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**ЭКОЛОГИЯ  
СЕГОДНЯ**

Учебное пособие по английскому языку  
для студентов неязыковых вузов

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## **ЭКОЛОГИЯ СЕГОДНЯ**

Учебное пособие по английскому языку

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**Grammar:**

1. Имя существительное (The Noun). Число (Number). Падеж (Case). Имя существительное в функции определения.
2. Артикли (Articles).

**Text:****ON THE MOVE**

As winter approaches, billions of birds worldwide are flying mostly south from their northern homes for where food is plentiful and living conditions are hospitable. Like clockwork, these birds depart for their winter homes as a means of survival, despite the fact that their journeys can be quite *formidable*.

*Migrating* birds depend on the seasonal availability of resources in order to survive and maintain their health. In Russia, for example, the Russian Arctic offers swans an abundance of food in the summer, which can be gathered with less competition from other *species*, and safe nesting places where there is relative freedom from human disturbance.

After summer, as the food supply disappears and the ice begins *to permeate* the region, the birds migrate to milder climates such as Great Britain where they can find *ample* resources and shelter to sustain them.

Migration is one of the most widely studied areas of bird biology, and yet it is very poorly understood. Even though people have observed and noted migrations for centuries, there is *sparse* information and few theories about how birds *accomplish* such impressive flights each year. However, what is becoming clearer is that these migratory birds are *harbingers* of the health of our planet, providing clues to changes in the Earth's systems that affect the human condition and overall public health.

Many animals migrate, including whales, fish, butterflies, turtles and numerous species of antelope (i.e. wildebeest, caribou). Moreover, while many of these animals travel incredible distances, like the gray whale, which travels 10 – 14,000 miles round trip, no animal travels as far and through as much *adversity* as many bird species.

In fact, the Arctic Tern accomplishes the extraordinary task of flying from the North Pole to the South Pole – and back again – each year in a route covering about 22,000 miles! And while migration patterns in North America are generally north and south, in Europe, a number of migrations occur more east west.

So why do these species go through so much effort and *peril*. For these birds, it is all about survival, and their survival depends on the state and conditions of the natural world. Just as they have *habitats* on which they depend in one region, they equally depend on habitat in another place that range anywhere from 300 miles to 10,000 miles apart. They begin to migrate when their "biological clock", which is determined by the length of the day, tells them it is time to go. But other environmental factors such as the weather, their state of nutritional health and their interaction with other birds enable them *to pinpoint* exactly when their migration should begin.

Although birds can ride out extreme weather conditions and threats from natural *predators*, their greatest threat comes from loss of habitat, mainly due to human development and related activities. Forests and *wetlands* are vital to birds' survival because they provide food and water, shelter, protection from predators and places for rest and food during their migrations. Over the past 100 years, as human populations *surged* and industrial and technological progress was made, much of the forests and wetlands have been *depleted* and thus seriously changed the landscape and resources for these migrating birds. As a result, bird numbers have been seriously affected in many parts of the world.

Of the 9,600 known bird species, nearly 1,200 are threatened with *extinction*. About 99 % of the globally threatened birds are at risk from human activities such as agriculture, *logging*, and other major changes in the world's ecosystems. Hunting and *trapping* are also contributors, but pale in comparison to changes brought upon the ecosystems. These ecosystems provide vital services (such as maintaining global climate patterns, *mediating* the carbon cycle, safeguarding *watersheds* and stabilizing soils), valued at \$33 trillion per year. The potential loss of large numbers of species facing extinction is a powerful indication that the quality of these ecosystem services is *deteriorating*.

In North America, for example, bird observers have seen a steady decline in the numbers of many of the birds, which migrate to Central and South America. And though *deforestation* or problems with their summer breeding habitats were suspected to be the problems, they also realized that forests were not being lost as fast as the rate of the disappearance of the birds.

A recent study on regional forest fragmentation *pinned* much of the blame on urban *sprawl* and development, which are significantly altering and removing valuable ecosystems on which birds depend. This is not only happening in the United States, but it is happening worldwide. In the US alone, this affects 80 percent of the total bird population since about 520 of the US' 650 bird species migrate.

Wetlands are areas that link water and land. They include a wide range of areas from marshes and *swamps* to areas between dry land and rivers, streams, lakes and coastlines. Though they are not necessarily wet year-round, they harbor very rich nutrients for plants and animals, including insects, which are a primary food for birds. Thus, wetlands provide vital habitat for many species of plants and animals, including about half of all known bird species.

But wetlands also provide needed protection of property and water quality vital for humans. They act as a sponge to absorb floodwaters from nearby streams and rivers or ocean tides, for example, and they filter out impurities and pollutants that could flow into main water sources. Wetlands also serve to clean the air of carbon dioxide, which is absorbed by plants. Carbon dioxide is the substance, which enables photosynthesis in plants, the process by which solar energy is converted into food and *fiber* necessary for plant growth and health. As wetlands become fragmented and disappear, the domino effect extends directly to both humans and wildlife and their respective qualities of life.

Birds live on more than 20 percent of the Earth's surface, but about three-fourths of the threatened or endangered birds inhabit less than five percent of the land. This enables most bird species to be easily tracked, particularly threatened species, and also allows scientists, conservationists and property owners to focus their attention where extinction risks are the highest. Generally, these tracking and planning activities can simultaneously focus on threats to the environment since they are usually at the heart of risks to bird populations.

Bird watching is one of the world's most treasured *pastimes*. According to the US Fish & Wildlife Service, 76 million Americans are actively engaged in the sport of bird watching – or birding, making it the second largest leisure time activity just behind gardening. It is estimated that Americans spend over \$12 billion each year on birdseed and related equipment, making birding not only a major hobby but also big business.

Yet, birding is very important for studying birds and migrations, particularly small migratory birds. There are literally tens of thousands of reporting groups, Internet sites and other forums used by birders to report their findings. Other methods of reporting bird statistics, particularly those of threatened or endangered species, include radar and bird banding (ringing). While radar may be useful in determining mass movements of birds, it is limited in its range and value of information detail collected.

Traditionally popular among scientists and conservationists, bird banding involves the attachment of a band, or ring, on a bird – usually placed harmlessly and painlessly around the bird's leg – which carries special identification (serial number) and tracking information unique to the bird. When they are located, the serial number assigned to the bird is sent to the US Fish & Wildlife Service Bird Branding Laboratory where the information is recorded.

Each year, over a half-million birds are banded by scientists in North America. This is significant because bird banding provides ornithologists with valuable information about the birds, their migration patterns health and other information, which help, determine what they need in order to survive. With this information, ornithologists can best work with conservationists and other scientists and policy makers in creating sound conservation policy.

But a new form of tracking birds began to emerge in the 1980s involving satellites and tiny transmitters attached to the birds themselves. Information about each bird's location and activity is beamed to a satellite, which is then stored by the spacecraft's data collection system. This information is then sent to ground stations on Earth and ultimately is sent to NASA's Goddard Space Flight Center in Maryland for analysis. The information collected includes such vital information as the location of the bird, body and *ambient* temperature, flight speed, etc.


Armed with the comprehensive information now being collected about the world's migratory birds, scientists hope to discover clues and develop solutions relating to Earth's environmental health. Yet, this information will be effective in helping individuals understand the true inter-connectivity of all life, which will lead to sound policy for sustainable development.

### Words and Expressions:


- *formidable* – грозный; жуткий, пугающий, чудовищный
- *to migrate* – мигрировать (о животных), совершать перелет (о птицах)

- *species* – род, порода, вид, разновидность
- *to permeate* – распространяться
- *ample* – богатый, изобильный, обильный
- *sparse* – разбросанный, редкий
- *to accomplish* – совершать, достигать, доводить до конца, завершать
- *harbinger* – вестник, предвестник, предшественник
- *adversity* – бедствия, неприятности, несчастья
- *peril* – опасность, риск, угроза
- *habitat* – родина, место распространения, ареал, естественная среда
- *to pinpoint* – указать точно, заострить внимание (на чем-либо), акцентировать
- *predator* – хищник
- *wetland* – заболоченная территория
- *to surge* – подниматься, вздыматься
- *to deplete* – уменьшать, истощать, исчерпывать
- *extinction* – вымирание, исчезновение, отмирание
- *logging* – заготовка и транспортировка леса
- *trapping* – ловля с помощью капкана, силка, ловушки
- *to mediate* – служить связующим звеном, занимать промежуточное положение
- *watershed* – бассейн реки, водораздел
- *to deteriorate* – ухудшать, портить, повреждать
- *deforestation* – вырубка леса
- *to pin* – прикалывать, прикреплять, скреплять, скалывать
- *sprawl* – разрастание города
- *swamp* – болото, топь
- *fiber* – волокно, волосок, фибра, нить, древесное волокно
- *pastime* – приятное времяпрепровождение, развлечение, забава, увеселение
- *ambient* – внешняя среда, окружающее пространство

### Exercises on the Text:

 Answer the following questions.

1. Why are birds flying south from their northern homes as winter approaches?
2. What do migrating birds depend on?
3. Can you name any migrating animals?
4. How do you understand the term "the biological clock"?
5. Why are forests and wetlands vital to birds' survival?

 Translate the following sentences from Russian into English.


1. Перелетные птицы зависят от сезонной доступности ресурсов для выживания и поддержки своего здоровья.
2. По окончании лета, когда исчезают запасы еды и земля начинает покрываться льдом, птицы мигрируют в более мягкие климатические условия.
3. Миграция – это одна из наиболее изучаемых областей в биологии птиц, но, несмотря на это, многое остается невыясненным.
4. Животные также мигрируют на огромные расстояния, например, серый кит проплывает 10 – 14 тысяч миль, но ни одно животное не мигрирует так далеко, как птицы.
5. Птицы начинают миграцию, ориентируясь на свои "биологические часы", работа которых зависит от длины светового дня.
6. Обладая информацией о перелетных птицах всего мира, ученые надеются улучшить экологическую обстановку на нашей планете.

7. Птицы живут более чем на 20 % поверхности планеты, но около трех четвертей вымирающих видов птиц населяют менее 5 % территории.

8. Кольцевание птиц предоставляет орнитологам важную информацию о самих птицах, пути миграции и состоянии здоровья, помогающую решить, что нужно птицам для выживания.

9. Заболоченная местность работает, как губка, очищая основные источники воды от различных загрязнений.

10. За прошедшие 100 лет в связи с ростом населения и промышленным прогрессом резко сократилась общая площадь лесов, что повлияло на процесс миграции птиц.

 Discuss the problems raised in the text above with your partner, using the active vocabulary.

## Grammar Reference:

### Имя существительное (The Noun)

Существительные – это слова, называющие предметы, живые существа, вещества, события, явления, т.е. все слова, отвечающие на вопрос *кто это?* или *что это?* (*who is this? what is this?*). Например: *a manager* – менеджер, *a storm* – шторм, *rain* – дождь, *rain* – боль, *time* – время и т.д.

Имя существительное может быть в предложении:

а) подлежащим: *The offer is on the table.* – Телеграмма на столе.

б) именной частью сказуемого: *I am a student.* – Я студент.

в) дополнением: *I see an office.* – Я вижу офис.

г) определением: *My secretary's things.* – Вещи моего секретаря.

*An iron gate.* – Железные ворота.

д) обстоятельством места, времени, образа действия и т.д.:

*I work at the institute.* – Я работаю в институте.

*He goes to the institute in the morning.* – Он ходит в институт утром.

*I have read this letter with pleasure.* – Я прочел это письмо с удовольствием.

### Число (Number)

Существительные в английском языке, как и в русском, имеют два числа: единственное и множественное.

1. Для образования множественного числа к существительному в единственном числе прибавляется окончание *-s*. Например: *a book* – *books*, *an offer* – *offers*, *a manager* – *managers*.

2. Если существительное оканчивается на буквы и буквосочетания *s*, *ss*, *ch*, *sh*, *x*, то во множественном числе прибавляется окончание *-es*: *a box* – *boxes*, *a match* – *matches*, *a telex* – *telexes*.

*Примечание.* Запомните следующие особенности образования существительных множественного числа:

1. Существительные, оканчивающиеся в единственном числе на *-o*, обычно образуют множественное число прибавлением окончания *-es*, например: *potato* – *potatoes*, *hero* – *heroes*.

Сравните: *metro* – *metros*, *photo* – *photos* и т.д.

2. Существительные, оканчивающиеся на *-f* и *-fe*, при прибавлении окончания *-es* меняют *f* на *v*: *a wife* – *wives*, *a shelf* – *shelves*.

3. Существительные, оканчивающиеся в единственном числе на букву *у* с предшествующим согласным звуком, образуют множественное число прибавлением окончания *-es*, причем *у* меняют на *i*. Например: *a company* – *companies*, *a city* – *cities*, *a duty* – *duties*. Но: *a day* – *days*, *a boy* – *boys*.

Исключения: *a man* – *men*, *a woman* – *women*, *a child* – *children*, *a tooth* – *teeth*, *a foot* – *feet*, *an ox* – *oxen*, *a mouse* – *mice*, *a goose* – *geese*, *a phenomenon* – *phenomena*.

### Падеж (Case)

В современном английском языке существительное имеет два падежа – общий падеж (*the Common Case*) и притяжательный падеж (*the Possessive Case*).

Существительные в общем падеже не имеют падежных окончаний, а отношение существительного к другим членам предложения может выражаться порядком слов или предлогами, например:

*The secretary asks the director.* – Секретарь спрашивает директора.

*The director asks the secretary.* – Директор спрашивает секретаря.

Существительное в притяжательном падеже служит определением к другому существительному, выражает принадлежность и отвечает на вопрос *whose*.

Притяжательный падеж существительных в единственном числе образуется путем прибавления апострофа и буквы *s* (-'s) к форме существительного в общем падеже:

*my brother's name*

*my director's things*

Притяжательный падеж существительных во множественном числе обозначается только одним апострофом, который ставится после окончания *-s*:

*the engineers' room, the managers' letters.*

*Примечание.* Если существительное во множественном числе не имеет окончания *-s*, то притяжательный падеж образуется, как у существительных в единственном числе (*the women's children*).

### *Имя существительное в функции определения*

В английском языке не только существительные в притяжательном падеже могут выполнять в предложении функцию определения. Существительные в общем падеже также могут быть определением второго и переводятся на русский язык либо прилагательным, либо существительным в косвенных падежах (обычно в родительном падеже).

Например: *Moscow University* – Московский университет  
*evening school* – вечерняя школа

### **Артикли (Articles)**

Артикль – это служебная часть речи, которая определяет существительное. В тех случаях, когда перед существительным имеются другие определения, артикль оказывается уже не непосредственно перед существительным, а перед этим определением, например: *a man* – человек, *a young man* – молодой человек.

В английском языке имеется два артикля: неопределенный и определенный.

#### **Неопределенный артикль (The Indefinite Article)**

У неопределенного артикля две формы: *a* и *an*.

Форма *a* ставится перед словами, начинающимися с согласного звука, а *an* – перед словами, начинающимися с гласного звука:

*a bus*;

*an offer*.

Неопределенный артикль употребляется перед исчисляемыми существительными в единственном числе, когда речь идет о предмете или лице, упоминаемом впервые или неизвестном слушающему.

*Today I have seen a beautiful car.* – Сегодня я видел красивый автомобиль.

#### **Определенный артикль (The Definite Article)**

Определенный артикль имеет одну форму – *the*.

Определенный артикль употребляется перед существительным как в единственном, так и во множественном числе, если речь идет об уже известных предметах или лицах.

– *Where is the cable?* – Где телеграмма?

– *The cable is on the table.* – Телеграмма на столе. (Та телеграмма, о которой знают говорящие).

*Примечание.* В некоторых случаях всегда употребляется определенный артикль, например:



1) перед прилагательным в превосходной степени, когда прилагательное является определением к последующему существительному (*the best season* – лучшее время года, *the most interesting film* – самый интересный фильм);

2) перед порядковым числительным, когда это числительное является определением к последующему существительному (*the second lesson* – второе занятие, *the fifth page* – пятая страница);

3) перед предметами или понятиями, единственными в своем роде (*the sun* – солнце, *the moon* – луна, *the earth* – земля и т.д.);

4) перед названиями рек (*the Thames* – Темза, *the Volga* – Волга), морей (*the Black Sea* – Черное море), океанов (*the Indian Ocean* – Индийский океан);

5) перед названием некоторых стран и местностей (*the United States* – Соединенные Штаты, *the United Kingdom of Great Britain and Northern Ireland*, *the Crimea* – Крым, *the Caucasus* – Кавказ);

6) перед названиями горных цепей (*the Alps* – Альпы, *the Ural Mountains* – Уральские горы).

### **Grammar Exercises:**

#### ***Put the nouns in brackets in the plural form.***

As we sailed up the River Hudson towards the (city) of New York and Brooklyn, we experienced a sensation which is, I think, common to all (traveler) who come to the end of their voyage. Many (man) have tried to analyze this emotion, and I have read many such (analysis) but none have ever really satisfied me.

The (building) stood out against the skyline like enormous (box) of (match) stuck on end. The (house) and (church) were completely dwarfed by them. As we went up the river, we examined it all with our (glass). It seemed as if each building brushed the (sky).

There were a lot of (ship) in the river mouth. They were bringing (cargo) from all over the world – cargoes of meat and (potato) and (mango), of (machine) and (toy) and many other (thing). They carried (silk) from China and (tea) from India as well. They flew the (colour) of almost every seafaring nation on the globe.

(Army) of (customs-official), (port-authority) and others, came on board. The (passenger) were paraded before the port doctor. He was a huge fat man. The first class passengers filed before him as solemn as (ox). Most of the third class passengers stood waiting their turn as quiet as (mouse), though some were as noisy as a flock of (goose). They carried their (saving) in knotted (handkerchief) and the rest of their (belonging) in (bundle). Many seemed to have completely lost their (bearing) in their new and strange (surrounding) and seemed as bewildered as (sheep), while their (wife) and (child) stared around like startled (deer).

There seemed to be varying (criterion) for the treatment of passengers by the immigration authorities, according to the class in which they traveled. Those of the third were examined for (louse) and other (vermin), regardless of their (feeling). And if a single louse was found, the individual was taken to Ellis Island, where there were plenty of delousing (apparatus). Our American (brethren) do nothing by (half), and do not care (six-pence) for anybody's (opinion) of their (method).

We landed with every manifestation of high (spirit) and the customs people examined our (effect). The (hanger-on) stared at us as though we were curious (phenomenon).

On the day we landed, the news got around that an armistice had been signed, and New York was beside itself with joy. Nobody then guessed how many world (crisis) would follow in the (year) to come; and what small consolation there would be for the (man) who had performed their (duty) like (hero) in "a war to and war".

#### ***Put the nouns in brackets in the Possessive Case.***

1. He did not want to impose his sorrow on his (friends) pleasure.
2. Wormwood Shrubs is a first (offenders) prison.
3. The estate where they were to spend the weekend belonged to a cousin of (Andrew).
4. Otto turned up at (Arthur) about a week later.
5. It was (Robin) turn now to be annoyed with what he felt to be the (boy) stubbornness.
6. Annie turned great-frightened (doll) eyes upon him.
7. In stressing her (mother-in-law) pleasant origin, she found it easier to disregard her.
8. A (professor) life is little better than a high-grade (clerk) nowadays.

9. She did not ask him anything because she knew a (sister) place.
10. The street had not changed. There was the (baker) at the corner, and there was the (butcher) with the gilt ox head on the signboard.
11. I am sure you know far more than they do about their (country) history.
12. The (sun) rays refracted in an intense glare from the chalk-white cliffs.
13. He looked expectantly at Maria, but she dilated her (camel) nostrils slightly and said: "I do not give blank cheques".
14. It was a habit of (John) not to tell you things and then assume that you knew all about them.

📖 Fill in the blanks with *a*, *an* or *the* where necessary.

1. He gave me ... message for you.
2. ... (R)oad past ... church was quiet.
3. "Is it true?" – "Oh, no. It's pure ... imagination".
4. Only ... poet or ... saint can water ... asphalt pavement in ... confident anticipation that ... lilies will reward his labour.
5. I was quick to weave ... fantasies with my mother, to build ... houses and furnish them, and give her ... motor cars and ... furs.
6. ... (A)ll available chairs were occupied, and at least a hundred people were standing.
7. He closed his eyes. ... (P)eculiar weariness came over him.
8. Just about everybody in the town is chasing ... dollar so hard that they only have time to breathe on Sundays.
9. I call it ... very mediocre play.
10. I liked ... pleasure and ... good things.
11. My mother died in May. From ... cemetery, my father and I returned to ... empty house.
12. He wanted to hide ... embarrassment he felt at making this speech.
13. With ... frankness which brought ... colour to her cheeks he said, "I suppose you mean me".
14. She looked in her handbag for ... envelope.
15. He thinks it's pure ... nerves and he's given me ... pills. You'd better hope that ... pills do some good.
16. Peter was alone at home, enjoying ... solitude and ... freedom of ... empty house.
17. You've never bought ... car yet, have you?
18. My mother liked to wait until it was quite dark before we lit ... gas and drew ... blinds.
19. I don't know how to talk to ... children.
20. We sat round ... table in ... kitchen. There was ... cold meat, ... cheese, ... bowl of ... tinned pears, ... jam-tarts, and ... jug of ... cream.
21. She put down ... cup and got up.
22. There was not ... cloud in ... sky.
23. ... (B)ig table was covered with ... texts and ... notebooks.
24. She answered ... soft tap at ... door and ... maid came in with ... tray which she set on ... table.

## LESSON 2

### Grammar:

1. Имя прилагательное (The Adjective).
2. Степени сравнения (Degrees of Comparison).

### Text:

## HUMAN POPULATION: CHALLENGING THE BALANCE

Jacques Cousteau, the famous *explorer* who opened the world's eyes to the wonder and *splendor* of our undersea world said it best: "Population growth is the primary source of environmental damage". Of course, this is not a comparison to natural catastrophes that eventually result in a natural change of life and ecosystems, but rather it is a statement about the challenges human population *poses* for nature.

Yet, the human population challenge has really occurred only recently. Let us look at why.

More people have been added to the Earth's population in the 20th century than at any other time in human history. In 1900, just 100 years ago, the world's human population numbered two billion people. Today, the total human population has grown three times as large and is now over six billion people.

The rate of population growth has gone up rapidly in the past two centuries, from 0,0015 % before 1800 to 1,2 % today. At this rate, the Earth adds one billion more people every 14 years. If this continues, the world's population will *double* in the next century, nearing 12 billion in the year 2100. Our planet truly is becoming a more crowded place to live.

What happened over the past 200 years to create such a rapid surge in the number of people living in the world? There are a few simple ideas that lie behind these *trends*. Before 1900, many children who were born did not reach *adulthood* so they never had their own children. In America and Europe, young children died of many *diseases* that we now *immunize* against such as diphtheria, *tetanus*, *measles*, pneumonia and *whooping cough*. In the 20th century, as these diseases became less common, more children lived to adulthood. The result was that more children than ever before were born and lived and had their own children, all of which increased the size of the world's population. And thus, one predator of humans began *to recede*.

At the same time, people are also living longer. For example, in the U.S. the average life expectancy in 1950 was 57 years. Now people, on average, can expect to live 77 years. People living longer increase the population size, and this means that more people are living together on Earth at the same time.

In the latter part of the 20th century, people in other parts of the world – Africa, Asia, South America and the Middle East – who had traditionally lost many children to disease, began *to catch up with* the developed world. People in these parts of the world began to adopt health practices such as immunizing children that also allowed more children to live. As these children grew to adulthood they too started their own families and this also has contributed to the world's current population growth.

But here is the critical question: "Will Earth's population continue to grow as fast as the last 100 years?"

There are signs that population growth rates in some parts of the world have started to slow down. In Europe, America, and in parts of Asia and Australia, most families are having less than two children. Some of these countries are actually experiencing negative population growth meaning that their populations are growing smaller. In Russia, Eastern Europe, Germany and Northern Europe populations may actually *shrink* in size because people are having fewer and fewer children.

The United States will continue to grow. While birth rates in America have gone down – *primarily* because of the migration of persons from other countries – we will continue to have steady population growth. Today, the US has over 287 million people and is expected to grow to 400 million people by 2050.

However, there are many parts of the world where population growth is still very high and populations are expanding rapidly. Six countries *account for* one-half of the population added every year: these are China, India, Pakistan, Bangladesh, Indonesia, and Nigeria. China alone has 1.3 billion people, and India has slightly over 1 billion people, or about one third of the total world population. In countries where the rate of natural *increase* is approximately 2 %, their population will double ever 34 years. If population growth continues to be high in these and other countries, attempts to slow down the growth of the world human population in the twenty first century may well be *futile*.

The other issue is, even if people worldwide choose to have fewer children tomorrow, it will still take 50 – 60 years for the world's population to stabilize, as there are so many people currently in their *childbearing* years. Slowing the growth of the world's population, even though this is happening in many parts of the world, may not be happening quickly enough: the world's populations may still double again by the end of this century to 12 billion persons.

Are these too many people for the size and *resources* of the planet?

### Words and Expressions:

- *explorer* – исследователь
- *splendor* – величие, слава, благородство
- *to pose* – ставить, предлагать
- *trend* – общее направление, тенденция
- *adulthood* – зрелость, взрослость, состояние зрелости организма
- *disease* – болезнь
- *to immunize* – иммунизировать
- *tetanus* – столбняк
- *measles* – корь

- *whooping cough* – коклюш
- *to recede* – убывать, спадать, идти на убыль
- *to catch up with* – нагнать, наверстать
- *to shrink* – уменьшаться, сокращаться
- *to account for* – отвечать, нести ответственность
- *increase* – возрастание, рост; прибавление, прирост
- *futile* – бесполезный, напрасный, тщетный
- *childbearing* – детородный
- *to double* – удваивать
- *resource* – запасы, ресурсы, средства, природные богатства
- *primarily* – в основном, главным образом

### Exercises on the Text:

📖 Answer the following questions.

1. What is the primary source of environmental damage?
2. What is the number of total human population today?
3. What is the average life expectancy now?
4. How do you understand the term "negative population growth"?
5. Why does human population shrink in size?

📖 Translate the following sentences from Russian into English.

1. Рост численности населения – основная причина загрязнения окружающей среды.
2. В 20 веке численность населения планеты возросла больше, чем когда-либо за всю историю существования человека.
3. Если эта тенденция сохранится, в следующем веке численность мирового населения удвоится.
4. До 1900 года многие родившиеся дети не доживали до половозрелого возраста и, таким образом, не могли иметь собственных детей.
5. В 1950 году средняя продолжительность жизни в США составляла 57 лет.
6. Люди в этих частях света начали иммунизировать детей, что привело к уменьшению уровня детской смертности.
7. Уже появляются признаки того, что в некоторых частях света рост населения начинает снижаться.
8. В странах, где численность населения увеличивается на 2 % в год, число жителей будет удваиваться каждые 34 года.
9. Если рост численности населения будет высоким в этих и ряде других стран, попытки снизить темп прироста окажутся тщетными.
10. В России численность населения резко сокращается, так как рождается все меньше и меньше детей.

📖 Discuss the problems raised in the text above with your partner, using the active vocabulary.

### Grammar Reference:

#### Имя прилагательное (The Adjective)

Прилагательное – это часть речи, обозначающая качество, признак предмета и отвечающая на вопрос: *какой? какая? какое?*

Прилагательное в английском языке не изменяется ни по родам, ни по падежам, ни по числам (*a large letter* – большое письмо, *a large family* – большая семья, *a large table* – большой стол).

В предложениях прилагательное выступает в роли определения (*a difficult problem*) и именной части сказуемого (*This problem is difficult*).

## Степени сравнения (Degrees of Comparison)

Прилагательные в английском языке имеют три формы: форму положительной степени (*positive degree*), сравнительной степени (*comparative degree*) и превосходной степени (*superlative degree*).

Односложные прилагательные и часть двусложных, оканчивающихся на *-e*, *-y*, *-er*, *-ow*, образуют сравнительную степень прибавлением к положительной степени прилагательного суффикса *-er*, а превосходную степень – суффикса *-est*:

Положительная степень	Сравнительная степень	Превосходная степень
<i>long</i> – длинный	<i>longer</i> – длиннее	<i>longest</i> – самый длинный
<i>large</i> – большой	<i>larger</i> – больше	<i>largest</i> – самый большой
<i>hot</i> – жаркий	<i>hotter</i> – жарче	<i>hottest</i> – самый жаркий
<i>old</i> – старый	<i>older</i> – старше	<i>oldest</i> – самый старый
<i>simple</i> – простой	<i>simpler</i> – проще	<i>simplest</i> – самый простой
<i>narrow</i> – узкий	<i>narrower</i> – уже	<i>narrowest</i> – самый узкий

*Примечание.* 1. Если положительная степень прилагательного оканчивается на немое *-e*, то оно опускается при образовании степеней сравнения:

*large – larger – largest.*

2. Если положительная степень прилагательного оканчивается на согласный звук с предшествующим кратким гласным, то конечная буква удваивается перед суффиксами *-er* и *-est* для сохранения краткости гласного звука: *hot – hotter – hottest.*

3. Если положительная степень прилагательного оканчивается на букву *y* после согласного звука, то в сравнительной и превосходной степени *y* переходит в *i* перед суффиксами *-er* и *-est*: *early – earlier – earliest.* После гласного звука *y* не меняется: *gray – grayer – grayest.*

Многосложные прилагательные и двусложные прилагательные (кроме тех, которые оканчиваются на *-le*, *-y*, *-er*, *-ow*, образуют сравнительную степень добавлением слова *more* (перед прилагательным) и превосходную степень – слова *most*.

Положительная степень	Сравнительная степень	Превосходная степень
<i>interesting</i>	<i>more interesting</i>	<i>most interesting</i>
<i>beautiful</i>	<i>more beautiful</i>	<i>most beautiful</i>
<i>difficult</i>	<i>more difficult</i>	<i>most difficult</i>

Небольшое число прилагательных образует степени сравнения от другого корня (по исключениям):

good – better – best  
хороший – лучше – самый хороший

bad – worse – worst  
плохой – хуже – самый плохой

many, much – more – most  
много – больше – самый большой


little, few – less – least  
мало – меньше – самый маленький

*Примечание.* Существительное, определяемое прилагательным в превосходной степени, всегда употребляется с определенным артиклем *the*.

### Grammar Exercises:

#### Use the required form of the adjective.

1. He was the (amusing) lad you ever met.
2. He is a far (intelligent) person than my brother.
3. She was the (practical) of the family.
4. When they told me I was cured and could go, I can tell you I was (afraid) than glad.
5. I wanted to ask you both what you thought of my (late) films if you saw them.
6. He is (talkative) than his sister. He will not tire you so much.
7. He turned out to be (angry) than I had expected.
8. Today I am no (wise) than yesterday.
9. This wine is the (good) I ever tasted.
10. Jack is the (clever) of the tree brothers.
11. I do not think it matters in the (little) which seat I choose.
12. He felt (bad) yesterday than the day before.
13. The (near) house is three miles away.
14. Of the two evils, let us choose the (little).
15. He was the (late) man to come.
16. She waited until her silence became the (noticeable) thing in the room.
17. The (near) item on the program is a piano sonata.
18. He is the (tall) of the two.
19. She is (amusing) in a small company.
20. Uncle Nick was the (old) son of the family.

 Translate the following into English using various sentence patterns to express comparison.

1. Чем меньше ты будешь говорить, тем лучше.
2. К сожалению, я не смог прийти так рано, как обещал.
3. Кошка упала с крыши, но чувствует себя нисколько не хуже от этого.
4. Комната хорошая, но все же не такая хорошая, как бы мне хотелось.
5. Чем больше человек имеет, тем больше ему хочется.
6. Я не так молод, как вы.
7. Погода меняется к лучшему.
8. Окно узкое, как дверь.
9. Суп хорошо пахнет, а на вкус он еще лучше.
10. Как пройти к ближайшей почте?
11. Если он поможет нам, тем лучше.
12. Если он не делает уроков, тем хуже для него.
13. Чем скорее ты сделаешь это, тем лучше.
14. Он становится все слабее и слабее.
15. На этот раз у вас меньше ошибок.

**Grammar:**

1. Числительное (The Numeral). Составные числительные. Хронологические даты.
2. Дробные числительные. Десятичные дроби. Математические знаки.

**Text:**

## FOOD'S FRONTIER: THE NEXT GREEN REVOLUTION

Over the past half century, the United States has sent billions of tons of food to *famine-stricken* countries and that is one reason many remain in a *dire* struggle to feed themselves.

Dumping our *surplus* grain depressed the prices of locally grown grain, pushing farmers in those countries out of business explains environmental writer Richard Manning, author of "Food's Frontier: the Next Green Revolution", a new book on efforts to establish sustainable agriculture in developing countries around the globe.

The situation is critical. Industrial agriculture, mostly developed in the 1960s "Green Revolution", has reached its production limit. In some areas, the combination of *monocropping* and heavy fertilizer and pesticide use has actually reduced the land's capacity to produce. Meanwhile, the population of developing countries is expected to double by 2020.

The second green revolution is a revolution not only in biological science, but also in information distribution among scientists, farmers, and consumers. "Food's Frontier" documents the Minneapolis-based McKnight Foundation's Collaborative Crop Research Program, which has funded research and training in agricultural science in nine developing countries in Africa, Latin America and Asia. Each project is headed by scientists from the developing country, who identify the agricultural problem they want to tackle and put together interdisciplinary teams of scientists such as biologists, economists, and anthropologists. Each team *collaborates with* counterparts in U.S. universities.

"We're realizing that economic and cultural factors are as important as biology, soil and climate in developing a secure global food supply", – Manning said. – "Certainly, you have to understand the biology behind the interaction of, say, a *chickpea* and a *pod borer* if you want to reduce the damage the pest does to the plant. But you also need to figure out how to help Ugandan farmers learn about a method of planting that protects sweet potato from *weevils*, or how to convince Mexican wholesalers that there's a potentially strong market in the United States for blue corn".

McKnight-funded research in areas like polyculture – the planting of several crops amongst each other – and the discovery of natural protections against pests in disease in wild relatives of common crops, also stand to benefit U.S. farmers.

"The Midwest is *strewn with* rural ghost towns whose small farmers were driven away by huge agricultural firms farming thousands of acres of a single crop. And the oversupply of grain has promoted widespread usage of high-fructose corn syrup in processed foods, contributing to the epidemic of *obesity*", – Manning said. The McKnight project researching an ancient Aztec polycropping system, still used by Mexican peasants, called "milpa", could provide a solution for reversing monoculture in the U.S.

Experiments underway in New York, Chile and Brazil crossing domestic potatoes, plagued by a range of insect pests, with wild relatives of potatoes, whose *sticky* leaves trap insects, are revolutionizing the economics of potato farming both in the U.S. and worldwide.

"The intensive use of pesticides and herbicides has *contaminated* our water and depleted our soils. It costs between \$60 and \$200 per acre per year to spray potatoes with insecticide. A grower in upstate New York typically gets about \$6 for a hundred pounds of these potatoes, while organic market pays \$30 a hundredweight for pesticide-free potatoes", – Manning said.

Three projects described in "Food's Frontier" involve genetic engineering: in Nanjing, China, creating *scab-resistant* wheat; in India, increasing the efficiency of production and nutritional value of chickpea; and in Shanghai, China, *eradicating viral* rice disease by eliminating the ability of a plant hopper insect to transmit the virus.

Recognizing that modern biotechnology has the potential to contribute much to the solutions of agricultural problems in the developing world, Manning dismisses the argument that genetic engineering is unnatural. "From lop-eared rabbits to wine grapes, artificial form of life as a result of human-engineered selection sur-

round us. Every form of life we call domestic has a genetic makeup that is artificial as a result of human activity", – he said.

The biggest danger to the public regarding genetic engineering, Manning feels, is when profit-motivated companies rush to patent and market an untested technique. In contrast, McKnight-funded research remains in the public domain, available to all who need it, and is carefully tested by scientists who live among the farmers where the techniques will be used.

Manning found that Robert Goodman, a University of Wisconsin plant pathologist who oversees the Collaborative Crop Research Program, has his own doubts about the value of genetic engineering.

"We'll eventually have the same problem with genetically engineered plants as we do with more traditional approaches – the pests and diseases we are trying *to repel* are going to develop their own defenses", – Goodman said.

The alternative is not to look only at a single *gene*, but at the entire sequence of genes in a particular plant, as well as the sequence of genes in the organisms living in the surrounding soil and air. With this information, scientists, rather than transferring single genes from one plant species to another, can manipulate a plant's own genes to stimulate certain interactions with the other organisms in its environment. Goodman predicts this practice, called "genomics", will render genetic engineering *obsolete* within a matter of years.

"By the end of the decade we're going to look back at current genetic engineering technology, with its parlor tricks like sweeter tomatoes, as being primitive and almost *arcane*," – Goodman said. – "We are finally recognizing that nature is unimaginably complex. To survive, we need to learn to respect and *harness* that complexity, because at a fundamental level, genetic improvement is integral to human society".


"No one ever said feeding a planet of six billion people would be without consequences," – Manning said. – "But helping third world scientists feed their own people ensures sensitivity to culture and environment that we missed in the first green revolution".

The McKnight Foundation Collaborative Crop Research Program, begun in 1993, seeks to increase food security in developing countries. The total financial commitment is \$53,5 million over 15 years.

### Words and Expressions:

- *famine-stricken* – голодающий
- *dire* – страшный, ужасный, жуткий, внушающий ужас
- *surplus* – излишний, избыточный; добавочный
- *monocropping* – выращивание одной культуры
- *to collaborate with* – работать совместно, сотрудничать
- *chickpea* – нут, турецкий горох
- *pod borer* – стручковый сверлильщик (червь)
- *weevils* – долгоносик
- *to strew* – разбрасывать, разбрызгивать
- *obesity* – тучность, ожирение
- *sticky* – клейкий, липкий, вязкий, тягучий
- *to contaminate* – пачкать, загрязнять, марать, портить, отравлять
- *scab-resistant* – устойчивый к парше
- *to eradicate* – искоренять, вырывать с корнем, истреблять
- *viral* – вирусный
- *to repel* – подавлять, сдерживать
- *gene* – ген
- *obsolete* – устарелый, старый, немодный
- *arcane* – тайный, скрытый, тёмный, загадочный, потайной, секретный
- *harness* – использовать


### Exercises on the Text:

 Answer the following questions.


1. How will you explain the term "monocropping"?
2. Have you ever heard about the second green revolution?



3. What developing countries can you name?
4. What kind of damage can pests do to plants?
5. Do you know any factors of water and soil contamination?

 Translate the following sentences from Russian into English.

1. Сельское хозяйство, которое развивалось быстрыми темпами во время "Зеленой революции" 60-х годов, достигло своего производственного предела.
2. Вторая зеленая революция – это революция не только в самой биологической науке, но и в распределении информации между учеными, фермерами и потребителями.
3. Каждый проект возглавляется учеными из развивающихся стран, которые решают, какую проблему принять к рассмотрению, и координируют работу биологов, экономистов и антропологов.
4. Мы осознаем, что экономические и культурные факторы так же важны, как биология, почва и климат в обеспечении мирового запаса пищи.
5. Переизбыток зерна привел к широкому использованию фруктозо-содержащего сиропа в пищевом производстве.
6. Интенсивное использование пестицидов и гербицидов приводит к заражению воды и истощению почвы.
7. Современная биотехнология имеет большое значение для решения сельскохозяйственных проблем в развивающемся мире.
8. Начиная от вислоухих кроликов и заканчивая темно-красным виноградом, нас повсюду окружают искусственные формы жизни, полученные в результате использования генной инженерии.
9. Наибольшая опасность для общества при использовании генной инженерии возникает тогда, когда жаждающие прибыли компании представляют на рынок непроверенные технологии.
10. Имея такую информацию, ученые предпочитают не переносить отдельные гены из одного вида в другой, а станут манипулировать имеющимися генами для стимулирования определенного взаимодействия с другими организмами окружающей среды.

 Discuss the problems raised in the text above with your partner, using the active vocabulary.

### Grammar Reference:

#### Числительное (The Numeral)

Числительное – это часть речи, обозначающая количество предметов или их порядок при счете. В английском языке существуют количественные и порядковые числительные.

Количественные числительные указывают на количество предметов или лиц, например, *two weeks – две недели, seven tables – семь столов, ten men – десять человек*.

Порядковые числительные указывают на порядок предметов при счете, например, *the seventh lesson – седьмой урок, the tenth day – десятый день*. Порядковые числительные, за исключением первых трех, образуются от количественных числительных с помощью суффикса *-th* (*first, second, third, fourth, fifth, sixth, seventh, etc*).

У некоторых числительных изменяется правописание: *five – fifth, twelve – twelfth, eight – eighth, nine – ninth, twenty – twentieth*.

*Примечание.* Существительное, перед которым стоит порядковое числительное, употребляется с определенным артиклем, например, *the seventh lesson – седьмой урок*.

#### Составные числительные

22 – *twenty-two*

58 – *fifty-eight*

131 – *one hundred and thirty-one*

302 – *three hundred and two*

1001 – *a (one) thousand and one*

1225 – *a (one) thousand two hundred and twenty-five*

3544 – *three thousand five hundred and forty-four*

После сложных числительных, оканчивающихся на 1, существительное ставится во множественном числе, а не в единственном, как принято в русском языке, например, 51 книга – *fifty-one books*.

### *Хронологические даты*

При чтении обозначений года называют два двузначных числа, соответствующих двум первым и двум последним цифрам обозначения, например:

1612 – *sixteen twelve*

1812 – *eighteen twelve*

1945 – *nineteen forty-five*

1960 – *nineteen sixty*

1900 – *nineteen hundred*

1905 – *nineteen hundred and five* или *nineteen o five*.

В таком чтении слово *year* (*год*) не добавляется после числа.

Например: *Пушкин родился в 1799 году.* – *Pushkin was born in seventeen ninety-nine.*

Даты обозначаются и читаются следующим образом:

22 May 1942 – *the twenty-second of May, nineteen forty-two.*

### *Дробные числительные*

В простых дробях числитель обозначается количественным числительным, а знаменатель – порядковым. Порядковое числительное, т.е. знаменатель, принимает окончание множественного числа *-s*, если числитель больше единицы:

1/2 – *a half; one-half*

1/3 – *a third; one third*

1/4 – 1) *a quarter; one quarter*

2) *a fourth; one fourth*

1/25 – *a (one) twenty-fifth*

1/100 – *a (one) hundredth*

1/1225 – *a (one) thousand two hundred and twenty-fifth*

2/3 – *two thirds*

3/4 – 1) *three fourths*

2) *three quarters*

7/18 – *seven eighteenths*

9/10 – *nine tenths*

21/2 – *two and a half*

31/4 – *three and a quarter (a fourth)*

### *Десятичные дроби*

Знаки десятичных дробей отделяются от целого числа точкой. Каждая цифра читается отдельно. Ноль называется по-английски *zero*, *nought* или 0. Ноль целых можно совсем не читать.

0.2 – 1) *o point two*

2) *nought point two*

3) *zero point two*

4) *point two*

0.02 – 1) *o point o two*

2) *nought point nought two*

3) *zero point zero two*

- 4) *point nought two*
- 5) *point zero two*
- 6) *point o two*

1.5 – *one point five*

- 25.34 – 1) *twenty-five point three four*  
2) *two five point three four*

### **Некоторые математические знаки**

"+" *plus*

"-" *minus*

"×" *multiplication sign*

":" *sign of division*

"=" *sign of equality*

### **Grammar Exercises:**

**📖** *Напишите прописью следующие даты.*

1964    1425    1247  
1795    1342    1740  
1845    1997    1644

**📖** *Напишите прописью следующие примеры.*

$40 : 10 = 4$      $10 \times 2 = 20$      $25 \times 0.02 = 0.5$   
 $72 : 9 = 8$      $30 \times 4 = 120$      $40 \times 0.04 = 0.16$   
 $54 : 6 = 9$      $25 \times 3 = 75$      $12 \times 1.2 = 12.24$

**📖** *Напишите прописью порядковые числительные от 1 до 21.*

## LESSON 4

### Grammar:

1. Местоимение (The Pronoun). Личные местоимения (The Personal Pronouns).
2. Притяжательные местоимения (The Possessive Pronouns). Указательные местоимения (The Demonstrative Pronouns).
3. Вопросительные местоимения (The Interrogative Pronouns). Неопределенные местоимения (The Indefinite Pronouns). Отрицательное местоимение (The Negative Pronoun).

### Text:

#### FOSSILS VS. RENEWABLES: ENERGY'S FUTURE TODAY

There is a great deal of information and enthusiasm today about the development and increased production of our global energy needs from alternative energy sources. *Solar* energy, wind power and moving water are all traditional sources of alternative energy that are making progress. The enthusiasm everyone shares for these developments has in many ways created a sense of *complacency* that our future energy demands will easily be met.

Alternative energy is an interesting concept when you think about it. In our global society, it simply means energy that is produced from sources other than our primary energy supply: *fossil* fuels. Coal, oil and natural gas are the three kinds of fossil fuels that we have mostly depended on for our energy needs, from home heating and electricity to fuel for our automobiles and mass transportation.

The problem is, fossil fuels are *non-renewable*. They are limited in supply and will one day be depleted. There is no escaping this conclusion. Fossil fuels formed from plants and animals that lived hundreds of millions of years ago and became buried way underneath the Earth's surface where their remains collectively transformed into the *combustible* materials we use for fuel.

In fact, the earliest known fossil fuel deposits are from the Cambrian Period about 500 million years ago, way before the *dinosaurs* emerged onto the scene. This is when most of the major groups of animals first appeared on Earth. The later fossil fuels – which provide more substandard fuels like *peat* or *lignite* coal (soft coal) – began forming as late as five million years ago in the Pliocene Period. At our rate of consumption, these fuels cannot occur fast enough to meet our current or future energy demands.

Despite the promise of alternative energy sources – more appropriately called Renewable energy, collectively they provide only about seven percent (7 %) of the world's energy needs. This means that fossil fuels, along with nuclear energy – a controversial, non-renewable energy source – are supplying 93 % of the world's energy resources.

Nuclear energy, which is primarily generated by *splitting* atoms, only provides six percent (6 %) of the world's energy supplies. And it is not likely to be a major source of world energy consumption because of public pressure and the relative dangers associated with *unleashing* the power of the atom. Yet, governments such as the United States see its vast potential and are placing pressure on the further exploitation of nuclear energy.

The total world energy demand is for about 400 quadrillion British Thermal Units – or BTUs – each year. That is 400,000,000,000,000 BTUs! A BTU is roughly equal to the energy and heat generated by a match. Oil, coal and natural gas supply nearly 88 % of the world's energy needs, or about 350 quadrillion BTUs. Of this amount, oil is king, providing about 41 percent of the world's total energy supplies, or about 164 quadrillion BTUs. Coal provides 24 % of the world's energy, or 96 quadrillion BTUs, and natural gas provides the remaining 22 %, or 88 quadrillion BTUs.

It is not so much that we mine fossil fuels for our consumption any more than it is to mine salt or tap water supplies way underground. The problems occur when we destroy ecosystems while mining it and while using it. Certainly, if there were a way that fossil fuels can be mined and used in ways that do not harm our ecology, then everything will be okay... in a perfect world. What makes our world perfect is that, it really is not perfect according to definition. It is natural, with all things interdependent on each other to live, grow and produce. Fossil fuel mining and oil production can and has caused *irreparable* damage to our environment.

Fossil fuels exist, and they provide a valuable service. It is not so much that we use fossil fuels for energy that is problematic, but it is the side effects of using them that causes all of the problems. Burning fossil fuels creates carbon dioxide, the number one greenhouse gas contributing to global warming. *Combustion* of these fossil fuels is considered to be the largest contributing factor to the release of greenhouse gases into the atmosphere. In the 20th century, the average temperature of Earth rose one degree Fahrenheit (1°F). This was a pe-

riod that saw the most *prolific* population growth and industrial development (read use of energy) in Earth's history.

The impact of global warming on the environment is extensive and affects many areas. In the Arctic and Antarctica, warmer temperatures are causing the ice to melt, which will increase sea level and change the composition of the surrounding seawater. Rising sea levels alone can *impede* processes ranging from settlement, agriculture and fishing both commercially and recreationally. Air pollution is also a direct result of the use of fossil fuels, resulting in smog and the degradation of human health and plant growth.

But there's also the great dangers posed to natural ecosystems that result from collecting fossil fuels, particularly coal and oil. Oil *spills* have *devastated* ecosystems and coal mining has stripped lands of their vitality. This is the primary reason there is enormous pressure on the current Bush Administration to discontinue its *pursuit* to tap the vast oil reserves in the Arctic National Wildlife Refuge.

The oil, coal and natural gas companies know these are serious problems. But until our renewable energy sources become more *viable* as major energy providers, the only alternative for our global population is for these companies to continue tapping into the fossil fuel reserves to meet our energy needs. And, you can pretty much count on these companies being there providing energy from renewable sources when the fossil fuels are depleted. Many oil companies, for example, are involved in the development of more reliable renewable energy technologies. For example, British Petroleum Company, today known as BP, has become one of the world's leading providers of solar energy through its BP Solar division, a business that they are planning on *eclipsing* their oil production business in the near future.

Just how limited are our fossil fuel reserves? Some estimates say our fossil fuel reserves will be depleted within 50 years, while others say it will be 100 – 120 years. The fact is that neither one of these projections is very appealing for a global community that is so heavily dependent on fossil fuels to meet basic human needs.

Nobody really knows when the last drop of oil, lump of coal or cubic foot of natural gas will be collected from the Earth. All of it will depend on how well we manage our energy demands along with how well we can develop and use renewable energy sources.

And here is one very important factor: population growth. As the population grows upwards towards nine billion people over the next 50 years, the world's energy demands will increase proportionately. Not only will it be important for renewable energy to keep up with the increasing population growth, but it must outpace not only these demands but begin replacing fossil fuel energy production if we are to meet future energy needs.

By the year 2020, world energy consumption is projected to increase by 50 %, or an additional 207 quadrillion BTUs. If the global consumption of renewable energy sources remains constant, the world's available fossil fuel reserves will be consumed in 104 years or early in the 22nd century. Clearly, renewable energy resources will play an increasingly vital role in the power generation mix over the next century.

Sun, wind and water are perfect energy sources...depending on where you are. They are non-polluting, renewable and efficient. They are simple: all you need is sunlight, running water and/or wind. Not only do the uses of renewable energy sources help reduce global carbon dioxide *emissions*, but they also add some much-needed flexibility to the energy resource mix by decreasing our dependence on limited reserves of fossil fuels.

Essentially, these renewable energy sources create their own energy. The object is to capture and harness their mechanical power and convert it to electricity in the most effective and productive manner possible. There is more than enough renewable energy sources to supply all of the world's energy needs forever; however, the challenge is to develop the capability to effectively and economically capture, store and use the energy when needed.

Take solar energy for example. The ultimate source of energy is the sun. Its energy is found in all things, including fossil fuels. Plants depend on the sun to make food, animals eat the plants, and both ended up becoming the key ingredients for fossil fuels. Without the sun, nothing on this planet would exist.

The sun also provides enough energy that can be stored for use long after the sunsets and even during extended cloudy periods. But making it available is much easier said than done. It would be cost *prohibitive* to make solar energy mainstream for major world consumption in the near future. The technology is pretty much ready for many business and consumer applications, but it would be way too expensive to replace the current energy infrastructure used for fossil fuel energy. Still, according to the European Photovoltaic Industry Association, solar power could provide energy for more than one billion people by 2020 and 26 % percent of global energy needs by 2040.

Wind and hydroelectric power, which have been used effectively for generations, are also rapidly growing energy markets. The principle behind both is that the force of the wind and water currents is passed through

*turbines*, which convert their energy into electricity. Commercial wind energy is usually collected by wind "farms" essentially consisting of hundreds of wind turbines (windmills) spread over large plots of land.


But hydroelectric power is harnessed in several different methods. The most popular is through *dams*, such as the Hoover Dam on the Colorado River. Another form of hydroelectric energy is tidal power. In use since the early 1900s, tidal power stations collect the energy created by the rise and fall of the tides to convert to electricity.

Biomass energy, or energy from burning plants and other organic matter, is one of man's earliest sources of energy. Wood was once the main source of power for heat, and it still is in many developing countries. Most people in developed countries use wood only for *aesthetic* purposes or secondary heating, limited mainly to fireplaces and decorative woodstoves. Roughly, one to two billion people in the developing nations still use wood as their primary source of heat. It is this group that is seen being among the first to convert to solar heating and energy because there is no other existing infrastructure *to hinder* its development.


### Words and Expressions:

- *solar* – солнечный
- *complacency* – удовлетворенность, самоуспокоенность
- *fossil* – ископаемое, окаменелость
- *non-renewable* – невозстановимый, невозобновляемый
- *combustible* – воспламеняемый, горючий
- *dinosaur* – динозавр
- *peat* – торф, брикет торфа, цвет торфа
- *lignite* – лигнит, бурый уголь
- *to split* – раскалывать, расщеплять, трескаться, разбивать на части
- *to unleash* – развязать, высвободить, дать волю
- *irreparable* – неисправимый, непоправимый, безвозвратный
- *combustion* – горение, возгорание, сжигание
- *prolific* – изобилующий, богатый
- *to impede* – мешать, препятствовать, быть помехой чему-либо
- *spill* – проливание, разливание
- *to devastate* – истощать, опустошать, разорять
- *to pursuit* – преследование, гонение, погоня
- *viable* – жизнеспособный
- *to eclipse* – затмевать, превосходить, заслонять
- *emission* – выделение, распространение
- *prohibitive* – запрещающий, препятствующий
- *turbine* – турбина
- *dam* – дамба, плотина, насыпь, запруда
- *aesthetic* – эстетический
- *to hinder* – задерживать, затруднять, мешать, препятствовать

### Exercises on the Text:


 Answer the following questions.

1. What traditional sources of energy can you name?
2. How will you explain the term "alternative energy"?
3. What kind of fossil fuels do we mostly depend on for our energy needs?
4. During which period did the major groups of animals first appear on Earth?
5. How is nuclear energy generated?

 Translate the following sentences from Russian into English.

1. Энергия солнца, сила ветра и движение воды – это традиционные источники альтернативной энергии, прогрессирующие в настоящее время.

2. Уголь, нефть и природный газ – это три базовых источника энергии.
3. Именно в этот период на Земле появились основные группы животных.
4. Несмотря на многообещающие источники альтернативной энергии, в общем они составляют около семи процентов мировых запасов энергии.
5. Ядерная энергия, получаемая путем распада атомов, составляет только шесть процентов мировых запасов энергии.
6. Проблемы возникают, когда мы разрушаем экосистемы, прорабатывая и используя их.
7. Это был период, когда мы видели наибольший прирост населения и развитие промышленности (читай использование энергии) в истории Земли.
8. Влияние глобального потепления на окружающую среду очень заметно: оно воздействует на многие области.
9. В Арктике и Антарктике потепление приводит к таянию льда, что повышает уровень морей и изменяет состав морской воды.
10. На самом деле никто не знает, когда будет использована последняя капля нефти, кусочек угля или кубический метр природного газа.

 Discuss the problems raised in the text above with your partner, using the active vocabulary.

### Grammar Reference:

#### Местоимение (The Pronoun)

Местоимение – это часть речи, которая употребляется вместо существительного, прилагательного или числительного.

*The story is interesting. – It is interesting.*

*The man is very clever. – He is very clever.*

#### Личные местоимения (The Personal Pronouns)

Личные местоимения – это местоимения, заменяющие существительные, поэтому они могут употребляться в предложении в качестве подлежащего, дополнения и именной части сказуемого.

Личные местоимения имеют два падежа: именительный и объектный.

Число	Лицо	Именительный падеж личных местоимений (кто? что?)		Объектный падеж личных местоимений (кого? кому? о ком?)	
		English	Russian	English	Russian
ед.	1	<i>I</i>	я	<i>me</i>	меня, мне
ед.	2	<i>you</i>	ты	<i>you</i>	тебя, тебе
ед.	3	<i>he</i>	он	<i>him</i>	его, ему
ед.	3	<i>she</i>	она	<i>her</i>	ее, ей
ед.	3	<i>it</i> – он, она, оно (с неодуш. пред.)		<i>it</i>	его, ему, ее, ей
мн.	1	<i>we</i>	мы	<i>us</i>	нас, нам
мн.	2	<i>you</i>	вы	<i>you</i>	вас, вам
мн.	3	<i>they</i>	они	<i>them</i>	их, им

*Примечание.* Если перед существительным есть притяжательное местоимение, то артикль не может быть одновременно употреблен.

*It is a textbook. – It is my textbook.*

*The teacher is in the room. – Our teacher is in the room.*

### Притяжательные местоимения (The Possessive Pronouns)

Притяжательные местоимения выражают принадлежность, они обычно находятся перед существительным, к которому относятся, и выполняют функцию определения. Каждому личному местоимению соответствует притяжательное местоимение.

Притяжательные местоимения бывают в общей и абсолютной форме:

*my – mine.*

В отличие от притяжательных местоимений общей формы, которые стоят перед существительным и выступают в функции определения, притяжательные местоимения абсолютной формы употребляются самостоятельно, вместо существительного.

Притяжательные местоимения в абсолютной форме употребляются в функции подлежащего, именной части сказуемого, дополнения.

Число	Лицо	Притяжательные местоимения <i>чей? чья? чье?</i>			
		Общая форма		Абсолютная форма (самостоятельная)	
ед.	1	<i>my</i>	мой	<i>mine</i>	мой
ед.	2	<i>your</i>	твой	<i>yours</i>	твой
ед.	3	<i>his</i>	его	<i>his</i>	его
ед.	3	<i>her</i>	ее	<i>hers</i>	ее
ед.	3	<i>its</i>	его	<i>its</i>	его
мн.	1	<i>our</i>	наш	<i>ours</i>	наш
мн.	2	<i>your</i>	ваш	<i>yours</i>	ваш
мн.	3	<i>their</i>	их	<i>theirs</i>	их

### Указательные местоимения (The Demonstrative Pronouns)

Указательные местоимения *this – этот, эта, это* и *these – эти* определяют предметы и лица, находящиеся близко к говорящему.

Указательные местоимения *that – тот, та, то* и *those – те* определяют предметы и лица, более отдаленные в пространстве и времени от говорящего: *that day – тот день, those days – те дни*.

Иногда, во избежание повторения одного и того же слова, употребляются местоимения *that* и *those*. Например: *The rivers of Russia are much longer than those of England.* – Реки России намного длиннее рек Англии.

### Вопросительные местоимения (The Interrogative Pronouns)

К вопросительным местоимениям относятся: *who – кто, whom – кого, кому, whose – чей, what – что, which – который*. Эти местоимения используются для образования так называемых специальных вопросов, т.е. вопросов к различным членам предложения. Местоимением *what* может начинаться вопрос к подлежащему, к дополнению и к определению:

*What is on the first floor of your office?* – Что находится на втором этаже Вашего офиса? (Вопрос к подлежащему).

*What do you see on the shelf?* – Что ты видишь на полке? (Вопрос к дополнению).

Местоимением *who* начинается вопрос к подлежащему:

*Who works usually on Sundays?* – Кто обычно работает по воскресеньям?

Объектный падеж местоимения *who – whom* употребляется в вопросе к дополнению:

*Whom do you want to send there?* – Кого Вы хотите туда отправить?

Местоимением *whose* употребляется в качестве определения:

*Whose laboratory is this?* – Чья это лаборатория?



Местоимение *which* употребляется при выборе из определенного числа предметов или лиц, например:

*Which shop is yours? – Какой магазин Ваш?*

### **Неопределенные местоимения *some* и *any* (The Indefinite Pronouns). Отрицательное местоимение *no* (The Negative Pronoun)**

В английском языке местоимение *some* означает *какой-то, какой-нибудь, несколько* и употребляется обычно в утвердительных предложениях:

*I want to buy some interesting novels. – Я хочу купить несколько интересных романов.*

*Give me some pen. – Дай мне какую-нибудь ручку.*

*Some* перед неисчисляемыми существительными обозначает некоторое количество и в этих случаях не переводится.

*Some* может употребляться в вопросительных предложениях, если вопрос не относится непосредственно к местоимению *some* или к определяемому им существительному. А также в вопросах, выражающих просьбу или предложение.

*Why did you not ask me to give you some more paper? – Почему ты не попросил меня дать тебе еще немного бумаги?*

Местоимение *any* означает *какой-то, какой-нибудь, сколько-нибудь* и употребляется в вопросительных предложениях, преимущественно в общих вопросах, и в отрицательных предложениях. В утвердительных предложениях *any* имеет значение *любой, всякий*.

*Did you get any news from this firm? – Вы узнали от этой фирмы какие-нибудь новости?*

*She has not any news. – У нее нет новостей.*

*You may take any of my copies. – Ты можешь взять любую из моих копий.*


Отрицательное местоимение *no* указывает на отсутствие предмета, явления или понятия и употребляется в отрицательных предложениях, причем глагол-сказуемое стоит в утвердительной форме:

*I have no information about it. – У меня нет информации об этом.*

*There are no computers in this room. – В этой комнате нет компьютеров.*

Отрицательное местоимение *no* употребляется в предложении в функции определения.

#### **Grammar Exercises:**

 Use the appropriate personal pronouns.

1. ... say there has been a great earthquake in the Pacific.
2. If ... see a giraffe once a year ... remains a spectacle; if ... see ... daily ... becomes part of the scenery.
3. "Mary is married now", – said Mrs. Scott. – "... was in the "Times".
4. The "Friedrich Weber" was a freighter sailing from Hamburg to Colombo. ... also carried passengers.
5. There was a lot of noise all around now, and amongst ... .. could hear a plane flying unusually low.
6. Pat soon made ... clear that ... did not want to stay there long.
7. I got my hat and beat ... .
8. He is dreadfully ugly. ... must not start when ... see ..., or ... will put ... off. ... does not like ... to feel sorry for ....
9. We were climbing a steep heel and the car throbbed as if ... were going to expire.
10. ... was cold to sit on the terrace, pretending that ... was really a summer evening.
11. "Our aim is to keep Italy out of the war until ... is strong enough to come in on our side", – said the colonel.
12. Poor old England! I do not suppose I shall see ... again.

 Use the appropriate form of possessive pronouns.

1. The man next door has been busy cutting the grass in (he) garden.
2. He put (he) hand in (she).
3. "This foolish wife of (I) thinks I am a great artist", – said he.

4. Very well, Mother, I shall have (I) hair cut this afternoon.
  5. Then he stopped and pointed and said: "Those are peas". I said: "We have got some peas too". "I expect (you) are bigger than (our)", – he said politely.
  6. Edwin said: "Dear Mary, we all felt with you. (You) distress was (we)".
  7. We can do (we) shopping before lunch.
  8. There is a ghastly article of (he) about it in this evening's paper.
  9. She folded the letter and replaced it in (it) envelope.
  10. The children had had (they) tea. Kate was late for (she) as usual, Mary and Paul were having (they).
  11. This demand of (they) is quite ridiculous.
  12. She makes all (she) clothes herself.
  13. This book is (I). There is (I) name on it.
- 📖 SUPPLY SOME, ANY OR NO.**

1. If you have ... news, call me back.
2. She helped me borrow ... more money.
3. There is hardly ... a place in this house where we can talk alone.
4. ... boy at the school had ever taken a scholarship to the university.
5. It meant real hardship to my mother unless I earned ... money at once.
6. My mother hoped that perhaps the school had ... funds to give me a grant.
7. It was unlikely that ... of the guests would take particular notice of it.
8. They understood each other without ... words.
9. "Let's go back home. It's already late". – "I'd rather stay out a little longer". "I suppose we've got to go home ... time".
10. There isn't ... boot-polish in this tin.
11. You have ... fine flowers in your garden.
12. Go and ask him for ... paper. I haven't ... in my desk.
13. Later we had ... tea.
14. He wants ... more pudding. You can take it away.
15. There are ... matches left. We must buy ... .
16. I wouldn't go to his concert. He is ... pianist.
17. ... time ago I read his story in a magazine.
18. I don't think there is ... milk left in the jug.
19. ... student can answer the question.

## LESSON 5

### Grammar:

1. Порядок слов в английском повествовательном предложении.
2. Функции глаголов "to have" и "to be" в предложении.
3. Модальные глаголы "can", "may", "must".

### Text:

#### ECOLOGY RETURNS TO THE DEEP SEA

*On the heels* of the 2000 Deep Sea Expedition of the Gulf of Mexico, Ecology Communications joined NOAA, ten Universities, the US Geological Survey, Woods Hole Oceanographic Institution (WHOI) and the Wildlife Conservation Society in a three-week exploration of three regions in the Atlantic Ocean *stretching* from Maine to Georgia. "AT&T Broadband – New England" has partnered with "Ecology Communications" once again *to capture* the exploration, the technologies that make such research possible, the work of the scientists and the discoveries and views of the deep sea on video for television and education. The findings told scientists that there is much about our world we still do not know.

Deep sea biodiversity, deep water coral communities, gas *hydrates*, deep sea geology, search for new organisms and the effects of deep sea *sewage* dumping – all areas of which very little is known – will be studied, explored and *unveiled* through video imaging, *core* sampling, and measurement observations. The three regions

include the Georges Bank, an area the size of Rhode Island, Connecticut and Massachusetts on the outer edge of the Gulf of Maine; the Hudson Submarine Canyon, about 400 *nautical* miles seaward from the New Jersey Harbor; and Blake Ridge, a vast area along the southeastern continental margin of the US.

*Aptly* called "Deep East 2001: Voyage of Discovery to Deep Sea Frontiers off the U.S. East Coast", the expedition *spans* 13 days, departing from Woods Hole, MA, and concluding in port at Charleston, SC. The manned deep-sea vehicle "Alvin", the US's only manned *submersible* capable of diving below 2,000 meters, will be at the center of the technology enabling the *intricate* research of the Atlantic Ocean's depths. "Alvin" will be carried by the 274-foot (84 meter) mother ship R/V "Atlantis" which is customized to support undersea operations. Its special a-frame allows fast, safe *deployment* and recovery of "Alvin". Both "Alvin" and "Atlantis" are maintained and operated by "WHOI Ecology" and "AT&T Broadband" will extend the production on the 2000 deep sea exploration of the Gulf of Mexico to produce a myriad of video applications from the expedition that will focus on the health and stability of our planet and what secrets the oceans hold for our future. Coral communities – their biology, diversity, population status and role as vital habitat for deep-water fishes – will be explored and recorded. Recent submersible dives suggest that the distribution of corals has significantly declined in the past three decades, likely destroyed by *trawling* and *dragging*.

The stability of the continental shelf along the Hudson Canyon, where methane hydrate deposits exist, will be closely examined. Scientists have been concerned that a slumping of shelf along the Hudson Canyon – due to instability of the methane hydrate deposits there – would send destructive tidal waves toward the US coastline. The Hudson Canyon also hosts the world's largest municipal sewage dumpsite along the continental rise off the coast of New Jersey that has been used for offshore dumping since the 1950s. "Deep Water Dumpsite 106", named so because it lies about 106 miles off the coast of New Jersey, received the world's largest *discharge* of municipal sewage sludge from 1986 – 1992 when chemical increases and biological changes finally brought a *halt* to the dumping. The lingering effects of changes that have occurred since then will be recorded and studied.

From the Hudson *canyon* down into Blake Ridge, a relatively unexplored community of life – that which *decoupled* from the photosynthetic food chain and survives on the gas *seeps* from beneath the ocean's surface – will be studied and compared to similar communities explored in the Gulf. These chemosynthetic communities exist far underneath the ocean's surface where sunlight never reaches, yet they *thrive* on chemicals that are *lethal* to animal life, as we know it. Yet, and perhaps of key importance to the sustainability of human energy needs for the next century, is the study of these chemosynthetic or seep communities as important markers for underlying oil and gas resources, specifically methane hydrates. Methane hydrates, which are also in abundance in the Gulf of Mexico, exist as ice crystals under very heavy pressure underneath the ocean floor. The hydrate crystals hold a concentration of methane gas molecules up to 160 times greater than the volume of pure natural gas. Scientists estimate that if these methane hydrates can be successfully mined, the world's energy needs can be met for centuries.

### Words and Expressions:

- *on the heels* – следом за
- *to stretch* – тянуть, растягивать, вытягивать, удлинять
- *to capture* – завладеть, захватить, увлечь, завоевать
- *hydrate* – гидрат, гидроокись
- *sewage* – сточные воды, нечистоты
- *to unveil* – открывать, разоблачать
- *core* – глубинная, внутренняя, сокровенная часть, суть, сущность
- *nautical* – морской, навигационный, мореходный
- *aptly* – так, как надо; надлежащим, подходящим образом
- *to span* – обхватывать, охватывать
- *submersible* – способный погружаться в воду, действовать в воде
- *intricate* – запутанный, сложный, замысловатый, затруднительный
- *deployment* – развертывание
- *to trawl* – тралить, ловить рыбу тралом
- *drag* – углублять дно (реки и т.п.) драгой, драгировать
- *discharge* – вытекание, выделение; выпускание; спуск, сток, слив
- *halt* – остановка, прекращение

- *canyon* – каньон, глубокое ущелье
- *to decouple* – расцеплять, развязывать, разъединять
- *seeps* – просачиваться, проникать, протекать
- *to thrive* – буйно, пышно расти, разрастаться
- *lethal* – смертельный, летальный; смертоносный, вызывающий смерть


### Exercises on the Text:

 Answer the following questions.

1. What are the usual purposes of deep-sea expeditions?
2. Which technologies make such expeditions possible?
3. How can the results of deep-sea expeditions be used in the educational process?
4. There is much about our world we still do not know, isn't there?
5. Which components make up sea biodiversity?

 Translate the following sentences from Russian into English.

1. Эти открытия еще раз доказали ученым, что мы все еще многого не знаем о нашем мире.
2. Ученые займутся исследованием коралловых сообществ, геологией подводного мира и поиском новых живых организмов.
3. Его особая А-образная форма обеспечивает быстрое и безопасное передвижение и подъем на поверхность.
4. Коралловым сообществам: их биологии, разнообразию видов и роли в жизни глубоководных рыб – будет уделено особое внимание.
5. Последние исследования показывают, что распространение кораллов значительно сократилось за прошедшие три десятилетия.
6. Также тщательно будет изучено континентальное побережье в Гудзоне, где находятся залежи метана.
7. Все изменения, произошедшие с тех пор, никем не регистрировались и не исследовались.
8. Эти химико-синтетические сообщества находятся глубоко в океане, куда никогда не попадает солнечный свет.
9. Химические вещества, выделяемые этими сообществами, летальны для живых организмов.
10. Данные сообщества являются маркерами залежей нефти и газа.

 Discuss the problems raised in the text above with your partner, using the active vocabulary.

### Grammar Reference:

#### Порядок слов в английском повествовательном предложении

В русском языке члены предложения могут занимать различные места в предложении. При этом смысл высказывания не нарушается. А в английском языке прямой порядок слов, т.е. сначала идет подлежащее, а затем сказуемое. Если изменить прямой порядок слов, то изменится смысл предложения.

В английском языке место слова определяет его роль в предложении. Поэтому при построении английского предложения слова нужно располагать в строго определенном порядке:

*подлежащее, сказуемое, дополнение, обстоятельство.*

*Примечание.* Обстоятельства могут иногда стоять в начале предложения перед подлежащим: *In the morning our manager reads letters.*

#### Функции глагола *to be* в предложении

Смысловой	Глагол-связка	Модальный	Вспомога-
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глагол		глагол	тельный глагол
<p>1. В сочетании с существительным и предлогом: <i>We are at the lesson.</i> – <i>Мы на уроке.</i></p> <p><i>He was at the Institute in the morning.</i> – <i>Утром он был в институте.</i></p>	<p><b>В сочетании с существительным, прилагательным или числительным, а также в сочетании с инфинитивом или герундием (если подлежащее выражено абстрактным существительным) в составе именного составного сказуемого:</b></p> <p><i>She is a student.</i> – <i>Она студентка.</i></p> <p><i>Our task is to learn to speak English.</i> – <i>Наша задача состоит в том, чтобы научиться говорить по-английски</i></p>	<p>В сочетании с инфинитивом, если подлежащее выражает лицо или предмет: <i>They are to come soon.</i> – <i>Они должны скоро прийти.</i></p> <p><i>They were to finish this work yesterday.</i> – <i>Они должны были закончить эту работу вчера</i></p>	<p>В сочетании с <i>Participle I</i> для образования времени <i>Continuous</i> или <i>Participle II</i> для образования <i>Passive Voice</i>: <i>He is reading a letter.</i> – <i>Он читает письмо.</i></p> <p><i>The letter was written yesterday.</i> – <i>Письмо было написано вчера</i></p>

#### Функции глагола *to have* в предложении

Смысловой глагол	Модальный глагол	Вспомогательный глагол
<p>В сочетании с существительным: <i>We had a meeting yesterday.</i> – <i>Вчера у нас было собрание</i></p>	<p>В сочетании с инфинитивом: <i>Metals have to stand up to heavy loads.</i> – <i>Металлы должны выдерживать большие нагрузки</i></p>	<p>В сочетании с <i>Participle II</i> для образования времен <i>Perfect</i>: <i>They have translated this article from "Smith and S".</i> – <i>Они перевели статью от "Смит и К"</i></p>

#### Модальные глаголы *can, may, must* (Modal Verbs)

Модальные глаголы – это такие глаголы, которые обозначают не само действие, а указывают на отношение говорящего к действию, т.е. указывают на возможность, вероятность или необходимость совершения действия.

Модальные глаголы не употребляются самостоятельно, а только в сочетании с инфинитивом смыслового глагола, образуя глагольное составное сказуемое.

1. Глагол *can* – "могу", "умею" выражает физическую возможность совершения действия:

– *Can you speak English?*

– *Yes. I can speak English.*

2. Глагол *must* – "должен" выражает долженствование или необходимость совершения действия:

– *I cannot speak to you now. I must go home.*

– *Must you go now?*

– *Yes, I must.*

3. Глагол *may* – "можно" выражает разрешение выполнить действие. В разговорной речи вместо *may* часто употребляется *can*:

– *May I go to the cinema?*

– *No, you must not. The film is not for children.*

– *You can watch TV at home.*

У модальных глаголов *can*, *may*, *must* есть ряд грамматических особенностей:

1. В *Present Simple* не имеют окончания *-s* в 3-м лице единственного числа.

2. Вопросительную и отрицательную формы образуют без вспомогательного глагола *to do*. Отрицательная частица *not* с глаголом *can* пишется слитно – *cannot*.

3. Не имеют формы инфинитива.

4. Следующий за модальным глаголом смысловой глагол употребляется без частицы *to*.

5. Не имеют форм будущего времени (*Future Simple*), а глагол *must* не имеет и формы прошедшего времени (*Past Simple*).

<i>Present</i>	<i>Past</i>	<i>Future</i>
<i>can</i>	<i>could</i>	–
<i>must</i>	–	–
<i>may</i>	<i>might</i>	–

6. Взамен недостающих форм модальных глаголов *can*, *may*, *must* употребляются заменители модальных глаголов.

#### Заменители модальных глаголов

Can	May	Must
<i>to be able (to)</i> – быть в состоянии (мочь)	<i>to be allowed (to)</i> – иметь разрешение	<i>to have (to)</i> – быть вынужденным (в силу обстоятельств)  <i>to be (to)</i> – быть обязанным (в силу договоренности, плана, расписания и т.д.)

Заменители модальных глаголов употребляются не только в тех случаях, когда модальные глаголы не имеют соответствующих форм *Future* или *Past*, но и вместо них.

Инфинитив, следующий за заменителем модального глагола, употребляется с частицей *to*.

*They were to be at the conference.* – Они должны были быть (присутствовать) на конференции.

*She was not allowed to stay there.* – Ей не разрешили оставаться там.

7. В вопросительных предложениях модальный глагол ставится перед подлежащим.

8. В отрицательных ответах на вопросы с глаголом *must* употребляется модальный глагол *need* (в отрицательной форме *needn't*) для выражения отсутствия необходимости.

9. Глагол *should* может употребляться в качестве модального глагола, выражая моральную обязанность или необходимость совершения действия. Обычно глагол *should* переводится на русский язык "следует", "следовало бы", "должен".

*You should help him. – Вам следовало бы помочь ему.*

10. Глагол *would* может употребляться в качестве модального глагола для выражения упорного нежелания, отказа выполнить действие, для выражения просьбы:

*We did our best but the motor would not start.*

*Would you come back a little later?*

### Grammar Exercises:

📖 Fill in the blanks with *have to* or *be to*.

1. At nightfall the ship put in at a small port where they ... to load three hundred bags of coffee.
2. They ... to light a fire to cook their supper.
3. He set off for the school where he ... to write examinations for entry to the University.
4. When I got home I found I had left my olive oil in front of the notice board and I ... to return in the afternoon to collect it.
5. He made all arrangements for the marriage, which ... to take place on the day of his mother's arrival.
6. The Finnish woman who ... to work for Finch had not arrived yet.
7. She knew there would be more vacations for her sons. But she ... (not) to say it. They knew it as well as she.
8. Eden went to the wood where he ... to meet his brother for a ride.
9. Uncle Nick's things ... to be moved out of his room so that it could be re-let.
10. For the next few weeks I ... to stay in bed. Everyone came to visit me, and brought me presents, and I ... (not) to do the cooking.

📖 Fill in the blanks with *can (be able)*, *may* or *must*.

1. "Will you know where to go?" – "Yes, thank you. I ... always ask my brother".
2. "Didn't she hear our shouting?" – "She says she heard nothing". "She ... wandered a long way".
3. What ... he have meant when he said it?
4. He hesitated and said: "I ... go to South America. As a tea planter". I said: "I ... be wrong, Jason, but I don't think they grow tea in South America".
5. He ... have flown off after he dropped us. He ... not land here. Not in a plane with wheels.
6. "I'd give anything to meet that fellow". – "We ... see what ... be done".
7. Cindy ... have laughed aloud. Instead, she nodded.
8. You ... hardly have been more surprised than I was.
9. The old man cupped his ear in his palm. "I think I ... be getting deaf. I ... not hear you".
10. "There was someone on the phone for you", – he said. "Oh, who?" "I don't know. He didn't say. Some man." "It ... have been Mike." "I know Mike. It wasn't Mike." "Oh. Then I ... not think who it ... have been."

📖 Translate the following sentences into English using *can*, *may* or *must* wherever possible.

1. Они должны действовать, как им сказали.
2. Я думаю, мне надо надеть другие туфли на вечеринку.
3. Я не могу уйти, не расплатившись.
4. Они должны вернуть все деньги.
5. Ты мог бы им позвонить и сказать, что не придешь.
6. Я так хотел есть, что чуть не съел всего цыпленка сразу.
7. "Мне взять зонт?" – "Да, похоже, что будет дождь".
8. Тебе удалось закончить работу?
9. Ситуация – хуже не придумаешь.
10. Ты не мог бы прийти немного позже?

## LESSON 6

### Grammar:

1. Сложноподчиненные предложения (The Complex Sentences).
2. Функции Причастия I и Причастия II (Participle I, Participle II).
3. Герундий (Gerund).

**Text:**

## THE NUCLEAR ENERGY CHALLENGE

The atom, the smallest component of any element, contains enormous energy. When it is split – a process called *fission*, this energy is released in the forms of tremendous heat and light. This energy was released on Hiroshima and Nagasaki, Japan, by two separate atom bombs in 1945 that led to the conclusion of World War II. The horrors created by those two bombs led the international community *to condemn* further use of atomic weapons.

Still, engineers, governments and scientists realized that if the atom's energy could be controlled and harnessed, it would revolutionize the world's energy markets and provide significant electricity reserves to help meet the world's energy demands. It was even *envisioned* that it could one day replace the need for fossil fuels. As a result, the first usable electricity from nuclear fission was produced at the Idaho National Engineering Laboratory in 1951.

In 1954, The Atomic Energy Act was passed to promote the peaceful use of nuclear energy. Subsequently, in 1957, the International Atomic Energy Agency (IAEA) was formed to promote peaceful use of nuclear energy and to provide international safeguards and an inspection system to ensure nuclear materials are not *diverted* from peaceful to military uses. It was later replaced by the Nuclear Regulatory Commission and the Energy Research and Development Administration, the latter of which became the US Department of Energy in 1977.

Commercial nuclear power plants became a commercial reality in the late 1960s when large numbers of orders were placed for nuclear power reactors in the United States. Yet, in 1979, America's fears about nuclear power were realized when a partial *meltdown* occurred in a reactor at the Three Mile Island *facility* in Harrisburg, Pennsylvania. Though minimal radioactive material – which can cause serious damage to or kill living *tissue* – was released, the potential for greater disaster *lurked*.

This greater potential was realized in April 1986 when a full reactor meltdown and fire occurred at the Chernobyl Nuclear Power Plant in the former Soviet Union. This resulted in the massive release of radioactive materials, resulting in major environmental catastrophe. As a result of these disasters, global support for nuclear energy – which already had significant negative public support – *plummeted* to lower levels.

Over the last 15 years, vast improvements to nuclear reactors have been made to make them safer and last longer. There is still strong support for nuclear energy from many sectors that are convinced it is the future of the world's energy sources. While nuclear energy has several advantages over fossil fuels, particularly considering that it does not release the harmful greenhouse gas carbon dioxide into the atmosphere, public resistance remains high.

Nuclear energy requires sources of radioactive elements found naturally in our environment and manmade with which to create the nuclear fission process that splits the atoms. The most common and most used of these elements is Uranium, which is found in two different types or species (called *isotopes*): U-238 and U-235. U-235 is the type used for nuclear fission because it can be readily split, releasing massive energy. The other type of Uranium is called U-238, which is barely radioactive. Of all the known Uranium reserves in the world, almost all of it is U-238, with just over a half a percent of those reserves being U-235.

Plutonium and Thorium are the only other available sources that are used for nuclear energy. Plutonium is not naturally occurring. Thus, the Plutonium used in nuclear reactors is man-made, coming from a nuclear reactor. It is not as stable as U-235 and is harder to use. Thorium, though not yet a *mainstream* nuclear energy supply source, is being heavily studied and applied as a safer, cleaner alternative to Uranium. Still, Uranium is king as the *premiere* provider of nuclear energy.

Perhaps the greatest challenge facing nuclear energy production – after any potential for nuclear disasters similar to the 1986 Chernobyl event – is disposal of the highly radioactive wastes. It could take at least 10,000 years for these materials to fully break down into harmless elements so the challenge is to store them safely for at least that length of time. It is possible, but where and how are still troubling issues.

*Exploitable* Uranium supplies also pose some more short-term challenges. According to the Organization for Economic Cooperation and Development, the world's economically exploitable Uranium reserves are likely to last between 35 and 63 years, depending on whether demand is such as to justify the higher cost of mining less easily exploitable reserves.



Still, in consideration of the power that can be generated by Uranium and the *burgeoning* global energy demands, many governments are placing more emphasis on nuclear energy. The largest user of nuclear energy is the United States, followed by France, Japan, Germany and the Russian Federation. In the US alone, the nation's 103 nuclear power plants each generate an average of around 20 tons of radioactive spent fuel a year. Spent fuel now sits in cooling pools and temporary storage areas waiting for somebody to figure out what to do with it.

A second form of nuclear energy comes from the same process that gives life to our sun and other stars in the universe: nuclear *fusion*. Fusion occurs when two lighter elements, like hydrogen, are forced together – or fused – to create a heavier element, Helium. This occurs only under extraordinary heat and pressure, but it releases enormous energy in the form of heat, light and other radiation.

Deep inside the sun's core, hydrogen is converted to helium at temperatures of 10 – 15 million degrees Celsius. Fusion provides the energy necessary to sustain life on Earth. Sunlight is energy released from fusion reactions inside the sun. This process also produces all of the chemical elements found on Earth.

In 1952, seven years after the atomic bombs were dropped on Japan, the United States developed and successfully tested the hydrogen bomb. Using the same fusion process and hydrogen elements used in the sun and stars, the hydrogen bomb *yields* thousands of times more energy than that provided by nuclear fission. One hydrogen bomb would release five times more energy than all of the bombs dropped in World War II! Fortunately, there have been no hydrogen bombs used in *warfare*.

*Duplicating* the fusion process that is constantly occurring inside the Sun is not that easy. While fusion does not have the harmful radiation side effects that fission creates, the problem with nuclear fusion is to start the fusion reaction in an area small enough at sufficiently high temperatures – about 180,000,000 degrees Fahrenheit! There is currently no known substance that would not melt or *vaporize* at just a few thousand degrees.

### Words and Expressions:

- *fission* – расщепление, деление атомного ядра при цепной реакции
- *to condemn* – браковать, признавать негодным для использования
- *to envision* – воображать что-либо, представлять себе, предвидеть
- *to divert* – отвлекать, переключать, переводить
- *meltdown* – расплавка, растворение
- *facility* – оборудование, приспособления, аппаратура
- *tissue* – ткань, материя
- *to lurk* – скрываться в засаде, прятаться
- *to plummet* – кидать, бросать, швырять вниз, сбивать
- *isotope* – изотоп
- *mainstream* – основное направление, главная тенденция
- *premiere* – премьера
- *exploitable* – использующийся
- *to burgeon* – распускаться, расцветать
- *fusion* – синтез, слияние
- *to yield* – давать такой-то результат, приводить к чему-либо
- *warfare* – война, приемы ведения войны
- *to duplicate* – повторять, копировать
- *to vaporize* – испаряться, распылять

### Exercises on the Text:

📖 Answer the following questions.

1. What is the smallest component of any element?
2. What does the process of fission look like?
3. In what form is nuclear energy always released?
4. Which episode of the Second World War led the international community to condemn further use of atomic weapons?
5. When did commercial nuclear power become a commercial reality?

📖 Translate the following sentences from Russian into English.

1. Атом, мельчайший компонент любого элемента, заключает в себе огромную энергию.
2. Две ядерные бомбы были сброшены на Хиросиму и Нагасаки в Японии, что привело к завершению Второй мировой войны.
3. С тех пор, как инженеры, члены правительств и ученые осознали, что энергией атома можно управлять, они поняли, что это произведет революцию на энергетических рынках.
4. В 1979 г. опасения Америки относительно ядерной энергии оправдались: случилась незначительная утечка реактора в Пенсильвании.
5. В течение последних пятнадцати лет ядерные реакторы были значительно улучшены в плане безопасности и продолжительности срока эксплуатации.
6. Ядерная энергия нуждается в источниках радиоактивных элементов, содержащихся в естественном виде в окружающей среде.
7. Самый распространенный из этих элементов – уран, который существует в двух формах, называемых изотопами.
8. Плутоний и торий – единственные источники ядерной энергии, помимо урана.
9. Торий в настоящий момент тщательно изучается и планируется его применение в качестве более безопасного заменителя урана.
10. Крупнейший потребитель ядерной энергии – США, затем идет Франция, Япония, Германия и Российская Федерация.

📖 Discuss the problems raised in the text above with your partner, using the active vocabulary.

### Grammar Reference:

#### Сложноподчиненные предложения (The Complex Sentences)

Сложноподчиненное предложение состоит из главного и одного или нескольких придаточных предложений. Придаточные предложения соединяются с главным предложением при помощи подчиненных союзов и союзных слов, а также бессоюзным способом.

#### Дополнительные придаточные предложения (Object Clauses)

Дополнительные придаточные предложения выполняют в сложном предложении функцию прямого дополнения или предложного косвенного дополнения. Они отвечают на вопросы *whom – кого?* или *what – что?* без предлогов или с предлогами и вводятся союзами *that, if, whether*, союзными словами *who, what, which, when, where, how* или бессоюзно.

*I am sure that he is not at home now.* – Я уверен, что его нет дома сейчас.

*I am glad you have come.* – Я рад, что Вы пришли (бессоюзное подчинение).

#### Определительные придаточные предложения (Attributive Clauses)

Определительные придаточные предложения выполняют функцию определения в сложноподчиненном предложении, отвечают на вопросы *what, which – какой?* и присоединяются к главному предложению бессоюзным способом или при помощи следующих союзных слов-местоимений: *who – который (whom – которого), whose – чей, которого, which, that – который*, а также наречиями *when – когда, where – где, куда, why – почему*. Местоимения *who, whom, whose* относятся к существительным, обозначающим одушевленные предметы, *which* относится к неодушевленным предметам, а местоимение *that* относится как к одушевленным, так и неодушевленным предметам.

*Here are the letters that I received yesterday.* – Вот письма, которые я получил вчера.

*The man whom you saw yesterday is our director.* – Человек, которого ты видел вчера, мой директор.  
При бессоюзной связи предлог стоит в конце придаточного предложения, а при переводе на русский язык – в начале.

*This is the office we work in.* – Вот офис, в котором мы работаем.

## Обстоятельственные придаточные предложения (The Adverbial Clauses)

Обстоятельственные придаточные предложения выполняют в сложном предложении функцию различных обстоятельств. Они делятся по своему значению на обстоятельственные предложения времени, места, образа действия, причины, цели, следствия, уступительные, степени и сравнения, условия.

### Придаточные предложения времени (Adverbial Clauses of Time)

Придаточные предложения времени отвечают на вопросы *when – когда? since when – с каких пор? how long – как долго?*

Придаточные предложения времени соединяются с главным предложением союзами: *when – когда; while – в то время как; before – перед тем как, до того как, перед; after – после того как; as soon as – как только; as – когда, в то время как, по мере того как; till, until – пока, до тех пор, пока не; as long as – пока, до тех пор пока; since – с тех пор как и др.*

*I saw many places of interest when I was in Moscow. – Я осмотрела много достопримечательностей, когда была в Москве.*

*As soon as I receive his cable, I shall give it to you. – Как только я получу его телеграмму, я дам ее тебе.*

*She came after I had left. – Она пришла после того, как я ушла.*

*Примечание:* В придаточных предложениях времени будущее время не употребляется.

*While you are working I shall be reading this article. – Пока Вы будете работать, я прочитаю эту статью.*

### Придаточные предложения условия (Adverbial Clauses of Condition)

Придаточные предложения условия обычно соединяются с главным предложением союзами *if – если, unless – если не*. В английском языке условные предложения подразделяются на три типа:

1 тип условных предложений выражает осуществимое условие, относящееся к настоящему, прошедшему или будущему времени.

*If it gets dark, we switch the light on. – Если становится темно, мы включаем свет.*

2 тип составляют предложения, выражающие маловероятные условия, относящиеся к настоящему или будущему времени. Эти предложения употребляются в сослагательном наклонении. В главном предложении употребляются вспомогательные глаголы *should/would + +* инфинитив смыслового глагола, в придаточном предложении употребляется форма сослагательного наклонения, совпадающая с *Past Simple*.

*If I had time (now, tomorrow), I should go there. – Если бы у меня было время (сейчас, завтра), я бы пошла туда.*

3 тип составляют предложения, выражающие неосуществимые предположения, относящиеся к прошедшему времени. В условных предложениях 3 типа глагол главного предложения стоит в форме *should (would) + Infinitive Perfect*, а глагол условного придаточного предложения стоит в форме сослагательного наклонения, совпадающего с *Past Perfect*.

*If you had listened to me carefully, you would not have asked me such questions. – Если бы Вы слушали меня внимательно, Вы бы не задавали мне таких вопросов.*

### Функции причастия I и причастия II (Participle I и Participle II)

*Participle I* образуется прибавлением суффикса *-ing* к основе глагола:

*to stand* – стоять

*to carry* – нести

*standing* – стоящий

*carrying* – несущий

Функция в предложении	Место в предложении	Примеры	Перевод
Определение	Перед определяемым	<i>Boiling water</i>	Кипящая вода

	словом		
Часть определительного причастного оборота	После определяемого слова	<i>The girl reading a newspaper is our student</i>	Девушка, читающая газету, наша студентка
Обстоятельство	В начале или в конце предложения в обстоятельстве причастном обороте	<i>Looking through the book, she came across the description of the process</i>	Листая книгу, она натолкнулась на описание этого процесса

*Participle II* обычно выражает результат действия, которому подвергся предмет, и переводится на русский язык причастием страдательного залога.

*Participle II* стандартных глаголов образуется прибавлением суффикса *-ed* к основе глагола:

*to complete* – заканчивать

*completed* – законченный.

*Participle II* нестандартных глаголов имеют особую форму, которая образуется по-разному у различных глаголов:

*to see* – *seen*

*to build* – *built*

*to make* – *made*.

Место <i>Participle II</i> в предложении	Функция	Перевод
1. Перед определяемым словом: <i>The selected stories</i>	Определение	Избранные рассказы
2. После определяемого слова: <i>The office built in our street has simple and severe lines.</i>	Определение	<b>Офис, построенный на нашей улице, имеет простые и строгие линии</b>

Продолжение табл.

Место <i>Participle II</i> в предложении	Функция	Перевод
3. В начале или в конце предложения (в обстоятельстве причастном обороте), сопровождаемый часто союзами <i>if, when, while</i> . <i>When built this office will be the highest in our street</i>	Обстоятельство	Когда построят этот офис, он будет самым высоким на нашей улице
4. <i>The work was done</i>	Именная часть сказуемого	Работа была сделана

**Герундий (Gerund)**

Герундий является неличной формой глагола, которая сочетает в себе свойства глагола и существительного. Герундий не имеет соответствующей формы в русском языке.

Active	Passive	
<i>writing</i> <i>asking</i>	<i>being written</i> <i>being asked</i>	Простые формы (одновременность или будущее)
<i>having written</i> <i>having asked</i>	<i>having been written</i> <i>having been asked</i>	Перфектные формы (предшествование)

1. Обладая свойствами глагола, герундий (как и инфинитив) имеет категорию относительного времени и залога, может иметь прямое дополнение и определяться наречием.

*Tom likes reading such books.* – *Том любит читать такие книги.*

*Tom likes being read such books.* – *Том любит, когда ему читают такие книги.*

*He is fond of walking quickly.* – *Он любит ходить быстро.*

*I remember having seen this film many years ago.* – *Я помню, что смотрел этот фильм много лет назад.*

*I remember having been told about this film.* – *Я помню, что мне рассказывали об этом фильме.*

2. Обладая свойствами существительного, герундий выполняет в предложении те же синтаксические функции, что и существительное (функции подлежащего, второй части сложного сказуемого, определения, дополнения, обстоятельства). Как всякое существительное, герундий может определяться притяжательным местоимением или существительным в притяжательном падеже и иметь перед собой различные предлоги.

### Grammar Exercises:

#### 📖 TRANSLATE THE FOLLOWING CONDITIONAL SENTENCES INTO ENGLISH.

1. Я бы никогда не подумал, что это возможно, если бы я не увидел это своими глазами.
2. Я бы не стал делать этого на твоём месте.
3. В случае, если тебе придется неожиданно уехать, пришли мне записку.
4. Пьеса понравилась бы мне больше, если бы она не была такой длинной.
5. Если бы не его болезнь, семья переехала бы в город.
6. Если бы он пришел вовремя, этого могло бы не случиться.
7. Если бы пошел дождь, я бы промокла до костей, так как на мне было очень легкое платье.
8. Куда бы ты пошел, если бы не было дождя?
9. Посиди с ним, и, если он вдруг попросит чего-нибудь, скажи мне.
10. Если бы я сказал что-нибудь подобное твоей тетушке, она сочла бы меня сумасшедшим.

📖 Supply infinitive or gerund for the following sentences.

1. It was quite late when they saw Trasker ... up the other side of the street. They saw him ... in front of his house, ... up at it and ... his cigarette away (*to come, to pause, to look, to throw*).

2. ... the truth, he felt disgusted with himself (*to tell*).

3. Even when my mother was alive it was considered ... a great extravagance ... to a hotel for dinner (*to be, to go*).

4. Meg was not much surprised in the morning ... that her uncle was too unwell ..., though he hoped ... his work in the afternoon (*to learn, to appear, to resume*).

5. He knew that he ought to feel ashamed ... his father's money when he made no effort ... himself, but it did not seem ... and he just went on ... (*to keep, to take, to support, to matter, to sketch*).

6. I love you so much that I still can't stop my heart ... fast when I see you ... something as ordinary as ... the table (*to beat, to do, to lay*).

7. ... on the deck Father surveyed the passengers ... up the gang-way (*to stand, to come*).
8. He insisted upon her ... a maid ... in three afternoons a week ... with the cleaning and ironing (*to have, to come, to help*).
9. He thought of ... out and ... a note to his wife ... that he had been called away (*to go, to leave, to say*).
10. ... frank, it is a great shock to me (*to be*).

📖 Translate the following into English using participles as attributes.

1. Мэри села на упавший ствол дерева.
2. Оркестр на экране телевизора в гостиной исполнял музыку Моцарта.
3. Дети играли в разрушенном коттедже.
4. Там было шесть коробок, туго завернутых в старые газеты.
5. Она подошла к письменному столу и вынула запечатанный конверт.
6. Женщина вышла из магазина и пошла к машине, оставленной на стоянке чуть ниже по улице.
7. Вернувшись в комнату, она позвонила по телефону.
8. Упавшие листья спокойно лежали в пруду.
9. Оставшись один, я огляделся.
10. Застигнутые врасплох, они не знали, что сказать.
11. У меня были свои собственные определенные взгляды на мое будущее.
12. В коробке было несколько негативов, свернутых в тугий виток.

## LESSON 7

### Grammar:

1. Активный залог видовременных форм английского глагола (Active Voice).
2. Простое настоящее время (The Present Indefinite Tense).
3. Простое прошедшее время (The Past Indefinite Tense).
4. Простое будущее время (The Future Indefinite Tense).

### Text:

## ORGANIC AGRICULTURE TODAY

The production and use of organic food products has taken firm root today as a serious alternative for consumers and farmers. Particularly since the early 1990s, a growing number of North American farmers have taken steps to minimize the use of and consumers' exposure to, toxic and persistent pesticides by establishing organic agricultural practices.

Organic farming is about building a sustainable, healthy and productive future for every aspect of our planet: the soil, water supply, animals and humans. Consumers who want to minimize their – and the environment's – exposure to toxic and persistent chemicals can do so by buying organic foods and organic *fiber* products, and by choosing organic agricultural methods for home pest control and lawn care. It is simply putting nature to work while removing many potential health risks that exist from certain food production today, mainly the use of pesticides.

In March 2001, the Centres for Disease Control and Prevention (CDC) released findings showing measurable amounts of *residual organophosphate* pesticides in a group of people who were studied. The National Academies of Sciences has indicated that one out of four developmental and behavioral problems in children may be linked to genetic and environmental factors, including exposure to lead, mercury and organophosphate pesticides. When you put these two studies together, the conclusions could be cause for concern. Still, it should be noted that there is still more scientists and doctors need to learn about the long-term health effects of the low-level presence of organophosphates in humans.

Interestingly, a separate study to assess preschool children's organophosphate exposure in the Seattle Metropolitan area showed that one child who showed no measurable pesticide *residue* lived in a family that buys exclusively organic products and does not use any pesticides at home. While this does not conclude that there

were any serious health risks to the *remainder* of the group, it does indicate that use of organic food and non-food products can reduce the presence of those products in humans.

With increasing demands for food supplies during the past 60 years, we saw the introduction of the use of *harsh* chemicals and synthetic fertilizers as a way for farmers *to boost* crop yields. This subsequently has been followed by the more recent adoption of planting genetically modified crops.

Even today, there are toxic and persistent pesticides still used in agriculture. CDC noted that organophosphate pesticides account for approximately half of the insecticides used in the United States. An estimated 60 million pounds of organophosphate pesticides are applied to about 60 million acres of U.S. agricultural crops annually, and an additional 17 million pounds are used per year for nonagricultural uses, such as in household pest control products and in lawn and garden sprays.

The National Organic Standards Board defines organic agriculture as an ecological production management system that promotes and *enhances* biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that *restore*, maintain and enhance ecological harmony.

Despite the fact that less than 1 percent of U.S. agriculture research dollars are spent on organic practices, organic production has been shown to have yields comparable to, and sometimes higher than, conventional systems. In addition, because organic production improves soil quality as measured by soil structure, organic matter, biological activity, water *infiltration* and water-holding *capacity*, organic systems generally produce higher yields than crops grown using conventional high-input methods during *drought*, leading to production stability year after year.

Organic agriculture is a collection of tested agricultural practices by diligent farmers *intent* on preserving the health of our planet. Organic agriculture is sustainable, keeping soils healthy and alive, and helping to minimize *contamination* of the earth's *precious* water supplies.

Organophosphates are not allowed in organic agriculture. Instead, organic growers use biological and cultural practices as their first line of defense against pests. Methods used include crop *rotation*, the selection of pest- and disease-resistant varieties, *nutrient* and water management, the provision of habitat for the natural enemies of pests, and release of beneficial organisms to protect crops from damage. The only pesticides allowed in organic agriculture must be on a USDA approved list, with restricted use.

In addition, organic practices prohibit the use of genetic engineering, *irradiation*, *sewage sludge*, antibiotics, and hormones. These practices are allowed in other forms of raising and producing our food, and other agricultural products.

Because organic agriculture respects the balance of microorganisms in the soil, organic producers use *composted manure* and other natural materials, as well as crop rotation, to help improve soil fertility, rather than synthetic fertilizers that can result in an *overabundance* of nitrogen and phosphorous in the ground. As a result, organic practices protect ground water supplies and avoid runoff of chemicals that can cause "dead zones" in larger bodies of water.

Comparisons in Europe, for instance, have shown nitrate-leaching rates on organic farms are 40 – 57 percent lower per hectare (roughly 2.5 acres or 12,000 square yards) and carbon dioxide *emissions* are 40 – 60 percent lower per hectare than conventional systems.

On the other hand, current conventional practices have led to some measurable problems, including a high level of toxic metals in commercial fertilizers. An analysis of 29 fertilizers found that each contained 22 different heavy metals. In 20 of the products, levels exceeded the limits set on wastes sent to public landfills, with disturbing quantities of arsenic, lead, mercury, cadmium, chromium, and dioxin, among others.

Furthermore, polluted runoff from farms and cities went largely *unabated* and actually increased over the past 30 years according to a 2001 report from the Pew Oceans Commission. The report noted that many of the nation's coastal environments exhibit symptoms of over-enrichment from these run-offs. Symptoms include harmful *algal* blooms, loss of sea grasses and coral reefs, and serious oxygen depletion. Coastal regions, as a result, have suffered reduced production of valuable fisheries and threats to biodiversity and ecosystems less *resilient* to natural and human influences.

Because organic practices help safeguard the environment and protect habitats, organic production conserves and promotes species diversity. In the United Kingdom, a study comparing biodiversity in organic farming and conventional farming systems found that organic farms had five times as many wild plants in *arable* (farmable) fields and 57 percent more species.

The organic farms also had 25 percent more birds at the field edge, 44 percent more in the field in autumn and winter, and 2.2 times as many breeding skylarks and higher *skylark* breeding rates. In addition, they had 1.6 times as many of the *invertebrate arthropods* that make up bird food; three times as many non-pest butterflies

in the crop areas; one to five times as many spider numbers, and one to two times as many spider species. They also showed a significant decrease in *aphid* numbers.

Buying organic products is also a way to support conservation of our land. Organic products, whether foods or fiber, are produced through a system of farming that maintains and *replenishes* soil fertility in an ecological way. There were approximately 1.3 million acres in certified organic production in the United States in 1997. The U.S. Department of Agriculture's Economic Research Service estimates 2.6 million acres were in production in 2001.

As far as feeding the world, the late Donella Meadows, who served as director of the Sustainability Institute, wrote: "We already grow enough food to feed everyone; the excess simply is not distributed where it is needed. Industrial agriculture, far from being the *salvation* it promises, is actually undermining the resource base-healthy soil, clean water, and diversity of plants and animals-needed to sustain the world's growing human population in the long term. If anything can restore that resource base and at the same time eliminate hunger it is organic methods."

Organic foods and products are making a healthy comeback from a by-gone era, but in more of the light of what is healthy for Earth's ecology and us. Moreover, the production and use of these products have become the choice of a rapidly growing number of farmers and consumers today. It does prove that the connection between human health and our ecology are indelibly intertwined.

### Words and Expressions:

- *fiber* – волокно, волосок, фибра, нить, древесное волокно
- *residual* – остаток, остаточный продукт
- *organophosphate* – органический фосфат
- *residue* – осадок, отстой
- *remainder* – остаток, остатки
- *harsh* – жесткий, твердый, грубый, неприятный
- *to boost* – поднимать, помогать подняться
- *to enhance* – увеличивать, усиливать, улучшать
- *to restore* – возвращать в прежнее состояние
- *infiltration* – инфильтрация, просачивание, проникновение
- *capacity* – вместимость, емкость
- *drought* – засуха, засушливость, нехватка дождей, сухость воздуха
- *intent* – намерение, цель
- *contamination* – загрязнение, порча
- *precious* – драгоценный, большой ценности
- *rotation* – чередование, периодическое повторение, очередность, ротация
- *nutrient* – питательное вещество
- *irradiation* – облучение, химиотерапия
- *sewage* – сточные воды, нечистоты
- *sludge* – густая грязь, слякоть, ил, тина
- *to compost* – готовить компост, компостировать, превращать в компост
- *manure* – навоз, компост, удобрение
- *overabundance* – чрезмерное изобилие, избыток, излишек
- *emission* – выделение, распространение
- *unabated* – неослабленный
- *algal* – относящийся к водорослям, водорослевый
- *resilient* – пружинистый, упругий, эластичный
- *arable* – пахота, пашня, пахотная земля
- *skylark* – жаворонок
- *invertebrate* – беспозвоночное животное
- *arthropods* – членистоногие
- *aphid* – тля растительная
- *to replenish* – (снова) наполнять(ся), пополнять(ся)
- *salvation* – избавление, спасение



## Exercises on the Text:

📖 Answer the following questions.

1. What does the term "organic" mean in agriculture?
2. Where and when did organic agriculture appear?
3. What is the purpose of organic farming?
4. Why do many farmers use harsh chemicals and synthetic fertilizers?
5. Which agricultural system is more popular nowadays: organic or conventional and why?

📖 Translate the following sentences from Russian into English.

1. Сегодня производство и использование органических пищевых продуктов представляет собой серьезную альтернативу для потребителей и фермеров.
2. Органическое сельское хозяйство вносит свой вклад в улучшение всех составляющих нашей планеты: почвы, воды, животных и человеческих существ.
3. Доказано, что в одном случае из четырех задержка в развитии у детей связана с генетическими и экологическими факторами, включая контакт со свинцом, ртутью и органофосфатными пестицидами.
4. Так как за последние шестьдесят лет резко возросла потребность в пищевых продуктах, фермеры начали применять химикаты и синтетические удобрения для улучшения урожая.
5. Даже в наши дни токсические пестициды все еще используются в сельском хозяйстве.
6. Органическое сельское хозяйство – это набор сельскохозяйственных практик, разработанных фермерами с целью сохранения здоровой обстановки на нашей планете.
7. Использование органофосфатов запрещено в органическом сельском хозяйстве.
8. Кроме того, органическое сельское хозяйство запрещает использование генной инженерии, антибиотиков и гормонов.
9. Анализ двадцати девяти удобрений показал, что каждое из них содержит двадцать два разных тяжелых металла.
10. Покупка органических продуктов – это еще один способ поддержать здоровую обстановку на нашей планете.

📖 Discuss the problems raised in the text above with your partner, using the active vocabulary.

## Grammar Reference:

### Активный залог видовременных форм английского глагола (Active Voice)

Действительный залог показывает, что действие исходит от подлежащего, т.е. подлежащим является лицо или предмет, производящий действие:

*Popov invented the radio in 1895. – Попов изобрел радио в 1895 году.*

### Активный залог группы Indefinite (Present, Past, Future). Простое настоящее время (The Present Indefinite Tense)

Простое настоящее время *The Simple Present Tense* или *The Present Indefinite Tense* употребляется для выражения постоянного или повторяющегося действия.

Утвердительная форма образуется при помощи инфинитива смыслового глагола без частицы *to*, а в 3-м лице единственного числа к инфинитиву смыслового глагола прибавляется окончание *-s (-es)*.

*Примечание:* 1. Если глагол оканчивается на *-o*, *-s*, *-sh*, *-ch*, *-x*, то в 3-м лице единственного числа к нему прибавляется окончание *-es*: *to go – goes, to do – does, to finish – finishes, to discuss – discusses*.

2. Если глагол оканчивается на -у с предшествующим согласным звуком, то в 3-м лице единственного числа к нему прибавляется окончание -es, а буква у меняется на i:

*to study – studies.*

Но: *to stay – stays.*

Отрицательная форма глаголов в *Present Indefinite* образуется при помощи вспомогательного глагола *do* (в 3-м лице единственного числа *does*) и частицы *not*. Сокращенные формы: *don't, doesn't*.

*I don't like to buy clothes myself.*

Вопросительная форма глагола в *Present Indefinite* образуется с помощью вспомогательного глагола *do (does)*, который ставится перед подлежащим.

Краткий ответ состоит из подлежащего, выраженного соответствующим местоимением, и вспомогательного глагола.

Например: 1) *Do you read letters in the morning? – Yes, I do.*

2) *Does your manager read letters in the morning? – Yes, he does.*

### Простое прошедшее время (The Past Indefinite Tense)

*The Simple Past Tense* или *The Past Indefinite Tense* употребляется для выражения действий, совершившихся в прошлом и не связанных с настоящим моментом, а также для выражения повторяющихся действий в прошлом.

Данное время употребляется со следующими обстоятельствами времени:

*yesterday* – вчера;

*the day before yesterday* – позавчера;

*yesterday morning (afternoon, evening)* – вчера утром (днем, ве-чером);

*last* – в последний (прошлый) раз;

*last week (month, year) ago* – неделю (месяц, год) тому назад;

*the other day* – на днях;

*in 1969* – в 1969 году.

Время совершения действия может быть не указано, но ясно из ситуации или контекста, например:

– *Did you have a nice weekend?*

– *No, I didn't. The weather was not good and I stayed at home.*

*Примечание.* 1) Глаголы в утвердительной форме в *Past Indefinite* не изменяются по лицам и числам.

2) Форма прошедшего времени правильных глаголов совпадает с формой *Participle II*.

Каждый неправильный глагол имеет свою форму прошедшего времени.

Отрицательная форма глаголов в *Past Indefinite* образуется при помощи вспомогательного глагола *did* и отрицательной частицы *not*.

Например: *The manager did not look through the mail yesterday morning.*

Вопросительная форма *Past Indefinite* образуется при помощи вспомогательного глагола *did*, который ставится перед подлежащим, а смысловой глагол употребляется в 1-й форме.

Например: *Did he stay at home last morning?*

*Примечание.* Глагол *to be* в *Past Indefinite* имеет форму *was* для 1-го и 3-го лица единственного числа и *were* для 2-го лица единственного числа и всех лиц множественного числа. Отрицательная и вопросительная форма образуются без вспомогательного глагола.

Например: – *Was the General Director in his office yesterday?*

– *No, he wasn't. He was in the conference room.*

### Будущее неопределенное время (The Future Indefinite Tense)

*The Future Indefinite Tense* употребляется для выражения действий, которые произойдут в будущем.

Утвердительная форма *Future Indefinite Tense* образуется при помощи вспомогательного глагола *shall* (для 1-го лица) и *will* (для 2-го и 3-го лица) и инфинитива смыслового глагола без частицы *to*.

Например: *We shall go there by train tomorrow.*

Отрицательная форма *Future Indefinite* образуется при помощи вспомогательного глагола *shall (will)* и частицы *not*, которая ставится после вспомогательного глагола (*shall not = shan't; will not = won't*).

Например: *We shall not go there by bus tomorrow.*

Вопросительная форма *Future Indefinite* образуется путем перестановки: вспомогательный глагол *shall (will)* ставится перед подлежащим.

Например: *When shall we see you?*

### Grammar Exercises:

📖 Complete the following sentences, using Present Indefinite.

1. I (sleep) here. My father (sleep) in his study.
2. In case she (want) to see him, he'll come over.
3. "Your mouth is bleeding. ... it (hurt)?" – Martha asked me.
4. Where ... we (go) from here?
5. Please see that the children (not to get) nervous.
6. I (do) a lot of traveling, you know.
7. One (live) and (learn).
8. He (own) a big car.
9. "It will not do any good to anyone if you (get) ill", – I said.
10. "His men (act) silently as a rule. They (wear) dark glasses and they (call) after dark", – he added.

📖 Complete the following sentences, using Past Indefinite.

1. At home we (heat) soup.
2. A netting wire fence (run) all around the house to keep out rabbits and deer.
3. My aunt (look) after my father and they (live) in our old house.
4. He always (smile) at children and (give) them sweets.
5. He (move) across the lawn to the house and I (follow) him. The moonlight (fall) in streaks through the leaves.
6. She (know) her brother at the University where he (lecture) on physics.
7. That evening she (have) a date with a man who (sell) cosmetics.
8. He (sit) down and silently (take) one of the cigarettes from the desk.
9. The office (smell) like a stage dressing room.
10. He (collect) books on Caribbean flora.

📖 Complete the following sentences, using Future Indefinite.

1. I (come) round tomorrow night.
2. His father (not to hear) of his giving up the job.
3. John is not here. He (to be) back soon though.
4. I (drop) you a note when I've seen Paula.
5. Do sit down, Edmund. You (break) something if you go on moving around.
6. I don't know what I (to do) when I live here. I ... probably never (get) another job.
7. ... I (turn) on the bath for you?
8. It (to be) easier when you get away. We (not to see) one another every day.
9. Oh, don't bother about me. I (stroll down) and (look) at the town.
10. They (do) whatever they have to do to regain their self-respect.

## LESSON 8

### Grammar:

1. Настоящее продолженное время (The Present Continuous Tense).
2. Прошедшее продолженное время (The Past Continuous Tense).
3. Будущее продолженное время (The Future Continuous Tense).

### Text:

## PAPER CHASE

Take a minute to look around the room you are in and notice how many things are made out of paper. There may be books, a few magazines, some printer paper, and perhaps a poster on the wall. Yet, if you consider that each person in the United States uses 749 pounds of paper every year (adding up to a *whopping* 187 billion pounds per year for the entire population, by far the largest *per capita* consumption rate of paper for any country in the world), then you realize that paper comes in many more forms than meets the eye.

The fact is, world consumption of paper has grown four hundred percent in the last 40 years. Now nearly 4 billion trees or 35 % of the total trees cut around the world are used in paper industries on every continent. Besides what you can see around you, paper comes in many forms from *tissue* paper to *cardboard* packaging, to stereo speakers, to electrical plugs, to home *insulation*, to the *sole* inserts in your tennis shoes. In short, paper is everywhere.

So where does it come from? Most people can guess that trees are the *staple* of any paper product. But did you know that until the middle of the 19th century, the main ingredient of paper was cloth rag? And while trees have since become a vital component in the creation of paper, many manufacturers today are beginning to use recycled waste combined with tree *pulp* to decrease the number of trees that need to be cut down and keep up with the growing demand for paper. Also, many environmentalists who believe that the world's forests are being cut down faster than they can grow are pointing to the continued success of wood-free paper made with other plants such as *hemp* and a similarly *fibrous* plant called *kenaf*.

Following is a brief history of paper along with the details of how the modern industry works and a few suggestions for making paper without cutting down so many trees.

The first paper-like substance was invented by the Egyptians over 6,000 years ago. Papyrus, which is the root of our English word "paper", was made by weaving reeds or other fibrous plants together and pounding them into a flat sheet. The Greeks and the Romans also used this technique, although some Ancient Greek paper makers were the first to create a kind of *parchment* paper made out of animal skins. Chances are, Aristotle, Socrates and other Greek philosophers originally wrote their books on the skins of dead cows.

But paper as we know wasn't made until 105 AD, when a Chinese court official named Tsai Lun mixed *mulberry bark* and hemp with water and scraps of cotton and linen cloth (i.e. rags). This *concoction* was mashed into a pulp and pressed into mats that were left in the sun to dry. Rags, as it turns out, would be used as the basis for paper for the next 1700 years.

As the Chinese culture flourished and expanded to the edges of the Asian continent, paper went along with it, first to Korea and Japan and then to the Arab world, which included Egypt and Morocco. Yet, it wasn't until 1009 AD that paper making reached Europe by way of Spain, where the first European paper mill was set up by Arabs in Xativa, near the Mediterranean port city of Valencia.

After that, the Italians and the French became notable paper makers and dominated the paper industry in Europe from 1250 to 1470 AD. After the invention of the moveable type printing press (link) in 1453 by the German inventor Johannes Gutenberg and the subsequent boom in literacy rates in the 16th century, paper for books grew in demand. Paper mills began opening all over the European continent and eventually reached the new world where the first American paper mill opened in Philadelphia in 1690. That increase in demand and the *upsurge* in papermaking began to tax the raw materials used to make paper (which was still largely made

with rags) and manufacturers began searching for alternatives. Yet, it was not until 1843 that ground-wood (or pulp) harvested from trees became the papermaker's material of choice.

Today, the world consumes about 300 million tons of paper each year. Most of that paper is made from virgin pulp, but recycled paper accounts for 38 % of the world's total fiber supply and non-wood fibers from plants like hemp or kenaf make up 7 %. The U.S., which contains only 5 % of the world's population, uses 30 % of all paper. In that country, the forest and paper products industry generates \$200 billion dollars in sales every year, accounting for 7 % of the total manufacturing output of the United States. About 28 % of all wood-cuts in the U.S. are used for papermaking and according to a 2000 report by PaperCom Alliance the demand for paper worldwide has grown 30 % in the past 6 years and is projected to grow even more.

Having come a long way from using rags and mulberry bark, papermaking has become a *sophisticated* science. Once a tree is cut down, it goes to a mill where it is *debarked* and then chipped into tiny fragments by a series of whirling blades. These fragments are then "cooked" in a *vat* with water and several chemicals, including *caustic* soda and sodium sulfate, to make *gooey slurry* known as pulp. In the final stages, *additives* such as *starch*, *China clay*, talc and calcium carbonate, are added to the pulp to improve the strength and brightness of the paper. Then the pulp is bleached to a white color using water and chlorine before being pressed into rolls and dried.

Unfortunately, the paper making process is not a clean one. According to the U.S. Toxic Release Inventory report published by the U.S. Environmental Protection Agency, pulp and paper mills are among the worst polluters to air, water and land of any industry in the country. The Worldwatch Institute offers similar statistics for the rest of the world. Each year millions of pounds of highly toxic chemicals such as *toluene*, methanol, chlorine dioxide, hydrochloric acid, and formaldehyde are released into the air and water from paper making plants around the world.

Paper making also uses up vast quantities of trees. But trees are a renewable resource, which means that once one is cut down another can be planted in its place. In fact, much of the wood used by paper companies in the U.S. comes from privately owned tree farms where forests are planted, groomed and thinned for harvest in 20 to 35 year cycles, depending on the tree species. Around the world, tree farms supply 16 % of all wood used in the paper industry while the *bulk* comes from second growth forests. Only 9 % of the wood used to make paper is harvested from old growth forests, which are impossible to replace because of their maturity.

Yet, while tree farms or plantations help feed the demand for wood, they cannot provide the plant and animal diversity found in natural forests. Plus, according to a 1996 report from the U.S. Forest Service, the rate of harvest for softwood trees in the southern United States outpaced growth for the first time since 1953.

For these reasons, there is a growing chorus of entrepreneurs, environmentalists and inventors who are coming up with ways to make paper without having to use as many chemicals or so many trees. Recycling is by far the most common way to help save a tree. According to the Worldwatch Institute recycling efforts around the world recovered about 110 million tons, or 43 %, of all paper used. About 45 % of all paper in the United States was kept out of *landfills* in 1998 and almost all paper makers in the U.S. substitute some recycled paper for virgin wood in the pulp making stage. Some paper mills rely on recycled waste as their primary source of raw material.

Others point to agricultural waste as a stand in for wood. Agri-pulp, as it is called, is wheat, oat, barley and other crop stalks left over after harvesting. Combined with recycled paper and other fillers, some paper makers are finding that agri-pulp paper makes fine stationery.

Hemp is a wood substitute that has a rich history in the paper making industry from paper's origins in China in the first century AD to the Declaration of Independence, which was written in the 18th century on hemp paper. Hemp is now used to make rope and clothes as well as paper. Unfortunately, it is illegal to grow hemp in the U.S. because it is a non-intoxicating variety of *cannabis sativa*, the same plant marijuana comes from. For that reason, hemp must be imported for use in the U.S.

Kenaf is also known as an excellent tree-substitute in making paper. This 4,000-year-old *hibiscus* plant – an annual, non-wood fiber plant related to *okra* and cotton – is native to central Africa and can grow up to 18 feet tall in a four-to-five month season. Like hemp, kenaf is naturally whiter than wood and can be bleached with hydrogen peroxide instead of chlorine.

One of the major reasons paper mills are hesitant to convert to using kenaf or hemp to make paper is because they are not set up to process anything except trees. Converting a paper mill to process these wood pulp alternatives would cost tens of millions of dollars and major coordination with their suppliers and customers.

Still – like the conversion of radio to television as the major entertainment source in the 1950s and 1960s – such a conversion from trees to non-wood source materials in the papermaking process can ultimately provide extraordinary economics for the manufacturers and the consumers. It is simply a matter of the different groups


within the industry agreeing on how to best make it happen. And, it is going to take consumers like you and me to start buying recycled products as well as alternative pulp.

What is certain is that with so much of our daily lives dependent on the material, paper is here to stay. Even e-mail and the Internet have not slowed this demand. And yet, as research advances and the environmental impact lessen, perhaps we will be able to live comfortably with paper for the next six thousand years.


### Words and Expressions:

- *whopping* – колоссальный, огромный
- *per capita* – на человека, на душу населения
- *tissue* – ткань
- *cardboard* – картон
- *insulation* – обособление, изоляция
- *sole* – подошва; ступня
- *staple* – главный элемент
- *pulp* – плоть, мякоть; мягкая масса
- *hemp* – конопля
- *fibrous* – волокнистый, жилистый, фиброзный
- *kenaf* – кенаф (лубяное волокно)
- *parchment* – пергаментная бумага
- *mulberry* – шелковица, тутовое дерево
- *bark* – кора (дерева)
- *concoction* – варево; стряпня
- *upsurge* – повышение, подъем, рост
- *sophisticated* – сложный, замысловатый; усовершенствованный
- *debarked* – высаживать(ся); выгружать(ся)
- *vat* – бак, цистерна, чан, кадка, ушат, бочка
- *caustic* – едкий; каустический
- *gooey* – клейкий, липкий; вязкий, тягучий
- *slurry* – гидросмесь, жидкий цементный раствор
- *additive* – добавление, дополнение; добавка
- *starch* – крахмал
- *clay* – земля, грязь, ил, тина
- *toluene* – толуол
- *bulk* – основная масса, большая часть чего-либо
- *landfill* – закапывание мусора, отходов, мусорная свалка
- *cannabis sativa* – гашиш, марихуана
- *hibiscus* – гибискус
- *okra* – бамя, гомбо

### Exercises on the Text:


 Answer the following questions.

1. How many things are made out of paper in your classroom?
2. Why is world consumption of paper growing so rapidly?
3. Where does the paper come from?
4. Do you know any facts from the history of papermaking?
5. Where and when was the first paper-like substance invented?

 Translate the following sentences from Russian into English.

1. Посмотрите вокруг себя, и вы удивитесь, сколько вещей сделано из бумаги.

2. За последние сорок лет мировое потребление бумаги возросло на сто процентов.
3. Сегодня многие производители используют переработанные отходы, чтобы сократить объем вырубаемых деревьев.
4. Первое похожее на бумагу вещество было изобретено египтянами более 6,000 лет назад.
5. Итальянцы и французы стали монополистами в производстве бумаги и возглавляли бумажную промышленность в Европе с 1250 по 1470 г.
6. Заводы по производству бумаги стали открываться во всей Европе, а в 1690 году первый бумажный завод был открыт в Филадельфии.
7. В настоящее время в мире ежегодно потребляется 300 миллионов тонн бумаги.
8. США, где проживает только 5 % мирового населения, используют 30 % всей бумаги.
9. Когда деревья срубили, их отправляют на завод, где их измельчают циркулярными пилами.
10. К сожалению, процесс изготовления бумаги не безопасен с экологической точки зрения.

 Discuss the problems raised in the text above with your partner, using the active vocabulary.

## Grammar Reference:

### Настоящее продолженное время (The Present Continuous Tense)

*Present Continuous* употребляется для выражения действия, совершающегося в момент речи или в настоящий период времени. Глаголы, выражающие чувства и восприятия, умственную деятельность и некоторые другие *to see – видеть, to know – знать, to like – нравиться, to want – хотеть* и др. в *Present Continuous* не употребляются.

Утвердительная форма *Present Continuous* образуется с помощью вспомогательного глагола *to be* в соответствующей форме *Present Indefinite* и *Participle I* (причастие настоящего времени) смыслового глагола.

Например: *Mr. Bell is reading a letter.*

*Примечание.* *Participle I* образуется путем прибавления окончания *-ing* к основной форме глагола: *speak + -ing = speaking*. Если глагол оканчивается на букву *-e*, то при прибавлении *-ing* *e* опускается: *come + -ing = coming*. Если глагол оканчивается на согласный звук, перед которым стоит один гласный, то конечная буква удваивается: *sit + -ing = sitting*.

Отрицательная форма *Present Continuous* образуется с помощью отрицательной частицы *not*, которая ставится после вспомогательного глагола *to be*.

Например: *I am not reading a book now.*

В вопросительной форме *Present Continuous* вспомогательный глагол *to be* ставится перед подлежащим, а смысловой глагол в *Participle I* ставится после подлежащего.

Например: *Is Mr. Bell reading a telex?*

### Прошедшее продолженное время (The Past Continuous Tense)

*Past Continuous* употребляется для выражения действия, происходящего в определенный момент в прошлом. Этот момент может быть выражен:

- 1) точным указанием времени.
- 2) другим действием, выраженным глаголом в простом прошедшем времени.

Утвердительная форма глаголов в *Past Continuous* образуется при помощи глагола *to be* в прошедшем времени (*was, were*) и *Present Participle* смыслового глагола.

Например: *Igor was waiting for the British businessmen at 7 o'clock.*

В вопросительной форме *Past Continuous* вспомогательный глагол *to be* в прошедшем времени (*was, were*) ставится перед подлежащим, а смысловой глагол в *Participle I* ставится после подлежащего.

Например: *Were you looking through the latest letters yesterday at nine?*

Отрицательная форма образуется при помощи отрицательной частицы *not*, которая ставится после вспомогательного глагола *to be* в прошедшем времени.

Например: *The director was not looking through the catalogues at two yesterday.*

## Будущее продолженное время (The Future Continuous Tense)

Употребляется для выражения незаконченного действия, которое будет совершаться в определенный момент в будущем. Этот момент может быть выражен:

1) точным указанием времени:

*I shall be working at the laboratory at 8 o'clock tomorrow morning.* – Я буду работать в лаборатории завтра утром в 8 часов.

2) другим действием в будущем, выраженным глаголом в *Present Indefinite*.

*When you come to see me, I shall be working at the laboratory.* – Когда Вы придете ко мне, я буду работать в лаборатории.

Глагол в форме *The Future Continuous Tense* переводится на русский язык глаголом в будущем времени несовершенного вида.

Утвердительная форма *The Future Continuous Tense* образуется при помощи вспомогательных глаголов *shall* (для 1-го лица) и *will* (для 2-го и 3-го лица), а также вспомогательного глагола *be* и смыслового глагола в *Participle I*: *shall/will be + -ing*.

Например: *I shall be passing my examination at 3 o'clock tomorrow.*

Вопросительная форма образуется при помощи вспомогательных глаголов *shall* или *will*, которые ставятся перед подлежащим, а вспомогательный глагол *be* и смысловый глагол в *Participle I* ставятся после подлежащего.

Например: *Who will be passing his examination at 3 o'clock tomorrow?*

Отрицательная форма образуется при помощи отрицательной частицы *not*, которая употребляется после вспомогательных глаголов *shall* или *will*.

Например: *He will not be passing his examination at 2 o'clock tomorrow.*

### Grammar Exercises:

#### COMPLETE THE FOLLOWING SENTENCES IN PRESENT CONTINUOUS.

1. Bill, stop that disgusting game you (to play).
2. They have moved to their London house. They (to buy) new furniture.
3. He paused and looked at her. "You (to shake). Are you all right?"
4. He ... always (to have) to check his emotions.
5. I (to meet) Jason at his office on the 25<sup>th</sup>. Would you join us?
6. You know that cinema audiences (to decline) in the United States.
7. The rain ... just (to begin).
8. I miss her very much, almost every minute of the day I think of her, or I think I (to heart) her.
9. My father ... always (to say) things that he shouldn't say in front of me.
10. Paris is wonderful. I like the food here, and I (to eat) like mad.

#### Complete the following sentences in Past Continuous.

1. The front door of the house stood open. The maid (to polish) the windows.
2. After a while he informed me that John (to do) a translation of some poems from Spanish.
3. I knew Harry (to come) sometime on Monday.
4. You remember how he ... always (to write) verses.
5. He glanced my way to see if I (to listen).
6. By the time the month was up, Eric realized he (to fight) a losing battle.
7. She stopped beside Tommy who was in a particularly scornful mood. He (to leave) in the morning.
8. Well, I was taught not to interrupt when older people (to talk).
9. She said it very calmly but her face had gone the curious colour, which meant that she (not to like) it very much.
10. He looked across the street to see if they (to wait).



📖 Complete the following sentences in Future Continuous.

1. "The evenings (to get) long soon," – I said to my aunt, to cheer her up.
2. "I do wish you'd do something about these stones," – said Mary. – "We ... all (to fall) over them."
3. He is very much ashamed. He realizes that it is all over between them. I think he (to leave) quite soon.
4. I (to have) some people in after dinner tonight at my place. Will you come?
5. Well, I (to see) you this evening.
6. "What is your brother like? I (to know) him at Oxford," – said Val.
7. Now that your assistant's gone you (to look) for someone to do his job.

## LESSON 9

### Grammar:

1. Настоящее совершенное время (The Present Perfect Tense).
2. Прошедшее совершенное время (The Past Perfect Tense).
3. Будущее совершенное время (The Future Perfect Tense).

### Text:

## THE COAST REDWOODS OF CALIFORNIA

They are the oldest living things on the face of the earth and the tallest. Some have looked down on the world around them for two thousand years. Earlier cultures had the good sense *to revere* them; but ours, since the mid-nineteenth century, has systematically destroyed them. The greatest remaining concentration of these great trees – and historically the scene of the greatest *devastation* by *loggers* – is along California's north coast. As a species, the coast *redwoods* are not endangered. New growth takes root easily. What is in danger is the old growth, described as trees that are more than 250 years old, with a *trunk* diameter of more than four feet at breast height. At one time, the majestic old growth forests covered millions of acres along a 50-mile wide coastal band stretching from San Francisco to southern Oregon.

Today, less than 90,000 acres of old-growth forests remain. Through the *concerted* and often *courageous* action of conservationists, starting in the early twentieth century, about 80,000 acres are now incorporated into state or national parks. Some of the most notable are:

- Armstrong Redwoods State Reserve, located north of San Francisco on the Russian River, where two of the largest and most famous trees, named Parson Jones and Colonel Armstrong, stand under the watchful eye of a legendary park ranger;
- Humboldt Redwoods State Park, located in the Eel River Basin of northern California, containing what is claimed to be the largest remaining *contiguous* old-growth redwood forest in the world. The oldest trees are, of course, irreplaceable, and most of them are gone. The remainder is now, for the most part, under federal or state protection. Only a few thousand acres of old growth – perhaps as few as 6,000 – are under the control of the big forest products companies. Is this really enough to cause the intense conflict that still rages between two or three corporations on one side and local conservationists on the other? In our opinion, the answer is yes, and for more than one reason.

The statistics are complicated and are therefore capable of being used in different ways by the differing parties. Published information suggests the following:

- the total distribution of coast redwoods, including old and new growth, currently occupies about 1,740,000 acres;
- of these, only about 350,000 are in the public domain, of which about 80,000 acres are old growth;
- most of the coast redwood forests, amounting to well over a million acres, are owned by no more than seven industrial forest products companies, only a few of which are considered by the conservation community to be engaged in sustainable practices.

Some corporate executives argue that most of the old growth is already protected and that the destructive harvesting of the past was, in any event, not their responsibility. Conservationists argue, we believe correctly, that any remaining old growth forests – even as little as 6,000 acres – represent a national treasure, which should be placed under a public *trust*. But the argument, and its intensity, runs much deeper. A generally accepted *paradigm* is that the family-owned *timber* companies, many of which harvested sustainably, protecting

the long-term health and productivity of their forests, have been taken over by a few number of corporate giants which were driven to dispose of the assets as quickly and efficiently as possible.

Pacific Lumber Company, owned by Maxxam, a Texas holding company, is regarded by its California neighbors as the worst offender in this regard. Another large operator, Louisiana Pacific, was similarly distrusted by its neighbors. When it was sold to new owners, a respected family firm, which also owns The Gap, Inc. *retail* chain, expectations were raised very high. But the new company, Mendocino Redwood Co., has quickly *inherited* much of the distrust, which was *lavished* on its *predecessor*.

These problems run much deeper than preservation of the old growth. When short-term profits rather than long-term, sustained prosperity govern harvesting policy, the effect on the surrounding habitat is often devastating. Without natural protection, hillsides wash out into rivers, poorly constructed roads pour dirt and *gravel* into streams, and mudslides pour down on private homes. One of the world's richest and most beautiful natural habitats has suffered enormously. The coho *salmon* and steelhead *trout* are disappearing, many forms of wildlife are threatened, water is badly polluted by herbicides, and the quality of life for the human population is declining. The State of California has offered astonishingly little protection to neighboring communities. And this has led to local activism, which has been characterized, sometimes fairly but more often falsely, as dangerous, irresponsible, and immature.

Unavoidably, the media cover the more flamboyant protesters. But closer examination always reveals a much more serious, thoughtful, and highly localized line of resistance, depending more on moral authority than finances to achieve results. There are many examples along the northern coast of California, such as respectable, grey-haired Mary Pjerrou, a long-time resident of the village of Elk, who leads the Redwood Coast Watersheds Alliance, to fight, in and out of court, to protect her community from destructive harvesting practices. These local resisters have used every tool at their disposal, including the Endangered Species Act. The case of the Northern Spotted Owl received national attention and occasional *ridicule*. It is helpful to keep in mind that, to a local activist, the federal laws protecting the habitat of an endangered species have also become a useful means of protecting the human habitat.

When the public at large finally reaches a consensus on an issue of this kind, solutions can emerge very quickly. A decade or so ago, the public became aware that *tuna* fishermen were setting their *purse* nets on the dolphins which swim just above the tuna schools, killing thousands of these appealing creatures every year. The most effective public response came in the form of *consumerism*, stirring a response from the major food companies to bring dolphin-free tuna to the supermarkets. Similarly, the coast redwood may now become a consumer *protectorate*. Home Depot, the largest retailer of wood products in the world, recently announced that, by the year 2003, it would carry only "certified" wood products. What this means, in practice, is that an independent organization has certified that the product being sold meets a standard of sustainability, according to the following criteria:

- timber sustainability – whether the company's methods will provide for growth rather than depletion of timber stocks over time;
- ecosystem maintenance – how well the company's operation protects endangered species, stream health and unique ecosystems such as old growth forests;
- financial *viability* strong enough to support good citizenship in the local community.

As one timber harvester said to a local newspaper: "The government hasn't been able to change forest practices. The environmental movement has not been able to change forest practices. But the consumer, through the purchase of sustainably grown and certified materials, will be able to finally change forest practices."

The many grass-roots organizations throughout California, which have been out on the front lines for years – such as the Save the Redwoods League – deserve our respect and the time needed for us to understand the issues. And, as consumers, we have the ability right now to start looking for the "certified" label when we visit Home Depot or the local *lumberyard*.

### Words and Expressions:

- *to revere* – уважать; чтить, почитать; благоговеть, боготворить, преклоняться
- *devastation* – опустошение; разорение
- *logger* – лесоруб, дровосек
- *redwood* – красное дерево или древесина
- *trunk* – ствол (дерева)
- *concerted* – согласованный
- *courageous* – бесстрашный, мужественный, отважный, смелый, храбрый

- *contiguous* – соприкасающийся; смежный; граничащий, прилегающий
- *trust* – опека
- *paradigm* – парадигма, принцип, система взглядов и понятий
- *timber* – лесоматериалы; строевой лес; древесина
- *retail* – розничная продажа
- *to inherit* – наследовать; унаследовать
- *to lavish* – дарить, раздавать, расточать
- *predecessor* – предшественник
- *gravel* – гравий; галька, галечник
- *salmon* – лосось; семга, лососина
- *trout* – форель
- *ridicule* – осмеяние; насмешка; предмет насмешек
- *tuna* – тунец (рыба)
- *purse* – деньги, богатство
- *consumerism* – стимулирование потребительского интереса, защита интересов потребителя
- *protectorate* – протекторат
- *viability* – жизнеспособность; жизненность, жизнестойкость
- *lumberyard* – лесной склад

### Exercises on the Text:

📖 Answer the following questions.

1. What are the tallest and the oldest living things of the earth?
2. Where are redwoods located?
3. Why redwoods are considered a national treasure?
4. What does the term "local resistor" mean?
5. How can consumers change current forest practices?

📖 Translate the following sentences from Russian into English.

1. Они – одни из самых старых жителей нашей планеты.
2. Некоторые из них прожили уже более двух тысячелетий.
3. Жители древних цивилизаций относились к ним с большим почтением, в то время как наши современники, начиная с середины девятнадцатого столетия, занимались их систематическим уничтожением.
4. Как вид красное дерево не относится к числу растений, подвергающихся исчезновению.
5. Молодые насаждения легко приживаются на любой почве.
6. Величественные старые лесонасаждения покрывают миллионы акров прибрежной полосы, простирающейся на 50 миль от Сан-Франциско до южного Орегона.
7. Самые старые деревья, конечно, нельзя сохранить, и большинство из них исчезли.
8. На сегодняшний день оставшаяся часть древней лесополосы находится под государственной или федеральной защитой.
9. Опубликованные данные свидетельствуют о том, что общая площадь прибрежного насаждения красных деревьев составляет на сегодняшний день около 1,740,000 акров.
10. Это не просто защита старых насаждений, проблема их сохранения затрагивает очень многие аспекты.

📖 Discuss the problems raised in the text above with your partner, using the active vocabulary.

### Grammar Reference:

#### Настоящее совершенное время (The Present Perfect Tense)

Это время употребляется для выражения действия, завершившегося к моменту речи и связанного с настоящим временем. На русский язык глаголы в *Present Perfect* в большинстве случаев переводятся прошедшим временем. *Present Perfect* в основном употребляется в устной речи.

Утвердительная форма *Present Perfect* образуется при помощи вспомогательного глагола *to have* в *Present Indefinite* и *Participle II* (причастия прошедшего времени) смыслового глагола:

*to have + Participle II.*

Например: *I have just read the offer from Sam and Co.*

*Примечания.*

1) *Participle II* стандартных глаголов образуется путем прибавления окончания *-ed*, *-d* к инфинитиву глагола без частицы *to*.

Если инфинитив глагола оканчивается на букву *-e*, то прибавляется только *-d*: *to translate – translated.*

Буква *у* после согласного звука меняется на *i*, а после гласных *у* сохраняется: *to study – studied*, но *to stay – stayed*

После краткого гласного звука конечная согласная удваивается: *to stop – stopped.*

2) *Participle II* нестандартных глаголов образуется не по правилам. Каждый нестандартный глагол имеет свою форму:

*to begin – begun, to drink – drunk.*

3) Вспомогательный глагол *to have* меняется на *has* при употреблении с 3-м лицом единственного числа: *He has just read the telegram from this company.*

4) *Present Perfect* часто употребляется: а) с наречиями неопределенного времени – *already, yet, lately, just, ever, never*; б) со словами, выражающими незаконченный период – *today, this week, this month, this year.*

Вопросительная форма образуется при помощи вспомогательного глагола *have (has)*, который ставится перед подлежащим, и *Participle II* смыслового глагола, который ставится после подлежащего.

Например: *Has he known her for many years? – Он знает ее много лет?*

*Have you ever been to London? – Были ли Вы когда-нибудь в Лондоне?*

Отрицательная форма образуется при помощи отрицательной частицы *not*, которая ставится после вспомогательного глагола *have (has)*. Например: *I have not seen you since spring.*

### Прошедшее совершенное время (The Past Perfect Tense)

*Past Perfect* употребляется для обозначения действия, совершившегося до определенного момента в прошлом. Этот момент может быть выражен точным указанием времени с предлогом *by* или другим прошедшим действием:

*Richard and his wife were late for the performance. When they got to the theatre, the play had already started. – Ричард и его жена опоздали на спектакль. Когда они добрались до театра, спектакль уже начался.*

Утвердительная форма *Past Perfect* образуется с помощью глагола *to have* в форме *Past Indefinite* и *Participle II* смыслового глагола: *had + + Participle II:*

*– When did you finish your work yesterday?*

*– I had finished it by 5 o'clock.*

Вопросительная форма образуется при помощи глагола *to have* в *Past Indefinite*, который ставится перед подлежащим, и *Participle II* смыслового глагола, который ставится после подлежащего:

*What business matters had you discussed before you signed the contract?*

Отрицательная форма образуется при помощи отрицательной частицы *not*, которая ставится после глагола *to have* в *Past Indefinite*.

Например: *I couldn't watch the nine o'clock news on television because I hadn't finished my article by that time.*

### Будущее совершенное время (The Future Perfect Tense)

Употребляется для того, чтобы выразить действие, которое будет совершено к определенному моменту в будущем. Этот момент может быть выражен:

1) обозначениями времени с предлогом *by* (*by 6 o'clock* – к 6 часам, *by that time* – к тому времени и т.д.)

*We shall have finished this article by 6 o'clock tomorrow.* – Завтра к 6 часам мы закончим эту статью.

2) другим будущим действием, выраженным придаточным предложением условия и времени с глаголом в настоящем времени, который переводится на русский язык глаголом в будущем времени.

*You will have finished your work before the bell rings.* – Вы закончите свою работу, прежде чем прозвонит звонок.

Утвердительная форма *Future Perfect* образуется при помощи вспомогательных глаголов *shall/will* и *have*, а также *Participle II* смыслового глагола: *shall/will have* + *Participle II*.

Например: *I shall have written the letter by seven o'clock.*

Вопросительная форма образуется при помощи вспомогательных глаголов *shall/will*, которые ставятся перед подлежащим, а также вспомогательного глагола *have*, который ставится после подлежащего и *Participle II* смыслового глагола.

Например: *Will you have written this article by 6 o'clock?*

Отрицательная форма образуется при помощи отрицательной частицы *not*, которая ставится после вспомогательного глагола *shall* или *will*.

*They will not have finished this work by 4 o'clock tomorrow.*

### Grammar Exercises:

#### COMPLETE THE FOLLOWING SENTENCES IN PRESENT PERFECT.

1. He thinks it's pure nerves and he (to give) me pills.
2. Sam, what (to come) over you? You make me sad talking like this.
3. I don't know how often I (to tell) you that I don't believe in this.
4. I (to try) to be good.
5. "Come on, ladies, " – he shouted, – "there's nothing to be afraid of. The mice (to leave) the room."
6. "Your hands are probably soiled. Go and wash them." – "I (to wash) them."
7. "Do you know the man?" – "I (to meet) him."
8. "Well, it's very nice to see you anyway. I (to be) lonely."
9. "You look a bit shaken. Are you all right?" – "It (to be) a pretty awful day, that's all."
10. "Are you keen on sailing?" – "I ... never (to do) any."

#### COMPLETE THE FOLLOWING SENTENCES IN PAST PERFECT.

1. He asked me if I (to have) breakfast.
2. He now opened the low gate that he ... so often (to swing) on as a small boy.
3. She was sure that he ... never (to lie) to her before.
4. He knew that as a girl she (to live) in Rome.
5. He glanced up and down the beach to see if he (to leave) anything.
6. She realized that she was faint for food. She (to eat) nothing since the picnic.
7. He quite forgot that Julian (to be divorced) for some time.
8. He decided to wait till he (to talk) to the man himself.
9. He was not aware how long he (to sit) there.
10. I called at nine and the man said she (to go) out about an hour ago.

#### COMPLETE THE FOLLOWING SENTENCES IN FUTURE PERFECT.

1. If you come back in about twenty minutes Alec and I (to have) our talk.
2. You'd better ring me back in half an hour. By then I (to find) the letter.
3. He says they (to finish) the house by the end of next month.
4. He will probably get here in about three weeks. By which time I (to return) to the University.
5. When we get back he (to have) a bath and we shall find him asleep in his bed.

## LESSON 10

### Grammar:

1. Пассивный залог группы Indefinite (Simple).
2. Словообразование.
3. Интернациональные слова.

### Text:

#### THE FATE OF THE BLACK RHINO

The spring rains came on time and in abundance to the South African landscape this year and from the air the *veld* looks as *lush* and green as ever I have known it as we fly into Johannesburg. Good rains, never certain anywhere in Africa, are always a cause for gratitude, even celebration. They are good for the country, good for the farmers – and particularly good for the wildlife. And wildlife is the whole purpose of our visit.

We, Ecology Communications, spent the first half of November in South Africa, principally at the Hluhluwe-Umfolozi game park, a three-hour drive north of the port city of Durban in KwaZulu-Natal. It is the home of the greatest concentration of *rhino*, black and white anywhere in the world and we had come looking for answers to the question that *haunts* wildlife conservationists: "Can the black rhino, now on the *brink* of *extinction*, be saved?"

What we found were some very encouraging signs but, as yet, no guarantee that the species will be saved. There is however, a sense of optimism among game rangers and conservationists that were almost nonexistent a few years back. It would seem that the tide of *wanton slaughter* has begun to turn.

It is hard to believe that an entire species could all but vanish in just three decades, wiped out because their horns are so highly prized in the marketplaces of Hong Kong and the Yemen.

As recently as the late 1960s, some 70,000 black rhino *roamed* the plains of Africa. Today, the most recent count puts the number at 2,700. The rhino horn is no more than tightly matted hair and *cartilage*, but in the Far East it is thought to have remarkable *curative* powers and to a Yemeni, there is no finer material from which to craft a *dagger* handle.

With such a high value placed on the horns, the rewards of illegal *poaching* are almost irresistible on a continent of widespread poverty and civil unrest. Moreover, liberation wars and cold war confrontations saw AK47s, the weapon of choice for poachers, strewn all over the plains of Africa.

The Russian weapon is remarkable for the abuse it can take and still keep firing. A conservation officer says he has unearthed several, *remnants* of the struggle against *apartheid*, buried on the Hluhluwe reserve for who knows how many months or years. "But, brush away the soil and its ready to fire," – he says in some admiration.

Wildlife conservation is largely a concern of the West and therefore, in African eyes, of the white man. But Dr. Ian Player, who led the program that saved the white rhino from the fate now faced by the black, is filled with praise for the many Africans who helped him. He also notes that encouraging headway is being made elsewhere in Africa in educating local populations.

When people recognize that rhino are major tourist attractions and that tourist dollars create local jobs they are more ready to become eyes and ears in the war on poaching. Why should a few men become rich from killing rhino when live rhino will help raise living standards for many more is the *rationale* behind this approach?

South Africa, struggling with a poor economy and *soaring* crime rates fuelled by widespread poverty, has seen tourist numbers decline markedly over the years. But the game parks remain popular. Lions, leopards, elephants, rhino and *buffalo*, the "big five" as they are called, hold an almost irresistible attraction to overseas visitors. So do stately giraffe, playful zebra and the ever-so-graceful antelope. Even *cavorting* baboons bring cars to a stop at the roadside.

During our week at Hluhluwe's Hill Top Camp, South African accents are principally those of the staff and tour operators. French and Dutch accents are plentiful, but on this occasion, German tones predominate in the dining room each evening. In contrast, the only American accents are those of my colleagues until our last day when we take breakfast alongside two couples from Chicago.

One man, a businessman temporarily stationed in Durban has brought out his wife and two good friends and they have come to the park for a few days. Republicans all, they had cheered wildly in the African bush for a George W. Bush victory in the presidential elections, only to find their celebration *premature*.

Most South Africans are indifferent as to who wins the election with at least one exception. Dr. Player is passionate about the US election. "God help us (environmentalists) if Bush gets in" – is his *terse* comment. As Vice President, Al Gore had visited with Player on a trip to South Africa and in a recent interview indicated that, Dr. Player would be one of those invited to the White House if he became president.

Player, elder brother of former golfing great, Gary Player who twice won the US Masters tournament at Augusta, is confident the black rhino will *endure* if the practices put in place to save the white rhino in the 1950s are repeated. "We placed a ring of steel around the rhino", – Player says of those days. By that he means that fences surrounding the reserve were strengthened and patrolled by armed wardens. In addition as many individual animals as possible were identified and closely monitored over the years.

In the 1950s all this was done on horseback. Today a tranquilizing dart will drop a rhino within five minutes.

All this is now done from the air as we observed. A program of identification, funded by the World Wildlife Fund, was underway when we visited the park. And we are invited to come along.

A fixed wing aircraft is used to spot the rhinos at which stage a helicopter crew is called in to dart the rhino, land close to the fallen animal, *notch* the ears for easy future identification, then administer the *antidote* and get out.

A quick exit is out of the question when producer and camerawoman Maureen McNamara accompanies the chopper to take close up shots of the entire operation. Only when the ranger administers the antidote, one minute away from a fully mobile rhino does he instruct McNamara. "Get up a tree. Quick", – he says. Seconds later, he *shoves* her unceremoniously up into the relative safety of the tree *canopy*.

"Never, ever run from a rhino," – we are told. – "If you run you are dead!" Rhinos have very poor eyesight but good hearing and an *exquisite* sense of smell.

Back-up cameraman Steve Marx is next to being up a tree when faced by a rhino. He is out with a foot patrol when they come across a *lone* cow. She is curious, rather than annoyed by all the movement deliberately made to attract her attention. She *trots* forward to investigate and *prods* the tree immediately below Marx's foot. He captures everything on camera.

At top speed of 36 miles an hour the 3,000-pound rhino would easily have *demolished* the relatively small tree. But that is not the case and Marx returns with a story he will, one day, tell his grandchildren.

Hopefully, if the ongoing programs at Hluhluwe-Umfolozzi are adopted elsewhere, they will know just what he is talking about.

Almost certainly, the black rhino will survive in South Africa. It remains to be seen if the same will be said of the rest of Africa.

### Words and Expressions:

- *veld* – вельд, степь, плоскость
- *lush* – сочный, буйный, пышный
- *rhino* – носорог
- *to haunt* – неотступно преследовать
- *brink* – грань, начало, край
- *extinction* – вымирание
- *wanton* – несдержанный, необузданный, подвижный
- *slaughter* – убой, забой
- *to roam* – бродить, путешествовать, скитаться, странствовать
- *cartilage* – хрящ
- *curative* – целебный, целительный
- *dagger* – кинжал
- *poaching* – браконьерство
- *remnant* – остаток; остатки
- *apartheid* – апартеид, расовая изоляция
- *rationale* – разумное объяснение; логическое обоснование, основная причина
- *soaring* – вздымающийся, возвышающийся; высокий, грандиозный
- *buffalo* – буйвол; бизон
- *to cavort* – прыгать, скакать
- *premature* – необдуманный, непродуманный, опрометчивый, поспешный

- *terse* – сжатый, краткий
- *endure* – выдерживать испытание временем
- *notch* – зарубать, делать метку; прорезать, делать запись, отмечать, записывать
- *antidote* – противоядие
- *to shove* – протолкнуть, протащить
- *canopy* – укрытие, прикрытие; убежище, прибежище
- *exquisite* – наилучший, отборный
- *lone* – одинокий, уединенный
- *to trot* – спешить, торопиться
- *to prod* – колоть, тыкать; прокалывать, протыкать; пронзать
- *to demolish* – стирать с лица земли

### Exercises on the Text:

📖 Answer the following questions.

11. What does the term "conservationist" mean?
12. What was the main purpose of conservationist's visit to Africa?
13. How do you understand the word combination "big five"?
14. Why do poachers need rhino?
15. Will the black rhino survive in South Africa, what do you think?

📖 Translate the following sentences from Russian into English.

1. Обильные дожди необходимы для страны, для фермеров и, особенно, для дикой природы.
2. Дожди в Африке являются причиной не только простой благодарности, но даже торжеств.
3. Это самое большое скопления носорогов в мире, черных и белых, и мы прибыли сюда, чтобы ответить на вопрос, который преследует борцов за охрану дикой природы: "Может ли черный носорог сейчас, находясь на грани исчезновения, быть спасен?"
4. Обнаруженное нами было обнадеживающим знаком, хотя нет никаких гарантий, что носорог будет спасен.
5. Казалось, что волна массовых убийств начала отступать.
6. Трудно поверить в то, что целый вид мог исчезнуть всего за три десятилетия из-за высокой цены на бивни носорога на рынках Гонконга.
7. Защитником дикой природы выступает, главным образом, Запад, а в глазах африканцев – это люди белой расы.
8. Когда местные жители поняли, что носорог представляет особую привлекательность для туристов, они с еще большим вдохновением начали сражаться против браконьерства.
9. У носорогов очень слабое зрение, но хороший слух и отличное обоняние.
10. Он снимал на камеру все происходящее.

📖 Discuss the problems raised in the text above with your partner, using the active vocabulary.

### Grammar Reference:

#### Пассивный залог (The Passive Voice)

Пассивный (страдательный) залог показывает, что подлежащее не является производителем действия, оно испытывает действие, направленное на него со стороны другого лица или предмета. Поэтому глагол-сказуемое употребляется в форме страдательного залога. Лицо, совершающее действие, выражается в страдательном обороте существительным или местоимением с предлогом *by*.

*The radio was invented by Popov in 1895. – Радио было изобретено Поповым в 1895 году.*

*Примечания.*



1) Глаголы, требующие после себя предложного дополнения (*to look at, to listen to, to speak about, to talk about, to send for*), в страдательном залоге сохраняют предлог.

Например: *The doctor was sent for a few minutes ago.*

2) Непереходные глаголы, такие как *to grow, to take place, to take part, to appear* в страдательном залоге не употребляются.

Утвердительная форма глаголов страдательного залога в *Indefinite* образуется при помощи вспомогательного глагола *to be* в нужном времени и *Participle II* смыслового глагола.

Например: – *You often go to the theatre, Lena. Who gets tickets for you?*

– *They are usually booked by my father.*

При образовании вопросительной формы вспомогательный глагол ставится перед подлежащим.

– *Is TV equipment exported to many countries?*

– *Yes, it is.*

При образовании отрицательной формы частица *not* ставится после вспомогательного глагола. Например:

*The goods were not delivered on time because the plant was heavy with orders.*

*The machines will not be tested next week because they are not ready for tests.*

### Словообразование

Эффективным средством расширения запаса слов в английском языке служит знание способов словообразования. Зная значение наиболее употребительных префиксов и суффиксов, можно без труда понять значение гнезда слов, образованных из одного корневого слова, которое известно.

#### Основные префиксы (приставки)

Префикс	Пример	Перевод
<i>anti-</i>	<i>antimonopoly</i>	антимонопольный
<i>be-</i>	<i>belittle</i>	уменьшать
<i>co-</i>	<i>cooperation</i>	сотрудничество
<i>counter-</i>	<i>counterbalance</i>	уравновешивать
<i>de-</i>	<i>devaluation</i>	девальвация
<i>non-</i>	<i>non – payment</i>	неплатеж
<i>dis-</i>	<i>disadvantage</i>	недостаток
<i>in-</i>	<i>indirect</i>	косвенный
<i>il-</i>	<i>illegal</i>	незаконный
<i>im-</i>	<i>impossible</i>	невозможный
<i>ir-</i>	<i>irregular</i>	неправильный
<i>en-</i>	<i>enclose</i>	прилагать
<i>extra-</i>	<i>extraordinary</i>	необычный
<i>inter-</i>	<i>Interaction</i>	взаимодействие
<i>mis-</i>	<i>misunderstand</i>	неправильно понять
<i>out-</i>	<i>output</i>	выпуск продукции
<i>over-</i>	<i>overpay</i>	переплачивать
<i>post-</i>	<i>postgraduate</i>	аспирант
<i>pre-</i>	<i>predetermine</i>	предопределять

Продолжение табл.

Префикс	Пример	Перевод
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<i>under-</i>	<i>underestimate</i>	недооценивать
<i>re-</i>	<i>rewrite</i>	переписывать
<i>sub-</i>	<i>subdivision</i>	подразделение
<i>super-</i>	<i>supermarket</i>	супермаркет
<i>ultra-</i>	<i>ultramodern</i>	сверхсовременный
<i>trans-</i>	<i>transoceanic</i>	заокеанский

Префиксы обычно образуют новые слова внутри одной и той же части речи (*pleasant* – приятный, *unpleasant* – неприятный).

Префиксы можно классифицировать по их лексическому значению, а именно: префиксы, придающие словам отрицательное или противоположное значение, выражающее предшествование или последовательность, повторность и т.д.

#### Основные суффиксы глаголов

Суффикс	Пример	Перевод
<i>-ate</i>	<i>to originate</i>	происходить
<i>-en</i>	<i>to threaten</i>	угрожать
<i>-ise,</i> <i>-ize</i>	<i>to advertise</i> <i>to organize</i>	рекламировать организовывать

Производные глаголы образуются обычно от существительных и прилагательных.

#### Интернациональные слова

В европейских языках, в том числе в русском и английском, есть значительное количество международных слов, близких по написанию и даже звучанию, хотя произносятся они по правилам фонологической системы каждого языка.

По значению международные слова в английском и русском языках можно разделить на три основные группы. Это слова:

- 1) полностью совпадающие по значению в английском и русском языках;
- 2) частично совпадающие по значению, имеющие в русском языке несколько эквивалентов;
- 3) имеющие разные значения в английском и русском языках.

К первой группе относятся названия наук, слова, связанные с общественно-политической сферой жизни, научные термины, названия месяцев и некоторые другие.

Английское слово	Русский эквивалент
April	апрель
constitution	конституция
delegation	делегация
democracy	демократия
expedition	экспедиция
fact	факт
geography	география
January	январь
magnet	магнит
Mathematics	математика

Ко второй группе относятся английские слова, имеющие в русском языке несколько значений. Одно из них, обычно узкое, совпадает со значением в английском языке, другие могут существенно отличаться от основного значения, например:

*champion (of peace)* – 1) чемпион, победитель;  
2) сторонник, поборник (мира);

*commission* – 1) комиссия, комиссионная продажа;  
2) полномочие, поручение;

*individual* – 1) индивидуальный;  
2) личный, частный;

*progressive* – 1) прогрессивный;  
2) передовой;

*public* – 1) публичный;  
2) общественный, народный, гласный;

*social* – 1) социальный;  
2) общественный;

*character* – 1) характер;  
2) репутация, характеристика;  
3) роль, действующее лицо;

*visit* – 1) визит;  
2) посещение.

Существуют и такие интернациональные слова, которые заметно изменили значение в русском языке по сравнению с английским:

*delicate* – тонкий, хрупкий, но не деликатный

*data* – данные, а не дата

*brilliant* – блестящий, яркий, а не бриллиант

*novel* – роман, а не новелла

*fabric* – материал, изделие, а не фабрика

*pretend* – притворяться, делать вид, а не претендовать.

### **Grammar Exercises:**

**📖 TURN THE FOLLOWING ACTIVE CONSTRUCTIONS INTO PASSIVE OMITTING ALL MENTION OF THE AGENT OF THE ACTION.**

1. No one has made any mistakes.
2. What do you call it?
3. They asked us to stay a little longer.
4. One expects him to obey the regulations.
5. People have made great progress in physics.
6. They are discussing the possibility of new negotiations.
7. Everybody thought that Jack was clever but lazy.
8. People use coal for making artificial materials.
9. People say it is difficult.
10. What books are people reading this year?
11. They elected him President of the Club last year.

12. They are rehearsing a new play at the National Theatre.
13. Someone found the children in the morning.
14. Nobody has ever treated me with such kindness.
15. He knew that they had sent the invitations out two weeks earlier.
16. They can arrange all things.
17. People expect you to meet the chief.
18. Are they sending for you?
19. They have always passed his telephone calls through to the Minister without questions.
20. They never took any major decision without his knowledge or advice.
21. I knew that they had told him of the meeting at once.
22. The trouble started when they told me to change the way we were running this department.
23. There was a tear in his trousers, which someone had already darned.
24. In his circle they looked on the police as enemies.
25. They took the child to the hospital for the poor.
26. Ever since I started asking questions about my sister they have lied to me.
27. I'm sure they will look better after him in an army hospital.
28. When the situation called for a lie, he lied firmly and well.
29. No one has ever beaten my brother at tennis.
30. They gave his little daughter a present, too.