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И МУНИЦИПАЛЬНОГО УПРАВЛЕНИЯ

**ENGLISH FOR BIOLOGY STUDENTS
AND POSTGRADUATES**

Учебное пособие
для студентов, магистрантов и аспирантов

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Учебное пособие содержит аутентичные тексты, раскрывающие предмет, понятийную область и актуальные вопросы биологии, экологии, генетики, агрономии. Тексты помогут освоить специальную лексику профессиональной сферы, сформировать компетенцию владения английским языком на уровне профессионального общения.

Предназначено для студентов, магистрантов и аспирантов, обучающихся по направлениям подготовки агрономического, биолого-технологического, ветеринарного факультетов и имеющих уровень владения английским языком В1–В2. Пособие также может быть использовано для курса повышения квалификации «Профессиональный иностранный язык».

Утверждено и рекомендовано к изданию учебно-методической комиссией факультета ГМУ (протокол № 2 от 7 ноября 2014 г.).

Автор выражает благодарность за неоценимую помощь в подготовке данного учебного пособия своему отцу – Геннадию Ивановичу Коротких, первому декану факультета романо-германской филологии Кемеровского государственного университета

ПРЕДИСЛОВИЕ

Данное учебное пособие предназначено для студентов, магистрантов и аспирантов различных направлений подготовки, связанных с биологией, биологическими технологиями, агрономией, ветеринарией.

Пособие рассчитано на 62–82 уч. часа аудиторных занятий и 100–120 часов самостоятельной работы, что соответствует базовым стандартам ФГОС второго и третьего уровней подготовки. Издание может быть использовано в научно-исследовательской работе магистрантов и при подготовке к сдаче кандидатского экзамена по английскому языку.

В основных разделах пособия (МОДУЛИ/MODULES) представлены: 1) учебно-тематические блоки (МОДУЛЬ 1); 2) текстовый и методический материал для изучающего, ознакомительного чтения, подготовки презентаций и научных докладов (МОДУЛЬ 2); 3) краткий грамматический справочник с комплексом тренировочных упражнений (МОДУЛЬ 3); 4) рекомендации и справочный материал для эффективной подготовки научной самопрезентации (МОДУЛЬ 4); 5) методические указания по организации самостоятельной работы (МОДУЛЬ 5).

Материал МОДУЛЯ 1 организован в 5 учебно-тематических блоках (UNITS). Каждый блок открывается основным тематически ведущим текстом для изучающего чтения (TEXT A), который сопровождается пред-

текстовыми (PRE-TEXT NOTES) и послетекстовыми (COMPREHENSION CHECK) заданиями. Задания, направленные на формирование письменной и устной коммуникации, даются в разделах WRITING PRACTICE/SPEAKING PRACTICE. Рекомендации, связанные с освоением профессиональной лексики и научно-академического стиля изложения, представлены под рубриками PRACTICE IN WORD-STRUCTURE, а также VOCABULARY/STUDY NOTES. Каждый учебно-тематический блок включает дополнительный текстовый материал (TEXT B) с комплексом упражнений. Данный раздел блока может быть использован либо для аудиторной работы, либо в качестве материала для самостоятельной подготовки.

Пособие включает обширный текстовый банк (TEXT BANK) по самым разным направлениям биологической науки, а также справочный материал для подготовки докладов и презентаций (PRESENTATION MANUAL/TEXT-PROCESSING SITES GUIDE). Пособие содержит разделы, ориентированные на работу, связанную с подготовкой докладов, презентаций по специальной тематике. Раздел PRESENTATION MANUAL включает инструкции как по общему алгоритму создания презентаций, так и по самым современным методам сопровождения докладов и презентаций, основанных на материале ряда специальных сайтов.

Раздел MAKING SELF-PRESENTATION даёт возможность магистрантам и аспирантам подготовиться к сдаче экзамена по иностранному языку по разделу беседы о научной и профессиональной деятельности.

В целом пособие ставит своей целью развить коммуникативные умения, необходимые в сфере профессиональной деятельности биологов. Особое внимание

уделяется формированию ведущего коммуникативного умения – чтения литературы по специальности с разной глубиной осмысления содержания. Материалы и задания пособия развивают диалогическую и монологическую речь, навыки реферирования и комментирования, стимулируют интерес к иноязычной информации о научных открытиях и проблемах.

Таким образом, каждый блок через тексты и систему упражнений стимулирует интерес обучающихся к научной коммуникации на иностранном языке, повышает мотивацию к процессу обучения, способствует формированию основных и профессиональных компетенций:

- владение иностранным языком как средством коммуникации в рамках терминологии профессионального международного общения;
- способность применять иностранный язык в сфере профессиональной деятельности;
- способность к письменной и устной коммуникации на иностранном языке;
- способность использовать знание иностранного языка для получения профессиональной информации из иностранных источников.

Пособие может быть использовано в разнообразных условиях учебного процесса для развития базовой коммуникативной компетенции – умения получать, перерабатывать и передавать информацию на иностранном языке.

TEXTS FOR COMPREHENSIVE READING AND DISCUSSION

Модуль I. ТЕКСТЫ ДЛЯ ЧТЕНИЯ И ОБСУЖДЕНИЯ

UNIT 1

PRE-TEXT TASK

Study carefully the meanings of the following phrases and word-combinations to avoid any difficulty in understanding TEXT A.

1	... are grouped into species	классифицируются по видам
2	subject matter	предмет, содержание, предмет науки
3	inseparably close to...	неотделимы от, нераздельно связаны с...
4	to deal with = to be concerned with	иметь дело с..., касаться
5	to distinguish as clearly as possible	различать настолько четко, насколько возможно
6	dividing line between...	линия водораздела
7	can be taken as...	могут рассматриваться как...

TEXT A

The Subject Matter of Biology

There is an enormous variety of life on this planet: from microscopically small bacteria to the giant trees of the forest and the beautiful orchid; from single-celled animals like amoeba to the great variety of worms, insects, fishes, reptiles and birds, and then to the many members of the class of mammals to which we belong.

Biology is the study of living things. The word that can be used for all living things is organism. When we say «or-

ganism» we mean anything that is alive. Organisms that are similar are grouped into species.

Biology is classified as a natural science because its subject matter is a part of nature. Problems in biology are inseparably close to chemistry and physics. Biochemistry and biophysics, for example, are well-recognized areas of study.

Biological knowledge can be divided into smaller groups: those that deal with plants (botany), those concerned with animal life (zoology) and those that study plants and animals in the relationship to their environment (ecology).

Since biology is the group of sciences that deal with life in all its forms and in all its functions, it is necessary to distinguish as clearly as possible between living and non-living bodies. The dividing line between the living and non-living is not a very sharp one.

Prom the view point of function we can speak of several unmistakable signs of life. They are responsiveness, nutrition and reproduction. These activities – responsiveness, nutrition and reproduction – are combined in living bodies, and can be taken as the main criteria of the living state. The most unique characteristic of living bodies is the capacity for reproduction.

COMPREHENSION CHECK

Exercise 1. Are the following statements true or false?

1. Biology is the study of plants and animals.
2. Scientists group similar organisms into species.
3. Scientists can easily distinguish between living bodies and non-living things.
4. The unmistakable signs of life are responsiveness, nutrition and reproduction.

Exercise 2. Fill in the correct words from TEXT A

Biology studies an enormous _____ of living bodies. Anything that is alive is called _____. Problems of biology are _____ to chemistry and physics, because the subject matter of biology is a part of _____. There are different _____ of biological knowledge. For example, botany _____ with plants, while zoology _____ with animals. There are three _____ of life: responsiveness, nutrition and reproduction. The most unique _____ of living bodies is _____.

PRE-TEXT NOTES

Study carefully the list of English phrases and their Russian equivalents to avoid difficulty in translating TEXT B.

1. ... may account for the evolution of existing species – можно объяснить эволюцией существующих видов

2. between these extremes – между этими крайностями

3. primeval seas – первозданный океан

4. in some logic and coherent way – логически и последовательно

5. as such – как таковой

6. area of distribution – зона распределения

7. a proper system of naming – научные принципы именования

8. ... from which our modern system is descended – от которой происходит современная система именования

9. ... not to confuse the organisms – чтобы избежать путаницы в наименованиях организмов

10. characters and distinctions – характерные черты и отличительные особенности

TEXT B

THE DIVERSITY OF ORGANISMS

Scientists recognize thousands of different types of living things. Organisms have lived on earth for more than three billion years. Variation and selection operating during these past years may account for the evolution of great variety of existing species/

The diversity of organisms is one of the most striking features of the biotic world. It can be expressed in a number of different ways: diversity by morphological difference (or difference in external form), by anatomical differences (or differences in internal structure), diversity extending on the microscopic level to differences of tissue structure and beyond that to cytological differences on the cellular level. Or diversity may be expressed physiologically in the way in which organs operate, or biochemically in the chemical mechanisms operating within the organism. Diversity also extends to means of reproduction. Perhaps, most extreme of all is the diversity in size of individuals of various species: the California redwood is about 10,000,000,000 times larger than the virus particle. Between these extremes may be found plants and animals of different intermediate size and weight.

All life must have originated from a very few, perhaps even one self-duplicating nucleic acid molecule in the primeval seas. Then the reasons for this vast diversity of living forms constitute one of the major problems of biology, namely the evolution of life forms. Many biologists tried to organize their knowledge of living things in some logical and coherent way. In early biological writings we find little direct reference to any scheme of classification as such.

The best biological writing of classical times was that of Aristotle. His work was remarkable for its time. Despite

many incorrect statements it contained an enormous body of facts, many of them are based on direct observation and experiment uncommon in Greek science.

The medieval period made little progress in the classification of animals. However, medieval naturalists made good progress in Botany. Many late medieval books on plants are as scientifically objective as any made in the twentieth century.

A proper system of naming was well stated by the great Swedish biologist Carl von Linné, better known under the Latinized form of his name, Carolus Linnaeus, who established the system of naming and classification from which our modern system is descended.

It is an enormous task to classify and describe scientifically the millions of species of plants and animals. Usually the scientists' concerned with classification give every organism two Latin names not to confuse the organisms. The first is the name of the genus, and the second is the name of the species.

The name of the genus is written with a capital letter, and that of the species, with a small one. For instance, the domestic cat has the scientific name – *Felis catus*. That is the species «*catus*» of the genus «*Felis*». The lion is called *Felis leo*, the tiger – *felis tigris*. As an example from the plant world, the orange, the lemon, the grape-fruit and the tangerine are all different species of the genus *Citrus*.

When distinguishing species the scientists look for the following characters and distinctions:

A visible resemblance between members of the group.

A geographical area of distribution that would lead to think that the group had a common ancestor.

That the group can interbreed and produce offspring sufficiently like themselves to be considered of the same species.

WRITING PRACTICE

A **summary** is a brief restatement in your own words of the main idea of a passage, article or entire book. When you write a summary, you should be careful not to leave out important points or misrepresent an author's intention. Before you write your summary, make sure that you thoroughly understand your source. As you reread a source, pay careful attention to topic sentences, headings, or key-words that will help clarify the source's meaning. Your summary should present the important ideas of the original without using the exact language or phrasing. Notice that the summary is much shorter than the original and gives just the main idea of the text.

Make use of the following standard phrases and expressions while writing your summary

the article is called... = the title of the article is ...	статья называется..., статья озаглавлена...
the article is published in ...	статья опубликована в...
the article is about/on	статья повествует о ...
is devoted to	посвящена
is concerned with	касается
deals with	имеет дело с...
touches upon the problem of	заглаголивает проблему
in the introductory part of the article the author points out	во вводной части статьи автор указывает
the following facts are stressed in the article	в статье акцентируется внимание /подчеркивается
the article contains useful information on ...	статья содержит полезную информацию о ...
in concluding paragraphs it is pointed out that	в заключительной части статьи указывается, что...
the article contains statistics about...	содержит статистику о...
the reader's attention is drawn to...	внимание читателя привлечено к...

TRANSITIONAL WORDS AND EXPRESSIONS:

first of all/at first/ second/secondly/
then/ besides that/next/ in conclusion/ finally.

STUDY NOTES ON DEVELOPING READING SKILLS

Reading is the most important skill for a learner of Science English. When you learn a foreign language, your reading may INTENSIVE or EXTENSIVE.

Intensive reading is decoding the message of a text. In this case your attention is focused on the linguistic features. Intensive reading deals with the study of grammatical and lexical features of the language which help you to decode the message. To overcome grammatical and lexical difficulties while reading you often turn to grammar reviews and rules or consult a dictionary. The major objective of intensive reading is developing the ability to decode messages.

In extensive reading your approach is similar to that of reading in the native tongue. You read directly for meaning, for information. You actually learn to read by reading. Extensive reading is much more important for a university graduate. The major objective of extensive reading is developing the ability to extract the necessary information from a text. You should not worry much about all the words you don't understand as long as you get the major outline of the reading. Extensive reading is primarily intended for your personal needs, personal interests and enjoyment. Students' of English extensive reading skills will stay with them long after they have finished their formal studies at college or university.

There are **three types of extensive reading**:

- PREVIEWING
- HIGHLIGHTING
- ANNOTATING

When previewing an article /or a book/ you SKIM a text (read it quickly noting only chief points), or SCAN a text (read it quickly for specific information).

In SKIMMING and SCANNING a text you look for such signals as headlines, summaries (usually called ABSTRACTS in journal articles), introductory and concluding paragraphs, repeated key words and key terms, pictures, names, places and numbers. A quick look at all these signals will help you to find out the information that may be important to you.

While skimming or scanning a text you also rely on its division into PARAGRAPHS. Most paragraphs have a TOPIC SENTENCE that summarizes the content of the whole paragraph. It is usually the first sentence in the paragraph, but not always. If you find out the topic sentences of an article, you can get its general idea.

HIGHLIGHTING is reading carefully in order to identify not only the key points of a text but also the relationship of one point to another. For this purpose you should give special attention to TRANSITIONAL WORDS that help to connect ideas. Highlighting is necessary, if you are going to make an oral report in class or write a paper.

ANNOTATING is very active reading. It means that you react to what you read. You record these reactions as annotations:

That's a very interesting point

I can't agree with this point

I don't think the author is right here

What the author mentions here is worth remembering

I think I should follow the advice the author gives

I don't understand the reasons the author gives for...

My understanding of this term is a bit different

Exercise 1. Re-read TEXT B and

1) find out TOPIC SENTENCES and TRANSITIONAL WORDS;

2) write short SUMMARY of TEXT B, start with SCANNING the principal statements;

3) write your own variant of ANNOTATION

UNIT 2

PRE-TEXT TASK

Study carefully the meanings of the following word combinations to avoid any difficulty in understanding TEXT A.

1	he was the first to show in a convincing way	он был первым, кто убедительно показал...
2	general arts	(зд.) гуманитарные науки
3	science subjects	естественные науки
4	spent much time out in the field	проводил много времени на природе
5	day by day account	(зд.) дневник путешествия
6	... lay in not only accumulating evidence...	заключался не только в том, чтобы собрать данные
7	Darwin referred to this evolutionary mechanism as...	Дарвин рассматривал этот эволюционный механизм как...
8	available environment ~	(зд.) существующая окружающая среда
9	deliberate selection	целенаправленный отбор

TEXT A

Charles Darwin's Evolutionary Theory

Charles Darwin occupies in biology a position comparable to that of Newton in physics. His name is associated with the idea of organic evolution. He was the first to show in a convincing way that evolutionary theory was the only hypothesis of the origin of species fully consistent with the biological evidence.

The great English naturalist and thinker, Charles Darwin, was born on February 12, 1809. Darwin's father was a successful country physician. His grandfather, Erasmus Darwin, was a philosopher of some reputation. His mother was the daughter of a famous pottery designer.

Darwin's school and university career was completely undistinguished. He studied medicine at the University of Edinburgh and general arts at Cambridge, but the only subject for which he had any real passion was natural history. He spent much time out in the field, hunting or collecting insects and plants and observing living things.

In spring 1831 he took his degree at Oxford and was offered the position of a naturalist on board the ship «Beagle». In December 1831 he set off on an expedition to South America and adjoining islands. Darwin came back to England on October 2, 1836, almost five years from the day of departure. On his return Darwin published his «Journal of Researches», a day by day account of his trip and the observations he made. In 1859 Darwin published his famous book «The Origin of Species» which was followed by «The Descent of Man» in 1871.

The genius of Darwin lay in not only accumulating evidence that objectively established the fact of evolution, but in deducing in the observed facts of nature a mechanism of evolutionary change from species less adapted to species more adapted to a particular environment. Darwin referred to this evolutionary mechanism as natural selection. Although many details of its operation were discovered after Darwin's death, it remains the basis of modern concepts of evolution.

In Darwin's days nothing was known of the laws of heredity. Darwin was aware that amongst plants and animals there was variation, and this variation was in part inheritable. The inheritance of some new variation could therefore lead in almost any direction. Darwin discovered that the direction of evolution is towards the better adaptation of the organism to the available environment. According to Darwin, man's success in «adapting» certain plants and animals for his own purposes was based on deliberate selection of certain variations.

Darwin's theory of evolution and natural selection has been regarded for a long time as a great scientific discovery.

COMPREHENSION CHECK

1. Exercise 1. Find the wrong statements

1. At Edinburgh University Darwin was interested in natural history.
2. After publishing «The Descent of Man» Darwin published «The Origin of Species».
3. His trip to South America took him 10 years.
4. Darwin didn't know in detail how evolution works.
5. In Darwin's opinion, breeding animals, people rely on deliberate selection of certain variations.

Exercise 2. Complete the following sentences joining the suitable part

1. The evolutionary mechanism was understood by Darwin as...

- a. environmental changes ...
- b. natural selection ...
- c. deliberate selection

2. Darwin discovered...

- a. laws of heredity
- b. that the direction of evolution is towards the better adaptation
- c. that evolution is based only on inheritable variations in plants and animals

Exercise 3. Fill in the correct words from TEXT A

Darwin's name is _____ with the idea of evolution. He was the first to _____ the mechanism of evolutionary change. His expedition to South America helped him to make _____ and _____ biological evidence for his discovery. Darwin's theory of _____ selection is also useful for selection of certain _____ in domestic animals.

Exercise 4. Complete the chart practicing word-formation. Consult the dictionary if necessary

N	Adj	V
	comparable	
		associate
observation		
		adapt
evolution		
		select
	inheritable	
		distinguish

Exercise 5. Translate from Russian into English. Make use of the words which are given in round brackets

1. В процессе своего развития животные и растения подвергаются изменениям (to undergo changes).

2. Современная теория эволюции связана с именем Чарльза Дарвина, который доказал, что в естественных условиях организмы подвергаются действию отбора (to prove, to be subjected to...).

3. Естественный отбор значительно отличается от искусственного отбора (artificial selection).

4. Организмы живут в определённой среде и приспособлены к этой среде (environment).

5. Физические и химические факторы среды изменяют внешние и внутренние черты организма (external and internal features).

6. Приспособление представляет собой результат действия естественного отбора (process of natural selection).

7. Организмы приспосабливаются к условиям среды и благодаря этому избегают вымирания (to avoid extinction).

SPEAKING PRACTICE

Working in pairs asks and answer questions about Charles Darwin and his evolutionary theory.

When ...? Where ...? What,...? Why...? How many...? How long...?

PRE-TEXT NOTES

Study carefully the list of English phrases and their Russian equivalents to avoid difficulty in translating TEXT B. Compare structural patterns of usage in English and Russian.

1	can be collectively called	можно обобщенно назвать
2	mental insight	проницательность ума
3	to compile all available information	собрать всю имеющуюся в распоряжении /доступную/ информацию
4	does not matter much	не имеет большого значения
5	this approach involves experimentation	этот подход предполагает проведение эксперимента
6	to involve	влечь за собой, вызывать последствия; включать в себя; подразумевать; предполагать
7	a comprehension of the fundamental laws that govern life	понимание фундаментальных законов, которым подчиняется все в жизни
8	is not conclusive enough	недостаточно убедительна
9	the hypothesis advances to the status of a theory	гипотеза поднимается до статуса теории
10	as a scientist approaches a problem	когда ученый берется за решение проблемы
11	thorough	скрупулезный, внимательный
12	corrigible	готовый признать ошибку
13	to draw hasty and careless conclusions	делать торопливые и неточные выводы
14	insufficient data	недостаточные данные
15	infallible	непогрешимый

TEXT B

Research Work: Methods and Procedures

Procedures of investigation which are used in the solution of scientific problems can be collectively called the scientific method. Of course, the main features of research in science are the mental insights and logical reasoning.

First, the field of investigation must be decided, the next step is to compile all available information concerning it. It is necessary to mention that the source of the information does not matter much as long as it is accurate. The logical place to look for such information is the university library, from which the search may well lead to larger libraries.

Two approaches are used in biological study. One, which can be called field biology, studies living organisms in their natural environment. This approach is widely used in such branches of biology as botany, zoology, ecology. A masterful example of the field approach was the world-wide collection of data by Charles Darwin.

The second approach is based on studying living organisms and their activities under controlled laboratory conditions. This approach involves experimentation. The experimental methods are widely used in physiology, genetics, and psychology. The combination of field study and laboratory experiment has given modern biology a comprehension of the fundamental laws that govern all life.

From the discoveries of other people and from his own experimentation, the scientist can suggest a hypothesis. If further experimentation seems to confirm the hypothesis but is not conclusive enough, the hypothesis advances to the status of a theory.

If the theory can be tested and proved true, it advances to the status of law. For instance, now many scientists are

working at the problems of genetic engineering. Experimentation with the genes confirmed the basic principles of the gene theory.

As a scientist approaches a problem he can best achieve his purpose by being inquisitive, honest, thorough, patient, objective, accurate and corrigible. Although these virtues are generally known as scientific attitudes, they are positive qualities desirable in all human beings. Another positive quality that may seem to have negative connotation is skepticism. Scientists should be skeptical not only about hypothesis and theories but about what are generally recognized as facts.

A scientist is often expected to produce results by reporting his discovery and publishing scientific papers. Regardless of pressure to produce publications, the scientist knows that drawing hasty and careless conclusions based on insufficient data is inexcusable and unpardonable.

COMPREHENSION CHECK

Exercise 1. Find synonyms to the words and word combinations in column A choosing them from column B

A	B
investigation	scientific method
to report a discovery	to prove a theory
research	thorough
data	investigate
to collect data	to search for smth.
to look for smth.	to compile information
not conclusive	study
accurate	insufficient
procedures of investigation	to produce a publication
to decide	to draw conclusions
to study	information

Exercise 2. Find out the correct translations from B of the following Russian word combinations in A. The English word combinations come from TEXT A

1	научный метод	to suggest a hypothesis
2	подойти к решению проблемы	to report the discovery
3	биологические исследования	branches of biology
4	разделы биологии	to decide the field of investigation
5	опубликовать результаты открытия	scientific method
6	недостаточные данные	to confirm the hypothesis
7	выдвинуть гипотезу	to achieve one's purpose
8	проверить гипотезу на практике	to approach a problem
9	достичь своей цели	the solution of a problem
10	доказать теорию	to test a hypothesis
11	дальнейшее проведение опытов	further experimentation
12	определить область исследования	to prove a hypothesis
13	подтвердить гипотезу	biological research
14	решение проблемы	insufficient data

Exercise 3. Fill in prepositions. Consult TEXT B in case of difficulty

1. Research _____ sciences
2. the logical place to look information
3. are used _____ biological studies
4. conclusions based interpretation of the data
5. sources _____ new information
6. experimentation _____ the genes
7. the hypothesis advances _____ the status _____
a theory
8. to produce results _____ reporting the discovery
9. regardless _____ pressure to produce publications

STUDY NOTES

Linking words and phrases are used in scientific and technical writing to provide logical reasoning in text development. They often signal a change in subject matter and transition from one point to another.

accordingly – по-этому, соответственно
above all – прежде всего, главным образом
anyway – во всяком случае, как бы то ни было
as a consequence – как следствие, в результате
besides – кроме того
consequently – следовательно
meanwhile – тем временем, между тем
moreover – к тому же ...
furthermore – кроме того, к тому же
however – однако
incidentally – кстати, между прочим
in accordance with – в соответствии с ...
nevertheless – тем не менее
now that – теперь, когда
otherwise – иначе, а то ...
similarly – также, аналогично, подобным образом
thereafter – после этого
therefore – по-этому, следовательно
thus – таким образом
undoubtedly – несомненно
indeed – в самом деле, действительно
next – затем
likewise – также
hence – отсюда, из того следует

Exercise 1. Put one of the following linking words or phrases into each gap. There are eleven gaps. Two of the words or phrases aren't used:

as a result, above all, which, before, and, especially, although, however, this is why, such as, on the contrary, if, so

Doing regular exercise can be dangerous, _____ if you are over 40. _____ it is a very good idea to see your doctor _____ starting, if you think you are not very fit. Some people try to exercise too vigorously too soon, and _____ they cause themselves injuries _____ can take a long time to heal. _____ it is not only older people who should take care. Doctors report many injuries _____ back-aches, sprained ankles and pulled muscles, which can all be avoided _____ a little care is taken. If you do injure yourself, rest for a while _____ allow your body to recover naturally. _____, don't push yourself because you think it is doing you good. _____, you could do yourself permanent damage.

UNIT 3

PRE-TEXT TASKS

Study carefully the list of phrases and their Russian equivalents to avoid any difficulty in working through text A.

1	since that time	с того времени, с тех пор
2	set	набор
3	hereditary determinants	определяющие факторы наследственности, наследственные признаки
4	each cell is enabled to fulfil the destinies of its own particular lineage	каждая клетка способна реализовать предопределенные для данного ряда поколений наследственные признаки
5	concerned in...	(зд.) которые участвуют в
6	a particular protein that contributes to either the structure or the functioning	специфический белок, который участвует в создании либо структуры, либо функции
7	have been assigned to approximate locations on chromosomes	были закреплены за приблизительно определенными местами на хромосомах
8	to splice	соединять
9	set to work to deciphering	принялись за расшифровку
10	tucked into the nucleus	которые «укрыты» в ядре
11	protein synthesis will be faulty	синтез белков будет нарушен
12	with gene in hand	определив ген, установив местоположение гена

TEXT A

Genetics and Heredity

Modern genetics began to develop very rapidly in the second decade of the 20th century though the foundation of it was laid by Gregor Mendel between 1857 and 1865. Since that time geneticists in all parts of the world have cooperated in establishing the chromosome theory of heredity.

Usually the chromosomes of a given species are individually distinguishable, and exactly the same set appears at mitosis in all cells of the individual and of the species.

The chromosome number varies in different organisms from 2 to 200 or more, but usually it is below 50 (man has 46). Not only the number of chromosome but also the size and shape of each chromosome remain constant.

Each chromosome carries a specific group of hereditary determinants – the genes. These carry coded instructions by means of which each cell is enabled to fulfill the destinies of its own particular lineage. Chromosomes contain DNA, RNA and protein, and these constitute the genetic material of the cell.

There are two chromosomes concerned in sex determination and they are not completely homologous. The male carries two chromosomes for sex called X and Y. The female carries two chromosomes. The factor that determines whether the offspring shall be male or female is the presence of a Y or an X chromosome in the male gamete.

Some knowledge of the substance concerned in transmission of hereditary factors has been gained in the last 40 years. We know that a gene is very small. Experiments have shown that there are about 10 000 genes carried on the chromosome of *Drosophila*, commonly called the fruit fly. The search for human genes has only begun. The estimated number of genes in human DNA is 100 000. Each gene is found in the nucleus of every one of the human body's trillion cells (with the exception of red blood cells, which have no nuclei). And each gene is responsible for the manufacture of a particular protein that contributes to either the structure or the functioning of the body. Fewer than 2000 genes have been assigned to approximate locations on chromosomes.

Armed with the ability to cut, splice and transplant genetic material, scientists set to work deciphering the estimated

100 000 genes tucked into the nucleus of virtually every human cell. Collectively, genes comprise the complete set of chemical instructions for making a human body. Each gene codes for the production of a single polypeptide (a protein component). Thousands of proteins give the human body function and form.

If the gene is defective, protein synthesis will be faulty and a deformity or genetic disease will result. More than 4000 inherited disorders are due to single-gene defects. Many more are thought to be influenced by multiple genes or by a combination of genes and environment. Locating a specific disease-associated gene on one of 46 chromosomes – the genetic material inherited in equal parts from each parent – gives researchers the basis for a diagnostic test. With gene in hand, it may also be possible understanding the disease and developing treatment for it.

COMPREHENSION CHECK

Exercise 1. Which of the following statements are not true?

1. The number of chromosomes in man is 50.
2. The DNA occurs in the nucleus.
3. Two chromosomes concerned in sex determination are similar.
4. Each gene is responsible for producing a certain protein.
5. Many diseases are caused by gene defects.
6. Locating a specific disease-associated gene does not help researchers diagnose diseases.
7. Even a tiny genetic error can break the right order of protein production.

Exercise 2. Complete the following sentences joining the suitable part

1. The number of chromosomes varies
 - a. Under specific conditions
 - b. From 50 to 200

- c. From 2 to more than 200
- 2. Scientists began deciphering the genes**
 - a. Only for theoretical reasons
 - b. For better understanding hereditary mechanism
 - c. For producing a particular protein
- 3. Each gene is responsible for**
 - a. The production of a specific protein
 - b. The division of cells
 - c. 4000 inherited disorders

Exercise 3. Fill in the correct words from TEXT A

The foundation of genetics was _____ by Gregor Mendel. It took many years to _____ the chromosome theory of heredity. It was not easy for researchers to understand that chromosomes _____ DNA and other proteins. The exact mechanism of transmission of _____ factors has been studied for many years. As a result of this research scientists are now able to _____ a particular gene and _____ the protein for which it codes. This will make it easier for doctors to develop _____ for certain diseases for which this or that gene is _____.

Exercise 4. Give Russian equivalents for the following combinations of words from Text A

- 1. to establish the chromosome theory of heredity
- 2. to remain constant
- 3. to carry coded instructions
- 4. to gain knowledge
- 5. a particular protein
- 6. to cut, splice and transplant genetic material
- 7. to comprise the complete set of instructions for making a human body
- 8. genetic disease

9. diagnostic test
10. to develop treatment (for an illness)

Exercise 5. Read the following definitions and choose the appropriate word from the box above which stands for a particular definition

gene	protein	environment
code	chromosome	DNA

1. A complex organic compound formed from many units of amino acids, joined by peptide bonds.
2. Collection of laws or instructions arranged in a system.
3. A long chain compound
4. Surroundings which may or may not affect the organism
5. A unit factor of heredity carried in a chromosome.
6. A long, thin, thread-like body in the dividing nucleus of a eukaryotic cell, observable during nuclear division.

Exercise 6. Answer the following questions on TEXT A

1. Whop laid the foundation of modern genetics?
2. Does the chromosome number vary in different organisms?
3. What does each chromosome carry?
4. What do chromosomes contain?
5. Which chromosomes are concerned in sex determination?
6. What do we call the substances concerned in transmission of hereditary factors?
7. What is the estimated number of genes in human DNA?
8. What is a gene responsible for?
9. What does a gene code for?
10. What happens, if the gene becomes defective?

PRE – TEXT NOTES

1. **frantic pace** – (зд.) высокая скорость
2. **stress-related illnesses** – болезни, связанные со стрессом
3. **leading causes of death** – основные причины смерти
4. **major contributor** – то, что вносит максимальный вклад или в максимальной степени отвечает за что-либо
5. **waking lives** – время бодрствования
6. **build up of stress** – создание стрессовой ситуации
7. **susceptibility** – подверженность (заболеванию), восприимчивость к чему-либо
8. **to keep in mind** – следует запомнить
9. **to avert the ill effects of stress** – предотвращать губительные последствия стресса
10. **corporate executives** – (зд.) офисные работники
11. **hard-driving personality** – человек, плохо поддающийся влиянию
12. **success-driven society** – общество, где более всего ценится (социальная) успешность
13. **job burnout** – психологическое «выгорание» на работе

TEXT B

How to live with stress

Stress has become an epidemic according to Dr. Paul J. Rosh, professor of medicine psychiatry at New York Medical College and president of the American Institute of Stress. The frantic pace of modern life, he reports, has brought us to the point where:

90 % of all adult Americans experience high levels of stress once or twice a week and one-fourth of us nearly every day.

75 % to 90 % of visits to physicians are for stress-related illnesses and complaints.

Stress is known to be a major contributor to the leading causes of death in the U.S.: heart disease, high blood pressure, cancer, accidental injuries and suicide. Stress often underlies obesity, alcoholism and drug abuse. And, of course, stress is a major factor in the painful headaches and backaches that afflict millions.

Stress in Everyday Life

We're assaulted by stressful situations every moment of waking lives. Meeting deadlines, making decisions, traffic jams, marriage, and divorce, getting a job, losing a job, any change in one's life situation – pleasant or unpleasant – can lead to a buildup of stress.

Scientists are learning that it's not the amount of stress that leads to a sense of helplessness, anxiety or even full-blown depression. Rather, it is one's inability to control stressful situations that causes the major damage. «The key to avoiding the harmful effects of stress,» says Rosch, «is learning how to distinguish between stress that you can't avoid and stress that you can do something about, so that you can use your time and energy effectively».

However, the damage is not only psychological. Stress manifests itself with a host of physical signs said symptoms, prominent among them: headache, neck pain, backache and muscle spasms; heartburn, stomach pain and nausea; unexplained allergy attacks, and susceptibility to colds and infections. Before attributing symptoms to stress, you should, of course, consult your physician. They may signal other underlying diseases. But if your headache or stomach pains are stress related, you can take an effective pain reliever. Exercise or an appropriate muscle relaxant may also help.

Keep in mind that stress has its good as well as its bad side. The famed father of stress research, Dr. Hans Selye, called

it «the spice of life». Falling in love, riding an ocean wave, seeing a great opera – all mobilize the same stress-inducing hormones as does great danger. Stanford University neurochemistry Dr. Jack Barchas observes: «A certain amount of stress is positive and pleasurable. It leads to productivity in the human race».

In other words, stress enables you to meet deadlines, jump out of the way of a speeding car and handle life's crises.

Still, countless millions of Americans struggle every day to avert the ill effects of stress.

Handling Stress at Work

«It's the bossed, not the bosses, who experience the most stress on the job».

That's just one of the startling findings reported by Drs. Robert Karasek and Tores Theorell in a just – published book, «Healthy Work». This is not to say that corporate executives and managers necessarily suffer less stress than assembly-line workers or secretaries; it's just that people whose work allows them latitude for decision making are able to handle stress better.

Actually, work stress may be America's number one health problem, according to Dr. Paul J. Rosch. A recent survey reveals that more than three-fourths of all workers say that their jobs cause significant stress. 60% to 80% of all industrial accidents are related to stress. The resulting cost to employers, because of absenteeism, lost productivity, medical bills and workers' compensation, totals more than \$200 billion a year.

Researchers are turning up some surprising findings about who suffers the most from stress. Contrary to popular belief, the hard-driving Type A personality often handles stress very well as long as he or she is in control. However,

one subgroup of Type A's – people who are unable to express their anger – are highly vulnerable to illness due to stress, Dr. Rosch points out.

According to Drs. Karasek and Theorell, people in high – strain jobs, under heavy pressure with little or no decision-making possibility, suffer the ill effects of stress the most. This describes people at many levels, from middle managers to telephone operators. One recent study showed that such workers have three times as many heart attacks as those whose jobs give them a sense of control.

Nonetheless, our high-tech, success-driven society increasingly subjects people who work – with their heads, or their hands or both – to stressful demands. What's worse, emphasizes Rosch, is that people are losing the human contact so essential to avoiding the harmful effects of stress. Too often they spend significantly more time communicating with each other by computer or fax machines rather than in person.

Rosch states: «The result is a working population increasingly frustrated by failure to achieve unrealistic goals. A mounting number of work-stress victims suffer from loss of social contact, low self-esteem, fatigue, anxiety, depression – and job burnout».

SPEAKING PRACTICE

Express your opinion on how to handle stress choosing from the following suggestions. Begin with: «I think the best way to avoid/to handle stress is not to is to...»

1. Don't waste your time and energy trying to influence things you can't possibly change. Stress is unavoidable consequent of life.

2. Do remember, however, that many stressful situations are under your control.

3. Don't allow anyone to put you in an inferior position without your consent. If you have been treated unfairly, learn to act assertively but reasonably. Persist in repeating a useful proposal.

4. Do learn to say «no» when a request is unreasonable or can't be accomplished in the allotted time.

5. Do manage your time properly. Establish appropriate goals and schedule your day. Set aside personal time for yourself on a regular basis – read, reflect, listen to music or just relax.

6. Strengthen relationships with others. Get involved in group activities or hobbies that provide pride of accomplishment.

STUDY NOTES

The words you encounter in Science English are sometimes long and complex. Once you see how ROOTS, PREFIXES and SUFFIXES work in the words you already know, you can discover the meaning of new words based on these forms. Many scientific words are based on Latin and Greek roots.

Greek roots

bios + logos	life + word	biology
hypo + tithenai	under + to place	hypothesis
genos	race/ sex/ kind	genetics
psyche + soma	soul + body	psychosomatic
bio + graph	life + write	biography

Prefixes and suffixes are also helpful in understanding the meanings of a great many words.

Prefix	Meaning	Example
uni-	one	unify
tetra-	four	tetrachloride
poly-	many	polygamy

micro-	small	microscope
anti-	against	antibiotic
pre-	before	prehistory
re-	back, again	review
inter-	between	international
mis-	wrong, ill	misunderstand
mal-	bad, wrong, ill	malnutrition
Suffix	Meaning	Example
-ic	pertaining to	democratic
-ful	abounding in	colorful
-ive	quality of	creative, adaptive
-less	lack of, free of	helpless, colorless
-ance, -ence	quality or state of	competence, insurance
-or	one who performs an action	doctor
-hood	state or condition of	childhood
-ment	act or condition of	environment

REMEMBER: learning related words according to a system is far more effective than memorizing words at random.

PRACTICE IN WORD-FORMATION AND VOCABULARY

Exercise 1. Match the following adjectives with the negative prefixes UN, NON, IN. The first has been done for you

- in organic (substance)
- animate (matter)
- living (body)
- natural (behavior)
- separable (union)
- mistakable (signs of life)

Exercise 2. Point out which of the words with the same root belong to N (noun), V (verb), Adj (adjective), Adv (adverb) classes. Be guided by suffixes as structural signals. Translate these words into Russian

variety – vary – variation – various

responsiveness – response – respond – responsive

nature – natural – naturally

activity – active – actively – activate – activeness

reproduction – reproductive – reproduce – reproducible

distinguish – distinguishable – distinguished – distinguishing.

Exercise 3. Give Russian equivalents to the following word combinations. In case of difficulty turn to the translations given below.

Variety of life, a rich variety of insects, members of a species vary, to observe variations, to distinguish between living and non-living bodies, the distinction is not difficult to observe, the distinct activities of living bodies, distinct species/

of plants and animals, hardly distinguishable plants, all typical organisms are responsive, inanimate responses are simple reactions, responsiveness of organisms, organisms respond to light and food.

Способность организмов к биологической реакции, наблюдать изменения, основные отчетливые проявления жизнедеятельности организмов, многочисленные виды насекомых, едва отличимые друг от друга растения, разнообразие жизни, проводить различие между живым и неживым в природе, все типичные организмы реагируют на раздражение, члены вида изменяются, этот отличительный признак не трудно заметить, нежи-

вые тела характеризуются простыми реакциями, организмы реагирует на свет и пищу, разные виды растений и животных.

Exercise 4. Note some cases of word-formation (the initial word comes from TEXT A). Translate them into Russian.

1. Develop (v) – development (n) – developmental (adj)
2. Distinguishable (adj) – distinguish (v) – distinguished (adj)
3. Determinant (adj, n) – determine (v) – determinative (n, adj)
4. Hereditary (adj) – heredity (n) – inherit (v) – inheritance (n)

UNIT 4

PRE-TEXT TASKS

Study carefully the list of phrases and their Russian equivalents to avoid any difficulty in working through text A.

1	at least	по крайней мере
2	whatever	какие бы
3	elongate and branched	вытянутые и разветвленные
4	regardless of their shape	независимо от их формы
5	tend to become rounded into drop-like spheres	имеют тенденцию к образованию округлой, каплеобразной формы
6	ranges from ... to	колеблется в пределах от ... до
7	most... protein synthesis is believed to take place...	считают, что синтез белков в основном происходит в ...
8	staining	окрашивание
9	takes a deeper colour	придает более темную окраску
10	has sufficient resolution	имеет достаточную разрешающую способность (о микроскопе)
11	protects against extremes of temperature	защищает от экстремальных температур
12	sequences of amino acids	последовательности аминокислот
13	maintains a supply of amino acids	сохраняет запас аминокислот
14	particular properties	определенные свойства
15	are arranged in the chain	расположены в цепочке
16	they make up the giant molecules	они образуют гигантские молекулы
17	strands	Спирально закрученные нити / ДНК /
18	... are coiled round each other	обвивают друг друга
19	the bases can only be paired in two ways	/азотистые/ основания соединяются попарно только двумя способами
20	enzyme transcriptase	фермент транскриптаза
21	messenger RNA	информационная РНК

TEXT A

The structure of the cell

What we commonly think of as cells consist at least of a mass of protoplasm surrounded by a membrane and containing a nucleus. But a cell, whatever its morphological peculiarities may be, is an integrated and continuously changing system. In plants and animals there are many different kinds of cells with many specialized functions. The amoeba and the bacterium are among the smallest unicellular organisms. The largest single cells are the egg cells of birds. In man, a multicellular organism, there are thousands of millions of cells, and many of these are renewing themselves all the time.

The form of each cell depends on performing a particular function. Nerve cells, for example, are elongate and branched, a form that enables the cells to conduct impulses from one part of the body to another. Regardless of their shape all cells tend to become rounded into droplike spheres, as protoplasm is, essentially, a liquid system.

The nucleus of a cell, separated by a delicate nuclear membrane from the cytoplasm, is derived from a mother cell by mitosis or by meiosis. The size of the nucleus ranges from a small fraction to almost the whole cell volume. The nucleus contains most of the DNA together with other materials. The nucleus is essential to the cell for it to continue living, without it the cytoplasm soon dies.

The cytoplasm is not just a simple fluid, it is highly heterogeneous; in it are situated various structures, called organelles, such as ribosomes and mitochondria. Most, probably all, protein synthesis is believed to take place in ribosomes. The mitochondria contain phosphates and numerous enzymes which vary in different tissues, their function is cellular respiration and the release of chemical energy. In plants, of course,

there are the plastids, carriers of the chlorophyll by which the energy of sunlight is made to synthesize organic compounds from carbon dioxide.

One must know that when a researcher begins to study cells he may use various techniques and methods. One of them is staining. The living cell nuclear and cytoplasmic parts are known to be transparent and colorless. When a cell is stained, the nucleus becomes plainly visible. It takes a deeper color than the cytoplasm, thus enabling the researcher to examine the cell under the light microscope. Electron microscopes have now replaced all others as the means for discovering and studying the details of cellular structure. The electron microscope has sufficient resolution to show the protein and other molecules.

All the substances present in protoplasm are known to fall into two great classes: inorganic and organic substances. The most important inorganic compound in protoplasm is water. The movement of substances in or out of cells is dependent on their being dissolved in water. Water protects against extremes of temperature. Its ability to conduct heat well is useful in equalizing temperatures throughout a living body.

Organic compounds occur only in living bodies or in their products or remains. The element carbon (C) is present in all organic compounds. Organic compounds are somewhat unique since the atoms of carbon can occur as chains or join to form rings. The organic compounds are known to be divided into three main classes – the carbohydrates, the lipids and the proteins.

Proteins are all-important structural components in every cell amounting to 15 % in protoplasm. A protein is built of sequences of amino acids linked together by means of peptide bonds to form a chain. Each amino acid is composed of the carboxyl group (-COOH) and the amino acid group (-NH₂),

attached to the carbon atom next to the carboxyl group. The general formula is $RCH(NH_2)COOH$ where R is a variable grouping of atoms.

Every organism maintains a supply of amino acids in a definite proportion of the 20 common and 2 rare amino acids, peculiar to each species of organism. The particular properties of the protein depend upon the order in which the 20 amino acids are arranged and repeated in the chain. One of the simplest of the proteins is insulin. Its molecule contains 51 amino acids representing 15 different kinds.

Finally, there are the instructional or information-carrying molecules in cells, nucleic acids. These are composed of five main nitrogen-containing purine and pyrimidine bases, ADENINE (A), GUANINE (G), CYTOSINE (C), THYMINE (T) and URACIL (U), combined with phosphoric acid and ribose or the related deoxyribose. They make up the giant molecules of DNA (deoxyribonucleic acid) and RNA (ribonucleic acid) which are responsible for arranging the amino acids in proper sequences in the proteins.

On the basis of results of X-ray crystallography on DNA, James Watson and Francis Crick proposed in 1953 their now-famous model, which shows DNA as composed of two strands. Usually two strands are coiled round each other in the form of a double spiral, with the strands connected to each other through a pair of bases. The bases can only be paired in two ways. Adenine pairs with thymine or uracil, and cytosine pairs with guanine.

DNA is found only in the chromosomes of plants and animals and the corresponding structures in bacteria and viruses. RNA is found in the nuclei, the ribosomes and the cytoplasm of all cells of all organisms. A single strand of RNA produced from a length of DNA (a citron) by the enzyme transcriptases called messenger RNA (mRNA). A molecule of mRNA contains the genetic code to be translated into a particular poly-

peptide molecule. The sequence of amino acids in a protein is determined by the sequence of the nucleotides in a molecule of messenger RNA.

Enormous advances have been made in the last twenty years in giving precise chemical knowledge on these matters. We expect the researchers to make new discoveries in the structures and chemistry of the cell.

NOTES

1. The element “proto” in the words “protoplasm”, “protein” comes from the Greek word “protos”→”first”.

2. unicellular→”unus”(Latin) →”one” + cell (Latin) → “small room”

3. multicellular →”multus” (Latin) →”much/many” + cell (Lat.) → “small room”

4. heterogeneous→”hetero”(Greek) →”other” +”genos”(Greek) → “kind”

singular:	plural:
nucleus	nuclei
mitochondrion	mitochondria

COMPREHENSION CHECK

Exercise 1. Join the suitable word or phrase, marked (A),(B),(C), that best completes the sentence.

1. Different kinds of cells ...

- are found in the bacterium.
- perform specialized functions.
- have only protoplasm surrounded by a membrane.

2. The nucleus of a cell is separated ...

- by a delicate membrane.
- by meiosis.
- by drop like spheres.

3. It is well known that the cytoplasm ...

- a. is composed of different kinds of material.
- b. is transparent when it is stained.

4. In plant cells organic compounds ...

- a. are not hard to see under the light microscope.
- b. become plainly visible when a cell is stained.
- c. are synthesized from carbon dioxide and water using sunlight energy.

5. The most important constituents of the nuclear membrane are...

- a. proteins
- b. proteins and lipids.
- c. plastids.

6. The particular properties of the protein depend upon...

- a. the order in which the amino acids are arranged.
- b. the number of carboxyl groups.
- c. the two strands of DNA which are coiled round each other.

7. RNA is found...

- a. in membranes.
- b. in the nuclei and the cytoplasm.
- c. in the chromosomes of plants and animals.

**Exercise 2. Fill in the correct word or preposition from
TEXT A**

A cell__ _____ of the nucleus and the cytoplasm units. There are many_____ kinds of cells with many _____ functions. The nucleus is _____ from the cytoplasm by a delicate membrane. The nucleus _____ most of the DNA and is _____ only in the chromosomes of plants and _____. The giant molecules of _____ and _____ consist _____ nucleic acids. They are responsible _____ arranging the amino acids _____ proper sequences in the proteins. Enormous _____ have been made in the last 20 years _____ giving precise chemical

_____ on the structure and chemistry of the cell. If a researcher wants _____ a cell, he uses _____ techniques and methods.

Exercise 3. Match the following terms in (A) with their definitions in (B). Consult TEXT A if necessary.

A		B
Cytology	is/are	Spherical organelles about 10 to 15 nm in diameter, containing protein and RNA, where most of protein synthesis takes place.
The cytoplasm		a long chain compound formed from many nucleotides bonded together as units on the chain.
Ribosomes		The study of structure, behaviour and function of cells of animals and plants.
The DNA		A unit of protoplasm surrounded by a plasma membrane and usually containing a nucleus.
The cell		All the protoplasm of a cell outside and surrounding the nucleus.
The Nuclei		Spherical bodies, present in almost all living cells of animals and plants, controlling the reproduction and functioning of the cell.

Exercise 4. Find out topic sentences in each paragraphs of TEXT A and write a short summary making use of them.

Exercise 5. Match the following English words and word combinations in (A) with their Russian equivalents in (B) Consult TEXT A and a dictionary if necessary.

A		B	
1	to perform a function	1	растворять/ся/
2	to depend on/upon	2	бесцветный
3	to be derived from	3	соединение /химич./
4	a compound	4	выполнять функцию
5	colorless	5	происходить из

6	to dissolve	6	зависеть от
7	to maintain	7	сохранять, поддерживать
8	particular	8	определять
9	to determine	9	определенный
10	carbohydrates	10	соответствующие структуры
11	corresponding structures	11	углеводы

Exercise 6. First look through the synonymous verbs from TEXT Agiving special attention to the prepositions used after most of them. Then read the following sentences translating into English the Russian words given in round brackets.

to fall into (groups, classes)	to be divided into
to consist of smth.	to be composed of smth.
to depend on smth.	to be dependent on smth.
to combine with	to join together, to link together, to bond together.
to form	to make up
to occur	to take place
to amount to	to come to

1. Organic compounds (встречаются) only in living bodies.

2. The giant molecules of DNA (состоят из) two spiral strands.

3. Inorganic substances (образуют) the bulk of living as well as non-living matter.

4. Lipids in protoplasm (достигают) 13 %.

5. Four of the five nitrogenous bases – adenine, thymine, guanine and cytosine – (соединяются с) the pentose sugar and the phosphate group (и в результате образуют) nucleotides.

6. Chemically, all carbohydrates have much in common. they (состоят из) carbon, hydrogen and oxygen.

7. The speed of reactions in cells (зависит от) enzymes.

8. Some reactions that simply (не происходят) in a test tube proceed rapidly in the living system.

Exercise 8. Define the following terms translating into English the words in round brackets. Work in pairs according to the model:

A: Could you define the term “protein”?

B: I could give you the following definition of the protein.

PROTEIN is a (сложное) organic (соединение) formed from many units of amino acids (соединенных) by peptide (связями).

AMINO GROUP is a group of atoms (состоящая) of one nitrogen atom and two (атомов водорода), which (остается) unchanged in many organic (реакциях).

GENE is a length of DNA which (определяет) a characteristic in an individual.

DNA (находится) only in the chromosomes of (растений) and animals and (соответствующих) structures in bacteria and (вирусах).

GENETIC CODING is the process (посредством которого последовательность) of amino acids in protein (определяется) by the sequence of nucleotides in a molecule of (информационной) RNA.

Exercise 9. Study questions on TEXT A. Work in pairs practising questions and answers.

1. Could you speak on the importance of water as a constituent of protoplasm?
2. What element is present “in all organic compounds?”
3. What are the three main classes into which organic compounds are divided?
4. What is the name of (-NH₂) group?
5. Could you name one of the simplest proteins?

6. What nucleic acids are important in cells? What nucleic acid is genetic material?
7. Who proposed the now-famous model of DNA?
8. Where is DNA found?
9. What is meant by the “genetic code”?
10. Could you explain the role of RNA in a cell?

PRE – TEXT NOTES

to mold = to shape = to form

studies in the wild = studies in nature

predators – хищники

animals that are preyed on as adults – животные, которые служат добычей хищников в зрелом возрасте

conversely – наоборот

... bear the brunt of... – несут на себе основной удар

hardier offspring – крепкое и выносливое потомство

to render ... dull = to make ... not bright

to bestow the offspring with = to give the offspring...

to come through with flying colors = to make a great success

TEXT B

Sex, predators and the theory of evolution (Observing Darwin's ideas in action)

What shapes a creature's life course and behavior? More than 130 years ago, Charles Darwin laid out his elegant and then shocking theory that it was natural selection, the survival of individuals most suited to the environment, that molded species over evolutionary time. But until very recently, Darwin's ideas remained unproved. Now, for the first time, studies in the wild are rigorously demonstrating the particulars of how evolution works.

Last month, David Reznick, an evolutionary ecologist at the University of California at Riverside, published the results of an 11-year experiment involving guppies living in the Aripo River of Trinidad. The experiment proved that predators are among the principal forces driving the evolution of species, just as predicted by a mathematical model that modern biologists had formulated to refine Darwin's theme.

According to the model, animals that are preyed on as adults will evolve to produce as many babies as they can, as early in life as possible, "If your chances of dying young are good, then having babies yearly is important", says Reznick. However, the earlier a species reproduces, the sooner it bums out, so to speak, and the shorter its life span. Conversely, whose juveniles bear the brunt of predatory attacks, tend to have their young later in life, in effect choosing to bear harder offspring over a longer adult life.

The experiment that Reznick devised, along with his colleagues, was delightfully uncomplicated. The researchers tested the mathematical model simply moving 200 guppies from the base of a 20-foot waterfall in the Aripo River, where predatory fish eat only adult guppies, to the top of the waterfall. There, the single predator is a killifish, a species that devours only young guppies.

After 60 generations, the experimental guppies had evolved in their new environment just as the model predicted. The fish now reach sexual maturity nine days later when they first give birth. What's more, they have fewer offspring in their first brood, apparently saving themselves for future breeding opportunities.

Reznick's is only one of several recent studies verifying Darwin's grand theory in nature. In others, for instance, parasites are proving to be an even more potent agent of evolutionary change than predators. Marlene Zuk, a colleague of

Reznick at Riverside, recently completed a study demonstrating that parasites affect how female jungle fowl, the wild ancestors of barnyard chickens, choose their mates. She found that nematode parasite, which lives in the gut, renders the eye and comb of the male fowl dull and consequently unattractive to females. The females prefer instead cocks bright of eye and comb, who will bestow their offspring with genes that will make them resistant to parasites.

Taken together, studies such as Reznick's and Zuk's, strike a resounding blow to all who would doubt veracity of evolution. It has taken more than a century, but Darwin's theory is finally being put to the test, as it is coming through with flying colors.

COMPREHENSION CHECK

Exercise 1. Read the text quickly and note its chief points by making a list of key words, topic sentences, names, places and numbers. Then re-read it for the specific information that will help you to answer the following questions.

1. Do we know in detail how evolution works?
2. Is "adaptation" the only factor contributing to evolution? Are there any other principal factors contributing to evolutionary changes in species?
3. Studies in the wild conducted by evolutionary ecologists are very helpful in understanding the particulars of evolutionary changes. How many experiments are described in the article and who conducted them?
4. What model is tested in the first experiment? Does it prove that there is a certain relationship between predatory attacks on a species and the period when it begins to reproduce?
5. What kind of fish was chosen for the first experiment?
6. How many generations of the experimental fish did it take to prove evolutionary changes?

7. Who conducted the second experiment which proved that sex relations among animals (the way they choose their mates) may affect the genetic composition of the offspring and may lead to evolutionary changes?

8. Which is the correct relationship established in the second experiment:

Rematode parasite → the specific genes → color of the eye and comb

Rematode parasite → color of the eye and comb → the specific genes

9. Do you think that Darwin's theory was successfully tested?

Exercise 2. Highlight TEXT B taking the following steps:

Step 1: Read and translate TEXT B into Russian.

Step 2: Read carefully TEXT B making a list of key words and topic sentences.

Note 1: Key words and key terms are usually repeated; similarity of meaning or parts of meaning turns them into key words.

Note 2: Topic sentence summarizes the content of the whole paragraph.

Step 3: Look through the text quickly giving special attention to transitional words that help to connect ideas (but, though, despite, etc.).

Step 4: Look for such signals as the heading (Why is the text entitled the "Sex, predators and the theory of evolution"?), introductory and concluding paragraphs, names and numbers.

Step 5: Prepare for making an oral report in class on different aspects of the Darwin's theory of evolution.

UNIT 5

PRE-TEXT TASK

Study carefully the meaning of the following phrases and word-combinations to avoid any difficulty in working through TEXT A.

1	environmental protection	защита окружающей среды
2	as well as	так же ... как
3	agricultural pollution control	контроль за загрязнением в сельском хозяйстве
4	genetic consequences of pollution	генетические последствия загрязнения окружающей среды
5	indiscriminate dumping of materials on land	беспорядочное вываливание отработанных веществ и материалов на землю
6	careless disposal of pesticides	небрежное использование пестицидов
7	fall-out	выпадение в виде осадков
8	... most of it being brought by winds	причем большая ее часть приносится ветрами
9	eventually	в конечном итоге, в конце концов
10	becomes upset	становится нарушенным
11	an ever-thinning ozone layer	постоянно истончающийся озоновый слой
12	ever-frozen	вечномерзлый
13	evergreen	вечнозеленый
14	ever-growing	постоянно растущий
15	to allow	делать возможным, приводить к ...
16	... speed and scale of change that human beings are inflicting on the world	скорость и масштабы тех отрицательных последствий /изменений/, которые люди наносят окружающей природе
17	rain forests	тропические леса
18	yet they only evolve to match -specific varieties of wheat	однако они развиваются только в том случае, если сочетаются с определенными сортами пшеницы
19	conservative forecasts	заниженные прогнозы

TEXT A

The Science of Ecology

People all over the world are concerned about ecological and environmental protection¹ problems. Ecology is the scientific study of how organisms interact with their environment. The word “ecology” comes from the Greek word “oikos” (house). The term was first introduced by the German biologist E. Hackel in 1870, and since the late 1960s it has become a subject of international interest. A key word in the definition of ecology is INTERACT. So numerous are each organism’s interactions with other living things and the physical environment that biologists organize ecology the science of interactions, into a hierarchy of four levels: populations, communities, ecosystems and the biosphere. “Environment” describes the conditions surrounding an organism. Organisms interact with the other living things that collectively constitute their BIOTIC environment, as well as with the non-living physical surroundings (air, water, soil, light, temperature) that make up their ABIOTIC environment. A permanent change in any of these conditions, for example, a change in the intensity of the light, is a change in the environment.

Highly industrialized states cannot ignore the problems of environmental protection. The practical results of the state policy in environmental protection include agricultural pollution control, the study of man’s influence on the climate, the biological and genetic consequences of pollution.protection of rare and vanishing plants and animals.

The main risks of land pollution lie in the indiscriminate dumping of materials on land, careless disposal of pesticides and chemicals, fall-out of materials from the atmosphere. For example, every day Sweden receives more than 1,000 tons of sulphur from the air, most of it being brought by the winds

from other countries. This has been dropping on Swedish soil for the last 30 years and the results are shocking: 18,000 of the country's 85,000 lakes are now acidified, 4,000 have no fish left and about another 6,000 have been seriously damaged.

To understand how the process works, imagine a factory in Britain. It needs heat for its manufacturing, so it burns oil. This has a high sulphur content, which turns into sulphur dioxide (SO₂) after the oil is burnt. The SO₂ can travel hundreds or thousands of kilometers, depending on the wind, and combining with oxygen it forms sulphur acid (H₂SO₄). The acid becomes a cloud, and eventually falls to earth as rain. The water being polluted, the biological balance of lakes becomes upset.

Recent scientific research suggests that the growing industrial use of chlorine compounds: called chlorofluorocarbons (CFCs) is responsible for destroying the protective layer of ozone around our planet. CFC is a gas commonly used in aerosol sprays, air cooling systems in refrigerators and air-conditioning. Researchers suggest that the level of CFCs in the atmosphere is actually increasing by 5% each year. An ever-thinning ozone layer could eventually allow a more harmful form of radiation, known as ultra Violet C. Laboratory experiments have shown that UVC can penetrate cells in the body and irreparably damage the nucleic acids and proteins which are the building blocks of life.

There is another aspect of the huge speed and scale of change that human beings are inflicting on the world. A powerful symbol of that change is the simple act of felling trees.

In the past 30 years, for example, people have been cutting down forests of Pakistan, Nepal and Tibet. This leaves fertile Himalayan hills naked, unprotected from the heavy rains. The Amazonian jungle is being destroyed at the rate of 29,000 square miles in a year. Trees are vital part of the water cycle and of course they give us the oxygen that we

breathe. And cutting down the rain forests kills the plants which help us fight diseases. 40% of our drugs, our medicines, are derived from plants and most of those come from the tropical rain forests. Those plants also help fight the diseases that threaten our food. The fungi and moulds that attack wheat, for example, are continually growing stronger. Yet they only evolve to match specific varieties of wheat. So plant breeders beat the fungi by changing the varieties. New genes which a plant breeder needs to change a variety come from wild plants. And if we lose those wild strains, the field could be devastated and mankind would starve.

The crucial ecological and environmental problems we face now are largely those of population which will really hit us in the middle of the next century. 80,000,000 new human beings are born each year. Even the most conservative forecasts project a total world population of around 6 billion by the turn of the century.

COMPREHENSION CHECK

Exercise 1. Explain in English or in Russian what is meant by:

1. ... are concerned about ecological problems
2. ... that collectively constitute their biotic environment
3. ... vanishing plants and animals
4. ...85,000 lakes are now acidified
5. to understand how the process works...
- 6...which turns into sulphur dioxide
7. ... can penetrate cells in the body
8. ... irreparably damage the nucleic acids
9. our medicines are derived from plants...
10. plant breeders beat the fungi by changing the varieties
11. ... the field would be devastated

Exercise 2. Which of the following statements are true?

1. The term “ecology” comes from German.
2. Ecology is the study of the relationship of plants and animals to their surroundings.
3. The term “biotic environment” describes all the conditions surrounding an organism.
4. The term “environment” includes air, water, soil, light, temperature and the presence or absence of other organisms.
5. Pollution of the atmosphere usually suggests the presence of sulphur dioxide.
6. CFCs are responsible for air pollution.
7. The nucleic acids and proteins which are the building blocks of life are damaged by CFCs.
8. Cutting down forests gives us more oxygen to breathe.
9. The main source of new genes is a variety of plants and animals on the earth.
10. All the problems of environmental protection are connected with the growing population.

Exercise 3. Read the short summary of TEXT A. Fill in the correct words choosing from the list below. Consult TEXT A, if necessary.

No country in the world can _____ ecological and environmental problems. For the last 30 years they have been _____ of international interest and _____. The branch of biology _____ with all these problems is called _____. It is the study of the _____ of plants and animals to their _____. Plants and animals are mainly considered in _____ and all surroundings, both animate and _____ are included in the study. The most damaging of the man's influence on nature are land _____, destruction of the ozone _____, _____ of rainforest, especially in the Amazonian region of South America. Besides polluting gases, such as sulphur, dioxide _____ as acid rain. Thousands of lakes have

been ruined already. The biological balance of lakes becomes _____. People are now buying items like fridges and air-conditioners. They contain lots of CFCs which are _____ for destroying the _____ layer of ozone. The growing world _____ will make things worse, if family planning is not introduced in the nearest future in some countries of Africa and Asia.

Word List:

Communities, concern, pollution, ignore, protection, animate, surroundings, protective, ecology, relationship, consequences, responsible, layer, fall out, dealing, population, devastation, upset.

Exercise 4. Fill in prepositions. Consult TEXT A in case of difficulty.

1. ... how organisms interact _____ their environment
2. man's influence _____ the climate
3. a subject _____ international interest
4. the state policy _____ environmental protection
5. a gas commonly used _____ aerosol sprays
6. is actually increasing _____ 5 % each year
7. ... change that human beings are inflicting _____ the world
8. 40 % of our drugs are derived _____ plants
9. ... is being destroyed _____ the rate of 29,000 square miles in a year
- 10... hills... unprotected _____ the heavy rains

Exercise 5. Translate the words given in brackets choosing their equivalents from the list below.

1. Large forests and thousands of lakes have been (погублены) already.
2. Many elephants are being (уничтожаются) in parts of Africa.

3. The acid rain is one of the worst types of (загрязнения окружающей среды)

4. As ozone is (разрушается) more and more of the sun's ultraviolet rays will get through to us.

5. Untold (вред) may be done to plancton – the microscopic life of the oceans – which is (разрушается) by ultra-violet rays.

6. It is only recently that people have realized that too much sunbathing can be (опасно, вредно) to our skin.

7. Humans have been living on this planet for two million years, but it is only in the last couple of hundred that we have (испортили) of it.

8. We have to stop (губить) the land, sea and air,

9. The rainforests contain a huge variety of animals, insects, birds and plants, but Man seems determined to (уничтожить) them.

10. Some vegetables (опрыскиваются) with pesticides just to make them look more appetising.

11. Nitrates get washed away by rain into streams and rivers, (вызывая) the oxygen level to drop and (уничтожая) fish and other aquatic life.

12. Nobody knows the long-term (последствия) of eating food (загрязненную) with pesticides.

Word List:

Wiped out, pollution, destroyed, harmful, ruined, damage, contaminated, causing, ruining, made a mess, effects, killing off, are sprayed.

Exercise 6. Translate into English.

Хотя кислотный дождь – наихудший вид загрязнения окружающей среды, какое только производят люди, это явление новым не назовешь.

Сто лет назад первый в Великобритании инспектор по контролю за загрязнением окружающей воздушной среды /air pollutionin inspector /.

Роберт Смит употребил сочетание “кислотный дождь” при описании загрязненного дождя в г. Манчестер.

Смит сообщал в служебном отчете /reported/, что городской воздух не только загрязнен частицами промышленной пыли / filthy /, но и содержит кислоту, которая поражает / was attacking / растительность, строения и металлические конструкции /ironwork /. Поразительно / Amazingly /, но о его отчете не вспоминали до 1960-х годов.

Именно в эти годы скандинавские ученые начали устанавливать связь / to link ... with / между потоками загрязненного воздуха, переносимыми ветром через море /blown across the../ из Англии и других стран Европы, и большим содержанием /high amounts / кислоты в реках и озерах скандинавских стран.

Сегодня, к сожалению, кислотные дожди распространились / have spread / по всему миру, уничтожая целые леса и все живое в них.

PRACTICE IN WORD STRUCTURE AND VOCABULARY

Exercise 1. Note some cases of word-formation. The initial word comes from TEXT A. Try to guess the meanings of some of these words in verbal contexts below.

Destroy (V) — destruction (N) — destructive (Adj) — destructiveness (N) — destructively (Adv) — devastate (V) — devastation (N) — devastative (Adj) — devastator (N) —

environment (N) — environmental (Adj) — environs (N) —
pollution (N) — pollute (V) — pollutant (N)

1. forests devastated/destroyed by fire
2. to destroy smb's hopes (All my hopes were destroyed)
3. the destruction of a town by an earthquake
4. to destroy life on the Earth
5. to destroy a building
6. to destroy smb's reputation
7. destructive criticism
8. children can be very destructive
9. birds- are very destructive in the garden,
10. the floods devastated the fields,
11. the frost destroyed the crops,
12. we were simply devastated by the news of that oil spill
13. ending nuclear weapon tests in all environments
14. to investigate social and moral environment so different people
15. his home environment
16. Moscow and its environs
17. rivers polluted with filthy waste from factories
18. control of air and water pollution!
19. sulphur dioxide is one of the worst pollutants of the atmosphere

PRE – TEXT NOTES

1. **..., are now cutting back** = are changing direction (in fan-ning)
2. **... with nature calling the shots** = with nature giving orders to us
3. **... he has a sneaking hunch...** = he has a secret feeling...
4. **He's also going broke...** = he's also going bankrupt
5. **I bit the bullet...** = I met the situation courageously..
6. **... highly touted** = much advertised

TEXT B

AGRICULTURE IS RIPE FOR CHANGE

Farming is about to undergo its biggest change since the end of World War II.

After nearly half a century of reliance on chemicals to fertilize soil and keep crops free of bugs and weeds, many farmers are now cutting back, trying non-toxic alternatives. Some are cutting out all chemicals, going “organic”.

The new direction, in farming got government approval and a promise of more than moral support last month in a joint announcement by the Environmental Protection Agency, the US Department of Agriculture. No specifics were given, but USDA officials say efforts will be made to find alternatives to chemicals and get information already available to farmers who want it.

Environmentalists and consumers are pleased by the turn of events, especially in the wake of a Rational Academy of Sciences report on the possible danger of pesticides in children’s diets. It’s an idea whose time has come – but it won’t come easily, says Frederick Kirshenmann, who raises grains and livestock organically. “All of us are going to rethink the way things are going. We are going to make fundamental changes” – he says.

One of the most difficult will take place in farmers’ heads, says Paul Buchsman, a peach grower- near Kingsburg, Calif. “The whole psychology behind farming is in flux,” says Buchsman, who converted to organic methods when his son, now a healthy 13-year-old, contracted leukemia in 1982.

Although there’s no way of knowing how many farmers are moving away from pesticides, “it’s a revolution that’s occurring,” Buchsman says. “There’s definitely a reduction in pesticides, but there’s a lot of struggle to hold onto them, too. Most farmers know they will change. They don’t all like it”.

Farmers who use chemicals spray or dust crops on a schedule and harvest a predictable crop, he says. "It's precision. You always knew how many boxes to order. You knew how many pickers you needed. It was a factory, and you had just the right amount of everything. It made sense. Now we enter an era of biological control, with nature calling the shots. It's very fickle. It's a friend, then it's a foe."

"Change is coming, though, like it or not", says Joe Sheridan – apple grower. Sheridan sprays his 3,500 apple trees, but he uses fewer and less toxic chemicals than he once did. Now he's experimenting with biological methods, such as bat houses to encourage colonies of the bug-eating creatures, and pheromones, natural hormones secreted by insects, to trap coddling moths. "That works for a little guy like me who has a small commercial orchard," he says, "but for larger growers, there are drawbacks. Hormone traps cost about twice the \$150 per acre of commercial insecticide sprays." Farmers are ready for change, Buchsman says, because they know "a lot of these chemicals are not working as well as they did. It's not unlike if you take almost any medication. It loses its effectiveness over time. Finally, it just doesn't work." Buchsman describes "the typical farmer":

"He has a sneaking hunch that some of the chemicals he's using might be harmful. He won't say it, but there's growing suspicion that something may not be right..."

"Second, they know the stuff isn't -working right. So when the -chemical salesman says you have to mix another chemical in that tank, because that old stuff isn't working, the cost to the farmer goes up. Wow instead of \$25 an acre, it's \$50 an acre. Then, that doesn't work. So you add a third chemical. We don't know what happens when they are mixed. We don't know if a new chemical is produced; we don't know if they cancel each other out; we don't know if we're creating nuclear waste."

Third, Buchsman says, is this typical farmer “has heard there are successful farmers protecting their crops without these things. He thinks, they might be lying, or it’s a cruel hoax, but he’s not sure. He’s also going broke and has consumers who think farmers are using poisons”.

Therefore, he says, “We’re now ripe for change.”

That requires courage, information, money for new equipment and time to make the transition, Buchsman says. Most farmers won’t be able to suddenly stop using chemicals. “A farm takes time to reach its ecological balance,” he says. “I bit the bullet and nearly lost the farm. Others don’t need to do that.”

“It’s not going to take more money – just a reorganization of priorities,” he says-..”And it won’t take new technology, not even the highly- touted genetically engineered vegetables with their own built-in immunities. Genetic engineering might have an application somewhere, but not in farming.”

Instead, he advises: “Use more natural fertilizers. Build the soil. Don’t spray with disruptive poisons, bet the grasses grow. Let the flowers bloom. That’s it.”

WRITING PRACTICE

HIGHLIGHTING a text is, as you already know, reading it carefully in order to identify its key points and the relationship of one point to another. Highlighting is necessary if you are going to make an oral report in class or write a paper.

Highlight TEXT B according to the following outline.

1. Focus on the main ideas and their development in TEXT B: Farming is about to undergo its biggest change → What sort of change is it? → Why is the change necessary? → Will it be easy to convert to organic methods in farming? → What stands in the way of reducing the use of pesticides? → What does the change in farming require?

2. Give special attention to introductory and concluding paragraphs.

3. While reading TEXT B look for a topic sentence in each paragraph.

4. To discriminate what matters more from what matters less try to concentrate on the following key words and word combinations: new direction- in farming; to cut out all chemicals (to reduce the use of pesticides, reduction in pesticides); to find alternatives to chemicals; to go “organic”(to convert to organic methods, to move away from pesticides); possible danger of pesticides; biological control; to experiment with biological methods; some sprays are unnecessary; to lose effectiveness; pesticides are harmful; to protect crops; ripe for change (ready for change); to stop using chemicals (pesticides); to use more natural fertilizers.

5. Give special attention to the following discourse markers (linking words) which are used to show the structure of this piece of writing; ALTHOUGH, THOUGH, BUT, SECOND ... THIRD, THEREFORE, INSTEAD.

SPEAKING PRACTICE

IDEAS FOR GROUP DISCUSSION:

Divide into two teams of “Optimists” and “Pessimists”, give your views on the greenhouse effect.

1. The greenhouse effect and its negative and positive consequences

2. The main “greenhouse gases” and their basic sources.

3. Possible ways of slowing down the greenhouse effect.

CONVERSATIONAL FORMULAS FOR GROUP DISCUSSION:

If you ask me...

Wouldn't you say that...

Don't you agree that...
As I see it...
I'd like to point out, that...
Would you agree that...
Do you think it's right to say that...?
I don't quite see what you mean, I'm afraid.
I don't quite see what you are getting at.

REFERENCE MATERIAL FOR GROUP DISCUSSION:

What is it?

Up in the atmosphere, energy, in the form of light from the sun, streams towards earth, it passes through layers of gases miles above the surface of the earth. As the sun warms the land and sea, energy is reflected back at these gases. But this energy is not in the form of sunlight – it is invisible infra-red energy, which the gases absorb. They trap this heat, and that's where the term “greenhouse effect” comes from. If the greenhouse effect did not exist at all, the earth would be a frozen, lifeless planet, but at the moment it is building up much too fast. The main “greenhouse gases” are carbon dioxide, methane and CFCs.

Electricity

Most of the electricity we use is produced by the burning of fossil fuels – coal, oil and gas. When these are burnt, they give off carbon dioxide. So, whenever you turn on any electrical appliance – hi-fi, light bulb, TV or washing machine – think “Do I really need to use this?” And don't forget to turn it off;

Cars

Cars add to the greenhouse effect because they have carbon dioxide and nitrogen oxide in their exhaust fumes. Car makers began to produce cars that go further on a gallon of petrol, but we are still wasting precious petrol and putting yet more CO₂ into the atmosphere on pointless car journeys.

Rubbish

Most household rubbish gets buried in landfill dumps. Just because it is out of sight, does not mean it does no harm. Methane is released into the air as the rubbish rots. It is the most effective greenhouse gas – one molecule of it absorbs twenty times as much heat as one molecule of carbon dioxide.

CFCs

Chlorofluorocarbons are well known for the damage they are doing to the ozone layer. They are a double attack on our planet because they are also “greenhouse gases”. Aerosols, foam plastic fast-food containers, padding from cushions and cars, coolants from fridges and air conditioners all contain CFCs.

Rainforests

Destroying rainforests has awful consequences. This is adding to the greenhouse effect in two major ways. Trees need carbon to grow. They get it from carbon dioxide (or CO₂), and forests absorb millions of tons of it a year. Cut the trees down, and the amount of CO₂ eaten up is also cut. To make matters worse, most of the wood is burnt. That releases millions of tons of CO₂ which add to the greenhouse effect.

Rice

Methane is also produced when vegetation rots underwater. That is what happens in the millions of square miles of rice fields all over Asia. As the world's population increases, more rice will need to be grown, releasing yet more methane. It is increasing in the atmosphere at an even faster rate than carbon dioxide.

The sea

The sea absorbs vast quantities of carbon dioxide, which is good. To keep soaking it up at the same rate, the amount of salt in the water should not fall. But water that comes from melting polar ice has no salt in it. It will absorb less carbon dioxide. As the greenhouse effect gets worse, the sea will help us less.

PRESENTATION MANUAL AND ELSP TEXT BANK

Модуль II. ПРАВИЛА ПОДГОТОВКИ ПРЕЗЕНТАЦИИ ПОДБОРКА ТЕКСТОВ ПО СПЕЦИАЛЬНОСТИ

PRESENTATION MANUAL ELSP TEXT BANK

PREPARING A PRESENTATION

- STEP 1.** Know the context of the presentation: Who are the audience, and what are their interests? How big will the audience be? How long is the presentation to be? What facilities are available for visual aids? What about time for questions?
- STEP 2.** Decide on your topic. Think carefully about the main point or points that you want to communicate. You should be able to write these clearly in one or two sentences.
- STEP 3.** Structure the content. Most people begin with an unordered collection of ideas and then put them into sequence. Then decide on the relative weight of each section of the talk.
- STEP 4.** Think of ways of catching the listeners' interest: examples, anecdotes, impressive statistics, interesting quotations.
- STEP 5.** It is useful to "rough-draft" visual aids at this stage, because they can help you make the sequence of points more clear and logical. Think about whether some information should be put into handouts.

- STEP 6.** Check overall length, and the relative weight of sections. A little too short is better than even a little too long. As a rough guide, allow about 1 minute for every 100 words, plus time if necessary for changing transparencies. One A4 page, double-spaced, takes about 3 minutes of speaking time.
- STEP 7.** Finish preparation of visual aids. If you are using PowerPoint data projection, having slides or transparencies is a useful back-up in case of last-minute technical problems.
- STEP 8.** Prepare handouts, if you want them. Make copies.
- STEP 9.** Plan the exact words you will use for the opening, the transition points, and the conclusion. Practice them again and again. If you are anxious, write on cards the introductory and concluding sentences. Make more notes if you need them.
- STEP 10.** REHEARSE your presentation, as often as necessary. Do not omit this step! You can practice alone, or ask a friend or colleagues to listen to you. With practice, you will become more fluent and at ease. Make sure you speak simply, but in academic not conversational style. Project your voice across the room. You will find this slows your speech. Check the timing carefully and make adjustments if necessary. Mark a time reference at one or two points in the presentation.
- STEP 11.** Think about the questions the audience may want to ask you. Plan how you will answer them.
- STEP 12.** On the day of your presentation, be calm and organized. If you are unfamiliar with the location, go beforehand to plan where you will stand and where you will put your papers and to see how the projection works. Arrive in good time for your presenta-

tion. Remember to take all your visual aids, notes and papers.

If you feel nervous, do not worry. That's normal. Breathe slowly and deeply for a few minutes beforehand, and try to relax the muscles of your face, mouth and neck. This will make you look relaxed, and will improve the quality of your voice. Then remind yourself how well prepared you are, and enjoy it. Concentrate not on yourself or your notes, but on the audience and making clear to them what you have to say.

VISUAL AIDS

If you are using an **overhead projector**, follow steps 1–4 below.

1. Before your presentation check that the equipment works. Decide on the best place to stand, so that you do not obscure the view of the audience; decide where to put transparencies before and after use; decide whether you will point at the transparency or at the screen (or not at all).

2. If you point at the transparency, use a pen as a pointer.

3. Detach the transparencies from their backing paper to make things easier during your presentation. Interleave them with plain paper.

- 4 Number the transparencies in case you drop them.

If you are using **PowerPoint** data projection, follow steps 1–6 below.

1. Check beforehand whether you should bring your presentation on diskette or CD or DVD. If you are bringing a computer, check on the type of connection required for the data projector.

2. If possible, set up your presentation before your talk. This can take several minutes, even if all goes well.

3. Have a blank slide at the start and end of your presentation. This makes your start and finish smooth.

4. Power Point has an excellent online tutorial and help system. Use it when *you* are preparing your presentation so that you can make full use of its faculties (such as time monitoring, handouts and notes).

5. Don't be tempted, because of PowerPoint's capabilities, to make your slides too "busy". That will distract the audience's attention.

6. Even if you are giving your presentation in a well-equipped room, technology can go wrong. Print out your PowerPoint slides on to transparencies, so that you have an alternative.

HANDOUTS

Handouts are useful in **three ways**.

1 They show data that are too detailed for a visual aid, such as transcript data from interviews, or mathematical calculations. If there is a lot of detail, the points you want to refer to in your presentation should be clearly highlighted in the handout. The handout is given immediately before the presentation, and then referred to.

2 They provide a "signposting" framework to guide the audience through your talk. In this case, the handout will be a note-frame, which is given out before the presentation. Don't put too much into it, or the audience will read the handout instead of listening to you.

3 They act as a record of your presentation, which the audience can take away. This could be either a note-frame or a fuller text. For this "record" type of handout, it's common practice to add your address and email address, so that people working in the same field can contact you later. Some pre-

senters like to give out this type of handout at the end of their talk, so that the audience listens with full attention. Others give it out at the start, as a support to listening. Keep your handout short – one page if possible.

NOTES

Visual aids often provide sufficient support for your presentation. If you feel you need notes as well, remember that they will be more to cope with during the presentation: you will have to deal with the visual aids, the notes, and the audience.

1. Cards or A5 paper are often recommended because they are neater in the hand than big pages. Make sure you number them clearly!

2. A good alternative is to use photocopies of your visual aids, with notes written on them. It is then easier to coordinate your progress through notes and visual aids.

3. Write very large and clear, with plenty of space.

4. Use colour, so that you can quickly locate key points or words.

SIGNPOSTS AND LANGUAGE SIGNALS

INTRODUCING THE TALK

I'd like to talk about...

I'm going to discuss...

I want to tell you about...

What I'd like to do is to explain to you...

What I'm going to do is to describe...

What I want to do is to give an account of...

ORDERING POINTS (TIME ORDER)

To begin with At the beginning At the start

Secondly Then Next After that

Finally At the end

ORDERING POINTS (LISTING AND ADDING)

First (ly),

Second (ly),

A second reason

Another point

Also

Last (ly)

Third (ly), The third aspect Other factors In addition Finally

TRANSITION

Having considered (X), let us now move on to (Y). So these were our methods. What about our results?

CONTRASTING

But However Nevertheless,

On the other hand By contrast

REFERRING TO VISUAL AIDS

This slide (graph, chart) shows... Here you can see Here are

This is

DEFINING

By X we mean yy.

X is defined as yy.

We call Xyy.

We can define X as yy.

REPHRASING

That is, In other words, To put it another way,

GIVING AN EXAMPLE

For example, For instance, such as say, like

To give you an example, Let me give you an example.

Including

*An example of this is.,
Here is an example.*

EMPHASISING

*Actually in fact indeed
Importantly surprisingly interestingly
It is clear that clearly obviously
I'd like to underline highlight stress
It's important to bear in mind keep in mind remember*

CONCLUDING THE TALK

*So, Finally,
To summarize Summing up To "Conclude In conclusion
I'd like to finish by saying...
I'd like to conclude now with a few remarks about...*

NON-VERBAL COMMUNICATION POSTURE

- a) Stand straight but not stiff.
- b) Balance your weight evenly on both feet.
- c) Standing well allows your diaphragm to move more easily to control your breathing and voice production. So you feel better, sound better, and look better.

MOVEMENT AND GESTURES

- a) Too much movement is distracting; no movement at all is boring and uncommunicative.
- b) Use movements and gestures to signal transition points or to stress points of importance.
- c) Avoid meaningless gestures and repetitive movements. Don't wave your left hand about in circles or wave the pointer about. Use the pointer only when necessary, and with a firm movement. If you have a laser pointer, keep your hand close to your body when using it; don't hold it at arm's length Like a gun.

FACIAL EXPRESSION

- a) Your facial expression must match your message. If you claim something is interesting, look as if you find it so.
- b) Relax your facial muscles. If you look nervous, the audience will not be comfortable.
- c) In the 10 minutes before you start, make sure your tongue is relaxed and not raised tensely against the roof of your mouth. If you can discreetly yawn widely once or twice, this will help to relax your facial and throat muscles and to feel less tense.

VOICE

- a) Speak a little louder than you think is necessary. Project your voice to the back of the room. Use your diaphragm to do this, not the muscles of your throat. Keep the muscles of your throat and mouth relaxed. Otherwise your voice loses resonance and power, and is less pleasant to listen to.
- b) Speak a little more slowly than you normally do, especially if you feel nervous. This will help you sound and feel more confident. A useful rule-of-thumb is: the larger the audience, the more slowly you should speak.
- c) Use your voice as a communication tool. Vary the speed – speak more slowly in the introduction and the conclusion. Use stress for important points and contrasts. A short silence can also serve to emphasize a point or a transition. All these techniques contribute greatly to making a presentation interesting to listen to.

EYE CONTACT

- a) Eye contact creates a relationship between the speaker and the audience. It encourages the audience to listen. It helps to relax the speaker. So look at people.

b) Start and end with direct eye contact, looking round the whole audience. During the talk, don't gaze over people's heads or out of the window. Look at your visual aids (and notes if you have them) as much as is necessary, but don't stare at them and talk to them. Look at the audience as much as you can.

c) Don't look always at the same section of the audience or, even worse, at one Victim". Don't dart your eyes about quickly or sweep your gaze round like a searchlight. Focus on one person or group for 1–2 seconds; then look at another person or group, then another.

ASKING AND DEALING with QUESTIONS

INTRODUCING A QUESTION

I've got a question about... Could I ask a question...? Sorry, could I just ask...?

CLARIFICATION

Sorry, I didn't follow what you said about. What did you mean when you said...? Could you give me an example of...?

MORE INFORMATION

I was interested in what you were saying about...

Could you tell us more about...?

Could you expand a bit on what you were saying about...?

CHECKING COMPREHENSION

So you mean...?

So you're saying...?

Can I just check I've understood – did you say...?

Have I got this right:...?

RESPONDING TO ANSWERS

Yes, I see.

OK, thanks.

Thanks, that's clear now.

That's not really what I was asking. What I meant was...

OK, but what I really wanted to know was...

Sorry, I'm still not clear about...

Perhaps I didn't make my question clear. What I was really asking was...

DEALING WITH QUESTIONS

ANSWERING DIRECTLY

Well, as I understand it...

If I've understood X correctly,...

Well, according to our results...

OK – I think I can answer that quite simply.,

PLAYING FOR TIME

Er, let me see... Well, I suppose I'd say...

That's an interesting/a very good question! Well.,

HANDLING COMPLEX QUESTIONS

Well, those are really two different questions. OK- let me deal with those questions one at a time. Your first question/point was about... I'll deal with your second question/point first, if I may.

DEALING WITH AWKWARD QUESTIONS

/ haven't had time to look into that, sorry.

I really don't know/I'm not (quite) sure/I've really no idea.

I'd need to think about that.

I'm not absolutely sure, but I'd guess that...

I don't really have any experience of that, but X might like to comment?

I don't think there's enough evidence to say for sure.

I was just coming to that/I'll come back to that in a minute, if that's all

right. I just wanted to...

That's rather outside my field.

That isn't really my field, but perhaps X could say something about...?

That's an important question, but it's really too complex, to deal with

now.

That's really a whole different argument/discussion/topic.

There isn't really time to go into that now/here.

I think we're going off the point a little.

Well, I think you'd be wrong to assume that...

You seem to be assuming that...

Do I take it you don't think/believe/accept...?

ELSP TEXT BANK

Text 1. VEGETATION AND WILDLIFE

The humid and mild climate of Great Britain is good for plants and flowers. Some of them have become symbols in the UK. Probably you know that the poppy is the symbol of peace, the red rose is the national emblem of England, the thistle is the national emblem of Scotland and the Edinburgh International Festival. The daffodils and the leek are the emblems of Wales, the shamrock (a kind of clover) is the emblem of Ireland.

The UK was originally a land of vast forests, mainly oak and beech in the Lowlands and pine and birch in the Highlands, with great stretches of marshland and smaller areas of moors. In the course of time, much forest land was cleared and almost all the Lowlands outside the industrial areas were put under cultivation. Today only about 6 per cent of the total land area remains wooded.

Extensive forests remain in eastern and northern Scotland and in southeastern and western England. Oak, elm,

ash, and beech are the commonest trees in England, while Scotland has much pine and birch. The Highlands with their thin soil are largely moorland with heather and grasses. In the cultivated areas that make up most of Britain there are many wild flowers, flowering plants and grasses.

The fauna or animal life of the UK is much like that of northwestern Europe. Many larger mammals such as bear, wolf have been hunted to extinction, others are now protected by law. About 50 land mammals are still found in the UK. There are many foxes. Otters are common along rivers and streams, and seals live along much of the coast. Hedgehogs, hares, rabbits, rats and mice are numerous. Deer live in some of the forests in the Highlands of Scotland and England. There are several small lizards, two or three kinds of snakes and several kinds of frogs and toads.

Some 230 kinds of birds live in the UK, and another 200 are regular visitors, many are songbirds. The most numerous are blackbirds, sparrows and starlings. Robin Redbreast is the national bird of the UK. The number of ducks, geese and other water fowl has diminished during recent years. Partridges, pheasants and other large and rare birds are protected by law. Gulls, geese and other sea birds nest near the coast.

There are many threats to wildlife and ecological balance around the coast. The biggest threat to the coastline is pollution. More than 3,500 million tons of industrial waste is pumped into the North Sea every year. "We cannot continue to use our seas as a dustbin and expect our coastline to survive", says Greenpeace. Many other ecological problems may be caused by privatization of the coast. The quality of rivers has also declined. Many of them are "biologically dead", i.e. unable to support fish and wildlife.

Text 2. SOIL

Soil plays a vital and important role in the life of the world and mankind. It is in fact a highly organized physical, chemical and biological complex all of us are dependent on. As the supporter of vegetable life, soil plays the most fundamental of roles in providing food for all animals and men.

Soils develop under the influences of climate, vegetation, slope and drainage, time, the nature of the parent material, and the culture. Climate influences plants, animals and soil directly. Plants influence the soil, the animals and the climate near the ground. Animals play a considerable role in soil development, the type of soil often influences the animals which are present in it, while the animals also influence the vegetation which is growing in the soil. Finally climate, through weathering, influences the rocks, which in time become part of the soil through the processes of soil formation.

All soils do not have the same utility, but man uses different soils in different ways. "Good" land for the production of food-stuffs must lie well and have good depth, for yields are dependent upon the ability of the soil to take up and use fertilizers and water. Man has done much to adapt crops to the soil and to provide various kinds of fertilizers for plant growth and development. Soils that are not good for the production of food-stuffs may be valuable in other ways. For example, podzols in high elevations are poor for crops but they comprise excellent forest soils.

Each soil series requires skilful handling if it is to produce to its maximum potential; but no two series make the same demands. From season to season conditions of temperature and moisture change, so the farmer must change the management to produce better drainage, improve tilth, prevent erosion, and test the soil to identify the proper kind and the correct proportion of fertilizer needed. Only by

Careful study of the soil, resulting in an understanding of the complexity of its nature and uses, will man be able to provide food for all the people who will inhabit the earth. The soil cannot reproduce itself. Therefore, man should improve it through good management and treatment so that future generations can farm more efficiently than their fathers and grandfathers have done. Man can improve the soil now in use and even discover how more kinds of soils can be utilized more productively.

So, the results obtained in soil science can be applied to practical problems in agriculture, horticulture, forestry, engineering, and in planning the future use of land.

Text 3. FLORA

In the 1800s when the first Europeans arrived, about 70% of New Zealand was covered in native forest. Much of it was soon cleared for timber (as in the large kauri forests) or to make way for farming.

Despite there not being as much native forest around as there was before the arrival of Europeans, NZ still has some magnificent areas of native forest and bush. About 10% to 15% of the total land area of the country is native flora, much of it in protected parks and reserves.

The variety of vegetation types in NZ is enormous. Heading south from the giant kauri forests of Northland there are the luxuriant lowland kohekohe forests of the Bay of Plenty; the rainforests dominated by rimu, various beeches, tawa, matai and rata, and a great variety of tree ferns; the podocarp and hardwood forests of the lower parts of the North Island with its kahikatea, tawa, rimu, rata, and kohekohe; the summer-flowering alpine and subalpine herb fields; and the wind-swept scrub of the smaller islands.

In the South Island the vegetation changes dramatically as you climb into the mountains. The lowland supplejacks give way to rimu, miro, and then tree ferns at about 800 meters. Above 1000 metres the totara, wineberry, fuschias, rata and kaikomako are gradually left behind, to be replaced by subalpine scrub. At about 1200 meters the scrub gives way to the tussock grasses and alpine herb fields, and at the extreme heights only some hardy lichens hang on to the exposed rock.

Like the Australian species, most of the 72 NZ orchids are not large or brilliantly coloured; one exception is the beautiful *Earina autumnalis*, which has perfumed cream flowers.

Various introduced species have been planted in large tracts for the timber industry. The most obvious imports are the massive plantations of radiata or Monterey pine and Douglas fir (Oregon).

The Maori language has bestowed marvellous names on some of the native plants of NZ, names that are almost unpronounceable to Europeans-tawhairauriki, kowhaingu-tukaka, to name a handful. Some of the English names are nearly as colourful, and it's interesting to speculate about their derivations – gum digger's soap, wild Irishman, seven-finger, bog pine, flower of Hades and Dieffenbach's Spaniard.

Text 4. HANDLING STARTED SEEDLINGS

From the time vegetables and flowers emerge from their potting soil in March until they are safely in the garden many weeks later, they need the most delicate and careful attention. Poor handling of started seedlings can set them back so far they are not worth planting, and that means wasted time, work and money. Proper handling gets them off to a vigorous start, and that means harvests that are early and big.

Light

Did you know that seedlings need more intense light than mature plants? The results of insufficient light become painfully obvious, usually within a week. The stem of the seedling will grow tall but weak, with large spaces between the leaves, and it will lean in the direction of available light. Ideally, seedling plants should receive 14 to 16 hours of direct sun or bright light each day, either from the sun (at a window or in a greenhouse) or from fluorescent lights – or a combination of the two.

If you have started plants early while days are still short, you can shift them from the morning windowsill to a lighting arrangement for the evening hours. Some sort of greenhouse, sun-pit or solar room is less energy – expensive than a bank of electric lights, but often a bit trickier for the average gardener to arrange. We still use fluorescent lights, but we're reading all the information we can get about solar greenhouses.

Oversupplying a plant with light is self-defeating, though. While plant species vary in the amount of light they require, most plants need at least five hours of darkness in each 24 hours, during which they convert stored carbohydrates into a form their tissues can absorb.

When raising seedlings under lights, we keep the foliage of well-started seedlings no more than three or four inches away from the tubes. If your light fixtures are not adjustable, you can use egg cartons, piles of magazines or other household flotsam to elevate the flats to the correct height.

Nourishment

Young seedlings, still growing on the food stored in the seed, need no extra nourishment until their true leaves emerge. But once the seedling has been transplanted and is growing well with its second set of true leaves, it must have

either good, rich soil or periodic feeding. The soil mix we favor is made according to Thalassa Caruso's recipe: Equal parts of: (1) leaf mold, good garden soil or purchased potting soil, (2) shredded sphagnum or peat moss, and (3) perlite (expanded volcanic rock) or sharp sand.

Generally, we give our future vegetable plants a feeding of diluted fish emulsion (follow label directions) the week after transplanting and every two weeks thereafter until we set them out in the garden. The fish emulsion is easy to use, and it is a natural source of vital elements and trace minerals.

It is important to avoid fertilizing the plants too early or too often. If your plants leaves look green and sturdy and are not few and far between, you've hit the right schedule. Heavier feeders like lettuce and cabbage require more frequent feeding than peppers or onions. Plants that receive fertilizer need plenty of light in order to make good use of the extra growth stimulation.

Text 5. TOMATO

Tomato may refer to both the plant (*Solanum lycopersicum*) and the edible, typically red, fruit which it produces. Originating in South America, the tomato was spread around the world following the Spanish colonization of the Americas, and its many varieties are now widely grown, often in greenhouses in cooler climates.

The tomato fruit is consumed in diverse ways, including raw, as an ingredient in many dishes and sauces, and in drinks. Botanically tomato is a fruit, but in everyday life it is considered a vegetable for culinary purposes. The fruit is rich in lycopene, which may have beneficial health effects. When absorbed from the stomach, lycopene is transported in the blood by various lipoproteins and accumulates in the liver,

adrenal glands, and testes. As preliminary research has shown a correlation between consumption of tomatoes and cancer risk, lycopene has been considered a potential agent for prevention of some types of cancers.

The tomato belongs to the nightshade family. The plants typically grow to 1–3 meters in height and have a weak stem that often sprawls over the ground and vines over other plants. It is a perennial in its native habitat, although often grown outdoors in temperate climates as an annual. Early and cool-summer tomato varieties bear fruits even where nights are cool, which usually discourages fruit set. There are also varieties high in beta carotenes and vitamin A, and tomatoes which can be kept for months in storage. Tomatoes grow well with seven hours of sunlight a day. A fertilizer with an NPK ratio of 5–10–10 is often sold as a tomato fertilizer or vegetable fertilizer, although manure and compost are also used.

There are around 7,500 tomato varieties grown for various purposes. Heirloom (varietal) tomatoes are becoming increasingly popular, particularly among home gardeners and organic producers, since they tend to produce more interesting and flavorful crops at the cost of disease resistance and productivity.

Hybrid plants remain common, since they tend to be heavier producers, and sometimes combine unusual characteristics of heirloom tomatoes with the endurance of conventional commercial tomatoes.

Tomato varieties are roughly divided into several categories, based mostly on shape and size.

“Slicing” or “globe” tomatoes are the usual tomatoes for industry use and fresh market, used for a wide variety of processing and fresh eating.

Beefsteak tomatoes are large tomatoes often used for sandwiches. Their kidney-bean shape, thinner skin, and shorter shelf life make commercial use impractical.

Oxheart tomatoes can range in size up to beefsteaks, and are shaped like large strawberries.

Plum tomatoes, or paste tomatoes (including pear tomatoes), are bred with a higher solids content for use in tomato sauce and paste, and are usually oblong.

Pear tomatoes are obviously pear-shaped, and are based upon the San Marzano types for a richer gourmet paste.

Cherry tomatoes are small and round, often sweet tomatoes generally eaten whole in salads.

Grape tomatoes, a more recent introduction, are smaller and oblong, a variation on plum tomatoes, and used in salads.

Campari tomatoes are also sweet and noted for their juiciness, low acidity, and lack of mealiness. They are bigger than cherry tomatoes, but smaller than plum tomatoes.

Text 6. POTATO STORAGE

Storage facilities need to be carefully designed to keep the potatoes alive and slow the natural process of decomposition, which involves the breakdown of starch. It is crucial that the storage area is dark, well ventilated and for long-term storage maintained at temperatures near 4 °C. For short-term storage before cooking, temperatures of about 7 °C to 10 °C are preferred.

On the other hand, temperatures below 4 °C convert a starch in potatoes into sugar, which alters their taste and cooking qualities and leads to higher acrylamide levels in the cooked product, especially in deep-fried dishes – the discovery of acrylamides in starchy foods in 2002 has led to many international health concerns as they are believed to be possible carcinogens and their occurrence in cooked foods are currently under study as possible influences in potential health problems.

Under optimum conditions possible in commercial warehouses, potatoes can be stored for up to ten to twelve months. When stored in homes, the shelf life is usually only a few weeks. If potatoes develop green areas or start to sprout, these areas should be cut before using.

Commercial storage of potatoes involves several phases: drying of surface moisture; a wound healing phase at 85 % to 95 % relative humidity and temperatures below 25 °C; a staged cooling phase; a holding phase; and a reconditioning phase, during which the tubers are slowly warmed. Mechanical ventilation is used at various points during the process to prevent condensation and accumulation of carbon dioxide.

When stored at home, mature potatoes are optimally kept at room temperature, where they last 1 to 2 weeks in a paper bag, in a dry, cool, dark, well ventilated location. If mature potatoes are refrigerated, dark spots can occur and conversion of starch into sugar can give rise to an unpleasant sweet flavour when cooked. Only new potatoes can be refrigerated, and should be kept so, where they have a shelf life of 1 week. If kept in a too warm temperature, both mature and new potatoes will sprout and shrivel. Exposure to light causes them to turn green. Also, it is interesting to know that potatoes absorb odors produced by pears.

Text 7. TYPES OF TOMATOES

Tomatoes are commonly classified as determinate or indeterminate. Determinate, or bush, types bear a full crop all at once and top off at a specific height; they are often good choices for container growing. Determinate types are preferred by commercial growers who wish to harvest a whole field at one time, or home growers interested in canning. Indeterminate varieties develop into vines that never top off and continue

producing until killed by frost. They are preferred by home growers and local-market farmers who want ripe fruit throughout the season. As an intermediate form, there are plants sometimes known as vigorous determinate or semi-determinate; these top off like determinates, but produce a second crop after the initial crop. The majority of heirloom tomatoes are indeterminate, although some determinate heirlooms exist.

Most modern tomato cultivars are smooth surfaced, but some older tomato cultivars and most modern beefsteaks often show pronounced ribbing, a feature that may have been common to virtually all pre-Columbian cultivars. While virtually all commercial tomato varieties are red, some cultivars – especially heirlooms — produce fruit in other colors, including green, yellow, orange, pink, black, brown, ivory, white, and purple. Such fruit are not widely available in grocery stores, nor are their seedlings available in typical nurseries, but they can be bought as seed. Less common variations include fruit with stripes (Green Zebra), fuzzy skin on the fruit (Fuzzy Peach, Red Boar), multiple colors (Hillbilly, Burracker's Favorite, Lucky Cross), etc.

There is also a considerable gap between commercial and home-gardener cultivars; home cultivars are often bred for flavor to the exclusion of all other qualities, while commercial cultivars are bred for such factors as consistent size and shape, disease and pest resistance, suitability for mechanized picking and shipping, and ability to be picked before fully ripening.

Text 8. KEEPING THE SEEDS

To keep seeds is to prevent germination and at the same time to preserve the life of the seeds. Seeds should be thoroughly ripe and dry before they are stored. Those of pulpy fruits are removed and cleaned. If the seed-vessels are dry

and hard, seeds may be left in them till sowing time, but usually they are removed.

Hard seeds, as of trees and nuts, may be buried, that is, mixed with earth exposed to frost or to moisture for a considerable time. Most seeds, however, are stored dry in paper bags or boxes in a cool dry room. The receptacles should be tight to keep out weevils; if there are any signs of bug work, a little bisulfide of carbon may be poured in the receptacle, and the vapor of it will destroy animal life. This material is inflammable, and it should be kept away from flames. If seeds at storing time are moist and the weather is damp, they may be lightly kiln-dried before put away for winter.

The influence that light exerts on germination is not definitely understood for all horticultural seeds. It is known, however, that seeds will often germinate in full sunlight, if the proper conditions of moisture and temperature can be maintained. Seeds sown on a moist surface and covered with a grass present an interesting study. They may have difficulty in getting a foothold, and they present peculiar reactions to light.

It is well known, on the other hand, that some seeds will not germinate, or will at least appear unevenly, if subjected to sunlight. At least some of the delphiniums and Adonises germinate very imperfectly, if at all, in direct light. It is always advisable to keep germinating seeds in shade or partial darkness. Of course, the soil itself is sufficient protection if the seeds are covered.

Text 9. NEMATODES

Nematodes are small parasitic roundworms about one – sixty-fourth to one-eighth inch long. They live in the soil and usually move into the plant through the roots. Underground parts are more apt to be infected, but the infection of stems,

leaves, and flower parts is fairly common. The nematodes that attack alfalfa live mainly in the plant tissue and suck juices from the cells. Alfalfa may be attacked by the root- knot nematode, the dagger nematode, or the stem nematode. Nematode damage in alfalfa has been a serious problem in Nevada, Utah and California.

Plants infected with the root – knot nematode develop galls or knot like growths on the roots. Severe infections cause the roots to become thickened, rough, and club like. Considerable rotting may occur, especially late in the season. The formation of nodules by nitrogen-fixing bacteria on alfalfa and other legume roots should not be confused with the galls and knot like growths caused by nematodes. Plants infected with stem nematodes may have swollen stem and buds, shortened internodes, and deformed leaves or other plant parts.

Text 10. VERTICILLIUM WILT

Verticillium wilt is a relatively new disease of alfalfa in the United States. It is considered to be a serious disease in Europe where it has been known since 1918. It was first discovered in the United States in the Pacific Northwest in 1976 and was positively identified in Wisconsin in 1980. The disease is caused by a fungus that invades the vascular system of the plants and reduces the flow of water and mineral nutrients to the leaves. Early symptoms are temporary wilting of upper leaves on warm days and a yellow or pinkish- orange discoloration on some leaflets. Chlorotic, V-shaped lesions extend from the leaflet tip down the midrib. The leaflets soon become yellow, bleached, desiccated, and twisted. They are early detached from the stem, which often remains erect and green long after all the leaves have died. A key character-

istic of verticillium wilt is that not all plants in a stand are affected, and within an infected plant only one to a few of the shoots shows the symptoms during the early stages. Later, as diseased plants and shoots become more prevalent, the more seriously affected plants also are stunted.

Text 11. FERTILIZING, WEEDING AND COMBATING PESTS

Fertilizer can be distributed during the winter or shortly before seeding time. Commercial fertilizers are commonly distributed, along with seeds, by drills and planters. Manure is distributed most efficiently by a manure spreader.

After crops have begun to grow, a cultivator is used to destroy weeds and loosen and aerate the soil. A flame weeder, which produces a hot-air blast, can be used to destroy weeds growing around crops, such as cotton, that have stems of tough bark. The weeds are vulnerable to the hot air, but the tough stems protect the crops from damage. Chemical herbicides applied in the form of a spray or as granules are used extensively for weed control.

Insecticides for pest control are applied to soil and crops in the form of granules, dust, or liquid sprays. A variety of mechanical spraying and dusting equipment is used to spread chemicals on crops and fields; the machinery may be self-powered, or drawn and powered by a tractor. Aircraft are sometimes used to dust or spray pesticides in areas where large crops of vegetables and grain are grown.

Chemical pesticides are used in nearly all farming operations. However, increasing concern over the harmful effects which pesticides may have on the environment has led to the use of alternative forms of pest control. For example, farmers use crop rotation. Certain pests are controlled by introducing

an organism that kills them. Some crops are being genetically engineered to be more resistant to pests.

Text 12. POULTRY FARMING AND OTHER BRANCHES OF ANIMAL HUSBANDRY

Poultry-farming constitutes a distinct branch of animal husbandry and there are many farms specially going in for the breeding of domestic fowl. Hens, geese, ducks and turkeys are bred here. The modern method of hatching chicks is not so much letting the hen brood on the eggs, but mostly to use incubators, which proves far more efficient. Feeding hoppers have also become regular poultry-farm practice, finding much the same application as in stock-sheds, piggeries, etc.

Poultry is partly bred for meat, down and feathers, but, above all, for eggs.

Eggs represent a cheap source of high quality protein for human consumption. The modern poultry industry producing eggs includes the use of specially bred birds, highly specialized feeds together with new housing and management techniques.

Efficient chicken production is one of the cheapest and most economical means of producing highly nutritious tender lean meat. Over the past decade improvements in performance and efficiency have been substantial.

The stock available to the chicken industry is selected particularly for high growth rate and survival capacity. They are further characterized by their attractive carcass conformation and a high meat-bone ratio.

For efficient control and economy in operation everything is fully integrated so that the activities of chicken breeding units, hatcheries, chicken (meat) producing units and processing stations are maintained in effective balance.

In addition, the feeding stuff requirement of an industry with a defined volume of output can be accurately planned on a long term basis.

To-day well-managed egg farms consistently achieve very high outputs.

A modern poultry farm comprises the following sections:

1) breeding units where the chicks are bred; 2) hatcheries where day-old pullets are obtained; 3) broiler production and rearing units, or 4) egg-laying units for laying hens; 5) stations for the disposal of breeders at the end of the laying cycle. Attached to the whole installation, there must also be a feeding stuff compounding mill for preparing the feed which, besides grain, proteins and vitamins, may also contain poultry offals.

The correct implementation of a proper technique enables layers to be kept all the year round, thus ensuring an even supply of eggs at all times. Also by keeping the birds in an environment conducive to the efficient utilization of the layer food, the bird is allowed more nearly to reach its genetic potential.

Some other branches of animal husbandry are: reindeer-breeding, rabbit-breeding, camel-breeding and, of course, horse-breeding at studs, though the use of horses and other types of draft cattle is being to a certain extent discontinued, tractors doing most of the work on the fields.

Not quite of secondary importance is apiculture, since, besides yielding honey and wax, it also contributes to pollination.

Text 13. FISHING

Britain is one of Europe's most important fishing nations. The fishing industry provides about 70 per cent of British fish supplies, and is an important source of employment and income in a number of ports (Hull, Grimsby, Milford Haven,

Aberdeen, etc.). Cod accounted for 32 per cent of the total value of fish landed, while haddock (20 per cent), mackerel (10 per cent) and plaice (7 per cent) were the other most important sources of earnings to the industry.

Some 73 per cent of the British catch is taken by the 7,100 vessels of the inshore fleet employing a variety of catching methods. The deep-sea fleet, comprising 245 larger vessels, has been reduced in number as fishing opportunities and the profitability of operations in distant waters have declined.

Since 1977 Britain's fishery limits have extended to 200 miles. Member states of the European Community have the right to fish up to Britain's 12-mile limit (some community countries may also fish in certain areas of Britain's 6-to 12-mile zone). With the extension of fishery limits to 200 miles, new arrangements became necessary to control Community fishing in the greatly extended area. Britain has a particularly strong interest in such control, since a sizeable proportion of the total catch within the 200-mile limits of member states is taken in British waters, while the loss of fishing opportunities in distant waters (such as Iceland) has reduced the British industry's total catch more than that of other Community states. As a result, Britain is looking for adequate access arrangements and a fair share of the quotas proposed for the fish stocks around its coasts and in other countries' waters.

Text 14. SYSTEM OF MATING

The principle of mating the animals is to evolve outstanding and improved types of animals which can render better service to man. The art of mating the animals implies the proper application of principles of heredity for the animal improvement. System of mating can be classified into inbreeding and outbreeding, depending on genetic relation-

ship of the individuals or on phenotypic resemblance of the individuals in order to obtain better type of animals in the next generation.

Inbreeding is a mating system in which individuals mated are more closely related than the average of their breed or population concerned. It means the mating of males and females which are related. Animals seemed to be related only when they have one or more ancestors in common in the first 4 to 6 generations of their pedigree. The intensity of inbreeding depends upon the degree of relationship. Close inbreeding denotes mating of closely related individuals like Dam to Son or Sire to Daughter or Full Brother to Full Sister.

Effects of inbreeding: By this system of inbreeding, the percentage of gene pairs are increasingly made homozygous and the percentage of gene pairs are decreasingly made heterozygous in the population.

Inbreeding is utilized as a tool in livestock breeding to form distinct lines or families within a breed and also it is widely utilized to develop inbred lines that can be used for crossing purposes to exploit hybrid vigor. Yet another use of inbreeding is to uncover deleterious genes in animals used as sires. The usual practice is to mate the sire to 25 or 35 of its own daughter and if none of the resulting progenies exhibit recessive deleterious traits the sire is enrolled for use in the breeding programs.

Text 15. SHEEP

After cattle-rearing sheep-breeding ranks perhaps first among the various pursuits of pastoral farming. Sheep are ruminants and while they are fond of concentrated they must also have such feeds as grass and hay. They like leguminous plants too.

The male sheep is known as the ram. The female sheep is called a ewe, and the little sheep are known as lambs.

Sheep are mainly bred for their meat (mutton) and for the wool they yield. There are accordingly two main type of sheep-breeding: for wool and for mutton. There is also a medium breed: the wool-mutton breed. But after all sheep are of course most valued for their wool. The annual clip (that is the quantity of wool sheared) of wool is a major factor in the economy of many countries. The best sheep are fine-fleece. Every effort is made in the USSR to bread new and better strains: fine-fleece, semi-fine fleece and long staple. This is carried out mainly by cross-breeding. Sheep also yield milk out of which a special kind of cheese is made and mutton which contains a high percent of fats and proteins. Flocks graze not only on well established pasturages, but also even on semi-desert or dry grazing land.

What is remarkable about the next branch of animal husbandry – hog-breeding – is that it quickly yields returns. The production cycle of hogs (or swine) is much shorter than that of cattle or sheep. Another significant feature of hog-breeding is (just as dairy farming) that it gives a vast range of food stuffs derived from pork. Among them are: bacon, lard, ham, sausage, tinned (canned) pork. At the same time hog skins are sent to tanneries while hog-bristles find a vast sphere of application, down to the manufacture of toothbrushes. Even the offals of swine are used, for instance, in sausage-making.

Hogs are omnivorous. However, unlike other domestic animals the pig has a small stomach and requires its food in concentrated form. Pigs grow more rapidly than any other class of farm animals in relation to their weight. The daily ration of a pig should be composed of feeds with a definite proportion of carbohydrates, proteins, vitamins and minerals.

The male pig is called a hog and the female pig a sow, the small piglets are often called just pigs. The fattening of pigs should, within reasonable limits, be begun from an early stage. As soon as the litter of newly farrowed pigs is weaned (from the sow), they should be properly fed on a balanced ration.

Text 16. MILKING CYCLE OF COWS

Milk is a source of nutrients and immunological protection for the young cow. The gestation period for the female cow is 9 months. Shortly before calving, milk is secreted into the udder in preparation for the new born. At parturition, fluid from the mammary gland known as colostrum is secreted. This yellowish coloured, salty liquid has very high serum protein content and provides antibodies to help protect the newborn until its own immune system is established. Within 72 hours, the composition of colostrum returns to that of fresh milk, allowing to be used in the food supply.

The period of lactation, or milk production, then continues for an average of 305 days, producing as much as 9000 or more kg of milk. This is quite a large amount considering the calf only needs about 1000 kg for growth.

Within the lactation, the highest yield is 2–3 months post-parturition, yielding 40–50 L/day. Within the milking lifetime, a cow reaches a peak in production about her third lactation, but can be kept in production for 5—6 lactations if the yield is still good.

About 1–2 months after calving, the cow begins to come into heat again. She is usually inseminated about 3 months after calving so as to come into a yearly calving cycle. Heifers are normally first inseminated at 15 months so she's 2 when the first calf is born. About 60 days before the next calving, the cow is dried off. There is no milking during this stage for two

reasons: milk has tapered off because of maternal needs of the fetus; udder needs time to prepare for the next milking cycle.

Text 17. BREEDS OF POULTRY

Breeds had become grouped according to area of origin – American, Asiatic, British, French, and Italian – and they were divided into varieties characterized by a particular color or color pattern or comb type.

The interest in poultry was almost exclusively in achieving perfection of show specimens. Little attention was paid to productivity in eggs or meat.

The breeds which currently dominate world production of eggs and meat were developed during this period. Leghorns arrived in the United States between 1828 and 1831 and many importations followed. They were imported to England at a later date but had become popular by 1876. They represented the indigenous stock of Tuscany and took their name from the port city of Leghorn (Livorno). Coloring was not uniform at first, but fanciers soon had isolated a large number of varieties. Only the Single Comb White Leghorn remains in commercial use as the exclusive layer of white-shelled eggs. Brown – shelled eggs currently are derived from crosses involving several minor breeds, all of which were developed after 1850 as a dual purpose (eggs and meat) stock. Barred Plymouth Rock, Rhode Island Red and New Hampshire were all developed in the United States.

Present-day broilers are based heavily on a cross of Cornish with White Plymouth Rock. The Cornish was developed in England from Asiatic fighting stock; the white variety is unrelated to the original Dark Cornish, White Plymouth Rocks were derived as sports of the original breed in the United States,

Text 18. A ROMANOV RAM

Romanov is a breed of domestic sheep originating from the Upper Volga region in Russia. These domestic sheep got the name Romanov from the town of the same name. These sheep first got noticed in the 18th century. Soon after that they were imported into Germany and then into France. In the year of 1980, 14 ewes and 4 rams were brought by the Canadian government and were quarantined for 5 years. After the testing, some of the Romanov breeds were brought into the United States. So, nowadays the distribution of this unique breed is worldwide. This breed is raised primarily for meat.

These sheep are adapted to the cold inland climate and local feeding. Romanovs are one of the Northern European short-tailed sheep breeds. They are pure black when they are born, but as they grow older the color quickly changes to gray. The average weight of a male Romanov is 55—80 kilograms and the average weight of a female is 40—50 kilograms.

By 3—4 months old, Romanovs are sexually mature and will start breeding any month of the year. The ewe can produce quads, quintuplets, and even sometimes sextuplets. Romanov ewes tend to lamb in litters, unlike other sheep who give single or twin births. British and North American breeds of domesticated sheep are genetically different because the Romanov breed is a “pure gene”, not a “cross”. But, they are often crossed with more popular breeds.

Romanov wool is very strong. The wool is double coated with mean diameter of wool fibers of 20.9 micrometers and 71.9 micrometers of outer-coat hair (lamb wool). Mean greasy fleece weight is around 4.5 kilograms. The wool, which is a mixture of gray wool and black guard hair, is usually used for rugs, mats, and wall hangings.

Text 19. POLECAT-MINK HYBRID

A Polecat-Mink Hybrid, also known as khonorik by fanciers, is a hybrid between a European polecat and a European mink. Such hybridization is very rare in the wild, and typically only occurs where European mink are declining. The two species likely began hybridizing during the early 20th century, when northern Europe underwent a warm climatic period which coincided with an expansion of the range of the polecat into the mink's habitat.

Polecat-mink hybrids have a poorly defined facial mask; have yellow fur on the ears, grey-yellow underfur and long, dark brown guard hairs. They are fairly large, with males attaining the peak sizes known for European polecats (weighing 1,120–1,746 g and measuring 41–47 cm in length) and females being much larger than female European minks (weighing 742 g and measuring 37 cm in length). The majority of polecat-mink hybrids have skulls bearing greater similarities to those of polecats than to minks. Hybrids can swim well like minks and burrow for food like polecats. They are very difficult to tame and breed, as males are sterile, though females are fertile. The first captive polecat-mink hybrid was created in 1978 by Soviet zoologist Dr. Dmitry Ternovsky of Novosibirsk. Originally bred for their fur (which was more valuable than that of either parent species), the breeding of these hybrids declined as European mink populations decreased. Studies on the behavioral ecology of free ranging polecat-mink hybrids in the upper reaches of the Lovat River indicate that hybrids will stray from aquatic habitats more readily than pure minks, and will tolerate both parent species entering their territories. During the summer period, the diet of wild polecat-mink hybrids is more similar to that of the mink than to the polecat, as they feed predominantly on frogs. During the winter, their diet overlaps more with that of the polecat, and they will eat a larger pro-

portion of rodents than in the summer, although they still rely heavily on frogs and rarely scavenge for food from ungulate carcasses as the polecat does.

Text 20. VITAMINS IN POULTRY NUTRITION

Vitamins play a very important part in poultry nutrition. The discovery of vitamins has been of practical importance to poultry keepers, as it is now possible to rear chicks at any time of the year regardless of climatic conditions and to keep laying hens in strict confinement without apparent loss of health and vitality. This has led to a complete reorganization of the poultry industry, based on the earlier hatching of chicks and the year around confinement of laying hens.

Vitamins of vitamin-forming substances are complex, organic compounds consisting of various combinations and proportions of carbon, hydrogen, oxygen and nitrogen, and possibly other elements. They are necessary for health, maintenance, growth, egg production and hatchability. A dozen or more vitamins are recognized for poultry.

Vitamin A is essential in poultry rations, not only for growth, production, reproduction and efficient feed utilization, but also for optimum vision and for maintaining the integrity of the mucous membrane. Vitamin A is found only in animal tissue, where it is stored largely in the liver.

Vitamin D is required by poultry for the proper metabolism of calcium and phosphorus in the formation of the normal bony skeleton, hard beaks, claws and strong egg shells. A deficiency of vitamin D, therefore, results in rickets. One of the primary actions of vitamin D appears to be concerned with increasing the absorption of calcium.

Vitamin E deficiency produces encephalomalacia, exudative diathesis and muscular dystrophy in chicks. It is also

required for normal embryonic development in chickens, turkeys and ducks. Prolonged vitamin E deficiency produces testicular degeneration and lack of fertility in male chickens.

Vitamin K is required for the synthesis with the body of prothrombin, which is an important of the blood-clotting mechanism.

Text 21. ANIMAL HUSBANDRY

Animal husbandry or pastoral farming is no less important than field husbandry. It comprises cattle-breeding; sheep-rearing and hog-growing, to say nothing of some minor branches, as poultry-breeding, rabbit-breeding, apiculture, etc.

Cattle can be roughly subdivided into draft cattle which has almost everywhere been replaced by various types of agricultural machinery; dairy cattle which provides dairy products (milk, butter, cream, cheese, etc.), beef cattle and dual purpose cattle.

The measure of merit of cattle is dependent upon the breed. The herds cannot be improved without the use of sires from pedigree stock.

Cattle-breeding on a scientific scale is not only aimed at improving the breed, but also at increasing the head of cattle; in stock-raising areas the herds are usually very big and the more heifers and calves are to be seen on the grazing lands, or in the corrals, the better the cattle-rearing farm is run.

One of the principal problems cattle-breeding faces is that of fodder or feeds. To choose the necessary feeds, rich enough in protein and other nutrient substances is not an easy thing.

As is well known, hay stands out as the main provender, but special crops are also grown for feeding cattle. They are mainly mangle, various leguminous plants, such as alfalfa, cow-peas, etc. Clover takes a vital part, while oilcake left

over after the extraction of oil from linseed, cotton-seed and other varieties of oil-bearing seeds ranks particularly high in protein content. Most farms – both those going in for diversified (mixed) farming and those that specialize in stock-breeding – have ensilage towers where silo or ensilage is obtained through fermentation and stored. Ensilage is recognized to be an excellent feed by most cattle-breeders.

As a general rule, dairy products are processed on the farm. In the creamery milk is skimmed and churned into butter, while some part is turned into cream or sour cream. The production of cheese and canned milk is mostly effected at cheese factories and condenseries. After the bulk of the fat is removed from the milk, whey remains. It is still useful as a feed for domestic animals and also can be used for making curds.

Beef cattle is mostly sent to the slaughter-houses on hoof. Big meatpacking plants after the slaughter of cattle are engaged in curing, smoking, corning and especially canning the meat. Mechanization is implemented on a large scale in cattle-breeding. Particular significance belongs to it in feeding and milking. Automatic bunks (gravity belt, rationing feeder, etc.) are gradually being introduced.

Text 22. AQUACULTURE

Aquaculture, also known as aquafarming, is the farming of aquatic organisms such as fish, crustaceans, molluscs and aquatic plants. Aquaculture involves cultivating freshwater and saltwater populations under controlled conditions. Mariculture refers to aquaculture practiced in marine environments.

Particular kinds of aquaculture include fish farming, shrimp farming, oyster farming, algaculture (such as seaweed farming), and the cultivation of ornamental fish. Particular methods include aquaponics, which integrates fish farming and plant farming.

Fish farming

The farming of fish is the most common form of aquaculture. It involves raising fish commercially in tanks, ponds, or ocean enclosures, usually for food. A facility, which releases juvenile fish into the wild for recreational fishing or supplementing a species' natural numbers, is generally referred to as a fish hatchery. Fish species raised by fish farms include salmon, big eye tuna, carp, tilapia, catfish and cod.

Shrimp farm

Commercial shrimp farming began in the 1970s. About 75% of farmed shrimp is produced in Asia, in particular in China and Thailand. The other 25% is produced mainly in Latin America, where Brazil is the largest producer. Thailand is the largest exporter.

Shrimp farming has changed from its traditional, small-scale form in Southeast Asia in 1970s into a global industry which due to applied high technologies can produce more than 1,800,000 tonnes of shrimps and ship them worldwide. All farmed shrimp are of the family Penaeidae. And just two species of shrimp, the Pacific white shrimp and the giant tiger prawn, account for about 80% of all farmed shrimp. By reason of increasing ecological problems, repeated disease outbreaks, which result in decimation of shrimp populations across entire regions, in 1999 governments, industry representatives, and environmental organizations initiated a program aimed at developing and promoting more sustainable farming practices.

Oyster farming

Oyster farm or oyster bed is a place, especially on the sea bed, where oysters breed and grow naturally or are cultivated for food or pearls. The most popular edible marine mollusk

of the genus *Haliotis* for farming is abalone which has an ear-shaped shell that is perforated with a row of respiratory holes. The shells are used for ornament or decoration. Abalone farming began in the late 1950s and early 1960s in Japan and China. Since the mid-1990s, this industry has become increasingly successful. Over-fishing and poaching have reduced wild populations of abalones. So, now abalone farming is the main supplier for abalone meat.

Algae

Microalgae are also referred to as phytoplankton, microphytes, or planktonic algae and constitute the majority of cultivated algae. Macroalgae, which are commonly known as seaweed, also have many commercial and industrial uses, but due to their size and specific requirements, they are not easily cultivated on a large scale and are most often taken in the wild.

Text 23. CALCIUM & PHOSPHORUS

Calcium

99 per cent of the calcium in the organism is in the skeleton and the teeth. It is deposited in certain areas of the bone as tricalcium phosphate crystals and gives the skeleton its rigidity; this calcium is not a permanent deposit, for bone is constantly being dissolved and redeposited. Several hundred milligrams of calcium are lost each day in the feces and urine. This amount must then be replaced through the diet. A calcium deficiency due to lack of dietary calcium is very rare. Calcium deficiency usually arises due to lack of adequate vitamin D, or to excessive amounts of other minerals that prevent calcium absorption. During pregnancy and lactation the demands for calcium rise immensely. If the calcium supply of the mother is not adequate for the maintenance of her normal needs, plus those of the growing fetus, calcium still will be

supplied in sufficient amounts to the fetus at the expense of the stored calcium in the skeleton of the mother. The diseases resulting from insufficient calcium for the development and maintenance of bone are rickets and osteomalacia.

Inorganic and Organic Phosphate

Inorganic phosphate is the major cation of the intracellular fluids, and this ion is of enormous importance in the formation of the energy-rich phosphate bonds. Also phosphate is able to combine reversibly with a multitude of enzyme systems and so operates in the majority of metabolic reactions within the cell. Inorganic phosphate is present in the extracellular fluids as well both in the plasma and in the interstitial fluid. This inorganic phosphate exists in the form of phosphate ions. These phosphate ions are closely involved in the maintenance of the acid-base stability of the blood.

Organic phosphate is present in the blood in the form of phospholipid and the phosphate from this compound can be liberated for bone formation.

The absorption of phosphorus from the intestine is dependent on the proper absorption of calcium, which in turn is dependent on the vitamin D concentration. This means that a deficiency of vitamin D will indirectly affect phosphorus and phosphate absorption. Excess phosphorus is excreted mainly through the kidneys. Milk and bone meal are particularly rich in phosphorus, but phosphorus is also widely distributed in both vegetable and animal foods.

Text 24. FEEDING PULLETS.

Feeding growing pullets and laying hens during a protein shortage and high ingredient prices has special challenges. The poultryman desires an economical ration, but a formula should not be cheapened to the detriment of productivity.

A question often asked is, “How far can I lower protein and other high-priced ingredients to lower feed costs?”

Although lowering protein is a consideration, there are some basics that should be reviewed before drastic changes are made in a ration merely to lower costs.

First, a bird eats basically to satisfy energy requirements. Therefore, high energy feed results in lower feed consumption, and a low energy (high fiber) feed results in increased feed consumption. For a bird to obtain an adequate amount of nutrients (protein, vitamins, minerals), the correct amounts must be contained in the quantity of feed consumed. Thus, a dense feed (one that has high energy) must contain a higher percentage of basic nutrients to adjust for lower consumption.

Recognize her protein needs!

The second consideration is the actual protein needs of the bird. There are three uses for protein: (1) Body maintenance to repair and replace body tissue; (2) body growth, since as a pullet adds more body weight, it adds fleshing; (3) numbers and size of eggs.

A young layer (between 20 and 30 weeks of age) is still growing and increasing her egg numbers and egg size. Thus, her needs for nutrients are more critical than a mature hen in lower production and not gaining weight. Feed formulation should be adjusted based on the age and job the flock is doing.

It must be emphasized that whenever the total nutrient intake is below that of actual need, something will suffer. Even small deficiency is harmful

A small deficiency to show up may be a reduction in body weight while the next to suffer may be egg size. Finally, if nutrient intake is significantly below the plateau of requirements, egg numbers will be reduced.

The most serious period for nutrient deficiencies is during the critical period of 20 to 40 weeks of age. Any subnor-

mal intake will greatly affect peaking as well as the normal increase in egg size and body weight.

Recommendations:

1. Feed a quality ration and avoid known sources of inferior ingredients.

2. Maintain accurate feed consumption records by individual flocks on a weekly basis.

3. Provide proper nutrient intake needed for each flock by adjusting the protein based on consumption. Whether a flock can go below 3.3 pounds per 100 birds per day (15 grams) must be based on individual flock situations and whether the feed has an adequate balance of all nutrients, especially amino acids. Trial rations could be fed with sufficient checks to pick up possible body weight, egg weight, body condition, or production changes.

4. Although culling has not been practiced in recent years, the lower feed consumption may pay the labor of pulling out the nonlaying birds if they can be sold conveniently and at a satisfactory price.

5. Although some research indicates that limit feeding saves feed, it demands extremely close attention and management know-how. Feeder space is a key factor. An over-crowded cage will not have as uniform consumption per bird as one with more optimum conditions (especially feeder space). Limit feeding should be approached with caution.

6. Controlling feed wastage is still a great challenge to management, but wastage must be kept to a minimum, especially during high feed prices.

Text 25. HINTS FOR POULTRY BREEDERS

Breeding is the most important part of poultry farming, for by good breeding not only the farm, but the whole industry benefits. The wastage in poultry meat and eggs, not only

from poor stock but by bad management, is enormous, many people taking it for granted that losses of 40 percent to 50 percent from birth to maturity are normal, and that egg production may be expected to cease altogether in March, April and May. By careful handling and selective breeding, however, this can be overcome.

Strict Culling. The first essential is perfect health and the feeding of a balanced ration. No egg that is less than 2 oz., and is not of sound shell and perfectly shaped, should go into the incubator. No chick that is under-weight, or deformed in any way, should go into the brooder house.

No pullet that does not reach the required body weight before coming into lay, or that does not lay before six months of age, or that does not lay a 2 oz. egg within 30 days of starting, or has any physical defect of any kind, should ever be allowed to become a breeder. No pullet under a year old should be used for breeding.

No cockerel that does not come up to standard at any time before maturity should be allowed to head a breeding pen, for all his faults may be reproduced by hundreds in only one season.

Breeding Points. Here are some points that can be bred into your stock: (1) Longevity, in life and laying; (2) early maturity; (3) good feathering; (4) body size; (5) winter egg production; (6) good fertility; (7) disease resistance. All must be assisted by good farm management.

Here are things that can be bred out: poor health, unproductiveness, small eggs, poor shells, broodiness, blindness, any deformity or colour defect and loss of body weight.

It may take many years to build up a good, sound flock and the introduction of new blood to the stock is one of the greatest problems, and must be done gradually, when it has been proved suitable to individual requirements; for quite different

stock is required for egg production and for table poultry, unless you have an all purpose-breed. By special pen matings, it is possible to keep direct blood lines clear for many years.

Trap-nesting. Trap-nesting, full pedigreeing and single pen matings require an immense amount of time and book work, but are very effective in culling out many birds that do not come up to standard. The birds are handled daily when being let out of their trap nests, and the eggs weighed and recorded for the whole year; only the bird that passes all the tests, laying over 200 eggs and keeping her body weight and breed characteristics, goes through to the special breeding pen.

A great deal can be done by monthly handling and culling if all the birds are number ringed, and records are kept as to which birds are in lay, or are broody, molting, going light, etc. Any bird that does not lay in the winter months does not go into the special cockerel breeding pen. This method helps to keep the farm free of all “passengers”, as they can be immediately culled if out of lay for any lengthy period.

A properly run breeding farm is a specialist’s job and is a paying proposition, but it needs constant observation and hard labour. It requires much more capital and knowledge than either table poultry or commercial egg farming.

Text 26. PROTEINS AND MINERALS

Nutritionally, proteins are important for growth, reproduction, lactation and optimum health. Protein is the main component of the soft tissues of the body; it is the structural constituent of the cells making up these parts and is vitally important in many biochemical substances, such as hormones, enzymes, immune bodies and blood. Proteins are also of considerable importance in the resistance to the recovery from various diseases. In a deficiency, for example, the ca-

capacity to fabricate antibody protein is low; the production of leukocytes and lymphocytes is decreased, and the bone marrow and lymphoid tissues depleted.

Hormones are proteins that regulate body organs and their functions, enzymes digest food for further use in the body, immune bodies are their principal bacterial and viral defenders of the body; hemoglobin carries the oxygen to the cells so that they have energy; leukocytes and lymphocytes kill and digest bacteria and other foreign substances in the blood.

Minerals are inorganic elements. Organic compounds, which contain carbon (such as carbohydrates, fat, protein and vitamins), will burn. Minerals become a part of skeletal structure, but also play essential role in digestion and in metabolism inside body cells. Calcium, phosphorus, magnesium, fluorine, and certain other mineral elements are integral part of the bone structure and of teeth. Approximately 99 percent of the calcium and 80 percent of the phosphorus present in the animal body are contained in the skeleton. When the need arises, calcium and other minerals can be mobilized from the skeleton and “used for other body functions. Examples are the removal of calcium for milk production after a heifer or cow calves

Text 27. ALEXANDER FLEMING

Alexander Fleming came from a Scottish family of farmers. He was born in August, 1881, the youngest of eight children. He began to go to school when he was five. His lessons came easily to him, he had a good memory and was very intelligent.

It was quite by chance that he came into contact with the man who was to affect his whole life. It was a famous bacteriologist. Fleming became interested in antibacterial medicaments.

After the army service, during which he was able to make studies of the problem of infection Fleming returned to laboratory work.

One day Fleming's assistant brought him a plate on which a colony of bacteria was growing. It was some mould (плесень).

Fleming looked at the plate again and saw that the microbes all round the mould were gone. He was a real researcher. For over fifteen years he was solving that problem. He understood the importance of what had happened and began to study it. He put some of the mould on other plates and grew more colonies of it. Then he discovered that this new product killed microbes. He named it Penicillin. Fleming was finding out more and more about penicillin. He found that the mould began to produce penicillin on the fifth day.

Fleming's dream was to find a new method for producing penicillin. At last his dream came true. A new product was tried on different bacteria. The researchers tried it on animals and had good results. Penicillin had not yet been used on man. Then one day in 1942 Fleming made his own first experiment. His friend was very ill. After several injections his life was saved.

Later on during World War II this medicine saved a great many lives. It was a great triumph. In 1945 he was given the Nobel Prize for Medicine.

He died on the 11th of March 1955 in London and was buried in St. Paul's Cathedral.

Text 28. ANIMAL HEALTH

If you own one or more animals, you are concerned with their health and welfare. Your personal commitment and knowledge of the basics – good housing, nutrition, sanitation and preventive medicine – are the most important first steps.

Housing is important to provide animals protection from the elements¹ and predators. Basic nutrition needs remain the same for all animals – energy foods, protein, vitamins, minerals and lots of clean fresh water. Clean cages, barns, aquariums and other animal facilities are important for preventing the entry of disease. Grooming is a good preventive tool – to keep animals clean and free of external parasites. Preventive medicine is the final link in the circle of good animal health and includes vaccinations and internal and external parasite control.

Animal health means more than taking the necessary care, and calling the veterinarian when an animal is ill or injured. There are three important areas of responsibility. First, your responsibility as owner or caretaker. Second, the responsibility of the veterinarian. And finally, the Government has a distinct and important role in assuring the health of animals.

You, as the owner or caretaker, have the most immediate responsibility. There's an old saying, "The eye of the master fattens the calf," which is to say that you are the one who best can provide the feed, water, shelter, sanitation and health care for your animal.

But at some point, you need to call in the expert – your veterinarian. The veterinary practitioner is the animal health professional. This expert is able to diagnose and treat diseases that threaten your animals. Veterinarians are not there just to help when things go wrong. They can help make sure that things don't go wrong.

They also have another responsibility: reporting certain disease to the Government, either because they are of public health significance, or because they are regulated under Government animal health programs. The Government is to prevent, control and eradicate several types of diseases. These include animal disease that can be transmitted to man,

such as rabies, brucellosis (undulant fever), psittacosis (parrot fever), and tuberculosis. And finally, there are potentially catastrophic foreign diseases that could wreck our domestic livestock and poultry industries.

Text 29. HEALTH AND THE HORSE

Horses are tough creatures, but like any animal they can fall ill or be injured. A healthy pony or horse is alert, bright eyed and takes a keen interest in all that goes on around it. Ribs and hip bones should not be prominent, and the quarters should be well-rounded. The base of the ears should be warm to the touch.

Signs of illness vary, but there are some general symptoms which can give warning of trouble to come. A field-kept pony which stays for a long time in one place, a horse which goes off its food, a willing horse which suddenly becomes “nappy” – all these signs are indications that something is wrong. Other symptoms include: discharge from the eyes or nostrils; stumbling for no apparent reason; restlessness; dullness of eye or general lack of interest; sweating; kicking or biting at the flank; lameness; diarrhea; apparent difficulty in breathing; coughing.

It is essential, therefore, to have a reliable vet, and to call him without hesitation. Nevertheless, all horse owners should have a practical knowledge of first aid, and a first aid kit is an essential part of any stable. A typical basic kit should contain: roll of cotton wool, antiseptic, methylated spirit, glycerin, Stockholm tar, petroleum jelly, sponge, worm paste, round-ended surgical scissors, thermometer, assorted bandages, sulphonamide powder and specific for colic.

Lameness is the commonest form of disability in the horse. Treating most forms of it is usually best left to an expert.

Wounds and injuries are another common problem. First bring the bleeding under control applying a pressure bandage. Clip the hair from the skin around the wound and clean it thoroughly. Then coat with an anti-biotic powder and dress.

Like humans, horses can easily catch skin diseases, particularly in unhygienic conditions. Skin diseases include lice, ringworm, sweet itch, mud fever, pustular dermatitis, and nettle rash.

Teeth and stomach can both give the horse problems. Both demand serious attention.

Text 30. FEEDING STUFFS. BUILDINGS FOR LIVESTOCK

Compounded feeds are a blend of components. Supplies of fats, proteins and carbohydrates are in composts or compounded feeds, as a general rule, mixed in the necessary proportions.

A better understanding of the role of what might be called the “minor nutrients” or feed elements used in insignificant quantities is also an outstanding development, notably in the case of young ruminants, pigs and the various categories of poultry.

Feeds for domestic animals must not only contain the necessary ingredients but must also be diversified; they must likewise be well prepared mechanically, so that the nutritive material should be well assimilated. Feeds should have good palatability and digestibility. That is the reason why a modern farm of necessity includes a special department for “cooking” feed stuffs. Feeds may be rough or coarse (hay, straw), succulent or juicy (ensilage, mangle, potatoes) and concentrated. Very frequently feeds are mixed. This is why the equipment of the fodder department is most diversified. Thus, for crush-

ing coarse or concentrated feeds universal crushers or ensilage cutters are used.

Succulent feeds are prepared in a more complex way. Potatoes and mangle are first of all washed in a root-tuber-washer and next cut into slices. The washed and cut potatoes or other semi-prepared feeds are next boiled in a steam-heated silage-maker. The steamed root and tuber-crops are then fed into a masher, whence they come out as ready prepared fodder. Cattle, as a rule, drink much water. Here again mechanization renders great help through the provision of automatic drinking bowls. The animal has only to lower its head, a pedal is worked and water is released into the bowl through a spring.

Farm-buildings for livestock comprise cow-stalls, sheep-houses, hog-houses and poultry houses, hatcheries and chicken breeding units along with rabbit hutches. To begin with buildings for stock-rearing. In warm countries cowstalls are replaced by loose-housing sites with separate feeding area and resting area. The pens here are movable. The milk-house or dairy adjoins the grounds as does the feed-processing division.

But perhaps more frequently stall barns are effective practice. A stall barn is a building for housing cows, bulls, heifers and calves. The barn is divided into a division with cow-stalls, a feed alley for supplying fodder, mangers with automatic drains to let away the wash water from the mangers, a milking parlour, then straw chutes which run down for providing litter, a special calf pen and a feed room connected with the silo.

A hog-house or piggery also has a number of sections: fattening, farrowing, feed-processing, etc.

The pig, because of its lack of external covering, is very poorly adapted to withstand extremes of climate. It is thus absolutely vital to provide housing which eliminates the ef-

fects of the vagaries of climate and to define environment with considerable precision.

Materials used in the construction of piggeries must be such as to permit of the application of sanitation procedures. They must also possess good insulation properties.

Building layout must permit the individual feeding of sows during gestation. Suckling sows will naturally be housed individually and the farrowing section must be provided with a farrowing crate to prevent overlaying of hew born piglets by the dam, and a creep section which can be fitted with feeding and supplementary heating arrangements for the sucklers.

As agriculture has moved towards more intensive production the function of farm-buildings for housing livestock has changed from the provision of temporary shelter to permanent housing wherein the climate can be controlled, or the air conditioned. This will enable animals to thrive and fulfil their purpose with maximum efficiency and the health of stock maintained at a high level.

There is a definite connection between environment and health. Adverse conditions or a sudden violent change of environment may predispose to disease.

As a rule, the new born animal is poorly equipped to withstand any great changes in environmental conditions, being ill-adapted to intense cold, dampness and draught. Gradually however, they develop body mechanisms which will enable them to withstand an increasingly wide range of environmental conditions.

Text 31. WOUNDS AND TRAUMATA

Wounds of the skin and underlying tissues are common problems in both large and small animal practice, are frequently infected, and must therefore heal by granulation. This process is often impaired by movement, irritation, infection,

necrosis, poor circulation and even the inflammatory process itself. The latter, with its traditional cardinal signs, reflects the mobilization of the body's defences necessary for ultimate resolution. The associated pain, swelling, and interference with function may, however, have adverse effects.

The therapeutic regimen, in addition to specific surgical procedures, should manipulate such target-areas as etiologic factors, including those secondary to the initial insult, the mediators of inflammation, the non-specific inflammatory process, and reparative process. Such a regimen can well necessitate a "therapeutic cocktail". During the last several years work has been conducted on various antiinflammatory (steroidal and non-steroidal) drugs, dimethyl sulphoxide (DMSO) and antihistamines. This pharmacological polyglot, along with the complexity of inflammation has created a need to clarify a confusing interaction and to justify the logic of utilizing such drugs either alone or in combination.

Text 32. MASTITIS

We think that the cow of the future will be taller than in the past. The taller cow will have an udder higher off the ground and less chance to injury. To produce higher yields year after year, our cows must have the high dairy capacity and strength.

In order to maintain maximum levels of production, it is necessary to supplement a dairy cow with large quantities of grain and concentrates. Though some cows have lived 17 years or more, the average cow is culled or dies between five and six years of age. Each year, 20% of the animals more than two years old are culled or lost from the milking herd because of low production, infertility, mastitis and so on.

Mastitis is an inflammation of the udder, caused either by infection or udder stress on the delicate mammary tissues, or a combination of both. In most areas, it is common to practice to conduct routine tests for mastitis. Udders or individual quarters of the udder infected with bacteria are treated with certain antibiotics that are effective in eliminating the bacteria.

It is becoming evident that the most important factors controlling mastitis are proper milking equipment and good milking practices. Most cows are now milked by machine. To avoid abnormal stress on the mammary tissues, it is important to operate milking machines in accordance with the recommendation of the manufacturer and to keep equipment in proper operating condition.

Text 33. TUBERCULOSIS

Tuberculosis, MTB, or TB (short for tubercle bacillus) is a common and in many cases lethal infectious disease caused by various strains of mycobacteria, usually *Mycobacterium tuberculosis*.

This is a chronic contagious disease of man and animals. Of the latter cattle, hogs, and poultry are the commonly affected ones. Man, poultry, and the remaining groups of commonly affected animals are each most easily infected by their own specific bacillus of tuberculosis (*Mycobacterium tuberculosis*). Thus the human, avian, and mammalian strains are recognized. There is, however, inter communicability of the germ so that man may also contract the cattle infection; swine the cattle, human and avian infection. Infection takes place by the consumption of tuberculosis germ contaminated liquid and solid food, and by breathing germ laden air. Thus calves may get the disease by drinking milk from tuberculosis cows.

Tuberculosis can be carried by mammals; domesticated species, such as cats and dogs, are generally free of tuberculosis, but wild animals may be carriers. For instance, it was found that cattle herd bovine TB infection at one of the farms in New Zealand was caused by Australian brush-tailed possums which had come into contact with domestic livestock at farm-bush borders. Another example is that in Ireland and the United Kingdom, badgers have been identified as one vector species for the transmission of bovine tuberculosis.

The symptoms of tuberculosis in animals vary greatly, depending upon the infected organ or organs. If the disease is in the lungs there may be a cough; in the intestines; chronic diarrhea; in the brain, nervous symptoms; in the udder swellings; in the joints, and testicles, enlargement; and if the disease is of very long standing there is usually evidence of unthrifty animals. An autopsy shows that evidence of TB presence in infected animals is in most instances found in the lymphatic glands.

A very important point is that infected animals may show no outward signs of the disease, many of them seem to be perfectly healthy. A diagnosis of tuberculosis in infected animals may be established by the inoculation method, and by a reaction to a tuberculin test.

Vaccination against tuberculosis of man and animals has been tried, and it appears to be in a measure successful in man; but in animals this has not been practical or reliable.

Text 34. TEN ORGAN SYSTEMS IN ANIMALS

Ten organ systems are commonly recognized in animals.

The digestive system is composed of such organs as the esophagus, stomach, small intestine, large intestine, pancreas, and liver. All of these organs function together, primarily through the action of digestive enzymes, to break down food

particles into molecules that are small enough to be absorbed into the blood stream.

The circulatory system is composed of the heart, the blood vessels, blood, the lymphatic vessels, and lymph. This system transports materials from one part of the body to another. The circulatory system also transports hormones and has a role in the regulation of body temperature and in protecting the body against disease.

The respiratory system is composed of the lungs and the related air passages (the nasal cavity, the pharynx, the trachea, and the bronchial tubes). The function of this system is twofold: 1) to supply all of the cells within the body with the oxygen they need to carry on respiration, and 2) to remove the carbon dioxide and some of the water that is a waste product of respiration. In some animals, other organs of respiration have evolved. For example, fish possess gills, insects have a series of tubules through which air flows, and a number of organisms, particularly the more primitive ones, carry on an oxygen-carbon dioxide exchange through the body surface.

The excretory system provides the body with a means of ridding itself of metabolic waste materials. The primary excretory organs are the kidneys, lungs, skin, and liver.

The skeletal system is composed of varying amounts of bone and cartilage, depending upon the group of animals in question. The skeletal system provides a supporting framework for the body, a system of joints, and places of attachment for skeletal muscles. In the vertebrates, this system also serves to protect such organs as the brain, the spinal cord, and the organs contained within the rib cage. The marrow tissue within the cavities of long bones and ribs is the source of red blood cells and certain kinds of white blood cells.

The muscular system involves all of the muscle tissues within the body. The contraction of these tissues, whether voluntary or involuntary, is a response to a nerve impulse.

The nervous system is composed of the brain, the spinal cord, all the peripheral nerves, and the sensory parts of those organs concerned with receiving stimuli from the external or internal environment. Not only does the nervous system receive the stimuli and conduct the nerve impulses that cause an organism to respond, but it also integrates and coordinates the various body parts in accordance with the information received in the form of stimuli. In higher animals, this system permits the processes which we term intelligence – thought, reasoning, and memory.

The reproductive system has as its sole function the perpetuation of the species through the production of new organisms. The organs involved include the gonads (the testes and ovaries) with their various associated ducts and glands. The asexual methods of reproduction characteristic of primitive forms do not involve reproductive organs.

The endocrine system consists of the ductless glands, the glands which produce chemical regulators called hormones. Hormones are highly specific in their effects. The thyroid, pituitary, and adrenal glands are examples of organs which compose this system.

The integumentary system is composed of the skin and the specialized structures, such as hair, scales, feathers and nails, which develop from it. Although the primary purpose of this system is protection, such functions as respiration, excretion, the reception of stimuli, and the production of secretions are also sometimes carried out by the integument.

Text 35. INFECTION

The term infection may be defined as the entrance, growth and multiplication of organisms in the body, resulting in the development of a disease process.

Incubation Period

The incubation period of a disease may be defined as the interval of time between the entrance of a disease organism into a host and the first appearance of symptoms.

Endemic, Epidemic, Pandemic Diseases

An endemic disease may be defined as one that occurs constantly among the population of a community. An epidemic disease is one in which a large number of cases develop in a community within a short time. A pandemic disease is an epidemic disease of wide distribution. The widespread occurrence of a disease may be at first epidemic and then become pandemic, spreading over the entire world.

Pathogenicity

A pathogenic organism is one capable of producing a disease. Thousands of bacterial species have been isolated but only a few of these are capable of producing disease in man. Some are pathogenic for man but not for animals. Conversely, some species produce disease in animals but fail to do so in man.

Virulence

Virulence may be defined as the degree of invasiveness of a pathogenic organism. Different strains of the same species may great variability in their invasive powers. As a rule, a pathogenic organism decreases in virulence when transferred from its natural environmental to artificial culture media.

Number of Organisms

The number of organisms plays a very important part in determining whether or not an infection will occur. A small number of virulent pathogenic organisms may be easily attacked and destroyed, whereas a large number may not be completely eliminated by the defense mechanisms of the host.

Path of Infection

Bacteria gain entrance to the body in various ways. Some enter through the broken skin (occasionally through the unbroken skin), some by way of the respiratory passages, others by way of alimentary tract. After bacteria invade the tissues, they may attack the host in a variety of ways. The organism may produce a local inflammation or may localize in the liver, bone marrow, spleen, lymph glands, etc., giving rise to secondary abscesses or secondary foci of infection, also known as metastatic infections. Sometimes organisms invade the blood stream producing bacteriemia or septicemia (blood poisoning).

Text 36. GENE

Gene. A gene is a unit of heredity in a living organism. It normally resides on a stretch of DNA that codes for a type of protein or for an RNA chain that has a function in the organism. All living things depend on genes, as they specify all proteins and functional RNA chains. Genes hold the information to build and maintain an organism's cells and pass genetic traits to offspring, although some organelles (e.g. mitochondria) are self-replicating and are not coded for by the organism's DNA. All organisms have many genes corresponding to many different biological traits, some of which are immediately visible, such as eye color or number of limbs, and some of which are not, such as blood type or increased risk for specific diseases, or the thousands of basic biochemical processes that comprise life.

A modern working definition of a gene is “a locatable region of genomic sequence, corresponding to a unit of inheritance, which is associated with regulatory regions, transcribed regions, and or other functional sequence regions”. Colloquial

usage of the term gene (e.g. “good genes”, “hair color gene”) may actually refer to an allele: a gene is the basic instruction, a sequence of nucleic acid (DNA or, in the case of certain viruses RNA), while an allele is one variant of that gene. In most cases, all people would have a gene for the trait in question, but certain people will have a specific allele of that gene, which results in the trait variant. In the simplest case, the phenotypic variation observed may be caused by a single letter of the genetic code – a single nucleotide polymorphism.

Chromosomes. The total complement of genes in an organism or cell is known as its genome, which may be stored on one or more chromosomes; the region of the chromosome at which a particular gene is located is called its locus. A chromosome consists of a single, very long DNA helix on which thousands of genes are encoded. Prokaryotes-bacteria and archaea-typically store their genomes on a single large, circular chromosome, sometimes supplemented by additional small circles of DNA called plasmids, which usually encode only a few genes and are easily transferable between individuals. For example, the genes for antibiotic resistance are usually encoded on bacterial plasmids and can be passed between individual cells, even those of different species, via horizontal gene transfer. Although some simple eukaryotes also possess plasmids with small numbers of genes, the majority of eukaryotic genes are stored on multiple linear chromosomes, which are packed within the nucleus in complex with storage proteins called histones. The manner in which DNA is stored on the histone, as well as chemical modifications of the histone itself, are regulatory mechanisms governing whether a particular region of DNA is accessible for gene expression. The ends of eukaryotic chromosomes are capped by long stretches of repetitive sequences called telomeres, which do not code for any gene product but are present to prevent deg-

radation of coding and regulatory regions during DNA replication. The length of the telomeres tends to decrease each time the genome is replicated in preparation for cell division; the loss of telomeres has been proposed as an explanation for cellular senescence, or the loss of the ability to divide, and by extension for the aging process in organisms.

Text 37. WHAT SHAPES A CREATURE'S LIFE COURSE AND BEHAVIOR?

More than 130 years ago, Charles Darwin laid out his elegant and then shocking theory that it was natural selection, the survival of individuals most suited to the environment, that molded species over evolutionary time. But until very recently, Darwin's ideas remained unproved. Now, for the first time, studies in the wild are rigorously demonstrating the particulars of how evolution works.

Last month, David Reznick, an evolutionary ecologist at the University of California at Riverside, published the results of an 11-year experiment involving guppies living in the Aripo River of Trinidad. The experiment proved that predators are among the principal forces driving the evolution of species, just as predicted by a mathematical model that modern biologists had formulated to refine Darwin's theme.

According to the model, animals that are preyed on as adults will evolve to produce as many babies as they can, as early in life as possible. "If your chances of dying young are good, then having babies yearly is important", says Reznick. However, the earlier a species reproduces, the sooner it burns out, so to speak, and the shorter its life span. Conversely, whose juveniles bear the brunt of predatory attacks tend to have their young later in life, in effect choosing to bear harder offspring over a longer adult life.

The experiment that Heznick devised, along with his colleagues, was delightfully uncomplicated. The researchers tested the mathematical model simply moving 200 guppies from the base of a 20-foot waterfall in the Aripo River, where predatory fish eat only adult guppies, to the top of the waterfall. There, the single predator is a killfish, a species that devours only young guppies.

After 60 generations, the experimental guppies had evolved in their new environment just as the model predicted. The fish now reach sexual maturity nine days later when they first give birth. What's more, they have fewer offspring in their first brood, apparently saving themselves for future breeding opportunities.

Reznick's is only one of several recent studies verifying Darwin's grand theory in nature. In others, for instance, parasites are proving to be an even more potent agent of evolutionary change than predators. Marlene Zuk, a colleague of Reznick's at Riverside, recently completed a study demonstrating that parasites affect how female jungle fowl, the wild ancestors of, barnyard chickens, choose their mates. She found that rematode parasite, which lives in the gut, renders the eye and comb of the male fowl dull and consequently unattractive to females. The females prefer instead cocks bright of eye and comb, who will bestow their offspring with genes that will make them resistant to parasites.

TEXT – PROCESSING SITES GUIDE

Указатель сайтов, содержащих технологии создания электронной презентации текстового материала.

1. ОБЛАКО СЛОВ

“Облако слов” представляет собой визуальное представление ключевых слов текста. Это – графическая визуализация текста.

1. Зарегистрироваться на сайте <http://tagul.com/>
2. Нажать клавишу “My clouds”, затем клавишу “CREATE NEW CLOUD” и зайти во вкладку Tags source (Теги: источник) → URL (вводим адрес веб-страницы) и текст загружается в буфер
3. Нажать клавишу “Visualize”, таким образом, текст появится справа
4. Придать облаку желаемый вид с помощью меню:
 - Appearance – внешний вид
 - Font (шрифт)
 - Color – цвет, раскраска слов в облаке
 - ✓ Background color – цвет фона (на экране)
 - ✓ Animation speed – скорость анимации
 - ✓ Roll over text color – развернуть цвет текста
 - ✓ Roll over box color – развернуть цвет рамки
 - ✓ Rollover stroke color – развернуть цвет шрифта
 - Сохранить и поделиться “Grab and share”
 - ✓ Save to local computer – сохранить на своем компьютере
 - ✓ Save graphic image – сохранить графическое изображение
 - ✓ Place on a web page – разместить на веб-странице
 - ✓ Send link to a friend – отправить ссылку другу
5. Сохранить созданное облако, нажав на клавишу “Save graphic image”. После нажатия появляется окошко “Сохранить как”, и вы выбираете место сохранения
6. Отправить ссылку своим коллегам
ИЛИ
1. Используя сайт <http://www.tagxedo.com/> создать “облако слов” из текста
2. Придать облаку желаемый вид с помощью меню:
 - Color (цвет) /Theme (тема)

- Font (шрифт)
- Orientation (ориентация)
- Layout (расположение слов в облаке)
- All (всевозможный вариант)
- Shape (очертание/форма)
- Hide History (история выполненных действий).

3. Сохранить, нажав клавишу Save, и выбрать необходимые параметры сохранения: размер и расширение. После нажатия клавиши сохранить изображение в любом месте на вашем компьютере.

2. ДИАГРАММА СВЯЗЕЙ/АССОЦИАТИВНАЯ КАРТА

“Диаграмма связей”, известная также как “Интеллект-карта”, “Карта мыслей” (англ. Mind map) или “Ассоциативная карта”, – способ изображения процесса общего системного мышления с помощью схем. Также может рассматриваться как удобная техника альтернативной записи.

1. Зайти на сайт <http://freemind.sourceforge.net/>. В пункте “**See Download**” нажать на “**Download**” (загрузка). Вы автоматически попадаете на страницу “**Download**”, где спускаетесь в пункт “**Installing Free Mind**”.

2. Если компонент Java уже установлен, то нужно нажать на “**You can find a Free Mind installer including java here**”. После чего начинается автоматическая загрузка файла Free Mind-Windows на ваш компьютер.

3. Установить программу в обычном режиме на компьютер.

4. На рабочем столе появляется значок, который вы запускаете как программу.

5. В центре поля щелкнуть на **Free Mind**/Новая карта и написать центральное понятие, например: “статья о программе FreeMind”.

6. Нажать клавишу **Insert**/ Вставка для вставки пункта первого уровня (например, “Введение”).

7. Нажать клавишу **Enter** для вставки второго пункта первого уровня (например, “Установка приложения”).

8. Основное редактирование необходимо производить с помощью клавиш **Insert**/вставка, **Enter**/ввод, **Escape**/выход и **Delete**/удаление.

9. Для редактирования текста внутри выбранного узла можно воспользоваться клавишей **F2**.

10. Можно перемещать карту целиком в любое место рабочего пространства методом обычного **drag’n’drop**/перетаскивание – нужно зажать мышью рисунок и перетаскивать его, не отпуская, в нужное место.

11. Попробуйте изменить размеры узлов. Все возможные формы работы с узлом вы найдете, щелкнув по узлу правой кнопкой мыши, в пункте “Формат”.

12. Нажатием сочетания клавиш **Alt+I** откройте каталог с предустановленными иконками («Выберите пиктограмму»). Вы можете выбрать любую из них для добавления к узлу на вашей карте. Добавление иконок делает ее более читаемой и интуитивно понятной.

Шаги по созданию и работе с узлами ассоциативной карты

1. Щелчок мышью по “**Новой карте**” дает возможность внести ключевое слово. Нажав клавишу “**Enter**”, вы закрепляете данное ключевое слово.

2. “**Вставка → Новый смежный узел после текущего**” дает возможность создать узел с правой стороны.

3. “**Вставка → Новый смежный узел перед текущим**” дает возможность создать узел с левой стороны.

4. Щелчок левой кнопкой мыши по “**Новому смежному узлу**” дает возможность внести название для созданного узла.

5. Выполнение щелчка **правой** кнопкой мыши обычно приводит к отображению *списка доступных действий* для работы с узлом:

Редактировать F2	Изменение названия узла
Изменить текст в редакторе	Форматирование шрифта: цвет, курсив, жирный шрифт, подчеркивание, выравнивание, вставка таблицы, создание списка, создание нумерации
Редактировать атрибуты	Создание таблицы с атрибутами под названием узла
Удалить узел	Удаление узла
Вырезать	Удаление узла из данного места и вставка в другом месте
Копировать	Копирование узла и вставка в другом месте
Копировать только этот узел	Копирование только этого узла и вставка в другом месте
Вставить	Вставка узла
Новый подчиненный узел	Создание нового узла, подчиненного заданному узлу
Новый смежный узел после текущего	Создание нового смежного узла под существующим узлом
Новый смежный узел перед текущим	Создание нового смежного узла над существующим узлом
Развернуть/свернуть	Развёртывание и свёртывание подчиненного узла
Пиктограммы <i>здесь же:</i>	Вставка пиктограмм из предложенного списка
Удаление последней пиктограммы	Удаление последней пиктограммы в данном узле
Удаление всех пиктограмм	Удаление всех пиктограмм в данном узле
Экспортировать как новую карту Alt+Shift+A	Экспорт данной ветви в новую карту, то есть перенос в новое окно, где с ней можно отдельно работать /в главной карте появляется ссылка на этот элемент ассоциограммы/

Формат	Работа с узлом Тип узла – овал, кривая Увеличить шрифт узла Уменьшить шрифт узла Курсив Жирный Цвет узла Высветлить узел Фоновый цвет узла Убрать фоновый цвет узла Цвет облака (облако создается во вставке) Цвет ребра (прямая, кривая, заостренная прямая, заостренная кривая) Толщина ребра (как у родительского узла, тонкое ребро, 1, 2, 4, 8)
Вставка	Облако Изображение из файла (Alt+K) Ссылка (выбор файла) – вставка файла через ссылку Ссылка (текстовое поле) Создать связь (выделив минимум два узла) / между узлами
Стиль	Изменение стиля текста в рамках узла

6. Если подвести курсор к узлу, появится значок на повороте узла – и **узел** можно **перенести** в другое место, потянув в нужном направлении.

7. Файл – экспортировать – как ... (выбираем формат, в нашем случае PDF). Сохранить созданную ассоциативную карту связей.

3. МЕНТАЛЬНАЯ КАРТА

1. Зайти на сайт <http://www.spiderscribe.net/> (предварительно зарегистрировавшись).

2. Создать новую ментальную карту – **Create New Map**.

3. **Map name** – задать имя папки.

4. **Description** – добавить описание данной папки.

5. Кликнуть по иконке “**текст**” и, удерживая кнопкой мыши, перетащить на поле. Ввести текст.

6. Отформатировать текст по желанию: справа на экране панель форматирования текста. Изменить фон окна, шрифт, кегель текста (размер текста).

7. Щелкнуть по знаку “+” и создать новую ветвь.

8. Кликнуть по иконке “**изображение**” и, удерживая кнопкой мыши, перетащить на поле.

9. Щелкнуть на кнопку загрузки “**upload image**” и загрузить изображение. Отформатировать изображение по желанию: справа на экране панель форматирования изображения.

10. Прodelать похожие шаги с картой, календарем, документом Word.

11. Внести дополнительные изменения в работу с ментальной картой: в верхней части экрана находится **ПАНЕЛЬ ИНСТРУМЕНТОВ**: отмена последнего действия, центрирование карты, изменение размера, печать, экспортирование карты, удаление карты.

12. После окончания работы с картой нажать на “**Share**” (поделиться) – в правом верхнем углу экрана.

- **Private** – Частные (по умолчанию) – карта видна только владельцу и тем, с кем автор поделился (указать электронные адреса).

- **Public with the link** – Общедоступная со ссылкой – карта видна всем, кто имеет ссылку. Вход в аккаунт SpiderScribe.net не требуется.

- **Public on Internet** – Опубликованная в Интернете – карта видна и доступна всем.

1. При выборе режима **Private** в левом поле ввести список людей, которым разрешен доступ к карте. Выбрать формат доступа: **readers** – только чтение,

editors – редактирование. Нажать кнопку “Save” (сохранить).

2. Сохранить. Предоставить доступ одному из участников. **Или:**

*выбрать режим **Public on Internet***, скопировать адрес карты и сохранить в отдельном документе. Нажать кнопку “Save” (сохранить).

3. Нажать в верхней части экрана на “Export Map” (экспортировать карту) и выбрать формат JPG.

GRAMMAR GUIDE AND GRAMMAR DRILLS

Модуль III. КРАТКИЙ ГРАММАТИЧЕСКИЙ СПРАВОЧНИК. КОНТРОЛЬНО-ТРЕНИРОВОЧНЫЕ УПРАЖНЕНИЯ GRAMMAR GUIDE AND GRAMMAR DRILLS

The Article (Артикль).

Общие сведения

1. Артикль – это служебное слово, самый распространённый определитель существительного.
2. В традиционной английской грамматике два артикля: неопределённый **a**—a dog, (an – перед гласными: an apple) и определённый **the**.
3. Неопределённый артикль **a, an** произошёл от числительного и обозначает **любой** предмет из класса; определённый артикль произошёл от указательного местоимения и обозначает **конкретный предмет** из ряда подобных.

Употребление артикля

TABLE 1

The Indefinite Article (Неопределённый артикль)	The Definite Article (Определённый артикль)
1. Употребляем перед нарицательными существительными: I have a pencil	1. Употребляем перед нарицательными существительными: The pencil is red
2. НЕ употребляем перед именами собственными	2. Употребляем перед именами собственными: <ul style="list-style-type: none">• The Greens (семья целиком)• The Pacific Ocean (океаны)• The Black Sea (морья)• The Don (реки)• The Urals (горные цепи)

	<ul style="list-style-type: none"> • The South (стороны света) • The USA, the UK, the Netherlands, the Ukraine, the Crimea, the Congo (некоторые страны и местности) • The Pobeda (суда) • The Hilton (гостиницы) • The Morning Star (английские газеты)
3. Употребляем только с исчисляемыми существительными в единственном числе: a dog, a friend	
4. Упоминаем предмет впервые: This is a star	4. Упоминаем предмет вторично: This is a star. The star is beautiful
5. There is a... There is a book on the table	5. Where is the... Where is the book?
6. Употребляем в структурах: I am a... I am a student. He is a... He is a teacher. This is a... This is a boy. That is a... That is a girl. It is a... It is a picture. I see a... I see a dog	6. Употребляем: <ul style="list-style-type: none"> • С порядковыми числительными: Today is the first of May. • Перед прилагательными в превосходной степени: He is the best student
7. What a! What a fine day!	7. What's the use?
В устойчивых словосочетаниях	
To have a good time To have a rest To go for a walk For a short time In a loud voice As a tourist	To the right To the left In the middle In the corner In the morning In the evening In the afternoon
No Article	
Если перед существительным стоит: <ol style="list-style-type: none"> 1. Притяжательное местоимение – It is my dictionary 2. Указательное местоимение – This dictionary is mine 3. Существительное в притяжательном падеже – This is my sister's dictionary 4. Отрицание NO – I have no dictionary 	

5. Количественное числительное – Those are two dictionaries		
6. Перед названием месяцев и дней недели – on Sunday, in May.		
Перед названиями наук, учебных предметов и языков (если после названия языка не стоит слова “language») – English is not difficult.		
We study chemistry		
No Article		
В устойчивых словосочетаниях		
At home	Before breakfast	In town
At work	Before dinner	To town
At school	Before supper	From place to place
To go home	For breakfast	By bus
To go to work	For dinner	By train
To go to school	For supper	By car
To go to bed		By tram
After work	At breakfast	On horseback
After school	At dinner	On foot
From work	At supper	On board a ship
From school	Have breakfast	
After breakfast	Have dinner	
After dinner	Have supper	
After supper	At sunrise	In winter
	At sunset	In spring
	From morning till night	In summer
	All day long	In autumn
С существительным во множественном числе , которое является частью именного сказуемого : They are friends		
Перед названием месяцев и дней недели: on Sunday, in May		
Перед названиями наук, учебных предметов и языков (если после названия языка не стоит слово “language»): English is not difficult. Ho! The poem is written in the English language		
Перед существительными в газетных заголовках Arrival of British Prime Minister		
Если существительное является обращением: Children , go to bed.		
Перед существительными breakfast, dinner, lunch, supper		
Перед существительными в высказываниях членов семьи: Is Granny in?		
Перед именами и фамилиями: Mary Smith		

Перед званием: Professor Grey
Перед названием отдельных гор: Snowdon , островов: Tasmania
Перед названиями стран, состоящих из одного слова - Russia , городов – London , континентов – Australia Ho! The Ukraine, the Crimea, the Caucasus, the Netherlands, the Hague, the Congo

Существительные school, college, university, bed, town, home, church, hospital, prison, jail, work:

а) могут выражать абстрактные понятия и употребляться **без** артикля; **at school**;

б) могут быть исчисляемыми и употребляться с определённым и неопределённым артиклем. **This is a school, not a church. This is the town where their parents live.**

THE NOUN (СУЩЕСТВИТЕЛЬНОЕ)

Общие сведения

1. Все существительные английского языка делятся на имена собственные (Ann, Novosibirsk) и имена нарицательные (dog), которые, в свою очередь, подразделяются на исчисляемые (table, chair) и неисчисляемые (water, air), вещественные (wood) и отвлеченные (impression). Имеется также класс собирательных существительных, таких как team, group, army, party.
2. Существительные могут иметь при себе слова-определители: артикли, местоимения, прилагательные, другие существительные.
3. В английском языке существительные имеют грамматические категории рода, числа, падежа. За редким исключением (an actor-an actress, a waiter- a waitress) род определяется по контексту.

TABLE 2

Род	Число		Падеж	
	един.	множ.	общий	притяж.
A girl -friend	a worker	workers	The boy reads	The boy's book
A boy -friend	a class	classes	a book.	was open.
An actor – an actress	a hero	heroes	The book of the boy was	The boys'
	a wife	wives	open.	books were open.
	a country	countries	The books of the boys were	The sun's rays
	a valley	valleys	open.	
	a man	men	open.	
	a woman	women	She showed	
	a child	children	the boy her	
	a foot	feet	pen.	
	a tooth	teeth	She showed	
	a goose	geese	her pen to the boy .	
	a sheep	sheep	We have seen	
	a fish	fish	the boy .	
	a deer	deer	It is written by the boy .	
	-	police	They speak	
	-	cattle	about the boy	
	Family	families		
	-	family		
		(все члены)		
	Греческие и латинские слова			
	a formula	formulae		
	a datum	data		
	a radius	radii		
	a crisis	crises		
	a criterion	criteria		

THE ADVERB (НАРЕЧИЕ)

Общие сведения

1. Наречие – часть речи, указывающая на обстоятельство, при котором (как, где, когда) совершается действие.
2. По своему составу наречия делятся на простые (here), производные (badly, forwards), сложные (somewhere) и составные (till now, forever).

3. Многие наречия (главным образом образа действия) могут иметь степени сравнения, которые образуются так же, как и степени сравнения прилагательных.

4. Для усиления сравнительной степени наречий употребляются слова **much, far, a great deal**, превосходной – **by far, far much** в значении **намного, гораздо, значительно**.

TABLE 3

Виды наречий	Степень сравнения		
	положительная	сравнительная	превосходная
Односложные	fast late early	faster later earlier	fastest latest earliest
Многосложные	slowly beautifully	more slowly more beautifully	most slowly most beautifully
Исключения	well badly little much far	better worse less more farther further	best worst least most farthest furthest

The Adjective (Прилагательное)

Общие сведения

1. Прилагательные обозначают признаки, качества или свойства предмета.

2. По своему составу они делятся на простые (fine, sharp), производные (homeless, unhappy) и сложные (first-class, good-looking).

3. По значению они делятся на качественные (big, heavy) и относительные (wooden, square). Качественные прилагательные образуют степени сравнения, относительные нет.

4. Некоторые английские прилагательные могут употребляться в значении существительных. В таких случаях они употребляются с определенным артиклем **the** и обозначают группу лиц, обладающих данным признаком:

The rich (богачи, богатые), **the poor** (бедняки, бедные), **the sick** (больные), **the Russians** (русские), **the English** (англичане).

5. Функции прилагательных:

а) определение: This is a very difficult question.

Если в предложении есть несколько определений, выраженных прилагательными, то порядок их следования следующий: качество, размер, возраст, цвет, происхождение, материал.

A beautiful old red arm-chair;

б) часть составного именного сказуемого

This question is very difficult.

6. Сравнительные конструкции: as good as – такой же хороший, как; not so good as – не такой хороший, как; more than – более чем; less than – менее чем; the more the better – чем больше, тем лучше; the less the worse – чем меньше, тем хуже.

Degrees of Comparison (СТЕПЕНИ СРАВНЕНИЯ ПРИЛАГАТЕЛЬНЫХ)

TABLE 4

Виды прилагательных	Степень сравнения		
	положительная	сравнительная	превосходная
Односложные: к односложным прилагательным прибавляется: -er – <i>сравнительная степень</i> , the... -est – <i>превосходная</i>	old	older	the oldest
	nice	nicer	the nicest
	thin	thinner	the thinnest
	gay	gayer	the gayest
	big	bigger	the biggest
	lazy	lazier	the laziest
	clever	cleverer	the cleverest

Многосложные: к многосложным прилагательным прибавляется: more (less) – сравнительная, the most (the least) – превосходная степень	beautiful important famous	more (less) beautiful more (less) important more (less) famous	the most (least) beautiful the most (least) important the most (least) famous
Составные: к составным прилагательным прибавляется: more – сравнительная, the most – превосходная степень	good-natured sweet-tempered absent-minded snow-white	more good-natured more sweet-tempered more absent-minded more snow-white	the most good-natured the most sweet-tempered the most absent-minded the most snow-white
Прилагательные, образующие степени сравнения от разных основ	good bad many much little far	better worse more more less farther further	the best the worst the most the most the least the farthest furthest
Прилагательные, имеющие две формы, отличающиеся по своему значению	old late	older elder later latter	the oldest (старейший) the eldest (старший) the latest (более поздний) the last (последний)
Attention!			
left single absent wooden	no degrees of comparison (нет степеней сравнения)		

The Numeral (Числительные)

Общие сведения

1. Числительное – часть речи, обозначающая количество или порядок предметов при счёте.

2. Числительные делятся на **количественные** (Cardinal) и **порядковые** (Ordinal).

По своему составу числительные делятся на простые (four), производные (forty), составные (forty-two).

3. Функции числительных:

а) подлежащее – **Two** played a game of chess;

б) дополнение – How many books did you buy? I bought **two**;

в) определение – **the second** class;

г) именная часть составного сказуемого – Three times two is **six**.

4. Составные числительные следует читать так: 2,345,678 two million three hundred **and** forty-five thousand six hundred **and** seventy-eight.

5. Телефонный номер следует читать так: 3435688 three four three five six **double eight**. Цифра **0** читается [ou] (Br.E).

Ho! 3455672 three four **five five** six seven two.

6. Перед порядковым числительным ставится определённый артикль. **The first** class.

7. Хронологические даты следует читать так: 2000 – twenty hundred, 1945–nineteen forty five.

16th November, – 1961 the sixteenth of November, nineteen sixty-one.

November 16, 1961 – November the sixteenth, nineteen sixty-one.

8. Проценты следует читать так: 5% – five percent (p.c.)

9. Британские деньги: J 1.35 – one pound thirty five (pence) или one thirty five. €5.80 – five euro eighty pence.

Американские деньги: \$20.75 – twenty dollars seventy five cents или twenty seventy- five.

TABLE 5

Количественные		
1 one	11 eleven	21 twenty one
2 two	12 twelve	22 twenty two
3 three	13 thirteen	30 thirty
4 four	14 fourteen	40 forty
5 five	15 fifteen	50 fifty
6 six	16 sixteen	60 sixty
7 seven	17 seventeen	70 seventy
8 eight	18 eighteen	80 eighty
9 nine	19 nineteen	90 ninety
10 ten	20 twenty	100 a (one) hundred
101 a (one) hundred and one	1,000 a thousand	100,000 a (one) hundred thousand
200 two hundred	2,000 two thousand	1,000,000 a (one) million
Порядковые		
1 st first	11 th eleventh	21 st twenty-first
2 nd second	12 th twelfth	30 th thirtieth
3 rd third	13 th thirteenth	40 th fortieth
4 th fourth	14 th fourteenth	50 th fiftieth
5 th fifth	15 th fifteenth	60 th sixtieth
6 th sixth	16 th sixteenth	70 th seventieth
7 th seventh	17 th seventeenth	80 th eightieth
8 th eighth	18 th eighteenth	90 th ninetieth
9 th ninth	19 th nineteenth	100 th (one) hundredth
10 th tenth	20 th twentieth	
Дроби		
Простые	S a (one) half	$\frac{2}{3}$ two thirds
	$\frac{1}{3}$ one third	$\frac{2}{3}$ two and three eighths
Десятичные	nought (zero) point three (point three)	
	2.35 two point three five (thirty five)	
Десятичные	32.305 three two (thirty two) point three nought (zero) five	

THE PRONOUN (МЕСТОИМЕНИЕ)

Общие сведения

1. Местоимение – часть речи, употребляемая вместо существительного или прилагательного.

2. Функции:

а) подлежащее: **I** am a pupil;

б) именная часть сказуемого: It's **me**;

в) дополнение: Tell **me**, please;

г) определение: **My** life.

TABLE 6

Местоимения		
1. Личные	им. п.	I, you, he, she, it, we, you, they
	объектн. п.	me, you, him, her, it, us, you, them
2. Притяжательные	I форма	my, your, his, her, its, our, your, their
	II форма	mine, yours, his, hers, its, ours, yours, theirs
3. Возвратные и усилительные		myself, yourself, himself, herself, itself, ourselves, yourselves, themselves
4. Взаимные		each other, one another
5. Указательные		this (these), that (those), such, the same
6. Вопросительные		who, whom, whose, what, which
7. Относительные и соединительные		who, whom, whose, what, which, that
8. Неопределенные		some, somebody, something, someone, any, anybody, anything, anyone, all, each, every, everybody, everything, everyone, other, another, both, many, much, few, a few, little, a little, either, no, nobody, nothing, none, neither

The Preposition (Предлог)

Общие сведения

1. Предлог – служебное слово, показывающее отношение существительного к другим словам в предложении.
2. По своему составу предлоги делятся на **простые** (on), **производные** (below), **сложные** (without – with+out), **со-ставные** (instead of).
3. Предлоги обычно ставятся перед существительным – **to** the shop, **to** whom did he go? Но могут стоять и после него – depend **on**., whom did he go **to**?
4. С помощью предлогов выражаются падежные отношения:

A pair of gloves – **родительный** (пара чего? перчаток)

A letter to my friend – **дательный** (письмо кому? другу)

By this scientist – **творительный** (кем? этим ученым)

With a fork – **творительный** (чем? вилкой)

About my friend – **предложный** (о ком? – о моём друге)

Падежные отношения

A pair of gloves – **родительный** (пара чего? перчаток)

A letter to my friend – **дательный** (письмо кому? другу)

By this scientist – **творительный** (кем? этим ученым)

With a fork – **творительный** (чем? вилкой)

The Prepositions of Space (Предлоги места и направления)		
up – вверх	opposite – напротив	to (куда?) – в, на, к
down – вниз	among – среди	out of – из
over – выше, над	between – между	into (куда?) – в
below – ниже, под	in the middle of – по-среди	through – через
on – на		along – вдоль
under – под	at – около, у	across – поперек,
behind – за	beside – рядом	через
in front of – перед	in – в	

The Prepositions of Time (Предлоги времени)		
<p>at указывает на точное время: at 6 o'clock – в 6 часов at this moment – в это время</p>	<p>on <i>употребляется с более общим обозначением времени, дат, с названиями дней недели:</i> on Tuesday – во вторник on my birthday on April 9th</p>	<p>by употребляется для обозначения самого позднего момента, к которому произойдет действие: by the end of the week – к концу недели</p>
<p>in а) <i>указывает период времени, по окончании которого произойдет действие:</i> in two years – через два года; б) <i>употребляется с названиями времен года, обозначениями лет, месяцев, частей суток:</i> in 2000 – в 2000 году in April – в апреле in the morning – утром</p>	<p>from (с) ... to, till (до): He lived in Moscow from 1965 till 1970. Он жил в Москве с 1965 до 1970 since (с) <i>действие началось в прошлом и длится:</i> I have lived in Rostov since childhood. Я живу в Ростове с детства</p>	<p>for <i>употребляется для обозначения периода, в течение которого длится действие:</i> for ages – очень долго, целую вечность during the week – в течение недели before – до after – после till (untill) – до between – между</p>

The Verb (Глагол)

Общие сведения

1. Глагол – часть речи, обозначающая действие или состояние, представленное в виде действия.
2. По своему составу глаголы делятся на **простые** (to go), **производные** (to organize), **сложные** (to whitewash), **составные** (to come in).
3. Формы глагола делятся на **личные** (Finite Forms) и **неличные** (Non-Finite Forms или Verbals).
4. По способу образования прошедшего простого времени и причастия прошедшего времени глаголы делят-

ся на **правильные** (Regular– to play) и **неправильные** (Irregular– to go).

5. Основные формы глагола: **инфинитив** (to go, to play), **прошедшее простое время** (went, played), **причастие прошедшего времени** (gone, played). См.таблицу неправильных глаголов.

6. По значению и функции в предложении глаголы делятся на **смысловые** (Notional Verbs), **вспомогательные** (Auxiliary Verbs–to be, to do, shall, should, will, would) и **служебные** (Semi-Auxiliary Verbs). К ним относятся **модальные** глаголы (Modal Verbs) и **глаголы-связки** (Link Verbs – to be, to become, to grow, to get, to turn, to look).

7. Грамматическая категория **залог** (Voice) – представлена **действительным** (Active) и **страдательным** (Passive) залогами.

8. Английский глагол имеет четыре группы времён (Tenses): **простые** (Simple или Indefinite), **длительные** (Continuous или Progressive), **совершенные** (Perfect), **совершенно-длительные** (Perfect Continuous или Perfect Progressive).

VERB TENSES. ACTIVE VOICE (ВИДОВРЕМЕННЫЕ ФОРМЫ ГЛАГОЛОВ. ДЕЙСТВИТЕЛЬНЫЙ ЗАЛОГ)

TABLE 8

	To be	To have	Оборот there is / are
The Present Indefinite Tense	I am not He, she, it is /isn't You, we, they are / aren't	I, you, we, they have / haven't He, she, it has / hasn't	There is / isn't There are / aren't
The Past Indefinite Tense	I, he, she, it wasn't You, we, they weren't	Had / hadn't	There was / wasn't There were / weren't

The Future Indefinite Tense	I, we shall / shan't be You, he, she, it, they will / won't be	I, we shall have / shan't have You, he, she, it, they will have	There will / won't be
------------------------------------	--	---	------------------------------

Tense	Present	Past	Future	Future-in-the-past	Для выражения какого действия употребляется
Simple	write writes do, does don't, doesn't usually, sometimes, every day, often	wrote did didn't yesterday, last year, 3 years ago	shall write will write shan't won't tomorrow, next month, in 3 years	should write would write shouldn't wouldn't the other day	Обычное, повторяемое действие, констатация факта
Continuous	am writing is writing are writing am not isn't aren't now, at present	was writing were writing wasn't weren't yesterday from 5 till 6, while	shall be writing will be writing shan't won't tomorrow from 5 till 6, while	should be writing would be writing shouldn't wouldn't at that time	Действие, которое происходит в определенный момент, в ближайшем будущем
Perfect	have written has written haven't hasn't just, yet, already, never, since, recently	had written hadn't by 3 o'clock yesterday, before	shall have written will have written shan't / won't by tomorrow, before, until, till	should have written would have written shouldn't wouldn't by that time	Действие, законченное до определенного момента
Perfect Continuous	have been working has been working haven't hasn't for, since	had been working hadn't for, since	shall have been working will have been working shan't / won't by next day for two hours	should have been working would have been working shouldn't wouldn't for 3 hours by eleven	Указывает на то, как долго длится действие, начатое некоторое время назад

TABLE 9

**VERB TENSES. PASSIVE VOICE
(ВИДОВРЕМЕННЫЕ ФОРМЫ ГЛАГОЛОВ.
СТРАДАТЕЛЬНЫЙ ЗАЛОГ)**

BE + V3

Tenses	Simple	Continuous	Perfect
Present	Schools are constructed here (regularly, day by day, weekly)	The school is being constructed in our street (now)	The school has been constructed in our street this year (by this month)
Past	Schools were constructed here (usually, regularly, yesterday, in the past)	The school was being constructed in our street (in May last year, from May to August last year)	The school had been constructed (by that moment in the past)
Future	Schools will be constructed here (in future, in a day, in a year, tomorrow)	—	The school will have been built by May next year

THE MOOD (НАКЛОНЕНИЕ)

Общие сведения

1. Наклонение – категория, свойственная только личным формам глагола.
2. Грамматическая категория наклонение (The Mood) представлена **изъявительным** (Indicative), **повелительным** (Imperative), **сослагательным** (Subjunctive) наклонением.
3. **Изъявительное наклонение** показывает, что действие рассматривается как **реальный факт**, **сослагательное** – как **предполагаемый, желательный, возможный**, **повелительное** выражает **приказание, просьбу, совет, запрещение**.

4. Сослагательное наклонение переводится с частицей бы.
5. Глагол to be в сослагательном наклонении принимает форму were (в Am.E. was)

TABLE 10

Изъявительное наклонение	Повелительное наклонение	Сослагательное наклонение
He likes coffee.	Go on reading! Don`t open the window! Please, sit down . Will you give me that book, please?	I should write a letter to him if I knew his address. He would have written a letter to him if I had known his address. If I were you I should write him a letter. It is necessary that he should come . He suggests (proposes, demands, orders, requests, insists) that I (should) take a leave. I wish I knew her address.

MODAL VERBS (МОДАЛЬНЫЕ ГЛАГОЛЫ)

Общие сведения

1. Модальные глаголы **can (could), may (might), must, ought, should, need, dare** не употребляются самостоятельно.
2. После модальных глаголов инфинитив употребляется без частицы to. Исключением является **ought**: You **ought to** close the window.
3. В 3-м лице единственного числа настоящего времени модальные глаголы не имеют окончания – s.
4. Модальные глаголы образуют вопросительную и отрицательную формы без помощи других глаголов.
5. Модальные глаголы не имеют формы инфинитива, причастия и герундия.

TABLE 11

Can / could	Способность, умение Просьба Сильное сомнение Be able to (эквивалент can в будущем времени)	You can/could do it Can / could you do it now? (Не могли бы вы...) Can / could he have done? (Неужели он это сделал?) He will be able to explain everything
Must	Твердая необходимость Приказ Запрещение Уверенное предположение о настоящем (прошлом) Have to (эквивалент must в будущем). Вынужденная необходимость Be to (эквивалент must) долженствование в силу договоренности, плана, расписания	I must do it. (Надо, должен) You must do it. (Должен) You must not do it. (Нельзя, не должен) He must know her. He must have done it (должно быть, вероятно) I had to do it. I'll have to stay at home. (Мне придётся остаться...) The train is to come at 6 p.m.
May (might)	Разрешение (в вопросах) Запрещение Сомнение might выражает более сильное сомнение, чем may Be allowed to (эквивалент may в будущем времени)	May I come in? (Можно...?) You may not go there. (Не смей!) It may (might) snow. (Возможно, может быть) We shall be allowed to go to the sports ground
Ought to	Настоятельный совет Моральный долг	You ought to visit your old father (должен, следует)

Should	Совет, рекомендация Упрек, сожаление	You should read a lot (следует, нужно бы) You should not smoke so much
Need	Отсутствие необходимости (= have to) Критика действия в прошлом, которое можно было и не совершать	You needn't do it. You don't have to do it (можно не...) He needn't have done it. Ему не нужно было этого делать (а он сделал). НО! He didn't have to do it. Ему не нужно было ... делать этого (а он и не делал)
Dare	Посметь (в вопросах и отрицаниях), дерзнуть, осмелиться	How dare you speak to me?

THE VERBALS (НЕЛИЧНЫЕ ГЛАГОЛЬНЫЕ ФОРМЫ)

Общие сведения

1. Неличные формы глагола: **инфинитив (The Infinitive)**, **причастие (The Participle)** и **герундий (The Gerund)** не изменяются по лицам и числам, не имеют наклонения, но имеют форму залога и временной отнесённости.

2. Инфинитив и герундий имеют свойства существительного, причастие – свойства прилагательного и наречия.

3. После модальных глаголов **can, may, must**, глаголов **to make, to let**, выражений **had better, would rather, would sooner**, глаголов **to see, to hear, to watch, to feel** частица **to** перед инфинитивом **не ставится**.

4. Глаголы **to believe, to consider, to hold, to think, to assume, to suppose**, употребляемые в Complex Subject в страдательном залоге, переводятся глаголами “**считать, полагать, думать**”.

TABLE 12

Инфинитив (to)			Герундий (-ing)		Причастие I (-ing)	
Времена	Действ. залог	Страд. залог	Действ. залог	Страд. залог	Действ. залог	Страд. залог
Simple (Неопр.)	to ask	to be asked	asking	being asked	asking	being asked
Continuous (Длител.)	To be asking	—	—	—	—	—
Perfect (Совер.)	to have asked	to have been asked	having asked	having been asked	having asked	having been asked
Perfect Continuous (Соверш. длит.)	to have been asking	—	—	—	—	—
					Причастие II V3, asked	

TABLE 13

FUNCTIONS OF THE INFINITIVE (ФУНКЦИИ ИНФИНИТИВА)

Функции	Примеры
1. Подлежащее	To walk is useful. Полезно ходить пешком
2. Часть сказуемого	Our aim is to master English. Наша цель – овладеть английским языком
3. Дополнение	She likes to sing . Она любит петь
4. Определение	The method to be used is not new. Используемый метод не нов
5. обстоятельство	He went there to study . Он пошел туда учиться

TABLE 14

**FUNCTIONS OF THE GERUND (ФУНКЦИИ
ГЕРУНДИЯ)**

Функции	Употребление	Примеры
Подлежащее		Swimming is my favourite sport. Плавание – мой любимый вид спорта
Часть составного сказуемого	После глаголов: to stop – прекращать to finish – заканчивать to continue, to go on, to keep – продолжать, to begin, to start – начинать	Stop talking! Прекратите разговаривать! He kept on asking her about the details Он продолжал спрашивать ее о подробностях
Дополнение: а) прямое	После глаголов: to like – нравиться To need – нуждаться to prefer – предпочитать to remember – помнить to enjoy – получать to mind – возражать to excuse – извинять to be busy – быть занятым to be worth – стоить	Your suggestion needs discussing Ваше предложение нужно обсудить I prefer reading classical novels Я предпочитаю читать классические роман I don't mind going there Я не возражаю (не против) пойти туда She is busy preparing for the exam Она занята подготовкой к экзамену
б) предложное	после глаголов с предлогами: to depend on – зависеть от... to rely on – полагаться на... to object to – возражать против... to blame... for – винить кого-то за... to thank for – благодарить за... to be responsible for – отвечать за...	He thanked his friend for helping him. Он поблагодарил своего друга за помощь
	to be fond of – любить to be tired of – устать от... to be afraid of – бояться ... to look forward to – ожидать с нетерпением to feel like – быть склонным и т.д.	He is fond of collecting stamps Он любит собирать марки I am tired of arguing with you Я устал спорить с вами I am afraid of making a mistake Я боюсь, как бы не сделать ошибку

Определение	После абстрактных существительных с предлогами: way (of) – способ opportunity (of) – возможность hope (of) – надежда experience (in) – опыт reason (for) – причина, основание interest (in) – интерес importance – значение и т.д.	You have no reason for saying that У вас нет оснований говорить это I understand the importance of learning English Я понимаю важность изучения английского языка
Обстоятельство: а) времени б) образа действия	Употребляется всегда с предлогами: after, before, on by, without, instead of, besides	After returning home he resumed his work После того как он вернулся домой (после возвращения), он возобновил работу She left the room without looking at me. Она ушла из комнаты, не взглянув на меня
После глаголов to like, to begin, to start, to continue, to stop, to intend и словосочетаний: it is no good, it is (of) no use, it is useless, употребляется как герундий, так и инфинитив		
Герундиальные конструкции		
Предлог + сущ. (прит. п.) или прит. мест. + герунд Пример: He speaks of the workers' (their) doing it Придат. предл. со словами: <i>то, что; о том, что</i>		

TABLE 15

FUNCTIONS OF THE PARTICIPLE (ФУНКЦИИ ПРИЧАСТИЯ)

Функции	Примеры
1. Подлежащее	–
2. Часть сказуемого	He is writing a paper Он пишет научную работу
3. Дополнение	–
4. Определение	The rising sun – восходящее солнце A broken cup – разбитая чашка
5. Обстоятельство	(While) reading he made notes

TABLE 16

**THE PARTICIPIAL CONSTRUCTION
(ПРИЧАСТНЫЕ КОНСТРУКЦИИ)**

Конструкция	Пример	Перевод
he Objective Participial Construction (объектный причастный оборот) Сущ. (общ.п.) или мест. (объект. п.) + прич. I или II	We heard <u>him playing</u> the piano I considered <u>the work done</u> I had <u>my hair cut</u>	Мы слышали, <u>как он играл</u> на пианино Я считал, <u>что работа выполнена</u> Я <u>подстригся</u> (кто-то подстриг меня)
The Subjective Participial Construction (субъектный причастный оборот) Сущ. (общ.п.) или мест. (им. п.) + прич. I или II	<u>He</u> was seen <u>crossing</u> the street <u>She</u> was heard <u>talking</u> about it <u>He</u> was seen <u>looking</u> for something	Видели, <u>как он</u> <u>переходил</u> улицу Слышали, <u>как она</u> об этом <u>говорила</u> Видели, <u>как он</u> что-то <u>искал</u>
The Absolute Participial Construction Независимый причастный оборот Сущ. (общ.п.) или мест. (им. п.) + прич. I или II	<u>It being</u> warm, we went for a walk. Radio was invented in 1895, <u>the inventor being</u> the Russian scientist	Так как было тепло, мы пошли гулять Радио было изобретено в 1895 г., причем изобретатель <u>был</u> русским ученым

TABLE 17

**THE INFINITIVE CONSTRUCTIONS
(ИНФИНИТИВНЫЕ КОНСТРУКЦИИ)**

Конструкция	Пример	Перевод
1. Сложное подлежащее (Complex Subject) Сущ. (общ. п) или мест. (им. п) + инф. гл.	They are said <u>to have travelled</u> a lot. The data proved <u>to be wrong</u>	Говорят, <u>что они много путешествовали</u> <u>Данные</u> оказались <u>неверными</u>
2. Сложное дополнение (Complex Object) Сущ. (общ.п.) или мест. (объект. п.) + инф. гл.	We believe <u>her to be</u> in Moscow She wanted <u>me to return</u> soon We expect <u>him to come</u> here	Мы полагаем, <u>что она</u> сейчас в Москве Она хотела, <u>чтобы я скорее вернулся</u> Мы ожидаем, <u>что он придет сюда</u>

3. For + сущ. (мест.) + инф. гл.	Everybody waited <u>for the meeting to start</u> He waited <u>for her to speak</u>	Все ждали, <u>когда начнется собрание</u> Он ждал, <u>чтобы она заговорила</u>
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SEQUENCE OF TENSES (СОГЛАСОВАНИЕ ВРЕМЕН)

1. Если сказуемое главного предложения выражено глаголом в настоящем или будущем времени, то сказуемое придаточного предложения может стоять в любом времени, которое требуется по смыслу.

2. Если сказуемое главного предложения стоит в прошедшем времени, то сказуемое придаточного предложения должно стоять в одном из прошедших времен. Выбор конкретной видовременной формы определяется тем, происходит ли действие в придаточном предложении одновременно с главным, предшествует ему, либо будет происходить в будущем.

3. В ряде случаев правило согласования времен не соблюдается:

1) в придаточных дополнительных предложениях, которые выражают общеизвестный факт или истину;

2) в придаточных дополнительных предложениях, сказуемое которых выражено глаголом в сослагательном наклонении;

3) модальные глаголы *must*, *should* и *ought* употребляются в придаточном предложении независимо от того, в каком времени стоит глагол-сказуемое главного предложения.

TABLE 18

1	He says (that)	he studies he studied he will study	Он говорит, что изучает английский Он говорит, что изучал английский Он говорит, что будет изучать английский
2	He said (that)	he studied English he had studied English he would study English	Он сказал, что изучает английский Он сказал, что изучал английский Он сказал, что будет изучать английский
3	а) He said (that) б) He demanded (that) в) The teacher says (said) that	the 9th of May is Victory Day the work should be done the pupil must correct his mistakes	Он сказал, что 9 мая День Победы Он потребовал, чтобы работа была сделана Учитель говорит (сказал), что ученик должен исправить свои ошибки

TABLE 19

DIRECT AND INDIRECT SPEECH (ПРЯМАЯ И КОСВЕННАЯ РЕЧЬ)

№ п/п	Direct speech	Indirect speech
1	He said: Ann, you are pretty	He told Ann that she was pretty
2	He asked: Is he a student?	He asked if he was a student
3	He asked: Who is absent?	He asked who was absent
4	He asked: Where do you work?	He asked where I worked
5	He ordered: Tom, open the door!	He told Tom to open the door
6	He ordered: Tom, don't open the door!	He told Tom not to open the door

В косвенной речи соблюдается правило согласования времён. При обращении утвердительных предложений из прямой речи в косвенную производятся следующие изменения:

3. Косвенная речь вводится союзом *that*, который часто опускается.

4. Глагол *t say*, после которого следует дополнение, заменяется глаголом *to tell*.

5. Личные и притяжательные местоимения заменяются по смыслу.

6. Времена глаголов в придаточном предложении изменяются согласно правилам согласования времён.

7. Указательные местоимения и наречия времени и места заменяются другими словами:

This	that
These	those
Now	then
Today	that day
Tomorrow	the next day
The day after tomorrow	two days later
Yesterday	the day before
Ago	before
Next day	the next day? The following day
Here	there

Общие вопросы вводятся союзами *if*, *whether*, имеющими значение частицы “ли”. В придаточных предложениях соблюдается порядок слов утвердительного предложения.

Словообразование

Наиболее употребительные префиксы и их значения

1. Префиксы, имеющие отрицательное значение

un-	<i>pleasant</i> (приятный) – <i>unpleasant</i> (неприятный); <i>familiar</i> (знакомый) – <i>unfamiliar</i> (незнакомый)
im-	<i>polite</i> (вежливый) – <i>impolite</i> (грубый); <i>possible</i> (возможный) – <i>impossible</i> (невозможный)
in-	<i>correct</i> (правильный) – <i>incorrect</i> (неправильный)
ir-	<i>regular</i> (регулярный) – <i>irregular</i> (нерегулярный)

il-	literate (грамотный) – illiterate (неграмотный)
dis-	to appear (появляться) – to disappear (исчезать)
mis-	to understand (понимать) – to misunderstand (неправильно понять)
non-	smoker (курящий) – non-smoker (некурящий)

2. Префиксы, придающие слову противоположное значение или обозначающие противоположное действие

un-	To dress (одеваться) – to undress (раздеваться); to tie (связывать) – to untie (развязывать)
dis-	To obey (повиноваться) – to disobey (не слушаться); to approve (одобрять) – to disapprove (не одобрять)
anti-	aircraft (самолет) – anti-aircraft (противовоздушный); fascist (фашист) – anti-fascist (антифашист)
counter-	to act (действовать) – to counteract (противодействовать), attack (атака) – counterattack (контратака)

3. Префиксы, имеющие значение «сверх», «пере-», «чрезмерно»

over-	to do (делать) – to overdo (перестараться); to sleep (спать) – to oversleep (проспать)
super-	human (человеческий) – superhuman (сверхчеловеческий)
ultra-	short (короткий) – ultra-short (ультракороткий)

4. Префикс, обозначающий повторное действие со значением «снова», «заново», «вновь», «пере»

re-	to construct (строить) – to reconstruct (перестроить); to read (читать) – to reread (перечитать); to write (писать) – to rewrite (переписывать)
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5. Префиксы, обозначающие общность действия, имеющие значение «между», «взаимно»

co-	owner (владелец) – co-owner (совладелец); existence (существование) – co-existence, (сосуществование); operation (действие) – co-operation (сотрудничество)
inter-	action (действие) – interaction (взаимодействие)

6. Префиксы, которые переводятся как:

а) «пред-», «до-»:

pre-	war (война, военный) – pre-war (довоенный); historic (исторический) – prehistoric (доисторический)
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б) «после-»:

post-	war (война) – post-war (послевоенный); revolutionary (революционный) – post-revolutionary (после-революционный)
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в) «недостаточно», «недо-»:

under-	To pay (платить) – to underpay (оплачивать низко, т.е. недостаточно оплачивать, недоплачивать); production (производство) – underproduction (недостаточное производство, недопроизводство)
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г) «под-»:

sub-	division (разделение) – subdivision (подразделение); committee (комиссия, комитет) – subcommittee (подкомиссия)
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д) «экс-», «бывший»:

ex-	wife (жена) – ex-wife (бывшая жена); champion (чемпион) – ex-champion (бывший чемпион); minister (министр) – ex-minister (бывший министр)
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7. Префикс глагола, имеющий значение «делать»:

en-	large (большой) – to enlarge (увеличивать, делать больше); danger (опасность) – to endanger (подвергать опасности); force (сила) – to enforce (принуждать, настаивать); circle (круг) – to encircle (окружать)
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Наиболее употребительные суффиксы

Основные суффиксы существительных

1. Суффиксы, обозначающие принадлежность:

а) к политическому направлению:

-ist	marxist (марксист), materialist (материалист)
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б) к профессии:

-ist	artist (художник), typist (машинистка), pianist (пианист)
-ian	historian (историк), musician (музыкант)

в) к нации:

-ian	Russian (русский), Belarussian (белорус)
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2. Суффиксы, обозначающие действующее лицо

-er	To teach (обучать, учить) – teacher (учитель)
-or	to direct (руководить) – director (руководитель), to sail (плыть) – sailor (морьяк)

3. Суффикс, обозначающий результат действия

-ment	achievement (достижение), agreement (соглашение), government (правительство, управление), development (развитие)
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4. Суффиксы, обозначающие:

а) состояние:

-hood	brotherhood (братство), childhood (детство)
-ship	friendship (дружба), leadership (руководство)

б) действие, состояние:

-age	shortage (нехватка), marriage (брак, супружество), passage (проход), voyage (путешествие)
-al	arrival (прибытие), approval (одобрение), proposal (предложение)
-ing	hunting (охота), crossing (пересечение, перекресток), living (жизнь), suffering (страдание)
-ence	silence (молчание), difference (различие), existence (существование), patience (терпение)

-ance	importance (важность), performance (представление)
-tion	dictation (диктант, диктовка), formation (образование)
-sion	decision (решение), discussion (обсуждение)

в) качество или состояние:

-dom	freedom (свобода), kingdom (королевство), wisdom (мудрость)
-ness	coldness (холод, холодность), darkness (темнота), kindness (доброта), weakness (слабость), happiness (счастье)
-ty	activity (активность), safety (безопасность), equality (равенство)

Основные суффиксы прилагательных

1. Суффикс, образующий прилагательные от существительных и обозначающий национальную принадлежность или слабую степень качества

-ish	pole (поляк) – polish (польский); scot (шотландец) – scottish (шотландский); red (красный) – reddish (красноватый); young (молодой) – youngish (моложавый); child (ребенок) – childish (ребячливый, детский).
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2. Суффиксы, образующие прилагательные от глаголов и обозначающие наличие качества

-ive	To act (действовать) – active (активный); to talk (разговаривать) – talkative (разговорчивый)
-ent	to differ (различать) – different (различный)
-ant	To observe (наблюдать, замечать) – observant (наблюдательный, внимательный)

3. Суффиксы, образующие прилагательные от существительных и обозначающие наличие качества, свойства

-ic	poet (поэт) – poetic (поэтический); hero (герой) – heroic (героический)
-al	music (музыка) – musical (музыкальный)

-ful	beauty (красота) – beautiful (красивый); power (сила, мощь) – powerful (сильный, мощный)
-ous	courage (храбрость) – courageous (храбрость)
-y	snow (снег) – snowy (снежный); sun (солнце) – sunny (солнечный)

4. Суффиксы, образующие прилагательные от различных частей речи и обозначающие:

а) качество, свойство:

-ary	element (элемент) – elementary (элементарный);
-ory	To explain (объяснять) – explanatory (объяснительный); illusion (иллюзия) – illusory (обманчивый, иллюзорный)

б) способность что-либо сделать, состояние, качество:

-able	to change (изменить) – changeable (изменчивый); rely (надеяться) – reliable (надежный); profit (доход) – profitable (доходный)
-ible	access (доступ) – accessible (доступный)

Основные суффиксы глаголов

-ate	active (активный) – to activate (активизировать)
-en	short (короткий) – to shorten (укоротить)
-fy	pure (чистый) – to purify (очищать)
-ify	simple (простой) – to simplify (упрощать)
-ize, -ise	character (характер) – to characterize (охарактеризовать) modern (современный) – to modernize (модернизировать)

Основные суффиксы наречий

Суффиксы, образующие наречия:

а) от прилагательных, иногда – существительных, порядковых числительных и причастий:

-ly	loud (громкий) – loudly (громко); bad (плохой) – badly (плохо, ошибочно), part (часть) – partly (частично), first (первый) – firstly (во-первых)
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б) от существительных и наречий и обозначающие направление (или направленность):

-wards	north (север) – northward (s) (к северу, на север); after (после) – afterwards (впоследствии, позже, потом)
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Грамматический практикум

Методические рекомендации

Прежде чем выполнять грамматические упражнения и тесты, внимательно изучите соответствующие грамматические таблицы: Table 1 (Артикль), Table 2 (Существительное), Table 3 (Наречие), Table 4 (Прилагательное), Table 5 (Числительное), Table 6 (Местоимение), Table 7 (Предлог), Table 8 (Глагол, активный залог), Table 9 (Глагол, пассивный залог), Table 10 (Модальные глаголы), Table 11–16 (Неличные глагольные формы), Table 17 (Согласование времен), Table 18 (Прямая и косвенная речь); раздел “Словообразование”.

Ex. 1. Раскройте скобки и употребите данные личные местоимения в притяжательном падеже:

1. (He) ... composition is very interesting.
2. (We) ... son goes to school.
3. (You) ... sister is young.
4. (They) ... knowledge of the subject is very poor.
5. (He) ... name is John.
6. (I) ... family lives in Kiev.
7. (She) ... friends often visit her.

Ex. 2. Употребите нужную форму личных местоимений:

1. I often see (they, them) in the bus.
2. She lives near (we, us).
3. (We, us) always walk to school together.
4. He teaches (we, us) English.
5. She sits near (I, me) during the lesson.
6. I always speak to (he, him) in English.

7. What is the matter with (he, him) today?
8. He explains the lesson to (we, us) each morning.
9. There are some letters here for you and (I, me).
10. I know (she, her) and her sister very well.

Ex. 3. Вставьте вместо точек нужное по смыслу местоимение:

1. I have lost ... pen, may I take ...?
2. If you've left ... dictionary at home, you may take ...
3. These pencils are ..., take ... if you want.
4. Help ..., please.
5. He always makes dinner
6. We have very many relatives in ... native town.
7. They can do it
8. ... of you knows his address?
9. There is ... butter on the table, but there isn't ... milk.

Ex. 4. Прочтите и переведите следующие предложения:

1. William Shakespeare was born in 1564 and died in 1616 in Stratford-on-Avon.
2. Shakespeare wrote 37 plays.
3. Jack London was born on the 12th of January 1876 and died in 1916.
4. On April 12, 1961 the whole world learned about Gagarin's flight into space.

Ex. 5. Скажите по-английски:

1 сентября 1984 года	11 марта 1951 года
7 ноября 1990 года	5 июля 1945 года
9 октября 1947 года	

Ex. 6. Ответьте на вопросы:

1. When do we celebrate the first day of spring (Victory Day, New Year's Day, Christmas, Women's Day, May Day, Cosmonautics Day, Independence Day)?

2. When were you born?
3. When was your father (your mother, your sister, your friend, your cousin) born?

Ex. 7. Прочтите вслух следующие существительные, запишите форму их множественного числа:

carpet, glass, photo, box, lady, wife, valley, thief, man, woman, child, foot, tooth, life, handkerchief, tomato, scarf, sheep, deer, information, fish, coat.

Ex. 8. Перепишите следующие предложения, вставляя данные в скобках существительные в единственном или множественном числе:

1. Ann's father told some funny circus The funniest ... was about a giant clown. (story, stories)
2. Many ... live in an apartment house. Tom's ... lives on the fourth floor. (family, families)
3. Do you know the name of this ...? The travellers will see many (country, countries)
4. Ben's dog has five brown One little ... has a flat nose. (puppy, puppies)
5. Small ... laugh and play. Jack's ... has a new toy. (baby, babies)

Ex. 9. Образуйте сравнительную и превосходную степени следующих прилагательных:

1. Tall, long, short, hot, cold, nice, large, big, wide, strong, happy, warm, high, heavy, low, hard, busy, easy, bright.
2. Interesting, comfortable, important, necessary, beautiful, famous, pleasant, popular, wonderful, active, careful.

Ex. 10. Употребите прилагательные и наречия, данные в скобках, в нужной степени сравнения:

1. My brother is much ... than myself (young).

2. The opera theatre is one of ... buildings in the city (beautiful).
3. The sound grew ... and ... (faint).
4. The party was not so ... as I had expected (gay).
5. I have no one ... than you (near).
6. What is the ... news (late)?
7. Yesterday I came home ... than usual (late).
8. Ann sings far ... than Nina (well).
9. I like this picture ... of all (well).

Ex. 11. Заполните пропуски глаголом to be, употребляя соответствующую форму в Present Indefinite:

1. He ... a good student.
2. They ... old friends.
3. I ... a teacher.
4. John ... absent from class today.
5. The weather ... good today.
6. The sky ... clear.
7. We ... both students.
8. Mr Smith ... sick today.
9. She and I ... cousins.

Ex. 12. Напишите следующие предложения в вопросительной и отрицательной формах:

1. They are in Europe now.
2. She is a clever girl.
3. It is cold today.
4. He is in his office now.
5. They are members of the country club.
6. Both sisters are tall.
7. John is angry with you.
8. She is a good tennis player.
9. The stamps are in my desk.
10. She is a good teacher.

Ex. 13. Заполните пропуски глаголом to have, употребляя соответствующую форму в Present Indefinite:

1. She ... one sister and two brothers.
2. We ... a large library at school.
3. They ... a new car.
4. She ... green eyes.
5. Helen ... a headache.
6. The secretary ... a new typewriter.
7. Mr Smith's office ... three large windows.
8. We ... many friends in Moscow.
9. Both brothers ... red hair.
10. Harry's dog ... a long tail.
11. He and I ... many things in common.

Ex. 14. Употребите глаголы to be или to have в нужной форме:

1. There is no school in this village and the children go to the school which ... two miles away.
2. How old ... you? I ... 17.
3. ... you English lessons twice a week? – Yes, we ...
4. I ... no time to help you yesterday. I ... very sorry about it.
5. We ... a conference tomorrow. So I ... busy with my report today.
6. My sister ... a second-year student of the Law Faculty.
7. What ... you fond of? My hobby ... drawing.
8. Will you ... any lectures tomorrow?
9. Physics ... my favorite subject at school.
10. He ... a lot of trouble with his car yesterday.
11. My grandfather ... short grey hair but my grandmother's hair ... long and thick.
12. Your glasses ... on the table.

Ex. 15. Преобразуйте предложения, употребляя оборот there is/are:

a) 1. This city has many monuments. 2. Our town has no theatres. 3. This family has two children. 4. Our group has many good pupils. 5. Every week has seven days and every year has twelve months. 6. She has a lot of English books in her library.

b) 1. The dog is in the room. 2. The children are in the yard. 3. The students are in the laboratory. 4. The car is near the house. 5. The bench was under the tree. 6. A lot of people will be at the stadium tomorrow.

Ex. 16. Употребите оборот there is/are в следующих предложениях:

1. ... a new moon tonight. 2. ... someone at the door. 3. ... a lot of students absent today. 4. ... three lamps in the room. 5. ... two large windows in the room. 6. But ... only one door. 7. ... a lot of English classes in our school. 8. ... nobody in the room now. 9. ... no one at home. 10. ... twelve months in a year. 11. ... a letter for you on the table. 12. ... several beautiful parks in this city.

Ex. 17. Употребите глаголы, данные в скобках, в Present Indefinite:

1. We (read) the newspaper in class every day.
2. He always (prepare) his homework carefully.
3. We always (play) tennis on Saturdays.
4. She (speak) several foreign languages.
5. The children (play) in the park every afternoon.
6. Helen (work) very hard.
7. They (take) a lot of trips together.
8. We always (travel) by car.
9. I (eat) lunch in the cafeteria every day.

Ex. 18. Употребите глаголы, данные в скобках, в Past Indefinite:

1. We (work) in our garden all day yesterday.
2. I (listen) to the radio until twelve o'clock last night.
3. He always (want) to learn English.
4. Ann and I (talk) over the telephone yesterday.
5. I (forget) to bring my notebook to class yesterday.
6. The telephone (ring) twice but no one answered it.
7. George (think) about his troubles continuously.
8. Last year Professor Johnes (teach) us both English and mathematics.
9. I (lose) my English book yesterday but (find) it later.

Ex. 19. Употребите глаголы, данные в скобках, в Future Indefinite:

1. Helen (find) the book which you need.
2. They (see) us tomorrow.
3. I (finish) the work in April.
4. The shops (close) at noon today.
5. We (arrive) at three o'clock.
6. She (tell) you all about it.
7. We (spend) two months in the South.
8. The plant (die) because of lack of sunshine.
9. The meeting (begin) at eight o'clock.
10. The film (last) an hour.

Ex. 20. Поставьте глагол в Past и Future Indefinite, употребляя соответствующие индикаторы времени:

1. He plays tennis twice a week.
2. She learns French and German.
3. We keep our car in the garage.
4. They often make mistakes.

5. I help my mother about the house.
6. They do their shopping every day.
7. We go to the University by metro.
8. The classes begin at 8.
9. I stay at school till 2 o'clock.
10. It often rains in October.
11. Tom gets excellent marks in English.

Ex. 21. Поставьте предложения в вопросительную и отрицательную формы:

1. Den studies at the University.
2. They usually buy newspapers in the morning.
3. The teacher asks many questions.
4. He entered the Law faculty.
5. My friend saw an interesting film yesterday.
6. They got to the country by bus.
7. Nick will work as a teacher.
8. We shall make coffee for him.
9. Her cousin will go abroad next week.

Ex. 22. Раскройте скобки, употребив Present Indefinite:

1. Nurses (look) after patients in hospitals.
2. Ann plays the piano, but she (not, play) it very well.
3. In Britain most shops (close) at 5.30 p.m.
4. At night when it (get) dark, they (switch) on the TV or the radio and (listen) to music.
5. Mr Brown often (go) to the cinema but his wife (not to go) very often. She (prefer) to stay at home and to watch TV.

Ex. 23. Употребите глаголы, данные в скобках, в Present Continuous:

1. I see that you (wear) your new suit today.
2. Listen! Someone (knock) at the door.
3. The bus (stop) for us now.

4. Please, be quiet! The baby (sleep).
5. The leaves (begin) to fall from the trees.

Ex. 24. Употребите глаголы, данные в скобках, в Past Continuous:

1. When you telephoned, I (have) dinner.
2. The baby (sleep) soundly when I went to wake him.
3. She (talk) with Mr Smith when I saw her in the hall.
4. The accident happened while they (travel) in the South.
5. When I got up this morning, the sun (shine) brightly.

Ex. 25. Употребите глаголы, данные в скобках, в Future Continuous:

1. I (wait) on the corner for you at the usual time tomorrow morning.
2. It probably (rain) when you get back.
3. If you come before six, I (work) in my garden.
4. At this time tomorrow afternoon I (take) my final English examination.
5. If we go there now, they (have) dinner. But if we go later, they (watch) television.

Ex. 26. Поставьте глаголы в Past Continuous, употребив соответствующие индикаторы времени:

1. The child is sleeping now.
2. Nina is having a lecture now.
3. The family is sitting at the table and having dinner.
4. What are you doing tonight?
5. The girl is looking for her notebook.
6. The students are preparing for their exams.
7. It is snowing hard.

Ex. 27. Употребите глаголы, данные в скобках, в Present Perfect:

1. I (speak) to him about it several times.

2. We (learn) many new words in this course.
3. He (make) that same mistake several times.
4. I (hear) that story before.
5. I am afraid that I (lose) my car keys.

Ex. 28. Употребите глаголы, данные в скобках, в Past Perfect:

1. I was sure that I (see) the man before.
2. I asked him why he (leave) the party so early.
3. It was clear that he (give) us the wrong address.
4. The teacher corrected the exercises which I (prepare).
5. He knew that he (make) a serious mistake.

Ex. 29. Употребите глаголы, данные в скобках, в Future Perfect:

1. I am sure they (complete) the new road by June.
2. He says that before he leaves he (see) every show in town.
3. By the time you arrive, I (finish) reading your book.
4. I (be) in this country two years next January.
5. A year from now he (take) his medical examinations and (begin) to practice.

Ex. 30. Поставьте предложения в отрицательную и вопросительную формы:

1. They have received a new flat this year.
2. She has been to Italy.
3. They have already heard the news.
4. I have known his father.
5. He had worked at a plant before the army.
6. We had studied German before we began to study English.
7. She had written the letter by 5 o'clock.
8. The children will have done their homework before their parents come home.
9. It will have stopped raining by noon.

Ex. 31. Поставьте глагол в главном предложении в Past, а затем в Future Perfect, Future Continuous, сделайте необходимые преобразования в придаточном предложении:

1. We were translating the text when you came.
2. They were writing a dictation when I entered the class-room.
3. The students were taking their exams from 9 till 12 o'clock.
4. He was having a shower when the telephone rang.
5. The boys were playing football when it began to rain.

Ex. 32. Проанализируйте употребление модальных глаголов в следующих контекстах:

1. Nick can run long distances.
2. He can speak many foreign languages.
3. You can join our group.
4. I must excuse myself.
5. You mustn't park the car here.
6. The boy must see a doctor.
7. You may keep my book for a week.
8. Drivers may go at 60 kilometers an hour here.
9. You may stay at your friends' over the weekend.
10. It may be cold. Take your coat.
11. Jack shouldn't have laughed at John.
12. John ought to be more careful in the future.
13. You needn't buy bread. We have some at home.
14. You needn't have done this. It was useless.
15. I have to take a taxi in order not to be late.
16. We had to wait as the manager was out.
17. Robert is to take his exams next month.
18. We are to meet at 5 o'clock.

Ex. 33. Переведите следующие предложения на русский язык, обращая внимание на модальный глагол must:

1. Her English is very poor, she must study very hard.
2. They must spend more time on their English.
3. You must help her in every way possible.
4. We must learn at least ten new words every day.

5. He must leave at once.
6. The students must do their homework regularly.
7. You must do this important work quickly.

Ex. 34. Напишите следующие предложения в вопросительной и отрицательной формах:

1. We must tell her this news.
2. He may smoke here.
3. She can speak English perfectly.
4. The students must translate the text at home.
5. We can go to the theatre tonight.
6. We shall be able to help them.
7. They had to wait for a long time.
8. His friend couldn't get this book.
9. You were allowed to take this book home.
10. May I go home now?
11. They were allowed to come at four.

Ex. 35. Заполните пропуски модальными глаголами или их эквивалентами:

1. She ... play chess well.
2. ... I take your pen?
3. ... I ask you a question?
4. You not talk at the lesson.
5. He ... not speak English last year.
6. My sister ... not play the piano two years ago, but now she ...
7. You ... get this novel in our library.
8. I ... go to the library today to prepare for my report at the conference.
9. ... you do me a favour?

Ex. 36. Замените в следующих предложениях действительный залог страдательным. Переведите предложения на русский язык:

1. The audience enjoyed the concert very much.
2. The little boy ate the cake.
3. The teacher corrects our exercises at home.
4. They started a dancing class last week.
5. Everybody will see this film soon.
6. The teacher returned our written work to us.
7. Mr Smith will leave the tickets at the box-office.
8. The students translate texts during the lessons.
9. Mary took that book from the desk.

Ex. 37. Замените в следующих предложениях страдательный залог действительным. Переведите предложения на русский язык:

1. The entire city was destroyed by the fire.
2. The lecture was attended by many people.
3. The book will be published in spring.
4. The class is taught by Mr Smith.
5. It was designed by a French engineer.
6. This book is always read by the students of the first course.
7. The letter was left on the table.
8. The house was struck by lightning.
9. The cries of the child were heard by everyone.

Ex. 38. Напишите следующие предложения в вопросительной и отрицательной формах:

1. The first prize was won by John.
2. Our exercises are corrected each night by the teacher.
3. The mail is delivered at ten o'clock.
4. The construction of the bridge will be finished this year.
5. The contract will be signed tomorrow.
6. His report was listened to with great interest.
7. The film is much spoken about.
8. All the letters are looked through by the secretary.
9. All these books were published by this publishing house.

Ex. 39. Переведите следующие предложения на русский язык, обращая внимание на Participle I и Participle II:

1. Finished with his breakfast, he remained for some time at the table, looking through the newspapers.
2. Before solving the problem, they had to consult the expert.
3. The leaves touched by the morning sun began to come out.
4. The flowers standing in the vase were brought by the pupils.
5. Writing a letter I heard a knock at the door.

6. I like pictures painted by this artist.
7. When asked about it, she couldn't give a definite answer.
8. Engineers working at big plants in our country are trained at our institute.

Ex. 40. Переведите следующие предложения на русский язык, обращая внимание на форму глагола придаточных предложений:

1. He said that he had read this book twice.
2. We thought that the results of your work would be better.
3. The boy said that he was only eight years old.
4. I knew that he would refuse to help me.
5. He was sure that I should come in time.
6. She thought that the letter had been written by her friend.
7. They said that it had been raining from five till seven.
8. She said that she could not give me this book because she had promised to give it to her sister.

Ex. 41. Поставьте глагол в главном предложении в Past Indefinite и сделайте необходимые преобразования в придаточном предложении:

- ◆ *He says that he knows them well.*
He said that he knew them well.
 1. He is sure that she is in Moscow now.
 2. He says that she is in Moscow now.
 3. He says that the classes begin at 2 o'clock.
 4. I think that she is ill.
 5. We know that she is ill.
- ◆ *He says that she went to the Crimea.*
He said that she had gone to the Crimea.
 1. I know that he lived in Kiev.
 2. He says that they met in Moscow.
 3. I am sure that the students were in the library.
 4. I hope that they knew about it.

5. I think that they were busy.
- ◆ *She says that she will go to the cinema.*
She said that she would go to the cinema.
1. They say that they will leave for London.
 2. She says that she will buy this coat.
 3. We know that we shall discuss this question.
 4. We hope that they will help us to do this work.
 5. We think that we shall have our holidays in January.

Ex. 42. Употребите глаголы, данные в скобках, в нужной форме времени и залога, соблюдая правило согласования времен. Переведите предложения на русский язык:

1. She said that she (to know) English very well.
2. We knew that they (to come) to visit us next Sunday.
3. John said that he (to go) away on Wednesday.
4. People were sure that soon a spaceship (to fly) to other planets.
5. We were informed that many scientists (to work) at the problem of radioactivity.

MAKING SELF-PRESENTATION

Модуль IV. СОСТАВЛЯЕМ САМОПРЕЗЕНТАЦИЮ MAKING SELF – PRESENTATION

LET ME INTRODUCE MYSELF WRITING ABOUT PEOPLE

(Education, Career, Research, Responsibilities)

Notes

Typical higher education Qualifications:

Undergraduate awards (BA – bachelor of Arts, BSc – Bachelor of Science, BA/BSc Hons – bachelor's degree with honours);

Postgraduate awards (Master's Degrees e.g., MPhil, MA, MSc, etc.; Doctoral degrees e.g., Doctor of Philosophy PhD/ DPhil, Doctor of Education – EdD,

Doctor of Clinical Psychology – DclinPsy, etc.).

1. Look through the texts and pay attention to their structure.

2. Complete the table with the phrases and expressions in bold.

Education	Career	Research	Responsibilities

1. Dr Adrian Needs

<http://www.port.ac.uk/departments-of-psychology/staff/adrian-needs.html>

Qualifications: BA (Hons), D Phil, Registered Forensic Psychologist

Role Title: Principal Lecturer

Department: Department of Psychology

Faculty: Faculty of Science

Biography

I was a psychologist in HM Prison Service for fourteen years, attaining the rank of Principal Psychologist. I worked in a number of high security prisons (principally Wakefield, Full Sutton and Hull special unit), **specialising in** work with lifers, sex offenders and personality disordered individuals. **My last few years were served at** the Prison Service College in developing training for prison officers and governors. **Sidelines included being a hostage negotiation advisor** (a role which extended to firearms incidents with the police) and an **in-service counsellor for staff** suffering from post-traumatic and other forms of stress. **I left in 1997 to start up the first MSc in forensic psychology in Scotland and joined the University of Portsmouth as a Principal Lecturer in 2000.**

A major impetus behind this change of direction was a growing role in the development of academic and professional training for forensic psychologists in the UK. **From being forensic representative on** the BPS project on Occupational Standards in Applied Psychology, **I came to be Chair of the Training Committee** of the Division of Forensic Psychology and steered the formulation of accreditation criteria for MSc courses in the field; **this was followed by** the development of standards for supervised practice leading to chartered status.

I have also been a member of national working parties on homicide, suicide and disasters and is currently on the steering committee of a Hampshire-based initiative for diverting veterans from the criminal justice system.

Teaching Responsibilities

Much of my teaching is on MSc units (e. g. “Theory into Practice”) and **topics range from** specialised assessment techniques to handling difficult (including potentially lethal) situations, from analysing offences to creating the conditions for therapeutic change. **Contributions are also made to teaching on** forensically relevant units at undergraduate level on topics such as homicide, sexual offending and working in prisons. Given my background it is unsurprising that these sessions are based in part on personal experience rather than exclusively on reading or research. **I also have a substantial role in research supervision at PhD, MSc and BSc levels;** many of the supervised topics explore processes relevant to offending and offenders.

Research Interests

My current research interests include the role of life events as precursors to homicide and processes involved in personal change. **I have also supervised several MSc projects** in the Young Women’s Unit of a large women’s prison, where the focus has been on attachment, instability of the sense of self and perceptions of the interpersonal environment. The latter area has led to an involvement in the area of therapeutic communities and improving interpersonal relations in custodial settings as a necessary part of the rehabilitative process more generally. **Recent research has also encompassed the problems of** former military personnel in prisons and the problems that veterans can face in making the transition from military to civilian life.

2. Dr Dominic Pearson

<http://www.port.ac.uk/departments-of-psychology/staff/dominic-pearson.html>

Qualifications: BA, MSc, PhD

Role Title: Senior Lecturer in Forensic Psychology

Department: Department of Psychology

Faculty: Faculty of Science

Biography

I joined the department in September 2012 **after 12 years of working as** a psychologist for the UK probation services in the North-East. I first joined the probation service in Co. Durham after a project placement while on an MSc in Forensic Psychology at the University of Leicester. **I then spent four years working in various areas of practice** under Chartered supervision. I was BPS Chartered myself in 2004 and from then **I led a small team of trainees** and psychology assistants using research evidence to address organisational goals (what works in reducing reoffending). **During this time I also worked towards a PhD with the University of York** on the application and development of an artificial neural network on offender risk assessment data.

Teaching Responsibilities

My main teaching is on the MSc in Forensic Psychology and the BSc in Forensic Psychology Year 3 module “Psychology of Offending Behaviour”. **I am also the unit coordinator for** “Introduction to Forensic Psychology” which is an optional module for Year 3 Psychology or “with Psychology” students. **I also supervise final year and postgraduate dissertations** on assessment and treatment of offending behaviour.

Research Interests

I am interested in working with individuals or organisations committed to evidence-based practice (‘demonstrable effectiveness’) in the areas of offender risk prediction / risk management and the evaluation of offending behaviour programmes. **I am a member of** the International Centre for Research in Forensic Psychology.

3. Dr Katherine Brown

Qualifications: PhD Forensic Entomology

Role Title: Senior Lecturer

Address: King Henry Building, King Henry I Street, Portsmouth, PO1 2DY

Telephone: 02392845012

Email: Katherine.brown@port.ac.uk

Department: School of Biological Sciences

Faculty: Faculty of Science

Biography

I obtained my BSc (Hons) in Forensic Biology and Biochemistry **from the University of** Portsmouth, **where I also stayed to complete my PhD in** Forensic Entomology **under the supervision of** Dr Michelle Harvey. **This work involved** morphological and molecular analysis of the blowfly pupal stage for the purpose of age and time-since-death estimation.

I now teach forensic entomology on the BSc Forensic Biology and BSc Criminology and Forensic Studies courses, **giving lectures and supervising undergraduate project** and MRes students. These students continue to work alongside me on my research interests, namely larval and pupal development and also local patterns of decomposition and succession.

Teaching Responsibilities

I teach the Level 6 Forensic Entomology unit on the BSc Forensic Biology and BSc Criminology and Forensic Studies (Institute of Criminal Justice Studies). **I also supervise** forensic entomology and biology project students across the Forensic Biology, Biology and Criminology and Forensic Studies pathways.

Research Interests

My main research interests involve the examination of blowfly pupal development at the morphological and molecular levels, for the purpose of time-since-death estimation. **My current project** students are examining decomposition and insect succession in different environments within the local area, as well as larval development under differing feeding conditions.

4. Dr Paul Farrell

Qualifications: BSc (Hons), PhD

Role Title: Senior Lecturer

Address: Institute of Marine Sciences Laboratories, Langstone Harbour, Ferry Road, Eastney, Portsmouth, P04 9LY

Telephone: 023 9284 5801

Email: paul.farrell@port.ac.uk

Department: School of Biological Sciences

Faculty: Faculty of Science

Biography

Since graduating from the University of Portsmouth in 1995, I have continued to work as a marine biologist at Portsmouth, **first as a research assistant studying for a PhD, and currently as a senior lecturer in** the School of

Biological Sciences. **My PhD research was on** the ecology and distribution of an invasive species (*Undaria pinnatifida*), first introduced into the UK in 1994. **Other active research interests are:** Invasive species, aquaculture/fisheries, surveys of marine flora and fauna, bio-fouling, environmental impacts and pollution.

I am currently researching the fates and impacts of plastic pollution in the marine environment, take part in annual fish surveys for Langstone Harbour, and conduct trials with bio-fouling treatments for marine structures. **As a member of the Society of Biology and Chartered Biologist I am interested in promoting biology as a subject**, especially marine biology. **My last conference presentation was in** May 2013, at the PRIMO 17 conference in Portugal, on the trophic transfer of plastic pollution between marine organisms.

5. Dr Eric May

Qualifications: PhD

Role Title: Reader in Microbiology

Address: King Henry Building, King Henry I Street, Portsmouth, PO1 2DY

Telephone: 023 9284 2025

Email: eric.may@port.ac.uk

Department: School of Biological Sciences

Faculty: Faculty of Science

Biography

I am active in environmental research, particularly pollution control by wastewater treatment and the microbiology of historic buildings. **My research involves** collaboration with the School of Civil Engineering and Surveying (Dr John Williams) through the Environmental Engineering Research Group, a multidisciplinary team of scientists and

engineers. By cooperation with Southern Water plc, I helped establish laboratories at the University's Centre for Environmental Technology (Petersfield, Hampshire).

PhD research at the University of Dundee on nitrogen cycling in freshwater lochs led to a long-term interest in understanding how microbes can be used to purify wastewater, notably using reed-beds in constructed wetlands. Protection of the environment from road-runoff using purpose-built wetlands (on the A34 Newbury by-pass) has recently extended this interest. Other on-going research is directed at concerns about phthalate pollution from plastics and the behaviour of the diarrhoeal bug *Cryptosporidium* in wastewater during treatment. I have also worked on wastewater projects with partners in Egypt, Colombia and Greece.

Teaching Responsibilities

I have extensive experience of postgraduate research supervision at MSc and PhD levels. My undergraduate teaching interests range from microbial and cell diversity at Level One, introductory microbiology at Level Two to environmental and applied microbiology at Level Three. I am pathway leader for BSc (Hons) Applied Microbiology and an Admissions tutor for the pathway scheme in biological sciences. I have acted as external examiner for BSc and BEd courses.

6. Dr Andy Pickford

Qualifications: BA (Hons), DPhil

Role Title: Associate Head (Research)

Address: King Henry Building, King Henry I Street, Portsmouth, PO1 2DY

Telephone: 023 9284 2055

Email: Andy.Pickford@port.ac.uk

Department: School of Biological Sciences

Faculty: Faculty of Science

Biography

I graduated from the University of Oxford in 1993 with a BA (Hons) degree in Biochemistry. I went on to complete a DPhil in Biochemistry (1997) in the laboratory of Prof Iain Campbell in Oxford, and continued there as a Research Associate studying the structural biology of the extracellular matrix (ECM) using nuclear magnetic resonance (NMR) spectroscopy as my principal research tool.

I joined the School of Biological Sciences at the University of Portsmouth in September 2005 as Senior Lecturer in Biological NMR. I brought with me extensive experience in the study of the structure, function and dynamic properties of proteins. Since then the focus of my research has turned from the steady-state structure and interactions of the ECM, to the mechanisms by which it is degraded by matrix metalloproteinases (MMPs) – an area of importance in the progression of diseases such as arthritis and cancer. In March 2012, I took on the role of Associate Head (Research) for the School of Biological Sciences.

Teaching Responsibilities

Level 4: Experimental Biology, Perspectives in Biochemistry

Level 5: Macromolecules Biochemistry

Level 6: Biomolecular Science (unit coordinator), Honours Project

Level 7: Science project supervisor

Research Interests

Structure-Function Relationships in Matrix Metalloproteinases

7. Dr Garry Scarlett

Qualifications: PhD

Role Title: Associate Head (Academics)

Address: King Henry Building, King Henry I Street, Portsmouth, PO1 2DY

Telephone: 023 9284 2027

Email: garry.scarlett@port.ac.uk

Department: School of Biological Sciences

Faculty: Faculty of Science

Biography

I studied Molecular Biology at Portsmouth and completed my undergraduate degree in 1991. I stayed in the Biophysics laboratories at Portsmouth for my postgraduate studies, working in the group of Professor Geoff Kneale on the characterisation of the gene V protein, a DNA binding protein that is important in the life cycle of the Fd bacteriophage via its role in gene regulation. After completing my PhD in 1995 I worked on unusual DNA structures formed by triplet repeat sequences in the laboratory of Dr James McClellan also in Portsmouth. In 1999 I took a new post-doctoral position in the laboratories of Professors Bob Simmons and Walter Gratzer at the Randall Institute London. I returned to Portsmouth in 2000 where I worked as a post-doctoral researcher for Dr Matt Guille, allowing me a chance to learn a new set of skills and a change of direction into the cell and developmental biology fields. I was appointed a Senior Lecturer at the University of Portsmouth in November 2004 and Associate Head in 2011.

Teaching Responsibilities

I teach on, and am also the unit coordinator for, the first year unit Introduction to Cell Biology and Biochemis-

try. I also help teach on both the Biochemistry and Cells units in the second year, while in the third year I teach on the Gene Organisation and Expression unit. I am first year Coordinator and since 2011 Associate Head.

Research Interests

The main focus of the Scarlett lab research is the role of unusual nucleic acid structures in gene regulation. **My lab makes use of the** popular model system *Xenopus laevis* and **employs a wide range of** genetic, biochemical and biophysical assays. **The lab is currently studying the role of** A-form DNA in transcriptional control. My lab is also interested in genetic zooarchaeology and collaborates with a number of organisations to better help understand the development of domesticated animals through history.

8. Dr Karen Thorpe

Role Title: Senior Lecturer in Ecotoxicology

Address: Institute of Marine Sciences, Ferry Road, Eastney, Portsmouth, PO4 9LY

Telephone: 023 9284 5803

Email: Karen.Thorpe@port.ac.uk

Department: School of Biological Sciences

Faculty: Faculty of Science

Biography

Much of my research to date has focused on developing biological measures to assess the effects of environmental contaminants and their mixtures on the physiology of fish. **Following successful completion of my PhD (Brunel University) in 2001, I worked for five years as a postdoctoral fellow at the** University of Exeter on an Environment Agency funded project to develop biological

measures for assessing endocrine activity in waste water treatment works effluents. In 2006, I moved to the University of Basel (Switzerland) for a 3.5-year postdoctoral position where I continued to study the effects of endocrine disruptors as well as teaching on the MSc course in Sustainable Development. **This was followed by** a 1.5-year postdoctoral position at the University of Prince Edward Island (Canada) where, in addition to continuing my research on endocrine disruptors, **I was also involved in projects to study the impacts of** oil process waters on the immune health of wild fish.

Teaching Responsibilities

I am currently deputy unit leader for the Honours Project (3rd year) and for Ecotoxicology and Pollution (MSc unit). **In addition I contribute to the teach team for** Biodiversity and Evolution, Experimental Biology, Animal Science, Community Ecology and Residential Field Trip, Ecology and Conservation, and Marine Eco-physiology.

Research Interests

My research focuses primarily on understanding the influence of novel environmental contaminants (endocrine active chemicals, pharmaceuticals, oil sands process waters and radiation) on the physiology, reproductive and immune health of aquatic vertebrates. **I am also working with Prof. Graham Mills (Pharmacy) and Dr. Zhongyi Zhang (Engineering) to develop methods for** assessing the impact of ingesting degraded and non-degraded plastics on the health of fish.

A key aspect of my research also involves development of biological methods that can be applied using embryonic

and early life-stages (less neurologically developed) of aquatic vertebrates as replacements for current methods that rely on the use of adult life-stages to detect endocrine activity. **This includes work with** Prof Guille (IBBS), Dr. Coxhead (Biology) and Dr. Tindall (WatchFrog) to develop transgenic lines that can be used to identify endocrine disruptors in embryonic life stages of frogs (*Xenopus*) and a native fish species (3-spined stickleback).

3. Write your own self-presentation. Include all possible information connected with your education, career and research interests.

Use the texts above as models. Rely on the phrases and expressions in bold.

INDEPENDENT WORK GUIDE

Модуль V. МЕТОДИЧЕСКИЕ РЕКОМЕНДАЦИИ ДЛЯ ПРЕПОДАВАТЕЛЯ ПО ОРГАНИЗАЦИИ САМОСТОЯТЕЛЬНОЙ РАБОТЫ СТУДЕНТОВ

INDEPENDENT WORK GUIDE

Методические рекомендации по организации самостоятельной работы представляют собой комплекс разъяснений и указаний, позволяющих преподавателю наилучшим образом организовать процесс обучения иностранному языку. Обучение иностранному языку должно подготовить будущего **специалиста к самостоятельному чтению текстов по специальности с целью извлечения информации.**

Рекомендации по организации работы с грамматическим материалом

1. Проработайте теоретический материал по теме в учебном пособии.

2. Выделите главные признаки изучаемого грамматического явления. Запишите их в тетрадь. Запомните!

3. Ответьте на контрольные вопросы по теме.

4. Выполните тренировочные упражнения на закрепление изученной темы, придерживаясь следующей последовательности:

- образование грамматического явления;
- употребление грамматического явления;
- перевод с английского на русский и с русского на английский;
- определение грамматического явления в тексте;

– проверка усвоения грамматического материала по тесту.

5. Выучите 3 основные формы неправильных глаголов.

Примеры заданий к упражнениям по грамматике

Make sentences from the words in brackets. – Составьте предложения из слов, данных в скобках.

Write positive or negative sentences. – Напишите повествовательные и отрицательные предложения.

Write the following sentences in the negative and in the interrogative. – Запишите следующие предложения в отрицательной и вопросительной формах.

Ask (write) questions to the following statements. – Задайте (напишите) вопросы к следующим предложениям.

Answer the following questions according to the model. – Ответьте на вопросы в соответствии с моделью.

Translate into English (into Russian). – Переведите на английский (русский) язык. Use “...” construction in the necessary tense form. – Используйте “...” конструкцию в соответствующей видовойременной форме.

Extend the sentences according to the pattern. – Расширьте предложения по образцу.

Put the verb in brackets into the correct form. – Поставьте глагол, данный в скобках, в правильную форму.

Open the brackets using the correct tense. – Раскройте скобки, используя правильную видовойременную форму.

Complete the sentences with “...” – Закончите предложение используя “...”.

Say whether the underlined words are correct.

Correct those which are wrong. – Определите, правильны ли подчеркнутые слова. Исправьте, где необходимо.

Insert the “...” where it is necessary. – Вставьте “...”, где необходимо.

Express the following sentences in PassiveVoice. – Выразите следующие предложения в страдательном залоге.

Give the plural (singular) of the following nouns. – Определите множественное (единственное) число следующих существительных.

Supply the missing (appropriate) words. – Вставьте пропущенные (подходящие по смыслу) слова.

Choose the correct form of the “...” in brackets. – Выберите правильную форму “...” из скобок.

Give Russian equivalents to the sentences (phrases). – Дайте русский эквивалент следующим предложениям (фразам).

Fill in the blanks with “...” where it is necessary. – Заполните пропуски словами “...”, где это необходимо.

Paraphrase the following sentences using “...” – Перефразируйте предложения, используя “...”.

Рекомендации по организации работы с лексическим материалом

1. Следует учитывать, что опора на словообразовательный признак и знание словообразовательных элементов служит:

- для расширения словарного запаса;
- для определения части речи по морфологическому признаку;
- для определения рода имени существительного;
- для определения значения слова;
- для умения самим образовывать новые слова;
- для развития языковой догадки.

2. Важную роль в овладении иностранным языком имеет развитие языковой догадки, которая помогает понять значение слова, пользуясь следующими приемами:

- определение значения слова из контекста;

- сходство слов со словами родного языка;
- знание значения корня или однокоренных слов;
- знание значения словообразовательных элементов;
- разложение сложных существительных на составные компоненты;
- привлечение своих знаний из различных областей.

3. Особое внимание следует обращать на интернациональную лексику. Знание этой лексики не только способствует развитию языковой догадки, увеличивает словарный запас, но и расширяет кругозор, повышает общую культуру.

4. Полезно запоминать не отдельные слова, а словосочетания, выражения или целые фразы. Это позволит вам быстрее подбирать нужные слова, строить предложения, использовать их в новом контексте.

5. Расширению словарного запаса может помочь запоминание новых слов по карточкам, что позволит учить слова в свободное время. На одной стороне карточки пишется слово или словосочетание на иностранном языке, на обратной стороне – перевод. С карточками следует работать до тех пор, пока вы не сможете быстро воспроизводить изучаемую лексику как с одной стороны карточки (английский вариант), так и с другой (русский вариант). Целесообразно составить тематическую или поурочную картотеку изучаемой лексики. Время от времени желательно проверять знание слов, выученных по карточкам.

Рекомендации по организации работы со словарями. Типы словарей

Из всех типов словарей наиболее необходимым для изучающих иностранный язык является двуязычный переводной словарь – англо-русский и русско-английский. Наиболее полные, точные и полезные словари – те, которые выдержали уже не один десяток

изданий: Англо-русский словарь под ред. В.К. Мюллера и Русско-английский словарь под ред. А.И. Смирницкого. Именно на их базе создан электронный словарь LINGVO (основной). Еще в 70-е годы XX века вышло первое издание двухтомного Большого англо-русского словаря под ред. И.Р. Гальперина. Затем вышел большой словарь под ред. Ю.Д. Апресяна (они имеются в продаже на компакт-дисках). Эти большие словари могут пригодиться, если нет под рукой одного или нескольких специализированных словарей, и большой словарь как бы включает несколько в одном. Современные словари часто имеют “коммерческие” названия: “большой”, “новый”, “полный”, “современный” и т.д. На самом деле эти словари, как правило, уступают названным выше и по объему, и по полноте, и по точности перевода. Большой словарь должен включать не менее 80 000 слов. Студентам неязыковых специальностей может быть достаточно словаря меньшего объема, но не менее 40 000 слов. Мы рекомендуем пользоваться последними переизданиями старых словарей.

Второй тип словарей – это о т р а с л е в ы е словари, например, медицинский, экономический, юридический и т.п. Их электронные аналоги имеются в пакете программ LINGVO и в электронном переводчике PROMT. Существуют специализированные издания, например, словари сокращений, слэнга, новых слов и т.п. Словари синонимов по-другому называются тезаурусами. Существуют как бумажные, так и электронные тезаурусы, например, Collins. Самый доступный электронный тезаурус (русский и английский) встроен в текстовый редактор WORD. Выделив слово и нажав кнопку, можно выбрать синоним и вставить его в текст.

Третий тип – т о л к о в ы е “а н г л о - а н - г л и й с к и е” словари. Можно выделить два основных

подтипа: учебные и энциклопедические. К первым относится, например, Oxford Advanced Learner's Dictionary, ко второму типу – Collins English Dictionary.

В первом словаре даны основные энциклопедические сведения, во втором (учебном) определения проще, меньше значений и больше примеров.

Следует учитывать, что словари с пометкой *for advanced learners* предназначены именно для продвинутого этапа. Они оптимальны для студентов, изучающих английский как специальность. Начиная лучше выбрать словари для начального уровня. Издательства Oxford University Press, Cambridge University Press, Macmillan, Longman, Collins описывают прежде всего британский вариант английского языка, Webster – самое известное издательство американских словарей. В некоторых словарях (Macmillan, Longman Dictionary of the English Language and Culture) даются основные лингвострановедческие сведения. Изданы и специальные лингвострановедческие словари. Мы рекомендуем словари Г. Д. Томашина. Для студентов они удобны тем, что основная информация дается на русском языке. Самый полный фразеологический словарь английского языка составлен А. В. Куниным.

Словари отличаются между собой тем, сколько значений они выделяют у одного слова, рассматривают ли они одинаковые слова как омонимы или как разные значения одного слова. Нужно внимательно прочитать всю словарную статью и определить, какое значение слова подходит по контексту. Например, русское слово «образование» имеет несколько значений. Фразу «начальное образование» следует переводить *primary education*, «образование слов» – *wordbuilding*, «образование нового отдела» – *formation of new division*. Одна из главных ошибок

при переводе – буквализм. «Детективный роман» – не *detectivenovel*, а *mysterynovel*. Существует немало слов, которые называют «ложными друзьями переводчика». Например, troops – не «трупы», а «войска», corpse – не «корпус», а «труп».

Рекомендации по организации работы с электронными ресурсами

Все современные словари имеют электронные варианты. Они существуют как в off-line версиях на компакт-дисках, так и в режиме online. On-line версии, как правило, менее полные, в них нет некоторых опций (например, расширенного поиска и др.). Тем не менее, и они могут быть подспорьем, особенно если доступ в сеть бесплатный. Вот некоторые адреса:

- <http://www.lingvo.ru/lingvo/index.asp> – сайт электронного словаря LINGVO;

- <http://www.translate.ru/rus/> – сайт электронного переводчика PROMT. Следует учитывать, что электронный перевод всегда требует более или менее значительного редактирования. Иногда редактирование занимает больше времени, чем обычный перевод. Электронный переводчик удобен, если текст крупный по объему, и набирать перевод вручную слишком долго;

- <http://britannica.com/> – сайт Британской энциклопедии;

- <http://www.americana.ru> – сайт лингвострановедческого словаря «Американа»;

- <http://www.polyglosso.com/links.htm> – сайт, содержащий много полезных ссылок, в том числе на словари Oxford, Cambridge, Webster's, Macmillan, Encarta, Collins, Longman, самый известный английский тезаурус Роже (Roget's), ссылки для учителей, студентов, тесты on-line и т. п.;

- <http://www.cas.okstate.edu/jb/faculty/ketterer/diction.htm> – сайт, содержащий ссылки на Библиотеку Конгресса США, другие библиотеки, энциклопедии, словари (перечисленные выше и многие другие);

- <http://www.onelook.com/> – сайт, в котором одним нажатием кнопки можно получить статьи сразу из нескольких десятков словарей и сравнить их.

Многоязычные словари

- <http://www.ets.ru/udict-r.htm>
- <http://www.ets.ru/abbrdict-r.htm>
- <http://www.yourdictionary.com/>
- <http://wordreference.com/>

Электронные библиотеки

- <http://www.gutenberg.org/> – самая крупная в Интернете бесплатная многоязычная библиотека художественной литературы. Содержит тексты на английском, немецком, французском и многих других языках. Пополняется ежедневно.

- <http://www.bartleby.com/reference/> – полезный справочный сайт, включает также многотомную Библиотеку классической литературы на английском языке, словари, энциклопедии.

Русскоязычные электронные библиотеки

- <http://lib.ru> – библиотека Максима Мошкова – крупнейшая русскоязычная электронная библиотека. Есть раздел “учим английский язык”.

- www.lib.aldebaran.ru – библиотека “Альдебаран”. Вторая по посещаемости русскоязычная электронная библиотека. Дополняет некоторые разделы библиотеки Мошкова. Большой раздел художественной литературы. Серьезная научная литература практически не представлена. Пополняется ежедневно.

- <http://publ.lib.ru> – библиотека Вадима Ершова.

Поисковые системы

Одним из главных условий успешного пользования Интернетом является умение применять поисковые системы.

Русскоязычные системы:

- <http://yandex.ru>
- <http://rambler.ru>
- <http://www.aport.ru>

Англоязычные поисковые метасистемы:

- <http://www.mamma.com>
- <http://www.dogpile.com>

Для получения оптимального результата в запросе должно быть несколько ключевых слов, хотя бы одно из них должно встречаться сравнительно редко, или они должны образовать сравнительно редкое сочетание. Метасистемы, в отличие от обычных, как правило, не выдают повторяющихся ссылок.

Рекомендации по организации работы с текстами для чтения

Чтобы научиться понимать и переводить иноязычный текст, необходимо в первую очередь научить студента выделять и понимать содержание на уровне *текста*, *абзаца* и *предложения*, а также дифференцировать основную и второстепенную информацию.

Основные признаки текста: 1) *связность*; 2) *тематичность* (все предложения объединены какой-либо одной темой); 3) *цельность* (использование средств связи между предложениями).

Тема текста. Текст представляет собой сложное суждение, в котором есть текстовый субъект (о чем го-

ворится в тексте?) и текстовый предикат (что говорится в тексте?).

Текстовым *субъектом* является тема текста, которая находит словесное выражение чаще всего в заголовке или в самом начале текста.

Текстовый *предикат* представляет собой группу суждений, раскрывающих тему текста, т.е. сам текст.

Главное содержание текста. Понять содержание текста – значит уяснить его тему и идею.

Тема текста – это предмет данного описания, т.е. предмет, явление, событие, о которых идет речь в тексте.

Идея текста – это главная мысль о данном предмете, авторское отношение к описываемому предмету. Идея текста – это вывод, к которому должен прийти читающий после ознакомления с содержанием текста.

Тема часто сообщается в заголовке или в первом предложении текста. Понять идею можно лишь после прочтения всего текста. Иногда она не имеет словесного выражения, тогда читающий должен сам сделать определенные выводы.

Основное содержание текста. Для этой цели выделяются элементы, в которых заключена основная смысловая информация текста. Они называются “ключевыми фрагментами” (слово, словосочетание, предложение, группа предложений). Каждый абзац имеет ключевое предложение – “абзацную фразу”, если их объединить, то можно получить основное содержание текста.

Ключевое предложение может находиться: а) в верхней части абзаца (*дедуктивная* структура – изложение мысли от общего к частному); б) в нижней части абзаца (*индуктивная* структура – изложение мысли от частного к общему); в) в верхней и в нижней части (*рамочная* логическая структура).

Другие предложения текста представляют собой способ логического развития мысли в абзаце.

Формы передачи информации. Существуют следующие формы передачи информации: *сообщение, описание, повествование и рассуждение*. Так, ядро самого простого типа информации – сообщения – составляют ответы на следующие вопросы: кто, что, когда, где, как, почему.

В текстах психолого-педагогического профиля преобладает тип информации о ситуации или положении дел, а также комбинированный тип информации (сообщение, передача высказывания, информация о событии или факте, о ситуации или положении дел, рассуждение).

Основные виды текстов для чтения

- 1) учебный;
- 2) художественный (*story – рассказ, play – пьеса, novel – роман*);
- 3) научный и научно-популярный (*research work – научный труд, theses – диссертация; monograph – монография; reference – статья из справочной литературы; article – журнальная статья; notes – сообщение*).

Методические рекомендации для студентов

Чтение с полным пониманием прочитанного

Цель – полностью понять содержание текста, выделить главную информацию, передать содержание, оценить его, сравнить с уже известным ранее.

Алгоритм

1. Перед чтением спрогнозируйте по заголовку содержание текста.
2. Читайте текст с полным пониманием, т.е. старайтесь как можно точнее понять содержание и смысл читаемого. При этом догадаться о значении слов вам помогут:

- понятное содержание – может подсказать значение незнакомого слова;
- сходство слов со словами родного языка;
- значение однокоренных слов;
- разложение сложных существительных на составные компоненты;
- использование словаря.

3. Проверьте, насколько хорошо вы поняли содержание и смысл текста. Для этого необходимо:

- ответить на вопросы к тексту, позволяющие выделить детали;
- самостоятельно поставить вопросы к тексту;
- составить развернутый план прочитанного.

4. Для подготовки *пересказа* текста необходимо:

- найти в тексте и выписать основные ключевые слова и выражения;
- составить последовательность фактов и событий;
- изложить содержание текста с опорой на ключевые слова и выражения.

5. Для *характеристики* какого-либо объекта текста необходимо:

- определить объект характеристики;
- выписать слова и выражения, относящиеся к определяемому объекту;
- описать объект;
- высказать свое мнение о нем.

6. Для подготовки *высказывания* по проблеме текста следует:

- определить исходный тезис;
- определить основной материал для аргументирования;
- выписать ключевые слова и словосочетания;
- аргументировать тезис;

- привести примеры.
- 7. Для *обсуждения проблемы* текста следует:
 - выделить предмет обсуждения;
 - выделить информацию о предмете;
 - выписать ключевые слова и словосочетания;
 - выразить свое отношение к предмету;
 - аргументировать свою точку зрения.
- 8. Для *реферирования* текста необходимо:
 - зафиксировать основные опорные пункты;
 - распределить информацию по степени важности.
- 9. Для *аннотирования* текста следует:
 - зафиксировать тему и главную мысль;
 - выразить свое отношение.

Чтение с пониманием основного содержания

Цель – получить общую информацию о содержании текста, выделить главную мысль, высказать свое отношение к прочитанному.

Алгоритм

1. Перед чтением спрогнозируйте по заголовку содержание текста.
2. Читайте текст с пониманием основного содержания, то есть:
 - сконцентрируйтесь на основных фактах текста, опуская второстепенную информацию;
 - старайтесь охватить взглядом все предложение или его часть;
 - старайтесь догадаться о значении незнакомых слов или обратитесь к словарю;
 - во время чтения подчеркивайте или выписывайте словосочетания и предложения, несущие основную информацию.

3. Проверьте, поняли ли вы основные факты текста, определите его основную мысль. Для этого необходимо:

- выбрать заголовок из предлагаемых вариантов или сформулировать самому;
- разделить текст на смысловые отрезки;
- ответить на вопросы, выделяющие основную информацию.

4. Для подготовки высказывания следует:

- сформулировать главную мысль текста;
- сказать, что вы узнали нового;
- кратко изложить основные идеи текста;
- высказаться по проблеме текста.

Рекомендации для написания рефератов, аннотаций

Реферат, составленный по одному источнику, называется *монографическим*. Структура реферата строго установлена. Он состоит из двух частей: *заголовочной* и *собственно реферативной*. В заголовочной части отражаются название первоисточника, фамилия автора и библиографические данные (место издания, издательство, год издания).

Текст собственно реферативной части строится на основе выделенных при чтении ключевых слов и ключевых фрагментов, большинство из которых могут быть терминами в данной специальной области.

Реферат, составленный по нескольким работам на одну тему, называется *обзорным*.

РЕКОМЕНДУЕМЫЕ КЛИШЕ ДЛЯ ОФОРМЛЕНИЯ РЕФЕРАТА НА АНГЛИЙСКОМ ЯЗЫКЕ

The Paper is called = The title of the Paper is... – Название реферата...

The theme of the Paper is... – Тема реферата...

It is spoken about... – Говорится о...

It is said in brief that... – Кратко говорится о...

Reader's attention is drawn to... – Внимание читателей привлекает...

The text gives an information about... – Текст дает информацию о...

The following facts are stressed in the article... – В статье подчеркиваются следующие факты...

The content of the text includes... – Содержание текста охватывает...

The text is devoted to the problem... – Текст посвящен проблеме...

The articles are taken from... – Статьи взяты из...

In the article it is analyzed... – В статье анализируется...

The author characterises... – Автор характеризует...

The author emphasizes ... – Автор подчеркивает, что...

The author suggests... – Автор предлагает...

The author considers that... – Автор считает, что...

The main (sufficient) part of the research work contains... – Главная часть исследования содержит...

The text contains statistics about... – Текст содержит статистику о...

In the introductory part the author touches upon... – Во вступительной части автор касается...

At first it is depicted that... – Во-первых, изображается...

Secondly it is revealed that... – Во-вторых, обнаруживается, что...

First of all it is stressed that... – Вначале упоминание делается на...

The author underlines that... – Автор подчеркивает, что...

In concluding paragraphs it is pointed out... – В заключительных параграфах указывается на...

Summing up the information... – Подводя итог...

Алгоритм составления реферата

1. Оформите заголовочную часть: запишите название первоисточника, фамилию и инициалы автора (авторов) и библиографические данные.

2. Пронумеруйте абзацы текста.

3. Просмотрите текст и определите его главную тему.

4. Внимательно читая текст по абзацам, определите тему и подтемы каждого абзаца и запишите их вместе с номером абзаца в виде ключевых слов и выражений.

5. Таким образом вы составите логический план текста.

6. Обдумайте последовательность расположения пунктов плана.

7. Выберите из каждого абзаца ключевые фрагменты (отдельные слова или словосочетания), которые характеризуют выделенные вами темы и подтемы, запишите их. Так выявляются смысловые ряды.

8. На материале смысловых рядов составьте текст реферата, используя связующие специфические выражения и языковые клише.

9. Прочитайте составленный текст реферата и отредактируйте его.

10. Укажите свою фамилию и инициалы, факультет, курс, номер группы и дату.

КЛИШЕ ДЛЯ ОБСУЖДЕНИЯ РЕФЕРАТА

Высказывание

To my mind the Paper is... – По моему мнению, реферат...

From my point of view... – С моей точки зрения...

It seems to me that... – Мне кажется, что...

I would like to express my own opinion on the problem... –

Хотелось бы высказать свое мнение по проблеме...

I would like to clarify... – Я хотел бы кое-что прояснить...

I would like to tell something else... – Я хотел бы сказать следующее...

I would like to add... – Я хотел бы добавить...

An example of this would be... – Примером этого будет...

For example... – Например...

The point is that... – Смысл в том, что...

Обсуждение

I disagree with the position of the author. – Я не согласен с позицией автора.

I do not share the author's point of view. – Я не разделяю точку зрения автора.

I have just the opposite idea. – У меня противоположное мнение.

I can't agree with the author's opinion. – Я не могу разделить мнение автора.

Согласие

I do share the author's opinion that... – Я разделяю мнение автора в том, что...

I agree with your point of view that... – Я согласен с вашей точкой зрения, что...

You are definitely right that... – Несомненно, вы правы, что...

I find this Paper interesting / important. – Я нахожу данный реферат интересным / важным.

There is no doubt that... – Нет сомнений в том, что...

It goes without saying... – Без сомнений, ...

Сомнение

I am not quite sure that... – Я не вполне уверен, в том что...

It seems to me doubtless because... – Это кажется мне сомнительным, потому что...

I agree to the point but... – Я согласен с этим, но...

I suppose you are right but... – Предполагаю, что вы правы, но...

I would like to mention that... – Хотелось бы упомянуть, что...

Требование, просьба

I would like to ask a question... – Я хотел бы задать вопрос...

Could you tell me more about... – Не могли бы вы рассказать о...

Do you know anything else about... – Знаете ли вы еще что-нибудь о...

Can you confirm the fact? – Вы можете подтвердить...?

I would like to ask you to tell your opinion about... – Я хотел бы вас попросить высказать свое мнение о...

Аннотирование текста

Аннотация – короткая справка о печатном произведении, излагающая содержание в виде перечня его основных вопросов. Аннотация дает представление только о характере оригинала (книга, статья и т.д.), о его строении (перечень вопросов), о его назначении (на кого оригинал рассчитан), а также об объеме оригинала (количество страниц). Аннотации пишутся как на языке оригинала, так и на родном языке. При составлении аннотации используются языковые клише. Объем аннотации составляет 0,5 страницы.

Структура аннотации стабильна. Она состоит из заголовочной части (название оригинала, фамилия автора, издательство, место и дата издания и др.). Написание собственно аннотации начинается с чтения текста и нумерации абзацев, определяется ведущая тема текста, темы и подтемы каждого абзаца, составление логического плана текста в виде перечня тем и подтем текста.

Клише, используемые при составлении аннотации:

а) *клише, начинающие аннотацию и вводящие в главную тему:*

The article (text) is called...

The title of the article (text) is...

The article (text) is published in...

The article is printed in...

The article consists of...

The article is devoted to...

The text touches upon the probleme...

In the introductory part the author points out...

в) *клише, оформляющие основную мысль произведения:*

The author raises the problem of...

The main part of the text informs about...

The article contains statistics about...

с) *клише, оформляющие выводы автора оригинала:*

In the concluding paragraphs it is pointed out...

Summing up the information it is important to say that...

Generalizing the information it is necessary to say that...

В конце аннотации указывают фамилию, инициалы составителя, факультет, курс, группу, дату составления.

Например:

Summary

The article is called "English for Specific Purposes in Russia: a historical perspective". The article is published in Journal "ESP Russia" in January, 1996. Volume 1. It is written by Tamara Nazarova, Professor of Moscow State University. The article is devoted to historical development of an approach of language teaching which is directed by specific and apparent reasons for learning. The author raises two problems for identification. The 1st is: What is the meaning of the word ESP? And the 2nd: How to use it? In the concluding paragraphs it is

pointed out that ESP methodology has been consistently applied to intellectual communication at large. Summing up the information it is important to say that as it is shown, terminologies of usage differ in various sciences, but the category of reproduction allows the learner to acquire proficiency in the use of neutral “prefabricated units”.

РЕКОМЕНДАЦИИ ДЛЯ РАЗРАБОТКИ ПРОЕКТОВ

Проектное обучение представляет собой технологию активной познавательной деятельности студентов, в основе которой лежит разработка в ходе самостоятельной (групповой или индивидуальной) исследовательской деятельности различных типов проектов – перспективных заданий, направленных на решение задач практики.

Участники проектной деятельности должны ответить на вопросы: Что является целью проектной деятельности? В чем актуальность (оригинальность, ценность) идеи проекта? На решение каких задач практики он будет направлен? Каков будет результат (продукт)? Где он может быть применен? Как он может изменить ситуацию?

Типы проектов в вузе:

- *исследовательские* проекты, подчиненные логике исследования и имеющие структуру, приближенную или полностью совпадающую с научным исследованием;

- *информационные* проекты (модуль исследовательского), направленные на поиск, знакомство и представление информации;

- *практикоориентированные* проекты, имеющие профессиональную направленность, результат которых ориентирован на социальные интересы самих студентов.

Процесс работы над проектом многоступенчатый. В таблице представлены этапы и содержание проектной деятельности.

Этапы работы над проектом	Содержание работы	Деятельность студентов
<i>Подготовка</i>	Определение реальной ситуации, ее осмысление, рождение задачи (проблемы) из описания ситуации, постановка вопросов	Анализируют ситуацию, выявляют проблему, рассматривают актуальность ее решения
<i>Прогнозирование и целеполагание</i>	Прогноз изменения ситуации, постановка личностных и коллективных целей, их осознание	Обсуждают. Прогнозируют. Определяют цели
<i>Планирование</i>	Определение источников, способов сбора и анализа информации, форм представления результатов. Установление критериев оценки процесса и результатов. Распределение задач между членами групп	Разрабатывают план действий. Определяют и распределяют задачи. Вырабатывают критерии оценки результатов
<i>Реализация</i>	Сбор информации. Работа над проектом. Решение промежуточных задач. Получение запланированных результатов	Выполняют свою часть проекта. Промежуточное обсуждение хода реализации проекта
<i>Оформление и представление</i>	Формы представления устного и письменного отчета. Оппонирование	Отчитываются, обсуждают, представляют результаты для внедрения в практику
<i>Мониторинг и рефлексия</i>	Интерпретация и анализ процесса и результата. Внешняя оценка. Рефлексия студентов по поводу авторства в проекте. Формулирование выводов. Новое целеполагание	Анализируют, интерпретируют, оценивают в ходе коллективного обсуждения и самооценок

Параметры внешней оценки проекта:

- значимость и актуальность проблемы;
- корректность используемых методов исследования и обработки полученных результатов;
- активность каждого члена проектной группы в соответствии с его индивидуальными возможностями;
- характер принимаемых решений, общения, взаимопомощи;
- глубина проникновения в проблему, привлечение знаний из других областей;
- эстетика оформления результатов проекта;
- умение аргументировать, доказывать, делать выводы и заключения, отвечать на вопросы.

ОБЩИЕ практические рекомендации для изучающих иностранный язык

Владение иностранным языком на современном этапе развития общества играет важную роль в формировании личности человека, свидетельствует о его высоком образовательном и культурном уровне. Изучение иностранного языка, с одной стороны, занятие довольно увлекательное, а с другой – очень не простое. Помимо интереса и желания оно требует больших усилий и терпения, значительных временных затрат, постоянной систематической работы.

Для организации успешной самостоятельной работы по овладению иностранным языком предлагаем вам несколько практических советов:

1. Регулярно занимайтесь языком. Не допускайте длительных перерывов, так как процесс забывания иноязычной информации происходит быстрее, чем в родном языке.
2. Составляйте собственный план работы над языком на день, неделю, месяц и старайтесь его выполнять.

3. Фиксируйте свои достижения в изучении иностранного языка. Помните, язык – беспредметен и безграничен, и каждое усвоенное слово или явление языка обогащает ваши знания.

4. Старайтесь сделать свои занятия разнообразными и интересными, используя различные виды деятельности: работу над произношением, выполнение грамматических упражнений, перевод, чтение вслух, прослушивание аудиокассет, просмотр телепрограмм, видеокассет или дисков с повторением и имитацией диктора, составление небольших ситуаций и рассказов, исполнение песен на иностранном языке и др.

5. Старайтесь больше учить наизусть стихов, песен, считалок, поговорок, диалогов, выражений речевого этикета, фрагментов текстов. Все это тренирует вашу память, расширяет ваши знания иностранного языка.

6. Будьте настойчивы и терпеливы в изучении языка. Здесь, как нигде, действует принцип перехода количественных изменений в качественные. Будьте активны, участвуйте во всех мероприятиях на иностранном языке, настраивайтесь на успех и добивайтесь его.

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