мові – теперішній час)	Past Simple V-ed / V-II Past Continuous was / were + V-ing
	2. для дії, яка мала місце раніше (в укр. мові – минулий час)	Past Perfect had + V-ed / V-III
	3. для майбутньої дії (в укр. мові – майбутній час)	Future-in-the-Past would (might / could) + V

Приклади.

He said that	he often went to the skating rink.
	he had gone the skating rink the last week.
	he would go to the skating rink the next week.
Він сказав, що	він часто ходить на каток.
	він ходив на каток минулого тижня.
	він піде на каток наступного тижня.

Вправа 2. Перекладіть речення, звертаючи увагу на узгодження часів.

1. Nobody expected that he would ever be able to do it.
2. It seemed that everything was quite all right.
3. He told them what had happened to him in Paris.
4. We knew that he was writing a new novel.
5. He declared that he would defend his rights.
6. She said that similar questions might be asked at the examinations.
7. We heard that she had become a champion.
8. He saw that the ship was leaving.

Вправа 3. Поставте дієслова у дужках у необхідній формі.

1. I knew that John currently (to work) at a new project.
2. Mike hoped that his friend (to help) him with his technical drawing.
3. We didn't know the score, but we were sure their team (to lose) the game.
4. Yesterday Tom learned that his aunt (to be) ill for two months.
5. The children were afraid of making any noise because Mom (to sleep).
6. He said that he (to trust) me.
7. We were told that

Andrew (to go) to enter that college. 8. My parents decided that we (to celebrate) my birthday on Saturday. 9. The student wasn't able to do the translation because he (not / to know) some special terms. 10. Ann wasn't informed that the lecture (to take place) the next Friday.

Вправа 4. Передайте речення непрямою мовою, починаючи їх словами у дужках.

1. The children are playing in the yard. (She thought) 2. Her friend will come to see her. (She hoped) 3. Father has repaired his bicycle. (He thought) 4. She knows English very well. (I supposed) 5. Our sportsmen will win the game. (We were sure) 6. She made no mistakes in her dictation. (She was glad) 7. He works at his English hard. (I knew) 8. She dances better than anybody else. (I was told) 9. My cousin has received a very interesting offer from his company. (I learnt) 10. She will come to stay with us. (My aunt wrote in her letter) 11. He is painting a new picture. (We heard) 12. His new picture will be a masterpiece. (We were sure) 13. You will fall and break your leg. (I was afraid) 14. My friend has never been to Washington. (I knew) 15. She never drinks milk. (I was told) 16. He is a very talented singer. (We were told) 17. They live a happy life. (We knew) 18. He does not know German at all. (I found out)

26.5. Домашнє завдання

Вправа 5. Передайте наступні речення у минулому часі.

1. Mother says Nick has just phoned from the Crimea. 2. He says he has spent the whole month at the sea-side. 3. Nick says his friend and he are spending most of their time on the beach. 4. Nick says he has visited a lot of beautiful places along the Black Sea coast. 5. He says he has made lots of pictures while travelling in the mountains. 6. Mother says Nick will tell us a lot of interesting stories that happened to him. 7. She says that last time she was to the Crimea many years ago. 8. She says she will go there next summer.

Вправа 6. Перекладіть англійською.

1. Він сказав, що любить проводити свою відпустку в Криму і збирається поїхати туди цього літа. 2. Аня була рада, що вся сім'я прийшла в аеропорт провести її перед вильотом у Лондон. 3. Він не мав певності, що йому тре-

ба їхати саме туди. 4. Я був засмучений, що всі квитки в театр опери та балету вже продані. 5. Студенти зраділи, що наступного року всі лекції будуть читати англійською. 6. Мені сказали, що незабаром цей фільм демонструватимуть на екранах кінотеатрів. 7. Він повідомив, що у нього нема ще ніякої інформації щодо результатів досліджень.

Вправа 7. Розкажіть про забруднення води, використовуючи активні слова та словосполучення.

Lesson 27. Air Pollution

27.1. Усна тема. Забруднення повітря

Прочитайте текст. Знайдіть у словнику та запам'ятайте підкреслені слова.

Air pollution has probably been with us since the very beginning of our existence on this planet, and even when man was not present.

Today, industrial activity is so great and fuel-powered transportation devices are so numerous that air pollution of human origin is starting to produce noticeable effects on a global scale. Carbon monoxide (CO) emitted by automobile engines arises from incomplete combustion of hydrocarbons found in gasoline in which the fuel reacts with less oxygen than it is theoretically possible. It is estimated that as a result of human activity about 260 million tons of carbon monoxide are released into the Earth's atmosphere every year. Automobile exhaust gases contain an average of 4–5 % CO. As to sulphur oxides, they have other bad effects in addition to those concerning human health. In high concentrations they are lethal to vegetation.

There exists one more ecological problem which is threatening the globe as a whole. The protective layer of ozone around our planet is under severe attack. In early 1980s researches first identified a yawning hole in the Antarctic where the ozone layer was the thinnest. Five years later it was reported that the hole had grown to an area the size of the United States. The fundamental importance of the ozone layer is that it acts as a filter intercepting most of the sun's radiation including potentially harmful ultraviolet β -rays which can cause melanoma – skin cancer.

The cause of the appearance of the arctic hole is the growing industrial use of chlorine compounds called chlorofluorocarbons (CFC-s). CFC is a propellant gas commonly used in aerosol sprays, air cooling systems in fridges and air conditioning. There is the need for an international agreement that would completely stop CFC production.

Визначте, чи правильними є висловлювання.

1. Industrial activity produces no effect on nature. 2. Automobile engines emit carbon monoxide. 3. Every year one ton of carbon monoxide is emitted into the atmosphere. 4. Sulphur oxides are harmful only to human health. 5. Scientists discovered the hole in ozone layer in 1917. 6. Now the ozone hole is the size of Moldova. 7. Ozone layer protects the Earth against the sun's radiation. 8. Too much ultraviolet radiation can cause only good suntan. 9. The arctic hole appeared due to the use of CFC-s. 10. CFC-s are used in nuclear reactors.

27.2. Письмові завдання

Вправа 1. Прочитайте та перекладіть письмово наступний текст.

Air pollution is a mixture of solid particles and gases in the air. Car emissions, chemicals from factories, dust, pollen and mold spores may pollute the air in big cities and small towns.

Some air pollutants are poisonous. Inhaling them can increase the chance you'll have health problems. People with heart or lung disease, older adults and children are at greater risk from air pollution. Air pollution isn't just outside – the air inside buildings can also be polluted and affect your health. Sources of indoor pollution include biological contaminants like mold and pollen, tobacco smoke, household products and pesticides, gases such as radon and carbon monoxide, materials used in the building such as asbestos, formaldehyde and lead.

Indoor air quality problems usually only cause discomfort, and most people feel better as soon as they eliminate the source of the pollution. However, some pollutants can cause diseases that show up much later, such as respiratory diseases or cancer. Making sure that your building is well-ventilated and eliminating pollutants can improve the quality of your indoor air.

27.3. Читання

Прочитайте діалог по ролях.

A: Can you tell me anything about smoggy cities?

B: I know that the smoggiest cities in the world are Teheran, Baghdad, Delhi, Calcutta, Athens and Madrid.

A: Really?! I didn't know that. And what is the reason?

B: It's the presence of great amount of sulphur dioxide and suspended particles in the air. Rain washes these harmful substances out of the air, and this creates "acid rain".

A: And how does it differ from the usual rain? Is acid rain harmful?

B: Certainly. It pollutes water, damages crops, forests and buildings.

A: And what about people? Does it affect people's health?

B: Of course, it does.

27.4. Граматика. Пряма та непряма мова

У непрякій мові обставинні слова змінюються:

Пряма мова	Непряма мова
today	that day
yesterday	the day before
tomorrow	the next day
... ago	... before
this (these)	that (those)
here	there
last year	the year before
next ...	the following ... (the next ...)
now	at that time / then

Перетворення спонукальних речень в непрякій мові

Keep quiet! Don't make noise! He told me to keep quiet and not to make noise.

Перетворення стверджувальних речень з прямої в непряму мову

I am an engineer. I work at a plant. In the evening I study English.		
He said	that	he was an engineer and worked at a plant
He told me		and added that he studied English in the evening.

I saw my friend yesterday.		
He said He told me	that	he had seen his friend the day before.
We lived in Rome two years ago. My father worked there.		
He said He told me	that	they had lived in Rome two years before and added that his father had worked there.
I will tell you about it tomorrow.		
He said He told me	that	he would tell me about it the next day.

Час підрядного речення **не змінюється**, якщо підрядне речення є висловлюванням, що не викликає заперечень. Наприклад, “The earth is round,” said the teacher. – The teacher said (that) the earth is round.

Past Continuous зазвичай не змінюється: “I was travelling to Brighton while she was flying to the USA,” he said. – He said he was travelling to Brighton while she was flying to the USA.

Модальні дієслова *would, could, might, should, ought to* не змінюються у непрякій мові: “He might visit us,” Mum said. – Mum said that he might visit us.

Вправа 2. Передайте непрямою мовою, використовуючи дієслова у дужках.

1. Close the door, please. (tell) – The teacher ____.
2. Will you hold these books for a moment, please? (ask) – The librarian ____.
3. Please don't tell anyone about what happened. (ask) – Mike ____.
4. Keep silence! (tell). The teacher ____.
5. Could you give me a lift? (ask) – Jack ____.
6. Put on your hat and scarf at once! (tell) – Mother ____.

Вправа 3. Передайте речення непрямою мовою.

1. The teacher explained, “In fact every hydraulic system can be reduced to a simple pump-motor system”.
2. The expert said, “Laser cutting is excellent at processing different materials”.
3. The researcher explained, “Radio waves have been used since 1931 to investigate celestial objects”.
4. The oceanographer said, “We will develop innovative techniques to restore aquatic ecosystems”.
5. The manager said, “We offer you a part-time job on your computer”.

27.5. Домашнє завдання

Вправа 4. Запишіть речення непрямою мовою.

1. The physicist said to the journalist, “We have already finished the experiment”. 2. The young chemist said, “The discovery is of great practical value”. 3. The engineers replied, “We must make the design accessible for cleaning”. 4. The operator said, “It was difficult to maintain constant temperature.” 5. The scientist said, “We have been discussing the problem with our colleagues for two hours”. 6. The receptionist said to the guest, “Please, fill in this form”. 7. The programmer argued, “Any programme contains at least one error”. 8. The plumber reassured us, “From now on the tap will work perfectly well”. 9. The chief said to a young designer, “Check the capacity of the engine”. 10. The lecturer said, “The neutron was discovered in 1932”. 11. The researcher declared, “The development of the electronic computer has changed the scientific world”. 12. The librarian said to the students, “Don’t forget to bring the books back to the library at the end of the term!”.

Вправа 5. Вивчіть діалог з п. 27.3 напам’ять.

Lesson 28. Land Pollution

28.1. Усна тема. Забруднення землі

Почитайте та перекладіть діалог. Складіть речення з підкресленими виразами.

Land Pollution

A: You know, lots of people in the world think it’s important to live green.

B: Yes, but some of them are not aware of how much pollution exists.

A: So, do you know where it comes from?

B: As far as I know, most land pollution is caused by industrial and commercial sources, such as factories, oil refineries and so on.

A: Does it mean that we are not able to influence it?

B: Nothing of the kind. First, we can help to make it known. The more people learn about the pollution facts, the more attention will be drawn to them and, I hope, the sooner these problems will be solved.

A: I know there are new laws and regulations that are aimed at reducing the amount of commercial and industrial pollution.

B: Sure, but there is still more work to be done and besides – everyone can contribute to preserving our land clean.

A: You are right. We must learn to care for the earth in a responsible way to sustain life for ourselves and for the generations to come.

28.2. Письмові завдання

Вправа 1. Прочитайте і перекладіть письмово.

Garbage is another important source of pollution. Every year households discard 41 million cubic metres of domestic waste – 1.18 cubic per urban resident. Nearly all this waste – 95.7% – is dumped at one of the 656 open-air sites; only a small part is processed at one of the four garbage disposal plants operating in Ukraine. Four out of five of the open-air dumps have no facilities to protect the underground water or the air and are huge toxic areas. As a result it is necessary to prohibit the use of large land areas for 50 years since the agricultural lands around dumps suffer low productivity due to pollution of the soil and the destruction of natural micro-organisms.

28.3. Читання

Прочитайте текст та запропонуйте, що ви самі можете зробити для зменшення забруднення землі.

Here are a few land pollution facts that pertain to littering.

- Some studies show that more than 8 million gallons of litter is thrown from car windows every day.
- Of all of the items placed in landfills each year, nearly 80% of them could have been recycled.
- More than 30 billion non-biodegradable foam cups are used each year.
- More than 20 billion tons of topsoil is lost each year due to land pollutions.

In addition to using your voice to spread the word about how important it is to stop commercial land pollution, there are also action steps you can take today that will cut down on your personal contribution to land pollution.

Here are a few land pollution facts how to reduce your own waste.

Buy Used

- Many of the items that you use every day can be found used. This includes clothes, furniture, household items and many more.

- You should also donate all of your old items to a local thrift store rather than throwing them away. This will not only cut down on what ends up in a landfill, but will give someone else a chance to find what they need used rather than having to buy new.
- Of course, you won't be able to find everything you need used, but you should always start your search looking for used items and only buy new when you must. This will not only help the environment, but it will save you money as well.

Eat Organic

- When you eat organic foods, you are supporting farmers that do not use pesticides which are harmful to the environment.
- Organic foods will cost a bit more, but they are better both for the environment and for your health.

Watch the Packaging

- When you do need to buy something new, try to find products that do not use unnecessary packaging. Such packaging accounts for a lot of what is thrown away by consumers each year.
- Write to companies that use too much packaging and let them know that you would love to buy their products, but that you will not do so until they eliminate what will potentially become land pollution.

28.4. Граматика. Питання в непрякій мові

Спеціальні питання

Пряма мова	Непряма мова
He asked (me),	He asked me
“What are you doing?”	what I was doing.
“Where do you live?”	where I lived.
“Where does he work?”	where he worked.
“What is Nick doing?”	what Nick was doing.
“What have you prepared for today?”	what I had prepared for that day.
“When did you come home yesterday?”	when I had come home the day before.
“When will your mother come home?”	when my mother would come home.

Загальні питання

Пряма мова		Непряма мова		
He asked me,	“Are you watching TV?”	He asked me	if / whether	I was watching TV.
	“Do you play chess?”			I played chess.
	“Does she go to school?”			she went to school.
	“Have you done your homework?”			I had done my homework.
	“Did you skate last winter?”			I had skated last winter.
	“Will you see your friend tomorrow?”			I would see my friend the next day.

Вправа 2. Передайте речення непрямою мовою, починаючи їх словами у дужках.

1. We'll close credit lines if you don't reduce carbon dioxide emission. (They promised) 2. You're right, some poisonous chemicals really escape into the atmosphere. (He said) 3. Are you going to call on our friends tonight? (They asked) 4. John, stand up immediately! (He ordered) 5. My friend is the best student in this school. (She said) 6. You can't use your dictionaries during the test. (The teacher warned) 7. Do you want a cup of tea? (They asked) 8. Is the bus service running according to the timetable today? (He wondered)

Вправа 3. Передайте речення непрямою мовою, використовуючи речення у дужках як головні.

1. Where is he going? (He didn't tell anybody) 2. Where has he gone? (Did you know) 3. Where is he? (Did you know) 4. When is he leaving for abroad? (I wanted to know) 5. Where does he live? (Nobody knew) 6. When will he come back? (She asked them) 7. Where did she buy this bicycle? (He wanted to know) 8. How much did she pay for it? (I had no idea) 9. Have you found the book? (She asked me) 10. Are there any more books here? (The man asked) 11. Did she go shopping yesterday? (I wanted to know) 12. Has she bought the dictionary? (He did not ask her) 13. Does she know the name of the man? (I doubted)

28.5. Домашнє завдання

Вправа 4. Передайте речення непрямою мовою, використовуючи речення у дужках як головні.

1. Where did I put the book? (I forgot)
2. Who has given you this nice kitten? (She wanted to know)
3. Where can I buy an English-Russian dictionary? (He asked me)
4. How long will it take your brother to get to Madrid? (He wondered)
5. Did Susan see the dean this morning? (I asked)
6. Have they sold the picture? (I did not know)
7. Do they know anything new about the travellers? (I wondered)
8. Has Jack given you his telephone number? (She asked me)
9. Is he coming back today? (I was not sure)

Вправа 5. Передайте речення непрямою мовою.

1. She asked me, "What are you doing?"
2. He asked her, "Are you angry with me?"
3. I asked him, "Where do you work?"
4. We asked them, "Have you made up your minds?"
5. They asked us, "Did you see the monument?"
6. She asked him, "Can you promise me that?"
7. He asked me, "Where will you go?"
8. I asked her, "When will you join our team?"

Вправа 6. Складіть розповідь про забруднення вашого міста, району, вулиці, під'їзду тощо.

Lesson 29. Ecological Dangers

29.1. Усна тема. Екологічні загрози

Знайдіть у словнику підкреслені слова. Складіть розповідь про одну з екологічних загроз, використовуючи активну лексику.

Noise Pollution

Noise pollution is the new side effect of our technological age. Day or night, various sounds fill the air. Between sunrise and sunset, streets and highways are a constant source of noise from cars, buses, and trucks. You can pass any factory or construction site and the roar of its machinery will make your ears ring. Music is played in every supermarket, most restaurants and many offices and homes.

Big cities of the world such as Los Angeles (California, USA), Osaka (Japan) are well-known for their noisiness.

We are realizing, finally, that silence is a natural resource and must be protected by law.

Global warming

Today our planet is warming. Some impacts from increasing temperatures are already happening: ice is melting worldwide, especially at the Earth's poles; the number of penguins on Antarctica have fallen from 32,000 to 11,000 in 30 years; sea level rise became faster over the last century; some butterflies, foxes, and alpine plants have moved farther north or to higher, cooler areas; precipitation (rain and snowfall) has increased across the globe, on average.

Other effects could happen later this century, if warming continues: sea levels are expected to rise between 7 and 23 inches (18 and 59 centimeters) by the end of the century; hurricanes and other storms are likely to become stronger; species that depend on one another may become asynchronous. For example, plants could bloom earlier than their pollinating insects become active; floods and droughts will become more common; less fresh water will be available; some diseases will spread, such as malaria carried by mosquitoes; ecosystems will change.

Overpopulation

With the number of people on the globe over 7 billion, the impact of human populations on the environment has been severe. Every year, more than 81 million people add the world-wide population. Every 10 years almost one billion more inhabitants are added.

The current effects of overpopulation are as follows: to build new settlements 16 million hectares of forest are chopped down each year; the accelerated growth of the human populations has caused the destruction of natural habitats of many bird and animal species and their extinction; about 5 million people die every year from illnesses associated to organic wastes; water necessities will increase to 20% by 2025; in USA only, consumption of materials (wood, metals, synthetics, etc.) has grown 18-fold since 1900; the ozone layer has been gradually ruined by the effect of the CFCs and as a result of huge industrial activity.

29.2. Письмові завдання

Вправа 1. Перекладіть текст письмово рідною мовою.

Jet Planes Keep Us Warm at Night

Scientists have discovered an unexpected reason for climatic change: airplanes. New research has revealed that vapour trails from jet aircraft flying across the country make nights up to 1⁰C (1.8⁰F) warmer, and days 1⁰C cooler. The study was conducted by checking the records at 4,000 weather stations when aircrafts were grounded across the US in the aftermath of the September 11 attacks. When compared with historical averages, they discovered that those nights were colder and the days warmer, with the temperature difference between night and day rising by an average of 1.8⁰C. The vapour trails, which can turn into high altitude cirrus clouds in the right conditions, reflect sunlight back during the day reducing air temperature at ground level and act as an insulating layer at night helping keep warm air in.

29.3. Читання

Прочитайте текст. Знайдіть у словнику підкреслені слова.

Cruise Liners Are Contaminating Our Oceans

Luxury cruise liners that carry millions of passengers to remote corners of the globe are polluting the seas and endangering marine life. The new superliners, which can accommodate up to 4,000 passengers and crew, are pumping thousands of gallons of sewage and oily bilge water into the sea every day with potentially disastrous effects on fragile ecosystems. These cruise holidays are increasingly popular but the ships are like floating cities without any rules on sewage and waste disposal. A study conducted by the American environmental group, which is dedicated solely to the protection of the Earth's oceans, has revealed that a typical ship's daily waste will include 37,000 gallons of oily bilge water; 30,000 gallons of sewage; 255,000 gallons of waste water (from showers etc.); and seven tons of rubbish. The number of cruise ships is growing every year – in 2000, 240 liners carried ten million passengers – and they are travelling to ever more exotic locations. As a result, even remote waters in Alaska are now polluted.

Вправа 2. Визначте, чи правильними є висловлювання.

1. Cruise liners often pollute seas and oceans. 2. Big liners can accommodate up to 100,000 people. 3. There are strict rules for treating wastes of ocean-going liners. 4. Ships throw no rubbish overboard. 5. Waters near Alaska are polluted with garbage thrown from the ships. 6. The activity of the American environmental group is aimed at the protection of American rivers.

29.4. Граматика. Повторення узгодження часів та непрямої мови

Вправа 3. Виберіть один з варіантів.

1. He said he (is staying, was staying) at the «Ritz» Hotel. 2. They realized that they (lost, had lost) their way in the dark. 3. He asked me where I (study, studied). 4. I thought that I (will finish, would finish) my work at that time. 5. He says he (works, worked) at school two years ago. 6. Victor said he (is, was) very busy. 7. I thought he (told, had told) you about the party. 8. My friend asked me who (is playing, was playing) the piano in the sitting-room. 9. He said he (will come, would come) to the station to see me off. 10. I was sure he (posted, had posted) the letter. 11. I think the weather (will be, would be) fine next week. I hope it (will not change, would not change) for the worse. 12. I knew that he (is, was) a very clever man. 13. I want to know what he (has bought, had bought) for her birthday. 14. I asked my sister what she (has seen, had seen) at the museum.

Вправа 4. Перепишіть речення непрямою мовою.

1. Mike said, "We have bought these books today". 2. The woman said, "I am glad I am here". 3. My group-mate said to me, "I can explain this rule to you". 4. The teacher said, "We shall discuss this subject tomorrow". 5. Jane said, "My friend lives in London now". 6. Tom said, "I have already had breakfast". 7. My friend said to me, "Explain to me how to solve this problem." 8. The doctor said to Nick, "Don't go for a walk today". 9. The teacher said to us, "Translate this text without dictionary". 10. Mother said to her son, "Put on your hat". 11. Nick's mother said to him, "Don't eat too much ice cream". 12. Granny said to Helen, "Please, help me with the dinner". 13. The chief said to the workers, "Clean the construction site!" 14. "Will you show me the way to the railway station?" said the passer-by. 15. Ann said, "Please, buy some milk in the shop".

29.5. Домашнє завдання

Вправа 5. Перепишіть речення непрямою мовою.

1. John said to Nick, "Where are you going?" 2. I said to him, "How long are you going to stay here?" 3. Ann said to Mike, "When did you leave London?" 4. She said to Boris, "Please, don't forget to buy tickets." 5. Jane said to me, "How can I get to the station?" 6. Tom said to Mary, "What time will you come tomorrow?" 7. My friend said to me, "Why didn't you come here yesterday?" 8. Peter said to Nick, "What time does the train start?" 9. The teacher said to us, "Have you made this exercise?" 10. Mother said to her son, "Put on your coat" 11. Nick said to Alice, "Don't make noise. My sister is sleeping." 12. Sam said to Jane, "Yesterday I talked to our dean." 13. Tommy said to his sister, "Have you seen this movie?" 14. "Do you take any medicine?" said the doctor to the patient. 15. Ann said to Jim, "Will you help me with my maths?"

Вправа 6. Заповніть пропуски в реченнях поданими нижче словами та знайдіть їх у кросворді. Слова можуть розташовуватись горизонтально і вертикально, а порядок букв може бути зліва направо чи справа наліво, зверху донизу чи знизу доверху. Букви в словах можуть бути спільними. Тільки 2 букви є зайвими.

coal; cell; truth; clean; sun; toxic; oil; pollution; protection; tropical; cancer; ecology; cut; nature; rye; biosphere; warm; ozone; care; trees; vehicle; photo; exhaust; law

t	r	o	p	i	c	a	l	b	w	e
u	p	r	o	t	e	c	t	i	o	n
c	e	l	l	r	r	a	r	o	e	o
l	l	c	l	e	a	n	u	s	x	z
a	c	o	u	e	c	c	t	p	h	o
w	i	a	t	s	i	e	h	h	a	t
a	h	l	i	o	x	r	e	e	u	o
r	e	c	o	l	o	g	y	r	s	h
m	v	y	n	a	t	u	r	e	t	p

1. Too much ultraviolet radiation can cause skin _____. 2. An _____ spill is the release of a liquid petroleum hydrocarbon into the environment, especially marine areas, due to human activity, and is a form of _____. 3. Waste production, air pollution, and loss of biodiversity are some of the issues related to environmental _____. 4. It was Vladimir I. Vernadsky who defined _____ as the science studying _____. 5. The _____ layer is destroyed by CFC's, chlorofluorocarbons, that are used as a propellant in aerosol cans, and refrigerators. 6. Millions of hectares of _____ rain forests are _____ down every year.

7. Bicycle is the most environmentally _____. 8. Being “green” means taking _____ of _____. 8. _____-synthesis is a process by which the light energy mostly coming from the _____ is converted into chemical energy. 9. Car _____ gases are highly _____ because of their carbon monoxide content. 10. _____ phones may be harmful not only to your health but also to the environment if not disposed of properly. 11. The main reason for smog in London was that households were burning more _____ than usual to keep _____. 12. Almost every state in America has a special _____ protecting roadside _____. 13. Tobacco companies try to avoid telling the deadly _____ about dangers of smoking. 14. Brown bread made of _____ is healthier than white bread made of wheat.

Вправа 7. Вивчіть діалог напам'ять.

Is the Earth Getting Hotter?

A: Do you know anything about the “greenhouse” effect?

B: Certainly, I do. I've heard that it will soon begin altering the Earth's climate.

A: Can you say what exactly the greenhouse effect means?

B: The greenhouse effect is a process by which thermal radiation from a planetary surface is absorbed by atmospheric greenhouse gases, and is re-radiated in all directions. Since part of this re-radiation is back towards the surface, it results in an elevation of the average surface temperature.

A: Oh, I see that it is like glass in a greenhouse. It forms a kind of “thermal blanket” around the planet.

B: Yes, that's right. The thing is that the greenhouse effect will cause not only hotter summers and milder winters, but it may alter rainfall, affect crop yields and raise sea level.

Lesson 30. Other Ecological Problems

30.1. Усна тема. Інші екологічні проблеми

Прочитайте деякі факти про тварин, що знаходяться на межі вимирання.

Pandas. Fewer than 1,000 giant pandas remain in the wild in their homeland, Western China.

Black rhinoceros. Fewer than 2,000 of them remain in the wild. That's a 95 percent decline since 1970. Most are killed for their horns, which are ground into powder for medical purposes in Asia.

Tigers. Only 67,000 wild tigers remain. Tigers are hunted and killed for their body parts, which are used in oriental medicines.

Chimpanzees. Chimps and other primates are on the verge of becoming extinct, primarily due to the destruction of tropical rain forests, which are home for 90 percent of all primates.

Elephants. In the last 20 years, half the African elephants have been killed off. The Asian elephant population has shrunk even more. Elephants are killed for their ivory tusks, most of which are used for making jewelry.

Визначте, чи є вірними такі висловлювання.

1. Pandas live in India. 2. Rhinoceros are killed for their skin. 3. The horns of rhinoceros are ground into powder for medical purposes. 4. The number of wild tigers is less than 30,000. 5. Tigers are hunted for their fur. 6. Chimpanzees live in rain forests. 7. The population of African and Asian elephants has increased in the last 20 years. 8. Ivory is a precious material for making jewelry.

30.2. Письмові завдання

Вправа 1. Заповніть пропуски словами, що підходять за змістом: *man, months, discovered, wars, evolved, only, appear, information, riches, Earth, ago, known, extinction, huge, system.*

Planet Earth Is 4,600 Million Years Old

If we pretend that our planet is like a person, we can compare the Earth with a man of 46 years of age. Nothing is ___ about the first 7 years of this person's life, and very little ___ can be found about his youth. What we know for sure is that ___ at the age of 42 the Earth began to flower.

Dinosaurs and the great reptiles did not ___ until one year ago, when the planet was 45. Mammals arrived only eight ___ ago. In the middle of the last week man-like apes ___ into ape-like men. And only last weekend the ice age enveloped the ___.

Modern ___ has been around for only four hours. During the last hour Man ___ agriculture. The industrial revolution began only a minute ___. During those sixty seconds of biological time, Man has made ___ rubbish dump out of Paradise. Man has caused the ___ of 500 species of animals, robbed the planet of its mineral ___, and now stands at the brink of a war to end all ___ which will destroy this oasis of life in the solar ___.

30.3. Читання

Прочитайте та перекладіть текст рідною мовою.

Bees Are in Danger

Since the 1980s, beekeepers and observers of nature have been noticing that bees are disappearing, particularly in Europe and the United States. The phenomenon reached a peak during the winter of 2006–2007, when one quarter of all domesticated honey bees in the US died out, according to a report from the US Congress.

Scientific experts blame a combination of stress factors, including climate change, the use of neurotoxic insecticides, viral and fungal infections, and lack of genetic diversity among domestic bee populations.

Thanks to pollinators such as insects, birds and bats, the world's flowering plants are able to reproduce and bear fruit. Bees are among the most active pollinators, alone responsible for as much as 70–80% of reproduction in the plant world, according to a study by the France's national institute for agricultural research, INRA. Their disappearance would put the survival of wild plants and commercial crops at risk.

30.4. Граматика. Повторення підрядних речень

Вправа 2. Доповніть текст необхідними відносними займенниками.

During your holidays, ___ you go somewhere with your friends, you usually take a lot of things with you. Though, your holiday suitcase is never big enough, is it? And there isn't a place ___ you can put bulky items like a sleeping bag. Well, there is a simple solution: take a rope or a scotch and attach it to your suitcase.

On holiday you put all the clothes ___ you have worn into old bags before you take them home. And when you get home, your brother says "___ T-shirt is this, yours or mine?" Correct? Well, here are some attractive bags ___ come in different sizes for different clothes.

There are people ___ like to read late at night on holiday and there are other people ___ want to go to sleep. Here is the answer. It's a little reading light ___ you put behind the book while you are reading.

Вправа 3. Вставте *that, who, what*.

1. Tell me ___ you want and I will try to help you. 2. Why do you blame me for everything ___ goes wrong in our group? 3. Maria is the only person ___ understands me. 4. Why do you always disagree with anything ___ I say? 5. She gives her children everything ___ they want. 6. This is an awful film. It's the worst one ___ I've ever seen. 7. I won't be able to do very much but I'll do the best ___ I can. 8. Nobody knows ___ kind of work is being carried out in that laboratory.

Вправа 4. Передайте непрямою мовою.

1. *Mike hasn't come to school today. – The teacher says that Mike hasn't come to school today.* 2. Are you going anywhere for the weekend? – Tom asked me ___. 3. I'm really angry with you for what you've done. – Hannah said that ___. 4. How long has Paul Brown been living in this street? – The police officer asked ___. 5. The police will probably want to question me. – The director thought that ___. 6. I was in love with Judith once. – He confessed that ___. 7. I have a lot of pets at home: a dog, a cat and some budgies. – Anna says that ___. 8. Have you met Kate before? – Mike wanted to know ___.

30.5. Домашнє завдання

Вправа 5. Розкажіть про тварин з тексту (30.1), використовуючи такі фрази. Не забудьте вжити правило узгодження часів.

1. I learned that ... 2. It was reported that ... 3. It turned out that ... 4. Scientists warned that ... 5. It appeared that ...

Вправа 6. Визначте типи підрядних речень та перекладіть їх.

a) 1. *That it is possible to convert heat to energy and energy back to heat can be demonstrated in a number of ways.* 2. *When we will start a new series of experiments is not settled yet.* 3. *Whether the spaceship will be able to leave the earth depends upon the speed of the ship.*

b) 1. One of the main characteristics of plastics is *that their molecules are composed of a large number of repeating molecules known as monomers.* 2. The most important feature of this plant is *that all its shops are equipped with automatic and semi-automatic machine-tools.* 3. The difficulty is *whether all the processes of the production at the plant can be mechanized.*

c) 1. I know when he will return home. 2. We didn't understand what had happened. 3. They said they knew about his arrival. 4. She couldn't even imagine where she had put her glasses.

d) 1. At the next table in the cafe I noticed the guy whose photo I saw yesterday in the newspaper. 2. She didn't explain the reason why she was absent. 3. The house we live in has been renovated recently. 4. The girl who is sitting next to me is my friend's sister.

e) 1. As soon as you arrive home, please, send us an E-mail. 2. He will be waiting until you come to a decision. 3. When she comes to Australia, she will see a lot of exotic animals. 4. Look before you leap.

☺ Time for Fun

- Many dead animals in the past changed to fossils while others preferred to be oil.

- Living on Earth may be expensive, but it includes an annual free trip around the Sun.

- Wind and students have the same mentality: Both keep turning book's pages without reading.

- Teacher: What is the chemical formula for water?

Jane: "HIJKLMNO"!!

Teacher: What are you talking about?

Jane: Yesterday you said it's H to O!

APPENDIX I. SUPPLEMENTARY READING TO LESSONS

To Lesson 1. Departments and Specialities of NTU “KhPI”

1.	Mechanical and Technological Faculty (Механіко-технологічний факультет) <ul style="list-style-type: none"> • Foundry technologies and equipment (Обладнання та технології ливарного виробництва) • Applied materials science (Прикладне матеріалознавство) • Pressurized metal forming equipment and technologies (Обладнання та технології пластичного формування конструкцій машинобудування) • Computer-aided and integrated technological processes and production (Комп'ютерно-інтегровані технологічні процеси та виробництва) • Computer-aided design and information technologies (Інформаційні технології проектування)
2.	Mechanical Engineering Faculty (Машинобудівний факультет) <ul style="list-style-type: none"> • Mechanical engineering technology (Технологія машинобудування) • Hoisting, road-building and meliorative machinery (Підйомно-транспортні, дорожні, меліоративні машини і обладнання) • Metal cutting machine-tools and systems (Металорізальні верстати і системи) • Hydraulic and pneumatic machinery and hydraulic drives (Гідравлічні машини, гідроприводи та гідропневмоавтоматика) • Tool making (Інструментальне виробництво) • Automated control of technological processes (Автоматизоване управління технологічними процесами) • Quality, standardization and certification (Якість, стандартизація та сертифікація)
3.	Power-Plant Engineering Faculty (Енергомашинобудівний факультет) <ul style="list-style-type: none"> • Heat and power engineering (Теплоенергетика) • Boilers and reactors (Котли і реактори) • Hydraulic and pneumatic machinery and hydraulic drives (Гідравлічні машини, гідроприводи та гідропневмоавтоматика)

	<ul style="list-style-type: none"> • Hydro-power engineering (Гідроенергетика) • Power management (Енергетичний менеджмент) • Turbines (Турбіни) • Thermal physics (Теплофізика) • Gas and oil-production machinery (Машини та механізми нафто-газових промислів) • Computer-aided technological processes and production (Комп'ютерно-інтегровані технологічні процеси і виробництва) • Gas-turbine and compressor plants (Газотурбінні установки і компресорні станції)
4.	<p>Transport Engineering Faculty (Факультет транспортного машинобудування)</p> <ul style="list-style-type: none"> • Internal combustion engines (Двигуни внутрішнього згоряння) • Wheeled and caterpillar vehicles (Колісні та гусеничні транспортні засоби) • Electric systems and vehicle complexes (Електричні системи і комплекси транспортних засобів) • Electric transport (Електротранспорт) • Locomotives and railway facilities (Локомотиви та локомотивне господарство) • Weaponry (Озброєння та військова техніка) • Automobiles and automobile industry (Автомобілі та автомобільне господарство) • Computer-aided design of vehicles (Інформаційні технології проектування транспортних засобів)
5.	<p>Faculty of Physics and Technology (Фізико-технічний факультет)</p> <ul style="list-style-type: none"> • Physical materials science (Фізичне матеріалознавство) • Alternative and renewable energy sources (Нетрадиційні та відновлювальні джерела енергії) • Cryogenic engineering (Кріогенна техніка і технології) • Technical equipment and high voltage electrophysics (Техніка і електрофізика високих напруг)

	<ul style="list-style-type: none"> • Micro- and nano-electronic equipment (Мікро- та наноелектронні прилади і пристрої)
6.	<p>Electrical Engineering Faculty (Електромашинобудівний факультет)</p> <ul style="list-style-type: none"> • Devices and systems of nondestructive testing (Прилади і системи неруйнівного контролю) • Automated electromechanical systems and electric drive (Електромеханічні системи автоматизації і електропривід) • Electric machines and equipment (Електричні машини і апарати) • Electronic systems (Електронні системи) • Home appliances (Електропобутові прилади) • Equipment and systems of ecological monitoring (Прилади і системи екологічного моніторингу) • Physical and biomedical electronics (Фізична і біомедична електроніка)
7.	<p>Electric Power Engineering Faculty (Електроенергетичний факультет)</p> <ul style="list-style-type: none"> • Power plants (Електростанції) • Electric systems and networks (Електричні системи і мережі) • Electric power generation and distribution control systems (Системи управління виробництвом і розподілом електроенергії) • Technical equipment and high voltage electrophysics (Техніка та електрофізика високих напруг) • Electric utility systems (Електротехнічні системи електроспоживання)
8.	<p>Faculty of Automation and Instrument Making (Факультет автоматизації та приладобудування)</p> <ul style="list-style-type: none"> • Radio physics and electronics (Радіофізика та електроніка) • Biotechnological and medical devices and systems (Біотехнічні та медичні апарати і системи) • Metrology and measuring equipment (Метрологія і вимірювальна техніка) • Computer-aided control systems and automatics (Комп'ютеризовані системи управління та автоматика) • Information measuring systems (Інформаційні вимірювальні системи) • Specialized computer systems (Спеціалізовані комп'ютерні системи)

9.	Faculty of Technology of Inorganic Substances (Факультет технології неорганічних речовин) <ul style="list-style-type: none"> • Chemical technology of inorganic substances (Хімічна технологія неорганічних речовин) • Engineering electrochemistry (Технічна електрохімія) • Chemical technology of refractory nonmetallic and silicate materials (Хімічна технологія тугоплавких неметалевих і силікатних матеріалів) • Chemical technology of rare dispersed elements and materials based on them (Хімічна технологія рідкісних розсіяних елементів та матеріалів на їхній основі)
10.	Faculty of Technology of Organic Substances (Факультет технології органічних речовин) <ul style="list-style-type: none"> • Chemical technology of organic substances (Хімічна технологія органічних речовин) • Industrial biotechnology (Промислова біотехнологія) • Chemical technology of fuel and carbon materials (Хімічна технологія палива та вуглецевих матеріалів) • Technology of fats and fat substitutes (Технологія жирів та жирозамінників) • Chemical technology of high-molecular substances (Хімічна технологія високомолекулярних речовин) • Oil and gas production (Видобування нафти та газу) • Technology of fermentation production and wine-making (Технологія бродильних виробництв і виноробства) • Pharmaceutical biotechnology (Фармацевтична біотехнологія)
11.	Faculty of Integrated Technologies and Chemical Engineering (Факультет інтегрованих технологій та хімічної техніки) <ul style="list-style-type: none"> • Equipment for chemical production and enterprises of construction materials (Обладнання хімічних виробництв та підприємств будівельних матеріалів) • Equipment for food and processing industry (Обладнання переробних і харчових виробництв)

- Chemical technology of high-molecular compounds (Хімічна технологія високомолекулярних сполук)
- Ecology and environmental protection (Екологія та охорона навколишнього середовища)
- Computer-aided integrated technologies and production (Комп'ютерні інтегровані технологічні процеси і виробництва)
- Polymer and composite materials chemical processing technology (Хімічні технології переробки полімерних та композиційних матеріалів)
- Computer-aided control of technological processes (Автоматизоване управління технологічними процесами)

To Lesson 2

My family

Satomi (Japan)

There are five members in my family: my mom, dad, grandmother, brother and myself. My dad works for a golf company. My mom is a housewife. My brother is majoring in tourism at Rikkyo University. When I was four, we moved from Kanagawa to Tokyo because we bought a new house. Now, we're living with my grandma. She used to be a very energetic ikebana teacher, but she's getting old. So, we're supporting her as much as possible. I was influenced by her very much because in my childhood she mainly took care of me and I wanted to be a woman like her in every respect. Now, she's not what she used to be; however, I really love her and my family also really loves her. That's why we'll continue to look after her. As for my grandpa, he died before I was born. Therefore I don't know very much about him. One thing I know about him is that thanks to his job (teacher), he didn't have to go to the war.

Daniel (USA)

My immediate family consists of six people. I am the youngest of four children. I have an elder brother John, who is twenty-five and two sisters. Jackie is twenty-two, while Anne-Marie is twenty-eight. John graduated from the Univer-

sity of Michigan and is an engineer, while Jackie has just graduated from the University of John Carol. Anne-Marie is an attorney, and currently works for McDonalds, dealing with their corporate material. My father has been the provider for the family as a doctor, and my mother works as a secretary and house-mother. My family is always there for me through the rough times, even though I see little of them now.

Sarah (USA)

My family consists of my father (George), mother (Jennifer), my elder sister Korie, me, and my younger sister Vanessa. Korie is 21, and she is a senior at the Ohio State University. She has a double major of journalism and political science and is an editor of the school's newspaper, the Lantern. She plans to graduate after the summer quarter. My little sister, Vanessa, is 5 years old, and is in her last year of pre-school. She will start kindergarten next year. My father and mother are both alumni of the Ohio State University. My father works for Conrail/CSX, and my mother as a family and consumer sciences teacher for Benjamin Logan High School. My parents made our family's home in Belle Center in 1980. This was after living in Marysville, Ohio, and Runnemede, New Jersey, respectively. The house that we call home now has always been home to me.

T o L e s s o n 4

Albert Einstein

Albert Einstein was born in Germany in 1879. He enjoyed classical music and played the violin. One story Einstein liked to tell about his childhood was of a wonder he saw when he was four or five years old: a magnetic compass. The needle's invariable northward swing, guided by an invisible force, profoundly impressed the child. The compass convinced him that there had to be "something behind things, something deeply hidden".

Even as a small boy Albert Einstein was self-sufficient and thoughtful. According to family legend he was a slow talker, pausing to consider what he would say. His sister remembered the concentration and perseverance with which he would build houses of cards.

Albert Einstein's first job was that of patent clerk.

In 1933, he joined the staff of the newly created Institute for Advanced Study in Princeton, New Jersey. He accepted this position for life, living there until his death. Einstein is probably familiar to most people for his mathematical equation about the nature of energy, $E = MC^2$.

Albert Einstein wrote a paper with a new understanding of the structure of light. He argued that light can act as though it consists of discrete, independent particles of energy, in some ways like the particles of a gas. A few years before, Max Planck's work had contained the first suggestion of discreteness in energy, but Einstein went far beyond this. His revolutionary idea seemed to contradict the universally accepted theory that light consists of smoothly oscillating electromagnetic waves. But Einstein showed that light quanta, as he called the particles of energy, could help to explain phenomena being studied by experimental physicists. For example, he made clear how light ejects electrons from metals.

There was a well-known kinetic energy theory that explained heat as an effect of the ceaseless motion of atoms; Einstein proposed a way to put the theory to a new and crucial experimental test. If tiny but visible particles were suspended in a liquid, he said, the irregular bombardment by the liquid's invisible atoms should cause the suspended particles to carry out a random jittering dance. One should be able to observe this through a microscope, and if the predicted motion were not seen, the whole kinetic theory would be in grave danger. But just such a random dance of microscopic particles had long since been observed. Now the motion was explained in detail. Albert Einstein had reinforced the kinetic theory, and he had created a powerful new tool for studying the movement of atoms.

Einstein's researches are, of course, well chronicled and his more important works include *Special Theory of Relativity* (1905), *Relativity* (English translations, 1920 and 1950), *General Theory of Relativity* (1916), *Investigations on Theory of Brownian Movement* (1926), and *The Evolution of Physics* (1938). Among his non-scientific works *About Zionism* (1930), *Why War?* (1933), *My Philosophy* (1934), and *Out of My Later Years* (1950) are perhaps the most important.

Albert Einstein received honorary doctorate degrees in science, medicine and philosophy from many European and American universities. During the 1920's he lectured in Europe, America and the Far East and he was awarded Fellowships or Memberships of all the leading scientific academies throughout the world. He gained numerous awards in recognition of his work, including the Copley Medal of the Royal Society of London in 1925, and the Franklin Medal of the Franklin Institute in 1935.

Einstein's gifts inevitably resulted in his dwelling much in intellectual solitude. Music played an important role in his life. He married Mileva Marie in 1903 and they had a daughter and two sons; their marriage was dissolved in 1919 and that very year he married his cousin, Elsa Lowenthal, who died in 1936. He died on April 18, 1955 at Princeton, New Jersey.

Marie Curie

Marie Sklodowska-Curie, one of the few people to win two Noble Prizes in different fields, was one of the most significant researchers of radiation and its effects as a pioneer of radiology. Until her granddaughter recently had them decontaminated her notes were radioactive.

Marie Curie (Polish Maria Sklodowska-Curie, born November 7, 1867, died July 4, 1934) was a chemist pioneer in the early field of radiology and a two-time Nobel laureate. She also became the first woman ever appointed to teach at the Sorbonne. She was born in Warsaw, Poland, and spent her early years there, but in 1891 at age 24 moved to France to study science in Paris. She obtained all her higher degrees and conducted her scientific career there and became a naturalized French citizen. She founded the Curie Institutes in Paris and in Warsaw.

After finishing high school, she suffered a mental breakdown for a year. Due to her gender and Russian anti-Polish reprisals following the January Uprising, she was not allowed admission into any universities so she worked as a governess for several years. Eventually, with the monetary assistance of her elder sister, she moved to Paris and studied chemistry and physics at the Sorbonne, where she became the first woman to teach.

At the Sorbonne she met and married another instructor, Pierre Curie. Together they studied radioactive materials, particularly the uranium pitchblende

ore, which had the curious property of being more radioactive than the uranium extracted from it. By 1898 they deduced a logical explanation: that the pitchblende contained traces of some unknown radioactive component which was far more radioactive than uranium; thus on December 26th Marie Curie announced the existence of this new substance.

Over several years of unceasing labour they refined several tons of pitchblende, progressively concentrating the radioactive components, and eventually isolated initially the chloride salts (refining radium chloride on April 20, 1902) and then two new chemical elements. The first they named polonium after Marie's native country, and the other was named radium from its intense radioactivity.

Together with Pierre Curie and Henri Becquerel, she was awarded the Nobel Prize in Physics in 1903: "in recognition of the extraordinary services they have rendered by their joint researches on the radiation phenomena discovered by Professor Henri Becquerel". She was the first woman to be awarded a Nobel Prize.

Eight years later, in 1911, she received the Nobel Prize in Chemistry "in recognition of her services to the advancement of chemistry by the discovery of the elements radium and polonium, by the isolation of radium and the study of the nature and compounds of this remarkable element". In an unusual move, Curie intentionally did not patent the radium isolation process, instead leaving it open so the scientific community could research unhindered.

In her later years, she was disappointed by the myriad of physicians and makers of cosmetics who used radioactive materials without precautions.

Her death near Sallanches in 1934 was from leukemia, almost certainly due to her massive exposure to radiation in her work.

Element 96 Curium (Cm) was named in her and Pierre's honour.

George and Robert Stephenson

George Stephenson won world-wide acclaim with his "Rocket" but he said that much of the credit belonged to his son Robert. Robert supervised the building of the "Rocket", and later improved some parts in its construction.

Father and son were always very friendly. Robert was born in 1803, and his mother died before he was three years old. This brought the boy nearer to his father.

One thought above all others was in George Stephenson's mind: at all costs Robert should have some schooling. He worked long and hard to send the boy first to a village school, then to a school in Newcastle. Robert wore clothes made by his father and went to school on a donkey, because there was no money to buy a horse.

Robert's first period of schooling ended when he was twelve, but during his few years of schooling he was a teacher as well a pupil, because what he learned by day he taught his father in the evening.

In 1815 George Stephenson invented a miner's lamp – the *Georgie lamp*, as it is still called, for use in the mines. For this invention he was given a large sum of money and so he could send Robert to Edinburgh University for a six-month course. From that time on, for many years, father and son worked closely together.

In 1821, when George Stephenson was asked to make a survey for the Stockton to Darlington Railway, his chief assistant was Robert.

They worked closely together again when they built the Liverpool to Manchester Railway. Then, as George Stephenson grew older and could not work much, he watched with pride as Robert gained achievements on his own, without his father's help.

Robert Stephenson built, for example, the Birmingham to London Railway, the first line to the British capital. For many years he built railways all over the world. Yet he is perhaps better remembered as a bridge-builder. He built bridges in Britain, in Canada and on the Nile.

A monument to father and son was erected in Westminster Abbey.

Thomas Alva Edison

🔗 Active Vocabulary:

his teacher thought him very stupid – вчитель вважав його дуже дурним; boxed his ear – сильно вдарив його у вуха: on the track – на рельсах.

Edison was a thoughtful little boy. He was very inquisitive and always wanted to know how to do things. He was not very strong, and went to school when he was quite a big child. But his teacher thought him very stupid because he asked so many questions. So his mother, who was a teacher, took him away from school at the end of two months and taught him at home. With such a kind

teacher, he made progress; and above all, he learned to think. His mother had some good books and there was an encyclopedia among them. It was probably from the encyclopedia that he first took an interest in chemistry. He liked to make experiments, so he bought some books, and made a little laboratory in the cellar of his home.

When he was twelve years old, he started to earn his living and became a newsboy on the train which ran from Port Huron to Detroit. There was a corner in the baggage car where he kept his stocks of newspapers, magazines and candies. He moved his little laboratory and library of chemical books to this corner, and when he was not busy, went on with his experiments. All went well for two or three years. But when he was in his sixteenth year, one day a phosphorus bottle broke on the floor. It set fire to the baggage car, and the conductor not only put the boy off the train, but soundly boxed his ear. That was the most unfortunate part of the accident, for as a result Edison gradually lost his hearing, and became almost deaf.

Once he was standing on the platform of the station in Michigan, watching a coming train, when he saw the station agent's little boy on the track right in front of the coming engine. Another moment and the child would have been crushed; but Edison sprang to the track, seized the little one in his arms, and rolled with him to one side, just in time to escape the wheels. To show his gratitude the baby's father offered to teach Edison telegraphy. Working at telegraphy he at the same time spent all the spare moments in the study of chemistry and electricity. Experimenting he improved telegraph apparatus. About the same time Edison made an improvement in the transmitter of the telephone which made it easier for the waves to travel, and improved the usefulness of the telephone very much. It was just about the same time that he invented the phonograph. This is the parent idea of the gramophone, dictaphone and other instruments, but these inventions are only a small part of the work of this wonderful man.

Дайте відповіді на запитання.

1. How did Edison study at school?
2. What were his interests in his childhood?
3. Where did he work?
4. What accident happened to Edison?
5. What happened that changed Edison's life?
6. What did Edison invent?

To Lesson 6

The Most Popular Hobbies in the World

General Hobbies

Indoors: Aquarium keeping; Computer programming; Creative writing; Dancing; Drawing; Genealogy; Amateur radio; Music; Scrapbooking; Woodworking; Painting; Knitting; Sewing; Jewelry making; Cooking; Baking; Singing

Outdoors: Air sports; Motor sports; Water sports; Mountain biking; Cycling; Rock climbing; Fishing; Surfing; Rowing; Jogging; Swimming; Sailing; Sand castle building; Breeding your pet responsibly; Photography; Graffiti; Yoga.

Collection hobbies

Indoors: Coin collecting; Stamp collecting; Art collecting; Vinyls; Vintage books, clothing; cars

Outdoors: Antiquities; Fossil hunting; Insect collecting; Mineral and rockcollecting; Seashell and seaglass collecting; Leaf and petal collecting and pressing

Competition hobbies

Indoors: Billiards; Bridge; Bowling; Boxing; Chess; Cheerleading; Darts; Fencing; Gaming; Table football; Handball; Martial arts

Outdoors: American football; Soccer; Archery; Auto racing; Badminton; Cricket; Golf; Equestrianism; Figure skating; Gymnastics; Ice hockey; Kart racing; Paintball; Rugby; Shooting; Squash; Surfing; Swimming; Tennis

Observation hobbies

Indoors: Microscopy; Reading; Shortwave listening; Home theater

Outdoors: Amateur astronomy; Amateur geology; Bird watching; Meteorology; People watching; Travel; Parkour

To Lesson 8

Travelling by Train

Travelling by train is generally much cheaper than any other fast means of travelling. Moreover, train is one of the most efficient and reliable vehicle in which you don't have to go through any traffic jams. Travelling by train may be a quite unique and leisurely experience, as you can do so many things while travelling such as: making new friends, taking a walk, chatting with other travelers, playing cards, looking at the views, reading or just sleeping. In short you

can have a lot more fun in train than you would have if you were travelling by car which requires you to be alert all the time.

Some tips for rail travel in Europe.

Ticketing

- Be aware that it can be very expensive in some countries to travel by train. Especially high speed trains can be as expensive as – but more convenient than – flying.
- If you can, book in advance. In many countries you may benefit from a substantial discount.
- Many countries offer passes, allowing several journeys to be made within a region. Inter Rail (for Europeans) and Eurail (for others) are good value for those who qualify and wish to travel extensively through Europe.
- Please buy your ticket through the Internet, in a ticket office or a ticket machine before joining the train or otherwise you may have to pay a higher price or a fine.

Boarding and accommodation on board

- Find out if the class of the car you are boarding is in the front, middle or rear of the train and stay on the platform accordingly. Ask the staff on the platform. In some countries, stations are divided into zones and diagrams show you what zone your coach number corresponds to.
- Many trains have first class accommodation. This can be available in some cases, or very expensive in others. You are paying (typically) for a wider seat and a much emptier compartment. Do not, under any circumstances, travel in first class unless you have a ticket or other permission to do so.
- Normally, the doors of a train do not open automatically. So to enter or exit a coach you have to push a button on the door or turn a handle.
- Tuck away your luggage as much as you can. Don't let it block the way or the seats for other passengers.
- For overnight journeys, consider investing in a couchette or sleeper compartment, which are often cost-competitive with lodgings for the night. A couchette cabin has 6 berths for sleeping and no other facilities around, while a full-fledged sleeper will have two to four berths and possibly bathing facilities like a sink or a shower.

Дайте відповіді на запитання.

1. Why travelling by train is sometimes more preferable than by plane or by car?
2. What trains can be more expensive than a plane?
3. Where can you buy a train ticket?
4. In some countries, stations are divided into zones. What do they correspond to?
5. Where do passengers sleep during overnight journeys?
6. How many berths are there in a compartment?

To Lesson 11

Tipping in America

Americans take tipping more seriously than any other nationality, and of all Americans, no one takes tipping as seriously as hotel bellboys do.

Tip your bellboy generously, and you will have the perfect holiday. Do not tip him, and you will have the worst holiday of your life!

Guests who do not tip well at hotels often find that the heating in their room “accidentally” stops working in the middle of winter, or that they receive strange phone calls in the middle of the night.

Sometimes the keys for their room “disappear” and it seems that no one can find the spare keys.

It is a good idea to tip a bellboy at least 5 dollars and, for tips of 20 dollars or more, your bellboy will be your friend forever. So, anyone who is planning to stay in an American hotel should remember – bellboys can make sure you have the holiday of your dreams ... or they can make your visit a nightmare!

To Lesson 16

Massachusetts Institute of Technology (MIT)

Department of Nuclear Science and Engineering

Nuclear Science and Engineering is an intellectually exciting and socially important discipline, supporting a wide range of applications.

Our department presently consists of 28 faculty and senior research staff, 101 graduate and 48 undergraduate students. The curriculum includes over 70 subjects of instruction, leading to the B.S., M.S., N.E., and Ph.D. degrees.

Our goal is to educate individuals to become future leaders and make fundamental contributions in each of the following three programs:

Fission Engineering and Nuclear Energy

Fusion and Plasma Physics

Nuclear Science and Technology

Research opportunities extend across all aspects of nuclear science and engineering enhanced by the use of world-class experimental facilities located on campus, including:

MITR-II, a 5-megawatt nuclear research reactor;

Alcator C-Mod, a high field tokamak fusion device;

Multi-accelerator laboratory, focusing on medical and industrial applications;

Multi-magnet nuclear magnetic resonance laboratory, focusing on medical imaging and quantum information processing.

Students also have access to state-of-the-art computational facilities.

Established in 1958, the Department of Nuclear Science and Engineering at MIT is one of the oldest Nuclear Science and Engineering graduate programs in the country. Still, compared to more traditional engineering disciplines, nuclear engineering is a relatively new addition to university educational programs. The field defines its education and research mission broadly as the study of nuclear and radiation interactions and their applications to problems of beneficial interest to society. Given that we have only recently begun to understand basic nuclear processes, nuclear engineering is still in its “pioneering” phase with regard to its impact on our lives.

University of Oxford

The Department of Chemistry

Each year some 170 chemists graduate after a four-year course which includes a year of research and about 80 graduates receive doctorates.

The Oxford Chemistry course is second to none in quality.

It has been judged to be excellent following a Teaching Quality Audit (TQA) by the Higher Education Funding Council for England (HEFCE). Furthermore, the research school of 74 faculty was awarded 5* (also the highest

grade) in the most recent Research Assessment Exercise, published in December 2001, an evaluation that recognises its considerable international standing.

Her Majesty the Queen opened the new £60 million Chemistry Research Laboratory on 20th February 2004. This state of the art facility has five floors covering ~17,000 sq.m of laboratory and office space. The £60 million has been raised with grants from the JIF, Wolfson Foundation, EP Abraham Trust, Thomas Swan, the family of Landon T Clay, the Salters Company and a £20 million partnership with IP Group.

University of Cambridge

The Department of Physics at the Cavendish Laboratory

The Cavendish Laboratory was founded in 1871, along with the appointment of James Clerk Maxwell as the first Cavendish Professor. It has a distinguished intellectual history, with 29 Nobel prizewinners who worked for considerable periods within its facilities, and is associated with many notable discoveries, including the electron and the structure of DNA. In 1973, the Laboratory moved from the historic centre of Cambridge to a green-field site, a mile west of the city centre. This formed the nucleus for the Universities development of a new physical science campus in West Cambridge.

The Department of Physics, housed in the Cavendish Laboratory, is large. Currently there are 65 teaching staff, approximately 150 postdoctoral fellows, about 250 graduate students in total (including administrative and technical support staff), a complement of 700 people. Total research grant income was over £14M in 2004/5, and has roughly doubled during the last decade. The Department (jointly with the Institute of Astronomy), was rated 5* (the highest possible) in the 2001 National Research Assessment Exercise performed by the Higher Education Funding Council for England (HEFCE). The undergraduate teaching programme is a vigorous one, with about 120 students annually proceeding to the 4-year MSci degree in Physics. During the first year, about 400 students take physics as part of the Natural Sciences Tripos. In the 1998 HEFCE subject review of teaching, the Department scored 23 out of a possible 24.

Research activities span all the areas of physics, and are organised under major research groupings: High Energy Physics, Astrophysics, Biological and

Soft Systems, Semiconductor Physics, Optoelectronics & Microelectronics, Quantum Matter, Theory of Condensed Matter, and Physics and Chemistry of Solids.

T o L e s s o n 21

Прочитайте текст. Знайдіть підкреслені слова у словнику.

School Life for a British Boy (Written by Erik)

My School is a mixed 11–18 school. There are about 1,150 students in my school, including 200 in the sixth form. It is called a Technology College and specializes in Computers and Maths. My school has over 1200 computers (including over 400 tablet PC's)

I am in Year 8. I am presently having to decide what GCSEs I would like to start working towards. I am sitting for my GCSE exams next year instead of the year after when most other people of my age will be doing them.

Some subjects are compulsory like Maths, English, Science and a foreign language. I am not sure what other GCSEs I will be taking. I will have to decide soon.

My School Day

I leave home at 6:45 and walk 20 minutes to catch a bus to school. The bus is a special one just for kids going to my school. The journey on the bus takes an hour because it has to keep stopping to pick up other students along the way.

When I arrive at school, I collect my Tablet PC from the Flexi (Flexible Learning Centre). Then I go to my Tutor Room for Registration at 8:30.

What is Registration?

The attendance of every child attending school each morning and afternoon is recorded in a special book. The teacher reads out each child's name in turn. On hearing his/her name, the child replies 'yes Mrs. (teacher's name)' and the teacher notes down in the book whether the child is in school or not.

We listen to announcements to see what special things are happening at school today or this week.

At about 8:50 we leave Tutor Room to go to our First Period. Every day I have a different Lesson the first period. Normally it is Humanities but I also

have Maths, Drama and Music, and French on the other days. Each period lasts an hour.

All my lessons are in different rooms and places around the school. Each Room either has a three digit number or a name. The numbers are very hard to remember! I have different teachers for each lesson. I have a locker where I can store some of my stuff but otherwise I have to carry it all around with me in my bags.

Swipe Cards

Every Student carries a swipe card. We swipe into every lesson to let the school know that we have attended that certain lesson and where we are in case of emergencies.

There are two stripes, a black and a brown, on the Swipe Card. The brown is to swipe into lessons and the black is to get into the toilets and buildings.

We can put money on our Swipe cards instead of carrying cash around. When we want to pay for snacks at the shop or the canteen we just hand over our cards and they deduct the money.

Subjects

Maths, English, Science, ICT, Drama, Music, Art, PE.

Humanities (History, Geography, and Religion), French or Spanish.

Time Table

9:00 1st Period

10:00 2nd Period

11:00 – 11:20 Break

During the break, I have a snack and play and chat with my friends. Usually we play a chasing game. Snow ball fight when it snows is dead fun.

11:20 3rd Period

12:30 4th Period

1:30 – 2:10 Lunch

I bring a packed lunch to school but occasionally I have school dinners in the School Canteen. School lunches are priced at £1.60.

2:10 5th Period

3:10 End of School

Sometimes I stay after school for clubs.

Canteen

The Canteen is open at Lunch Time and Break Time. Most hot food is served only at lunch time. Chips are only available on Mondays and Fridays.

Tablet PC

We don't use our Tablet PCs in all lessons because some rooms do not have enough power sockets. We use the Tablets to do our work on and to search the Internet. Our Tablet PCs are connected to a Network so we can send our work straight to our teachers, and they can send them back with their comments.

Дайте відповіді на запитання.

1. How old is Eric? 2. What subjects are compulsory for GCSE? 3. What do pupils do in Tutor room before lessons? 4. What is a Swipe Card used for at school? 5. How many lessons a day do British pupils have? 6. Where do the pupils take a Tablet PC? 7. How do they use the computer at school? 8. How do British pupils address their teacher?

To Lesson 28

Прочитайте текст. Знайдіть у словнику підкреслені слова.

A Dying Technology

Incinerators and landfills are both attempts to answer the question, "what do we do with waste?" Over the last century, governments have invested billions of dollars in increasingly sophisticated technologies in the vain hope of making waste disappear. Yet neither incinerators nor landfills truly dispose of waste; each creates significant, hazardous byproducts and generates additional waste streams that require further management. This is because waste, like all matter, can never truly be destroyed. The current paradigm of waste management attempts to impose a linear production model on a cyclical ecosystem.

In the linear model of the human economy, materials are first extracted from nature, then processed into goods, then consumed, and finally discarded. The challenge, therefore, is not merely to find a new method of dealing with waste, but to completely change the manner in which materials flow through human society. At the same time, human discards must be fed back into the

economy in ways that reduce the pressure on natural resources. At that point, they are no longer wastes, but resources.

Alternative approaches must begin by questioning the fundamental assumptions of traditional waste management. These include the ever increasing quantity of waste generated, the mixing of disparate materials in the waste stream, and failure of much industrial design to take wastes properly into account. Waste generation is often projected to increase without limit for the foreseeable future. But it should be obvious that waste – and therefore resource consumption – cannot grow infinitely on a finite planet.

Waste management must therefore be replaced by materials management: creating a closed loop economy that neither generates significant wastes nor consumes resources beyond their replacement rate. In order to achieve this closed-loop economy, true waste (material that is of no use and must be disposed) must be differentiated from discards: materials that are of no further use to their present owner but are still a resource to be fed back into the economy. This means an end to the mixed waste stream. When discards are mixed, they become useless and appear to require large-scale disposal technologies to manage them.

Currently, waste management is treated as wholly unrelated to an economy's production and consumption patterns. Governments collect and manage most waste while private firms and consumers produce it. As a result, private businesses shift a significant portion of their costs onto society as a whole by not taking responsibility for their waste streams and by manufacturing products that cannot readily be recycled. Even when producers do have responsibility for their wastes, such as process wastes from a factory, they rarely pay the full cost of managing them. Incineration and landfilling merely transfer the problem to other populations and future generations. Large-scale industrial redesign is needed to eliminate wastes that result from production and change products so that they may be recycled.

Ultimately, an effective program for dealing with waste is more about materials management than about technology. Although the details vary considerably, three principles are the key to solving the waste problem: prevention / minimization, waste stream segregation and industrial redesign.

Дайте відповіді на запитання.

1. What are the traditional ways of waste disposal? 2. Why are incinerators and landfills harmful to the environment? 3. What is meant by a linear production model? 4. What is a true waste? 5. What is needed to eliminate wastes? 7. What are the key principles to solve the waste problem? 8. Are you ready to sort your wastes at home?

To Lesson 30

Прочитайте текст. Знайдіть у словнику підкреслені слова.

Spray-On Solar-Power Cells Are True Breakthrough

Scientists have invented a plastic solar cell that can turn the sun's power into electrical energy, even on a cloudy day. The plastic material uses nanotechnology and contains the first solar cells able to harness the sun's invisible, infrared rays. It is a real breakthrough! The theorists predict that plastic solar cells could one day become five times more efficient than current solar cell technology.

Like paint, the composite can be sprayed onto other materials and used as portable electricity. A sweater coated by the material could power a cell phone or other wireless devices. A hydrogen-powered car painted with the film could potentially convert enough energy into electricity to continually recharge the car's battery.

The researchers envision that one day "solar farms" consisting of the plastic material could be rolled across deserts to generate enough clean energy to supply the entire planet's power needs.

"The sun that reaches the Earth's surface delivers 10,000 times more energy than we consume", said Ted Sargent, an electrical and computer engineering professor at the University of Toronto. Sargent is one of the inventors of the new plastic material. "If we could cover 0.1 percent of the Earth's surface with [very efficient] large-area solar cells", he said, "we could in principle satisfy all of our energy needs with a source of power which is clean and renewable".

Infrared Power

Plastic solar cells are not new. But existing materials are only able to harness the sun's visible light. While half of the sun's power lies in the visible spectrum, the other half lies in the infrared spectrum.

The new material is the first plastic composite that is able to harness the infrared portion.

“Everything that’s warm gives off some heat”, Sargent said. “So there actually is some power remaining in the infrared spectrum, even when it appears to us to be dark outside”.

The researchers combined specially designed nano-particles called quantum dots with a polymer to make the plastic that can detect energy in the infrared. With further advances, the new plastic “could allow up to 30 percent of the sun’s radiant energy to be harnessed, compared to 6 percent in today’s best plastic solar cells”, said Peter Peumans, a Stanford University electrical engineering professor, who studied the work.

Electrical Sweaters

The new material could make technology truly wireless. Sargent said that the plastic coating could be woven into a shirt or sweater and used to charge an item like a cell phone.

“A sweater is already absorbing all sorts of light both in the infrared and the visible”, said Sargent. “Instead of just turning that into heat, as it currently does, imagine if it were to turn that into electricity”.

Other possibilities include energy-saving plastic sheeting that could be spread on a rooftop to supply heating needs, or solar cell window coating that could let in enough infrared light to power home appliances.

Складіть діалог до тексту (3–4 репліки кожний партнер).

APPENDIX II. IRREGULAR VERBS

Infinitive	Past Indefinite	Participle II	Translation
be	was; were	been	бути, знаходитися
bear	bore	born	народжувати, витримувати
become	became	become	стати
begin	began	begun	починати(ся)
break	broke	broken	ламати
bring	brought	brought	принести, привезти
build	built	built	будувати
burn	burned / burnt	burnt	палити, горіти
buy	bought	bought	купувати
catch	caught	caught	ловити, схватити
choose	chose	chosen	вибирати
come	came	come	приходити, приїжджати
cut	cut	cut	різати
do	did	done	робити
draw	drew	drawn	малювати, тягти
drink	drank	drunk	пити, випивати
drive	drove	driven	везти, їхати, керувати авто
eat	ate	eaten	їсти
fall	fell	fallen	падати
feel	felt	felt	відчувати
find	found	found	знаходити
fly	flew	flown	літати
forget	forgot	forgotten	забувати
freeze	froze	frozen	мерзнути, заморозити
get	got	got	отримувати, стати

Infinitive	Past Indefinite	Participle II	Translation
give	gave	given	давати
go	went	gone	йти, їхати
grow	grew	grown	рости, вирощувати
have	had	had	мати
hear	heard	heard	чути
hold	held	held	тримати, проводити (заходи)
keep	kept	kept	зберігати, тримати
know	knew	known	знати
learn	learned/learnt	learned/learnt	вчити(ся)
leave	left	left	покидати, їхати
let	let	let	дозволяти
lose	lost	lost	загубити, програвати
make	made	made	робити, виробляти
meet	met	met	зустрічати, знайомитися
pay	paid	paid	платити
put	put	put	класти
read	read	read	читати
ride	rode	ridden	їздити верхи
ring	rang	rung	дзвонити
rise	rose	risen	підніматися, виникати
run	ran	run	бігати
say	said	said	говорити, казати
see	saw	seen	бачити
sell	sold	sold	продавати
send	sent	sent	відсилати
show	showed	showed/shown	показувати
shut	shut	shut	закривати

Infinitive	Past Indefinite	Participle II	Translation
sing	sang	sung	співати
sit	sat	sat	сидіти
sleep	slept	slept	спати
speak	spoke	spoken	говорити
spend	spent	spent	витрачати
stand	stood	stood	стояти
steal	stole	stolen	красти
swim	swam	swum	плавати
take	took	taken	взяти, брати
teach	taught	taught	навчати
tell	told	told	розповідати
think	thought	thought	думати
throw	threw	thrown	кидати
understand	understood	understood	розуміти
wake	woke	woken	прокидатись
wear	wore	worn	носити (одяг), зношуватись
win	won	won	вигравати, перемагати
write	wrote	written	писати

APPENDIX III. TABLES OF TENSES

Active Voice

	Past	Present	Future
Indefinite	V-ed, V-II <i>yesterday, last year</i> I (you, he, we, they) wrote	V, V-s <i>every day, usually, often</i> I (you, we, they) write He (she, it) writes	will + V <i>tomorrow, next week</i> I (you, he, we, they) will write
Continuous	was (were) + V-ing <i>yesterday at 5 o'clock, from 5 till 7</i> I (he) was writing We (you, they) were writing	am (is, are) + V-ing <i>now, at the moment</i> I am writing He (she, it) is writing We (you, they) are writing	will be + V-ing <i>tomorrow at 5 o'clock, the whole day tomorrow</i> I (you, he, we, they) will be writing
Perfect	had + V-ed / V-III <i>by 5 o'clock yesterday, before I came home</i> I (you, he, we, they) had written	have (has) + V-ed / V-III <i>already, just, recently, lately, yet (- / ?), ever, never</i> I (you, we, they) have written He (she, it) has written	will have + V-ed / V-III <i>by 5 o'clock tomorrow, by the end of the next month</i> I (you, he, we, they) will have written
Perfect Continuous	had been + V-ing <i>for 3 hours before you came</i> I (you, he, we, they) had been writing	have (has) been + V-ing <i>for 3 hours, since the morning</i> I (you, we, they) have been writing He (she, it) has been writing	will have been + V-ing <i>tomorrow ... for 3 months</i> I (you, he, we, they) will have been writing

Passive Voice

	Past	Present	Future
Indefinite	was (were) + V-III <i>yesterday, last year</i> I (he, she, it) was shown on TV You (we, they) were shown on TV	am (is, are) + V-III <i>every day, usually, often</i> I am shown on TV He (she, it) is shown on TV You (we, they) are shown on TV	will + be + V-III <i>tomorrow, next week</i> I (you, he, she, it, we, they) will be shown on TV
Continuous	was (were) + being + V-III <i>yesterday at 5 o'clock, from 5 till 7</i> I (he, she, it) was being shown on TV We (you, they) were being shown on TV	am (is, are) + being + V-III <i>now, at the moment</i> I am being shown on TV He (she, it) is being shown on TV We (you, they) are being shown on TV	↑ <i>tomorrow at 5 o'clock, the whole day tomorrow</i>
Perfect	had + been + V-III <i>by 5 o'clock yesterday, before I came home</i> I (you, he, she, it, we, they) had been shown on TV	have (has) + been + V-III <i>already, just, recently, lately, yet (-/?), ever, never</i> I (you, we, they) have been shown on TV He (she, it) has been shown on TV	will have + been + V-III <i>by 5 o'clock tomorrow, by the end of the next month</i> I (you, he, she, it, we, they) will have been shown on TV
Perfect Continuous	↑ <i>for 3 hours before you came</i>	↑ <i>for 3 hours, since the morning</i>	↑ <i>tomorrow ... for 3 months</i>

APPENDIX IV. SUPPLEMENTARY READING

Text 1. What Are Fossil Fuels?

Fossil fuels form from the remains of plants and animals that died millions of years ago. Over time, these remains sank to the bottom of the seas and oceans, and as layers grew on top of them they were subjected to enormous pressure and heat, causing the remains to break down into hydrocarbons, or compounds made of hydrogen and carbon. When these hydrocarbons are burned, the energy they release can be used to power cars, produce electricity and heat homes.

Speech Patterns

Millions of	years	Мільйони	років
Hundreds of	people	Сотні	людей
Thousands of	books	Тисячі	книжок

Choose one of the options.

1. Fossil fuels were formed from ____.
a) ancient plants and animals b) carbon c) water
2. Chemically fossil fuels are ____.
a) compounds of oxygen b) acids c) hydrocarbons
3. When these fuels burn they ____ energy.
a) annihilate b) absorb c) release

Text 2. Where do Rainbows Come from?

Light bends as it travels from one location to another, due to the different speeds at which it travels through different mediums. This process of natural bending **is referred to as** refraction. When light passes through a prism, the different colours of the light refract out at different angles, dispersing and becoming individually visible to the human eye. The same principle applies when light passes through a droplet of water in the air. If enough light passes through enough droplets in a confined area, the refracted pattern of light is visible to humans as a bent stripe of multiple colours, known everywhere as a rainbow.

Speech Patterns

Kharkov is often referred to as the first capital.	Харків часто називають першою столицею.
This law is referred to as a “thumb rule”.	Цей закон називається правилом буравчика.

Choose one of the options.

1. Refraction is the process of natural ____ of light.
a) shining b) dissolution c) bending
2. When light passes through a prism, one can see different ____.
a) pictures b) colours c) movies
3. A rainbow is light passing through ____.
a) elementary particles b) a mountain c) droplets of water

T e x t 3. Where Does Metal Come From?

Most metal is mined straight out of the earth in the form of ore. Ore is any part of the Earth’s crust, often a mixture of rocks, loose soil and other earthy materials, from which a valuable material can be extracted. This can be difficult, since the desirable metal is often locked in chemical compounds with other unwanted materials and filled with impurities. Ore refiners must find the best way to separate each useful element from the rest of the ore in which it lies. One common method of extraction is smelting, which is where refiners heat the ore to extremely high temperatures with the use of powerful furnaces. This makes it easier to get the pure metals out. In the refining of iron, for instance, the smelting process releases unwanted particles of oxygen that populate raw iron ore.

Speech Patterns

He	comes from	Spain.	Він родом з Іспанії.
Milk		cows.	Молоко дають корови.
The word “wall”		the Latin “wallum”.	Слово «wall» походить з латинського «wallum».

Choose one of the options.

1. Most metals are extracted from ____.
a) ore b) ear c) air
2. Ore always contains ____.
a) all the chemical elements b) some impurities c) only pure metal
3. To get the pure metal metallurgists use special ____.
a) furniture b) furnaces c) solvents

T e x t 4. How Did the Computer Mouse Come into Being?

The development of the computer mouse as an essential input device followed on the heels of numerous changes to the operating environment of personal computers. Initially, there was no need for a mouse, because **there was nothing to point to** on a computer screen. Early computers had primitive interfaces that used crude methods to receive data, like punch cards or teletype machines. Once graphical user interfaces were created, however, and pointing became an essential part of interacting with a computer, the mouse soon became the input device of choice in personal computing. The first mouse to have commercial success debuted with Apple's Macintosh computer in 1984.

Speech Patterns

There is	nothing	to rely on.	Нема на що покластися.
(was)	nobody		Ні на кого покластися.

Choose one of the options.

1. A mouse is ____.
a) a computer virus b) a system software c) an input device
2. Early computers used ____ cards to receive data.
a) punched b) playing c) credit
3. The mouse appeared only after ____ was created.
a) a keyboard b) a graphical interface c) a mouse pad

Text 5. What Are the Negative Social Effects of Computer Addiction?

Like any other addict, computer addicts can suffer from a variety of harmful side effects from their obsessive behavior. The most common and evident negative side effect revolves around the addict's social life. Most computer addicts **will completely withdraw** from their friends and family so they can have more time to spend on the computer, whether e-mailing, chatting, viewing pornography or playing games. Ultimately, the addicts will almost always completely withdraw from their real social world and delve deeper into their cyber world. Gamers, especially, can begin to consider things happening in their virtual gamer's world as more important than anything in their real lives. Many times these addicts will end up having trouble navigating real social situations.

Speech Patterns

will + Verb	(іноді) для посилення
Most computer addicts will completely withdraw from their friends ...	Більшість комп'ютерозалежних <u>часто</u> повністю відсторонюються від своїх друзів
In difficult situations he will always support his friends.	В скрутних ситуаціях він завжди підтримує своїх друзів.

Choose one of the options.

1. A computer addict is a person who ____.
a) writes computer programmes b) spends most of his time at a computer
c) can add well
2. The most important things for computer gamers are those which happen ____.
a) in their virtual world b) at their home c) with their football-team mates

Text 6. What Is Lava?

Lava is the molten or melted rock that is forced from volcanoes and cracks within the Earth's surface, **as well as** what is left behind once it cools and hardens. Cooled lava has formed many mountains and island chains, and much

of it eventually becomes lush and productive soil. Lava is made up of mostly silicon dioxide, and geologists believe magma (the term used to describe the molten rock deep within the Earth) is created under extreme pressure and temperatures at great depths below the Earth's crust. When a volcano erupts, molten rock is forced up through the Earth's crust and expelled out as lava, which can reach temperatures **as high as** 2,000 degrees Fahrenheit (1,200 degrees Celsius).

Speech Patterns

as well as ...	а також
He studies physics as well as other natural sciences.	Він вивчає фізику, а також інші природничі науки.
as high as ...	висотою аж до
This tree is as high as a five-storey building.	Це дерево висотою аж з п'ятиповерховий будинок.

Choose one of the options.

- Cooled lava formed many ____.
a) cities b) islands c) continents
- Molten rock deep below the Earth's crust is called ____.
a) enigma b) sigma c) magma
- Volcanic explosion is called ____.
a) corruption b) eruption c) extrusion

Text 7. What do we know about the surface of Mars?

Ever since the first successful flyby over Mars in 1964, scientists have been striving to gather more and more information about our rusty-red planetary neighbor. What we know already, based on soil and rock samples, as well as our observation of the planet, is that Mars is dusty, dry and cold. Its surface is heavily dotted with deep craters in some areas, while other areas have volcanic mountains even higher than Earth's highest volcano. Mars also has low-lying plains where scientists have discovered evidence of wind streaks, dunes and basins that resemble riverbeds. There are canyons on Mars, far deeper than our canyons

on Earth, as well as polar regions – icy caps made up mostly of frozen carbon dioxide. Evidence suggests that liquid water once flowed over the surface of Mars. But **as far as we know** today, Mars remains a dry, rocky planet pummeled by dust storms and pocked with crater cavities.

Speech Patterns

As far as	I know	Наскільки	я знаю
	I understand		я розумію
	I can judge		я можу судити

Choose one of the options.

- The first successful flight over Mars was performed ____.
a) in the late 1960s b) last year c) at the beginning of 20th century
- Observations proved that Mars is ____.
a) cold b) warm c) hot
- Ice on Mars is made of ____.
a) water b) carbon monoxide c) carbon dioxide

Text 8. What Is An Electric Car?

Active Vocabulary:

gasoline	бензин	exclusively	виключно
amount	обсяг	to adopt	приймати
accelerator	акселератор	commitment	зацікавленість
vehicle	транспортний засіб	simultaneously	одночасно
rechargeable	такий, що можна перезаряджати	tailpipe	вихлопна труба
unlike	на відміну від	utility company	комунальна компанія
to improve	удосконалювати	smokestack	димар

An electric car is powered by an electric motor instead of a gasoline engine. The electric motor gets energy from a controller, which regulates the amount of power based on the driver's use of an accelerator pedal. The electric car (also known as electric vehicle or EV) uses energy stored in its rechargeable batteries, which are recharged by common household electricity.

Unlike a hybrid car – which is fueled by gasoline and uses a battery and motor to improve efficiency – an electric car is powered exclusively by electricity. Historically, EVs have not been widely adopted because of limited driving range before needing to be recharged, long recharging times, and a lack of commitment by automakers to produce and market electric cars that have all the creature comforts of gas-powered cars. That's changing. As battery technology improves – simultaneously increasing energy storage and reducing cost – major **automakers are expected to begin** introducing a new generation of electric cars.

Electric cars produce no tailpipe emissions, reduce our dependency on oil, and are cheaper to operate. Of course, the process of producing the electricity moves the emissions further upstream to the utility company's smokestack – but even dirty electricity used in electric cars usually reduces our collective carbon footprint.

Speech patterns

He	is expected	to arrive tonight.	Очікується, що він приїде сьогодні ввечері.
	is known	to be a good driver.	Відомо, що він добрий водій.
	is sure	to pass the exam.	Він напевно складе екзамен.

Choose one of the options.

- An electric car is powered by ____.
a) an electric motor b) a diesel engine c) an internal combustion engine
- Batteries are recharged ____.
a) only at service stations b) from another car c) from household electric grid
- Recharging a battery now takes ____.
a) little time b) much time c) much work of many people

Text 9. How Bearings Work?

Active Vocabulary:

bearing	підшипник	storage	зберігання
to spin	обертатись	in excess of	понад
smoothly	плавно	revolution	оберт

to wear (wore, worn)	зношуватись	to melt	плавитись
friction	тертя	to explode	вибухати
to slide	ковзати	to handle	мати справу з чимось
to cause	викликати	log	колода
to reduce	зменшувати	to withstand	витримувати
flywheel	махове колесо	concave	угнутий

Have you ever wondered how things like inline skate wheels and electric motors spin so smoothly and quietly? The answer can be found in a neat little machine called a bearing.

The bearing makes many of the machines we use every day possible. Without bearings, we would be constantly replacing parts that wore out from friction.

The concept behind a bearing is very simple. Things roll better than they slide. The wheels on your car are like big bearings. If you had something like skis instead of wheels, your car would be a lot more difficult to push down the road. That is because when things slide, the friction between them causes a force that tends to slow them down. But if the two surfaces can roll over each other, the friction is greatly reduced.

Bearings reduce friction by providing smooth metal balls or rollers, and a smooth inner and outer metal surface for the balls to roll against. These balls or rollers “bear” the load, allowing the device to spin smoothly.

There are several types of bearings, and each has its own interesting uses, including magnetic bearings and giant roller bearings.

Magnetic Bearings. Some very high-speed devices, like advanced flywheel energy storage systems, use magnet bearings. These bearings allow the flywheel to float on a magnetic field created by the bearing. Some of the flywheels run at speeds in excess of 50,000 revolutions per minute (rpm). Normal bearings with rollers or balls would melt down or explode at these speeds. The magnetic bearing has no moving parts, so it can handle these incredible speeds.

Giant Roller Bearings. Probably the first use of a bearing was back when the Egyptians were building the pyramids. They put round logs under the heavy stones so that they could roll them to the building site. This method is still used

today when large, very heavy objects like the Cape Hatteras lighthouse need to be moved.

Earthquake-Proof Buildings. The new San Francisco International Airport uses many advanced building technologies to help it withstand earthquakes. One of these technologies involves giant ball bearings. The 267 columns that support the weight of the airport each ride on a 5-foot-diameter (1.5-meter) steel ball bearing. The ball rests in a concave base that is connected to the ground. In the event of an earthquake, the ground can move 20 inches (51 cm) in any direction. The columns that rest on the balls move somewhat less than this as they roll around in their bases, which helps isolate the building from the motion of the ground. When the earthquake is over, gravity pulls the columns back to the center of their bases.

Speech Patterns

There are	many species of insects.		Існує багато видів комах.
	many species of insects	in rain forests.	В тропіках багато видів комах.

I. Decide which of these statements are true and which are false.

1. Bearings help to prevent wearing of parts caused by friction. 2. The concept of bearing is rolling instead of jumping. 3. Magnetic bearings are used in fly-wheels. 4. Ancient Egyptians put big stones under logs when they constructed pyramids. 5. Giant ball bearings are used in San Francisco's Opera House to prevent the building from ruining in earthquakes.

II. Answer the following questions.

1. Why do things that slide begin to slow down? 2. At what speed do some fly-wheels run? 3. Why do magnetic bearing withstand such speeds? 4. How many columns support the building of San Francisco airport? 5. What force moves the columns back to their places after an earthquake?

Text 10. The Properties of Diamonds

Active Vocabulary:

rough	грубий	solid	тверде тіло
to process	обробляти	orthoclase	ортоклас (мінерал)
gem	коштовний камінь	file	напилок
to purchase	купувати	to link	з'єднувати
hard	твердий	lattice	решітка
to rank	займати місце	to share	ділитися

Diamonds are found as rough stones and must be processed to create a sparkling gem that is ready for purchase.

Diamonds are the crystallized form of carbon created under extreme heat and pressure. It's this same process that makes diamonds the hardest mineral we know of. A diamond ranks a 10 on the Mohs Hardness Scale. The Mohs Scale is used to determine the hardness of solids, especially minerals. It is named after the German mineralogist Friedrich Mohs. Here's the scale, from softest to hardest:

talc – easily scratched by the fingernail;

gypsum – just scratched by the fingernail;

calcite – scratches and is scratched by a copper coin;

fluorite – not scratched by a copper coin and does not scratch glass;

apatite – just scratches glass and is easily scratched by a knife;

orthoclase – easily scratches glass and is just scratched by a file;

quartz – (amethyst, citrine, tiger's-eye, aventurine) not scratched by a file;

topaz – scratched only by corundum and diamond;

corundum – (sapphires and rubies) scratched only by a diamond;

diamond – scratched only by another diamond.

Even though diamond is only one level higher on the scale than corundum, diamond can be anywhere from 10 to hundreds of times harder than this class of gems.

It is the molecular structure of diamonds that makes them so hard. Diamonds are made of carbon atoms linked together in a lattice structure. Each carbon atom shares electrons with four other carbon atoms, forming a tetrahedral

unit. This tetrahedral bonding of five carbon atoms forms an incredibly strong molecule. Graphite, another form of carbon, isn't as strong as diamond because the carbon atoms in graphite link together in rings, where each atom is only linked to one other atom.

Speech patterns

It is him who	invented this machine.	Саме він винайшов цю машину.
It is the helmet that	saved my life.	Саме шолом врятував мені життя.
It is tomorrow that	I make a report.	Саме завтра я роблю доповідь.

I. Decide which of these statements are true and which are false.

1. Diamonds are a form of sodium.
2. Diamond is the hardest mineral we know.
3. Friedrich Mohs was an Italian Physicist.
4. Quartz is harder than gypsum.
5. In diamonds, carbon atoms make a hexahedral unit.

II. Answer the following questions.

1. What physical phenomena influence the creation of diamonds?
2. What property is the criterion for ordering minerals in the Mohs Scale?
3. How many minerals are there in the Mohs Scale?
4. What makes diamond molecules so strong?

Text 11. Are Cell-phones Harmful?

Active Vocabulary:

cell phone	стілниковий телефон	frequency	частота
proximity	близькість	available	наявний
to cause	викликати	adverse	шкідливий
exposure	піддавання	to dissipate	розсіювати
tissue	тканина	vulnerable	уразливий
to alter	змінювати	ailment	нездужання
lead	свинець	fatigue	втома

All cell phones emit some amount of electromagnetic radiation. Given the close proximity of the phone to the head, **it is possible for the radiation to cause** some sort of harm to the 118 million cell-phone users in the United States. What is being debated in the scientific and political arenas is just how much radiation is considered unsafe, and if there are any potential long-term effects of cell-phone radiation exposure.

There are two types of electromagnetic radiation:

- Ionizing radiation. This type of radiation contains enough electromagnetic energy to strip atoms and molecules from the tissue and alter chemical reactions in the body. Gamma rays and X-rays are two forms of ionizing radiation. We know they cause damage, which is why we wear a lead vest when X-rays are taken of our bodies.
- Non-ionizing radiation. Non-ionizing radiation is typically safe. It causes some heating effect, but usually not enough to cause any type of long-term damage to tissue. Radio-frequency energy, visible light and microwave radiation are considered non-ionizing.

On its Web site, the FDA states that “the available scientific evidence does not demonstrate any adverse health effects associated with the use of mobile phones.” However, that doesn’t mean that the potential for harm doesn’t exist. Radiation can damage human tissue if it is exposed to high levels of RF radiation, according to the FCC. RF radiation has the ability to heat human tissue, much like the way microwave ovens heat food. Damage to tissue can be caused by exposure to RF radiation because the body is not equipped to dissipate excessive amounts of heat. The eyes are particularly vulnerable due to the lack of blood flow in that area.

The added concern with non-ionizing radiation, the type of radiation associated with cell phones, is that it could have long-term effects. Although it may not immediately cause damage to tissue, scientists are still unsure about whether prolonged exposure could create problems. This is an especially sensitive issue today, because more people are using cell phones than ever before. In 1994, there were 16 million cell-phone users in the United States alone. As of July 17, 2001, there were more than 118 million.

Here are a few illnesses and ailments that have potential links to cell-phone radiation: cancer, brain tumors, Alzheimer's, Parkinson's, fatigue, headaches.

If you are worried about the potential hazards of cell-phone radiation, here are a few ways to reduce your risk:

- Use a hands-free headset.
- Use a phone that places the antenna as far away from you as possible.
- Extend the antenna during use.
- Limit calls inside buildings.
- Limit use by children.

Speech Patterns

It is important	for him	to know these laws	Йому важливо знати ці закони.
It is necessary		to revise this rule .	Йому необхідно повторити це правило.
It is essential		to be in time for the exam.	Головне, щоб він не запізнився на екзамен.

I. Decide which of these statements are true and which are false.

1. Cell phones emit big amount of electromagnetic radiation. 2. Radio-frequency radiation has the ability to destroy human tissue. 3. Scientists still discuss the possible harm of cell phones effect. 4. Children may use cell phones without any restriction.

II. Answer the following questions.

1. How many cell phone users were there in the USA in 2001? 2. What illnesses may be caused by excessive use of cell phones? 3. What are the forms of ionizing radiation? 4. What organ is particularly vulnerable to the effect of heat?

Text 12. The Internet

Active Vocabulary:

global	всесвітній	feeds	забезпечення
interconnected	з'єднаний	to enable	робити можливим
network	мережа	instant	миттєвий
mail	пошта	message	повідомлення
to reshape	надавати нової форми	forum	засідання, конференція
Web site	вузол мережі	access	доступ
blog	щоденник у мережі	data	дані
software	програмне забезпечення	hardware	деталі комп'ютера

The Internet is a global system of interconnected computer networks linked by a broad range of electronic and optical networking technologies. The Internet carries a lot of information resources and services, especially the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support electronic mail.

Most traditional communications media, such as telephone and television services, are reshaped using the technologies of the Internet, giving rise to services such as Voice over Internet Protocol (VoIP) and IPTV. Newspaper publishing has been reshaped into Web sites, blogging, and web feeds. The Internet has enabled the creation of new forms of human communications through instant messaging, Internet forums, and social networking sites.

The Internet was created in the 1960s when the USA funded research projects of its military agencies decided to build forceful computer networks. Now the Internet has no centralized governance in **either** technological realization **or** policies for access and usage.

The terms Internet and World Wide Web are often used in everyday speech without much difference. However, the Internet and the World Wide Web are not one and the same. The Internet is a global data communications system. It is a hardware and software infrastructure that provides connectivity between

computers. In contrast, the Web is one of the services communicated via the Internet. It is a collection of interconnected documents and other resources, linked by hyperlinks and URLs.

Speech Patterns

either ... or	або ... або	You may choose to study either English or French. Ви можете вибрати, що вивчати – або англійську, або французьку.
neither ... nor	ні ... ні	Neither wind nor low temperature could stop the travellers. Ані вітер, ані низька температура не могли зупинити мандрівників.

I. Decide which of these statements are true and which are false.

1. The Internet is a global system of computer networks connected by a wide range of electronic and optical networking technologies. 2. TV programs have been transformed into Web sites, blogging, and web feeds. 3. The Internet was created as forceful computer networks in the 1960s in the USA for military purposes. 4. The terms Internet and World Wide Web are one and the same.

II. Answer the following questions.

1. What is the Internet? 2. What traditional communication media give rise to services such as Voice over Internet Protocol (VoIP) and IPTV? 3. What new forms of human communications were created in the Internet? 4. When was the Internet created?

Text 13. DNA Stretching Mystery is Solved

Active Vocabulary:

to unravel	розплутувати	bead	кулька, бульбашка
mystery	таємниця	to pull apart	розривати
to stretch	натягуватися	tweezing	розщеплення
breaking point	межа міцності	zipper	змійка

researcher	дослідник	transition	переміщення
to carry out	виконувати	tension	напруга
to attach	приєднувати	strand	ланцюжок молекул

Researchers in Europe have unravelled a mystery that has been puzzling scientists for years: what happens to a molecule of DNA when it is stretched to its breaking point.

Now **Erwin Peterman and his colleagues appear to have answered the question.** The researchers carried out a DNA-stretching experiment by attaching one end of each strand of a length of double-stranded DNA to a polystyrene bead. The beads could be pulled apart with a controlled and measurable force by lasers – a process called optical tweezing.

“Pulling the DNA from both ends is a bit like pulling on a jacket that has a double-ended zipper,” says Peterman. “What we found was that at the transition force the zipper starts to come apart at either end, but remains zipped in the middle. In other words, the DNA comes apart at either end, and under tension this single-stranded DNA is 70 percent longer than double-stranded DNA.”

It is a great work. It tells us about the way the structure of a single molecule is changing under tension, something we have not been able to see before. It looks as though they have solved the question, but as always it is very complicated. So this might not be the end of the story.

Speech Patterns

He	appeared	to have forgotten	Виявилось, що він забув мою адресу.
	seems	my address.	Здається, він забув мою адресу.

I. Decide which of these statements are true and which are false.

1. The researchers have been stretching strands of DNA for ages. 2. The scientists have divided strands of DNA into two different parts. 3. A single-stranded DNA is as long as a double-stranded one. 4. The structure of a single molecule can be changed under pressure.

II. Answer the following questions.

1. Who carried out a DNA-stretching experiment? 2. What was the DNA-stretching experiment? 3. What happened to a molecule of DNA when it was stretched to its breaking point? 4. Is this experiment useful? Why?

Text 14. Status of Genetically Modified Products

Active Vocabulary:

advance	рух уперед	raw material	сировина
tissue	тканина	objection	заперечення
to emerge	з'являтися	consumer	споживач
crop breeding	вирощування зерна	detrimental	нищівний
benefit	прибуток, перевага	affordable	доступний
enhanced crop yield	підвищений врожай зерна	current	сучасний
nutritious	поживний	to assist	сприяти, допомагати
efficiency	ефективність	to reduce	зменшувати

The development of modern biotechnology is really a ground-breaking advance because of its enormous power to transform living things. New techniques such as tissue culture, cell culture and embryo transfer, as well as various techniques of molecular manipulation, have emerged. Transgenic technologies such as genetically modified organisms (GMOs) are now being widely used in crop breeding and commercial production.

There are a number of actual or potential benefits from GM crops. These include:

- Enhanced crop yield and productivity;
- More nutritious and higher quality products;
- Less need for pesticides and herbicides;
- Greater efficiency in resource management;
- Role as a bioreactor to produce raw materials for pharmaceuticals and other industries.

For critics, there are four main objections:

- Consumers do not have enough information about GMOs.

- There may be potential detrimental effects from eating GM foods, while there have not yet been objective studies to identify such effects, if they exist.

- There may be unexpected environmental problems.

- Using of GM crops may go against certain religious beliefs and traditions.

So, rapid introduction of GM products into the market is really amazing. Many of the key technologies are in the hands of the private sector, and dominated by a few companies. The use of transgenic modification could have benefits for developing countries only, due to an affordable cost.

So, there are some more problems of using these products.

- Many developing countries can not afford the cost of biotechnology.

- The crop genetic improvements that are currently available are not suitable for developing countries.

- The question is who will assist developing countries, and what type of assistance is appropriate.

Population growth and food distribution will most likely remain the two most critical problems which mankind must face **for many years to come**. **Biotechnology offers the potential to reduce uncertainty** in the world's future food supply, in the face of a growing population and the limited carrying capacity of the Earth.

Speech Patterns

The years to come	Наступні роки
The words to remember	Слова, що треба запам'ятати
The things to do	Все, що треба зробити
You have to hurry to catch the train.	Ви повинні поквапитись, щоб встигнути на потяг.
To drive a car you must get a license.	Для того, щоб водити автомобіль, потрібно отримати права.

I. Decide which of these statements are true and which are false.

1. Transgenic technologies have been known since ancient times. 2. Genetically modified food is very useful for our body. 3. GMOs may cause plenty of environmental problems. 4. A developing country should have a fortune of money to afford the cost of biotechnology.

II. Answer the following questions.

1. What new techniques in modern biotechnology do you know? 2. What are pros and cons of GM crops? 3. What is the situation with GM products on the market? 4. How can you solve the problem of food supply for all the mankind?

Text 15. The Big Future of Nanotechnology

Active Vocabulary:

to deal	діяти	tool	інструмент
realm	сфера, галузь	fuel cell	паливний елемент
invisible	невидимий, непомітний	cell	1) клітина; 2) елемент; 3) секція; відсік; 4) сота
dwarf	гном	cancers	рак
by account	за оцінкою	without controversy	безсумнівно, безперечно
stain-proof	брудо- відштовхувальний	nanoparticle	наночастинка
fabric	тканина	device	прилад
scratch- resistant	стійкий до подразнень	to punch	пробивати отвір

Nanotechnology deals in the realm of the nearly invisible. The word comes from the Greek *nanos*, meaning “dwarf”. But by most accounts, the technology’s potential **is anything but** small. Scientists and engineers can now physically work with materials at the atomic level to create stain-proof fabrics, scratch-resistant paints and longer-lasting tennis balls. And researchers say new medical diagnostic tools and smaller, more efficient fuel cells and batteries based on nanoscience are on the way.

From computer chips invisible to the naked eye to microscopic machines that seek out and destroy cancers inside the human body, a lot of scientists argue that the potential of nanotechnology could be endless, but not without controversy.

“If we can get a nanoparticle into a cell, that might prove to be a new and useful drug delivery device,” says Ms. Kulinowski, Executive Director of the Center for Biological and Environmental Nanotechnology at Rice University.

“**On the other hand**, it might prove to be a toxin to the cell either by punching a hole in the cell membrane or otherwise disrupting the cell’s function”.

Whether the benefits of nanotechnology outweigh the risks will determine the future of what many researchers hope will be the world’s next industrial revolution.

Speech Patterns

He	is anything but	lazy.	Він далеко не ледащий.
It		pleasant.	Це зовсім не приємно.

On the one hand	З одного боку
On the other hand	З іншого боку

I. Decide which of these statements are true and which are false.

1. Nanoparticles are very big. 2. Nanotechnology has a great potential. 3. There is no need to use nanotechnology in medicine. 4. Nanotechnology is a step to the industrial revolution.

II. Answer the following questions.

1. What does the word **nanos** mean? 2. At what spheres of industry can you use nanotechnology? 3. Why is nanotechnology useful? 4. How do nanoparticles influence the cells?

Text 16. The Greenhouse Effect

Active Vocabulary:

greenhouse	теплиця	wave-length	довжина хвилі
to trap	поглинати, вбирати	to impact	мати вплив
to radiate	випромінювати	surface	поверхня
to spread	поширювати	to blanket	заглушати
global warming	глобальне потепління	to escape	виходити
transparent	прозорий, відкритий	space	космос, простір
to income	надходити	level	рівень
to convert	перетворювати	average	середній

The light from the sun comes in, and the greenhouse gases trap some of the heat radiated from the Earth. It's an energy balance. The more heat that comes in or the more heat that is trapped, the higher the energy balance is. The bigger the ice fields, the lower the Earth's energy balance.

A fundamental error is being spread that, because a global warming gas is transparent to a large amount of the incoming radiation from the sun, it cannot have much effect in terms of warming the planet. This is an error that ignores a real-world fact that incoming radiation is converted to longer wave-lengths as it impacts the atmosphere and the planetary surface. It is these longer wave-lengths that are then blanketed from escaping back into space. **If it were not for** this wave-length conversion (mechanism), the greenhouse gases (GHGs) **would** not be causing the rise in the level of the Earth's energy balance.

The energy balance for the Earth is about 33° Centigrade higher than it would otherwise be if there was no greenhouse effect. The average temperature on Earth is about 16° Centigrade. Thus, it would be more like -17° Centigrade, if there were no greenhouse gases in the atmosphere and, therefore, no greenhouse effect. The best estimate is for climate sensitivity to be 3°C. Values substantially higher than 4.5° C cannot be excluded.

Speech Patterns

If it were not for X ... we would ...	Якби не X, ми б ...
If it were not for hope, the heart would break.	Якби не надія, серце б розірвалось. (Надія вмирає останньою.)

I. Decide which of these statements are true and which are false.

1. Energy balance depends on heat level. 2. GHGs can not cause the rise in the level of the Earth's energy balance. 3. The average temperature on Earth is about 18° Celsius. 4. The best temperature for climate is 3° F.

II. Answer the following questions.

1. What is an energy balance? 2. What error information is spread all over the world? 3. What is the difference between a greenhouse effect and a global warming? 4. Is there any danger in the greenhouse effect?

Text 17. Essential “Green” Metals are being Thrown Away

Active Vocabulary:

cellphone	мобільний телефон	solar cell	сонячна батарея
recycling	вторинна переробка	crucial	вирішальний, критичний
UN (United Nations)	Організація об'єднаних націй	decade	десятиріччя
rare	рідкісний	rely (on)	залежати (від)
essential	важливий	hoarding	накопичення
gadget	пристрій; технічна новинка	to update	модернізувати

That old cellphone gathering dust in your cupboard could help the economy go green, if only you could **get round to** recycling it. A UN report published last week says that too many of the rare metals that are essential for green technologies are locked up in old gadgets we throw away or forget about.

The report, from the United Nations Environment Programme, examined the recycling rates of 60 metals. Globally, 34 of them have recycling rates below 1 per cent, while only 18 have rates above 50 per cent. Among the least-recycled metals are tellurium and gallium – which are used in solar cells – and lithium, a key component of the batteries in electric cars – which is also found in cell-phone batteries.

These metals are not yet in heavy use, but will be crucial over the next few decades. While **we are unlikely to** run out of them in the near future, recycling those already in use is less energy-intensive than mining, offering a way to make the green technologies that rely on the metals even greener.

“Most metals can be used over and over again,” says leading author Thomas Graedel of Yale University. But this doesn’t happen, partly because electronic devices are not designed with recycling in mind, and partly because people hang onto their old gadgets for years. This hoarding mentality may be influenced by privacy concerns associated with selling or recycling old electronics that store personal information.

Part of the solution is to collect more metals for recycling, but Graedel says we also need to update our recycling technology. At the moment, about 70 per cent of the metal sent for recycling gets lost during the process.

Speech Patterns

I will	get round to	it.	Я якось займусь цим.
I can never		see her.	Я ніяк не можу вибратись побачитись з нею.
Let us		facts.	Давайте перейдемо до фактів.

He is	likely	to come to the lesson.	Скоріш за все, він прийде на заняття.
	unlikely		Скоріш за все, він не прийде на заняття.

I. Decide which of these statements are true and which are false.

1. UN specialists discovered that some rare metals are thrown away together with food wastes. 2. Gallium is used in producing electric car batteries. 3. Cell-phone batteries contain Lithium. 4. During the recycling process, about 50 per cent of rare metals are lost.

II. Answer the following questions.

1. What technologies use most of rare metals? 2. What investigation concerning rare metals was made under the United Nations Environment Programme? 3. Why aren't rare metals recycled on a large scale?

Text 18. Robots

Active Vocabulary:

to coin	карбувати	invasion	вторгнення
drudgery	тяжка робота	longevity	довговічність
servitude	рабство	butler	дворецький
slave	раб	to roam	блукати
household	домашнє господарство	artificial intelligence	штучний інтелект
to require	вимагати	to triple	потроювати
precision	точність	lawn mover	газонокосарка

hazardous	небезпечний	bot ([ro]bot)	робот
defusing	знешкодження	chore	рутинна робота
enhancement	удосконалення	dexterity	спритність

Ever since the Czech writer Karel Chapek first coined the term “robot” in 1921, there has been an expectation that robots would some day deliver us from the drudgery of hard work. The word – from the Czech “robota”, for hard labour and servitude – described intelligent machines used as slaves in his play R.U.R. (Rossum’s Universal Robots).

Today, over one million household robots, and a further 1.1 million industrial robots, are operating worldwide. Robots are used to perform tasks that require great levels of precision or are simply repetitive and boring. Many also do jobs that are hazardous to people, such as exploring shipwrecks, helping out after disasters, studying other planets and defusing bombs or mines.

Robots are increasingly marching into our lives. In the future, robots will act as carers, medics, bionic enhancements, companions, entertainers, security guards, traffic police and even soldiers.

Domestic invasion.

Despite the longevity of the robot concept, robotic butlers that roam our homes and relieve us from housework still seemed far from reality until very recently. Instead, the vast majority of robots worked in factories performing the industrial functions of brainless machines.

However, a combination of increased computing power and advances made in the field of artificial intelligence, or AI, have now made software smart enough to make robots considerably more useful.

A recent report published by the United Nations revealed that sales of domestic robots had tripled in a single year. What’s more, they **were well on their way to** outstripping their industrial cousins.

While a large portion of the household robots were made up of robotic vacuum cleaners, mops, lawn mowers, pool cleaners, security bots and even robotic baby-rockers – the real boom was in entertainment robots.

Suddenly people were happy to pay for robots that had no specific functional value. Instead these bots, such as Sony’s Aibo robotic dog and its robo-pups served as robo-pets and companions, rather than slaves.

This is partly because many domestic chores still pose a real challenge for robots, in terms of dexterity and intelligence, even with seemingly simple chores such as ironing.

Speech patterns

He is well on his way to	mastering English.	Він далеко просунувся у вивченні англійської.
	recovery.	Він скоро одужає.

I. Decide which of these statements are true and which are false.

1. Karel Chapek was a Czech engineer. 2. Robots are used to perform boring repetitive work. 3. Robots can be found only at the enterprises. 4. Robots can easily do ironing.

II. Answer the following questions.

1. Where did the word “robot” first appear? 2. How many industrial robots are used today? 3. What household jobs can robots perform? 4. What robots are being used now to entertain their masters?

Text 19. Raphael Revealed by Raman Spectrography

Active Vocabulary:

provenance	походження	microscopy	мікроскопія
fleck	частинка, зразок	dispersive	такий, що розсіює
canvas	полотно	x-ray	рентгенівське проміння
to reveal	відкривати	to identify	ототожнювати
lead	свинець, олово	lead-tin	свинцово-олов'яний
massicot	окис свинцю	confirm	підтвердити
evidence	дані	conclusive	переконливий
to detect	виявляти	conclusions	висновки

A portrait of Madonna and the Child is one of Raphael's most famous Renaissance creations. Now it is in a gallery in Dresden, Germany. For many years people have wondered what the provenance of the work is.

Laser Raman spectral analysis of three flecks of paint taken from the Raphael's canvas reveals that the unknown artist used a lead-based yellow pigment called massicot (lead II oxide). This is typical of the Renaissance period and it was not used in the early 17th century. There's historical evidence that massicot was one of the pigments used by Raphael himself.

Raman analysis is a very good technique for detecting pigments. Using scanning electron microscopy (energy dispersive x-ray microanalysis), scientists identified another yellow – lead-tin yellow – in some of Raphael's paintings at the gallery. But it is possible that the artist was also using other yellows.

Later, as the painting has aged, a miniature sketch of the composition has become visible beneath the Madonna's scarf. "It's undoubtedly an original in some form," Alan Ward said. Further research could confirm it. But it's unlikely there will ever be conclusive proof that Raphael was the artist. "**The more** evidence one gets about it, **the more** firm the conclusions that can be drawn," he said.

Speech Patterns

The more ..., the more ...	Чим ..., тим ...
The faster you drive, the more petrol the car uses.	Чим швидше ви їдете, тим більше бензину витрачає автомобіль.

I. Decide which of these statements are true and which are false.

1. Raphael made only one work. It is "Madonna and the Child". 2. Using massicot was widely spread during the Renaissance period. 3. Scientists have never detected pigments yet. 4. Scientists could see nothing under the layers of paint on the portrait.

II. Answer the following questions.

1. Where is the portrait of Madonna and the Child now? 2. What is massicot? 3. What did the scientists do to detect pigments? 4. What was Raphael and what do you know about him?

Text 20. How Much Arsenic do You Drink?

Active Vocabulary:

vegan	вегетаріанський	tolerance	допустима кількість
concern	турбота	sea-weed	морські водорості
derived	виведений, вироблений	to exceed	перевищувати
to investigate	досліджувати	barley	ячмінь
to consume	споживати	millet	просо
to increase	зростати	reduction	зниження
conscious	турботливий	incidence	частка, відсоток
to include	включати	cancer	рак

Sex, drugs, rocks, gold, murder, war, mass poisonings, the deaths of Napoleon, Tchaikovsky, Mozart, and others are all linked by one element – arsenic! Arsenic has been around since the beginning of time and the word has become a metaphor for poison with associated shock value.

But nowadays Japanese rice-based drinks are becoming a central part of Western diets, such as vegan diets. **However**, the levels of toxic inorganic arsenic contained in these types of drinks could, **in fact**, be cause for concern.

High levels of arsenic have recently been found in rice-based food. Now, researchers have found that some drinks and syrups contain high levels of arsenic too. “The rice-derived products we investigated are consumed by millions of people in Japan on a regular basis, and are increasingly becoming an important part of the diet of health conscious consumers in Western countries,” says Signes-Pastor. **However**, regularly including these types of drinks in the diet could add as much as 23% of the daily tolerance level of arsenic.

Although in isolation this may not seem of massive concern, for people already taking high levels of arsenic from rice and sea-weed based products this could mean exceeding maximum daily tolerance levels.

Similar products derived from barley or millet contain much lower levels of arsenic and could be used as an alternative to the rice based drinks. This could be particularly important for people who already eat a lot of rice and sea-weed products.

The experiments showed that regulations for inorganic arsenic in foodstuffs and non-water drinks should be re-examined. Regulations for arsenic in foodstuffs and non-water drinks may lead to a reduction in the incidence of arsenic-attributable diseases, including various cancers.

Speech Patterns

However	Однак
Although	Хоча; незважаючи на те, що
In fact	Насправді, фактично
Furthermore	Крім того, до того ж
Unfortunately	Нажаль
Thus	Таким чином, отже

I. Decide which of these statements are true and which are false.

1. Toxic inorganic arsenic could cause cancer. 2. The rice-derived products consumed by millions of people on a regular basis are less important part of the diet of health conscious consumers. 3. The products derived from barley and millet contain much more arsenic than rice-based food. 4. Contemporary regulations for inorganic arsenic in foodstuffs and non-water drinks should be admitted.

II. Answer the following questions.

1. What do you know about vegan diets? 2. What food contains high levels of arsenic? 3. Why is arsenic dangerous? 4. What should scientists do in order to protect people against arsenic-attributable diseases?

APPENDIX V. UNITS CONVERSION TABLES

Length Conversion

UK/USA unit	Metric (SI) unit	Metric (SI) unit	UK/USA unit
Inch	2.54 centimeters	Centimeter	0.39 inches
Foot	30.48 centimeters	Meter	3.28 feet
Yard	0.91 meters	Meter	1.09 yards
Mile	1.61 kilometers	Kilometer	0.62 miles

Weight (or mass) conversion

UK /USA unit	Metric (SI) unit	Metric (SI) unit	UK/USA unit
Ounce (weight)	28.35 grams	Gram	0.035 ounces
Pound	0.45 kilograms	Kilogram	2.21 pounds
UK ton (2240 pounds)	1.02 metric tons	Metric ton (1000 kg)	0.98 UK tons
US ton (2000 pounds)	0.91 metric tons	Metric ton (1000 kg)	1.10 US tons

Area Conversion

UK /USA unit	Metric (SI) unit	Metric (SI) unit	UK /USA unit
Acre	0.40 hectare	Hectare	2.47 acres
Square inch	6.45 square centimeters	Square centimeter	0.16 square inches
Square foot	0.09 square meters	Square meter	10.763 square feet
Square yard	0.84 square meters	Square meter	1.20 square yards
Square mile	2.60 square kilometers	Square kilometer	0.39 square miles
Cubic foot	0.028 cubic meters	Cubic meter	35.23 cubic feet
Cubic yard	0.76 cubic meters	Cubic meter	1.35 cubic yards

Volume (or Capacity) Conversion

UK /USA unit	Metric (SI) unit	Metric (SI) unit	UK /USA unit
Teaspoon (UK)	5.92 milliliters	Millilitre	0.17 teaspoons (UK)
Teaspoon (US)	4.93 milliliters		0.20 teaspoons (US)
Tablespoon (UK)	17.76 milliliters	10 Millilitre	0.56 tablespoons (UK)
Tablespoon (US)	14.79 milliliters		0.68 tablespoons (US)
Fluid ounce (UK)	28.41 milliliters	100 millilitre	3.52 fluid ounces (UK)
Fluid ounce (US)	29.57 milliliters		3.38 fluid ounces (US)
Pint (UK)	0.57 liters	Litre	1.76 pints (UK)
Pint (US)	0.47 liters		2.11 pints (US)
Quart (UK)	1.14 liters		0.88 quarts (UK)
Quart (US)	0.95 liters		1.06 quarts (US)
Gallon (UK)	4.55 liters		0.22 gallon (UK)
Gallon (US)	3.79 liters		0.26 gallons (US)

APPENDIX VI. РОЗМОВНІ ФОРМУЛИ

I. Прочитайте зразки розмовних формул і складіть діалоги.

Positive requests (Ввічливі запитання)

№	Pattern	Example	Translation
1.	Will you + Infinitive	Will you open the window, please?	Відкрийте, будь ласка, вікно.
2.	Would (could) you + Infinitive	Would you translate the letter for me?	Чи не могли б Ви перекласти цей лист для мене?
3.	Would you mind + Gerund?	Would you mind going to the movies tonight?	Чи не хотів би ти сходити в кіно сьогодні ввечері?
4.	Would you be so kind as + Infinitive	Would you be so kind as to close the window?	Чи не будете Ви так люб'язні закрити вікно?

Positive replies (Позитивні відповіді)

№	Pattern	Translation
1.	OK (O.K. / Okay)	Добре, згода, все в порядку
2.	Good	Добре
3.	All right	Добре
4.	Sure	Звичайно
5.	(Yes,) certainly	Так, звичайно
6.	(Yes,) of course	Так, звичайно
7.	By all means	Безперечно
8.	Here you are	Візьміть, будь ласка (коли щось дають)
9.	No problem	Нема проблем
10.	With pleasure	Із задоволенням

Negative replies (Негативні відповіді)

№	Pattern	Translation
1.	Sorry, I can't	Пробачте, не можу
2.	I'm afraid I can't	Боюсь, що не можу

3.	Sorry, but ...	Пробачте, але ...
4.	I wish I could but ...	Прикро, але ...
5.	By no means	Ні в якому разі
6.	Never	Ніколи (Ні за що)

Examples

1. Will you help me to move the table? – Yes, of course. – Sorry, I can't.
2. Could you lend me 5 bucks till Saturday? – Sure. – Sorry, but I'm rather short of money at the moment.
3. Would you fill in this form, please? – All right. – I'm afraid I can't. I'm illiterate.
4. Would you be so kind as to show me the way to the railway station? – No problem. You should go straight on and in five minutes you'll be there. – I wish I could but I'm a foreigner myself.
5. Will you call him tomorrow? – OK. – Never. We fell out with him.

II. Прочитайте зразки розмовних формул і складіть діалоги.



We may **agree** or **disagree** when somebody states something. E.g.:

This is an interesting book. The weather is bad today.

Agreement (Згода)

№	Patterns	Translation
1.	Yes, of course	Так, звичайно
2.	You are (quite, absolutely) right	Ви абсолютно праві
3.	It goes without saying	Безперечно
4.	It's (absolutely) true	Абсолютно правильно
5.	I agree with you	Я з вами згоден
6.	I think so	Думаю, що так
7.	I believe so	Надіюся, що так
8.	Exactly	Звичайно, саме так
9.	Just so!	Цілком правильно
10.	Quite so!	Цілком правильно

Disagreement (Незгода)

№	Patterns	Translation
1.	Certainly not	Звичайно, ні
2.	I can't agree with you	Я не можу з Вами погодитись
3.	I don't think so	Я так не думаю
4.	Not exactly	Це не зовсім так
5.	I think you are not right	Я думаю, ви неправі
6.	It may not be true	Можливо, це не так
7.	It's not absolutely true	Це не зовсім так
8.	Nothing of the kind	Нічого подібного
9.	Nonsense	Маєчня, дурня
10.	Stuff and nonsense!	Маєчня, дурня
11.	Rats!	Маєчня, дурня



Our **emotional reaction** to some statements like these: *We are going to London in two days. There will be no English lesson next week.* – may be positive or negative.

Emotional replies (Емоційні відповіді)

Positive		Negative	
Good	Добре	I don't like the idea	Мені це не подобається
Nice	Чудово	I hate the idea	Мені це дуже не подобається
I like the idea	Мені подобається ідея	It's awful!	Жахливо!
Excellent!	Відмінно	It's terrible!	Жахливо!
Marvelous!	Пречудово	Can it be true?	Невже це правда?
Superb!	Неперевершено	It's a pity!	Як жаль!
Fantastic!	Фантастика	It's too bad!	Погано!
Incredible!	Неймовірно		
Unbelievable!	Неймовірно		
I can't believe it!	Не можу повірити	I can't believe it!	Не можу повірити

СПИСОК ЛІТЕРАТУРИ

1. Богацкий И. С. Бизнес-курс английского языка / И. С. Богацкий, Н. М. Дюканова. – К. : ООО «ИП Логос-М», 2007. – 352 с.
2. Качалова К. Н. Практическая грамматика английского языка с упражнениями и ключами / К. Н. Качалова, Е. Е. Израилевич. – М. : Юнвес Лист, 1998. – 718 с.
3. Медведева Л. М. Английская грамматика в пословицах, поговорках, идиомах и изречениях. / Л. М. Медведева – К. : Изд-во при Киев. ун-те, 1990. – 240 с.
4. Почепцов Г. Г. Язык и юмор (на английском языке) / Г. Г. Почепцов – К. : Вища школа, 1974. – 318 с.
5. Тичина Н. В. Англійська мова : навч.-метод. посіб. – Ч 1 / Н. В. Тичина, С. Т. Лоповок, О. Ю. Ільченко, Г. І. Колеснікова, Г. А. Маковецька – Х. : НТУ «ХПІ», 2005 – 108 с.
6. Хведченя Л. В. Практическая грамматика современного английского языка / Л. В. Хведченя, Р. В. Хорень, И. В. Крюковская. – М.: Выс. шк., 1997. – 300 с.
7. Шмелёв В.М. Времена в английском языке : учеб.-метод. пособие / В. М. Шмелёв – Казань, 2000. – 75 с.
8. Advanced Grammar in Use: a self-study reference and practice book for advanced learners of English; with answers / M. Hewings. – Cambridge: Cambridge University Press, 2006. – 340 p.
9. Beaumont Digby. The Heinemann ELT English Grammar: учеб. пособие / Digby Beaumont, Colin Granger. – К. : Методика, 2005. – 352 с.
10. Collins Cobuild English Language Dictionary / John Sinclair. – London : Collins ELD, 1987. – 1703 p.
11. English Grammar in Use: with answers / R. Murphy. – Cambridge : Cambridge University Press, 2009. – 181 p.
12. English Grammar in Use. Supplementary Exercises with answers / L. Hashemi, R. Murphy. – Cambridge: Cambridge University Press, 2009. – 140 p.
13. English Phrasal Verbs in Use: with answers. Intermediate / McCarthy. – Cambridge: Cambridge University Press, 2004. – 351 p.
14. Enterprise 1. Beginner Coursebook / Virginia Evans, Jenny Dooley. – Newbury: Express Publishing, 2006 – 166 p.
15. New Headway English Course. Elementary Student's Book / Matt Castle, Liz and John Soars. – Oxford: Oxford University Press, 1999. – 145 p.
16. New Headway English Course. Pre-Intermediate Workbook / J. Soars, L. Soars. – Oxford: Oxford University Press, 1999. – 119 p.
17. New Webster's Dictionary and Thesaurus of the English Language / Bernard S. Cayne. – Danbury: Lexicon Publications, Inc. – 1149 p.

ЗМІСТ

Вступ	3
Unit 1. Personal Identification	4
Lesson 1. Personal Presentation	4
1.1. Усна тема. Презентація студента НТУ ХПІ	4
1.2. Письмові завдання	5
1.3. Розмовна тема. Знайомство	6
1.4. Граматика. Іменники	7
1.5. Домашнє завдання	9
Lesson 2. My Family	10
2.1. Усна тема. Моя сім'я	10
2.2. Письмові завдання	12
2.3. Граматика. Артиклі	13
2.4. Домашнє завдання	14
Lesson 3. My Biography	15
3.1. Усна тема. Моя біографія	15
3.2. Читання	15
3.3. Письмові завдання	18
3.4. Граматика. Дієслова <i>to be, to have</i>	18
3.5. Домашнє завдання	21
Lesson 4. Outstanding Scientists	22
4.1. Усна тема. Біографія видатної людини	22
4.2. Письмові завдання	24
4.3. Граматика. Числівники. Прийменники	24
4.4. Домашнє завдання	28
Lesson 5. Students' Life	29
5.1. Усна тема. Моє студентське життя	29
5.2. Читання	31
5.3. Письмові завдання	32
5.4. Граматика. Займенники	32
5.5. Домашнє завдання	36
Lesson 6. Hobby	37
6.1. Усна тема. Моє хобі	37
6.2. Читання	38
6.3. Письмові завдання	39
6.4. Граматика. Багатофункціональні слова. Словотвір	40
6.5. Домашнє завдання	42
Unit 2. Social Contacts	43
Lesson 7. Asking the Way	43
7.1. Розмовна тема. Орієнтування в місті	43
7.2. Читання	44
7.3. Письмові завдання	45
7.4. Граматика. Система видових та часових форм англійського дієслова. Present Simple Tense. Типи речень	46
7.5. Домашнє завдання	48
Lesson 8. Travelling	49
8.1. Розмовна тема. Подорожі	49

8.2. Читання.....	50
8.3. Письмові завдання.....	52
8.4. Граматика. The Past Simple Tense. Regular and Irregular Verbs. The Future Simple Tense	52
8.5. Домашнє завдання.....	55
Lesson 9. At the Customs.....	55
9.1. Розмовна тема. На митниці.....	55
9.2. Читання.....	56
9.3. Письмові завдання.....	57
9.4. Граматика. The Present, Past, Future Continuous Tenses.....	58
9.5. Домашнє завдання.....	60
Lesson 10. Speaking Over the Telephone	61
10.1. Розмовна тема. Телефонна розмова.....	61
10.2. Читання.....	62
10.3. Письмові завдання.....	63
10.4. Граматика. The Present, Past, Future Perfect Tenses.....	63
10.5. Домашнє завдання.....	65
Lesson 11. Staying at a Hotel	66
11.1. Розмовна тема. Реєстрація в готелі.....	66
11.2. Читання.....	68
11.3. Письмові завдання.....	68
11.4. Граматика. The Present, Past, Future Perfect Continuous Tenses	69
11.5. Домашнє завдання.....	70
Lesson 12. Cross-cultural Communication	71
12.1. Розмовна тема. Традиції та звички іноземців.....	71
12.2. Читання.....	72
12.3. Письмові завдання.....	73
12.4. Граматика. Повторення часових форм дієслова	74
12.5. Домашнє завдання.....	74
Unit 3. Ukraine in European Educational Environment	76
Lesson 13. Ukraine	76
13.1. Розмовна тема. Україна.....	76
13.2. Письмове завдання.....	78
13.3. Читання.....	79
13.4. Граматика. Повторення часових форм дієслова: групи Indefinite, Continuous, Perfect, Perfect Continuous	80
13.5. Домашнє завдання.....	81
Lesson 14. Education in Ukraine.....	82
14.1. Розмовна тема. Освіта в Україні.....	82
14.2. Письмове завдання.....	83
14.3. Читання.....	83
14.4. Граматика. Пасивний стан дієслова груп Indefinite	84
14.5. Домашнє завдання.....	87
Lesson 15. Our Alma Mater	87
15.1. Розмовна тема. Наш університет.....	87
15.2. Письмове завдання.....	90
15.3. Читання.....	91
15.4. Граматика. Особливості вживання пасивного стану	92

15.6. Домашнє завдання	93
Lesson 16. My Department	94
16.1. Розмовна тема. Мій факультет	94
16.2. Письмове завдання	94
16.3. Читання	94
16.4. Граматика. Особливості перекладу пасивних конструкцій	95
16.5. Домашнє завдання	97
Lesson 17. My Major	98
17.1. Розмовна тема. Моя спеціалізація	98
17.2. Письмове завдання	98
17.3. Читання	99
17.4. Граматика. Ступені порівняння прикметників і прислівників	100
17.5. Домашнє завдання	102
Lesson 18. The City of Science and Education	103
18.1. Розмовна тема. Місто науки та освіти	103
18.2. Письмове завдання	104
18.3. Читання	105
18.4. Граматика. Порівняльні конструкції <i>as ... as, not so ... as, the ... the</i> та інші	106
18.5. Домашнє завдання	108
Unit 4. European and International Educational Environment	110
Lesson 19. Great Britain	110
19.1. Розмовна тема. Велика Британія	110
19.2. Письмові завдання	112
19.3. Читання	113
19.4. Граматика. Модальні дієслова <i>can, may</i> та їхні еквіваленти на позначення можливості, дозволу, здатності	114
19.5. Домашнє завдання	116
Lesson 20. London	117
20.1. Розмовна тема. Лондон	117
20.2. Письмові завдання	118
20.3. Читання	119
20.4. Граматика. Модальні дієслова <i>must, should, ought to, need</i> та їхні еквіваленти на позначення необхідності, обов'язку, поради тощо	120
20.5. Домашнє завдання	122
Lesson 21. Education in Great Britain	123
21.1. Розмовна тема. Освіта у Великобританії	123
21.2. Письмові завдання	124
21.3. Читання	125
21.4. Граматика. Модальні дієслова з Perfect Infinitive	126
21.5. Домашнє завдання	127
Lesson 22. The United States of America	129
22.1. Розмовна тема. Сполучені Штати Америки	129
22.2. Письмові завдання	131
22.3. Читання	131
22.4. Граматика. Повторення модальних дієслів з перфектним інфінітивом	132
22.5. Домашнє завдання	133
Lesson 23. Washington	134
23.1. Розмовна тема. Вашингтон	134

23.2. Письмові завдання.....	135
23.3. Читання.....	136
23.4. Граматика. Функції дієслів <i>to be, to have</i>	137
23.5. Домашнє завдання.....	139
Lesson 24. Education in the USA.....	140
24.1. Розмовна тема. Освіта у Сполучених Штатах Америки.....	140
24.2. Письмові завдання.....	142
24.3. Читання.....	142
24.4. Граматика. Повторення Passive Voice, Modal Verbs.....	144
24.5. Домашнє завдання.....	144
Unit 5. Environmental Protection.....	147
Lesson 25. Ecology.....	147
25.1. Розмовна тема. Екологія.....	147
25.2. Письмові завдання.....	148
25.3. Читання.....	148
25.4. Граматика. Складне речення. Типи підрядних речень. Безсполучникові підрядні речення.....	149
25.5. Домашнє завдання.....	151
Lesson 26. Water Pollution.....	152
26.1. Усна тема. Забруднення води.....	152
26.2. Письмові завдання.....	153
26.3. Читання.....	154
26.4. Граматика. Узгодження часів.....	154
26.5. Домашнє завдання.....	156
Lesson 27. Air Pollution.....	157
27.1. Усна тема. Забруднення повітря.....	157
27.2. Письмові завдання.....	158
27.3. Читання.....	159
27.4. Граматика. Пряма та непряма мова.....	159
27.5. Домашнє завдання.....	161
Lesson 28. Land Pollution.....	161
28.1. Усна тема. Забруднення землі.....	161
28.2. Письмові завдання.....	162
28.3. Читання.....	162
28.4. Граматика. Питання в непрямій мові.....	163
28.5. Домашнє завдання.....	165
Lesson 29. Ecological Dangers.....	165
29.1. Усна тема. Екологічні загрози.....	165
29.2. Письмові завдання.....	167
29.3. Читання.....	167
29.4. Граматика. Повторення узгодження часів та непрямої мови.....	168
29.5. Домашнє завдання.....	169
Lesson 30. Other Ecological Problems.....	170
30.1. Усна тема. Інші екологічні проблеми.....	170
30.2. Письмові завдання.....	171
30.3. Читання.....	172
30.4. Граматика. Повторення підрядних речень.....	172
30.5. Домашнє завдання.....	173

Appendix I. Supplementary Reading to Lessons.....	175
To Lesson 1. Departments and Specialities of NTU “KhPI”	175
To Lesson 2.....	179
To Lesson 4.....	180
To Lesson 6.....	186
To Lesson 8.....	186
To Lesson 11.....	188
To Lesson 16.....	188
To Lesson 21.....	191
To Lesson 28.....	193
To Lesson 30.....	195
Appendix II. Irregular verbs	197
Appendix III. Tables of Tenses	200
Appendix IV. Supplementary Reading	202
Text 1. What Are Fossil Fuels?	202
Text 2. Where do Rainbows Come from?	202
Text 3. Where Does Metal Come From?	203
Text 4. How Did the Computer Mouse Come into Being?	204
Text 5. What Are the Negative Social Effects of Computer Addiction?	205
Text 6. What Is Lava?	205
Text 7. What do we know about the surface of Mars?.....	206
Text 8. What Is An Electric Car?	207
Text 9. How Bearings Work?	208
Text 10. The Properties of Diamonds	211
Text 11. Are Cell-phones Harmful?.....	212
Text 12. The Internet	215
Text 13. DNA Stretching Mystery is Solved.....	216
Text 14. Status of Genetically Modified Products.....	218
Text 15. The Big Future of Nanotechnology.....	220
Text 16. The Greenhouse Effect	221
Text 17. Essential “Green” Metals are being Thrown Away	223
Text 18. Robots.....	224
Text 19. Raphael Revealed by Raman Spectrography.....	226
Text 20. How Much Arsenic do You Drink?	228
Appendix V. Units Conversion Tables	230
Appendix VI. Розмовні формули	231
Список літератури.....	234

Навчальне видання

ЛАЗАРЄВА Ольга Ярославна
КОВТУН Олена Олександрівна
МЕЛЬНИК Світлана Семенівна

ENGLISH FOR TECHNICAL STUDENTS

Англійська мова для студентів технічних ВНЗ

Навчальний посібник з англійської мови
для студентів 1 курсу всіх спеціальностей

Відповідальний за випуск *Л. В. Скрипниченко*
Редактор *Л. А. Пустовойтова*

Підп. до друку 16.08.2012 р. Формат $60 \times 84 \frac{1}{16}$. Папір офісний.
Riso-друк. Гарнітура Таймс. Ум. друк. арк. 13,9. Наклад 500 пр., 1-й з-д 1–200.
Зам. № 61. Ціна договірна.

Видавець і виготовлювач
ТОВ «Видавництво «Підручник НТУ «ХП»,
вул. Фрунзе, 21, м. Харків-2, 61002

Свідоцтво суб'єкта видавничої справи ДК № 3656 від 24.12.2009 р.