Федеральное государственное бюджетное образовательное
учреждение высшего образования
«Брянский государственный аграрный университет»

КАФЕДРА ИНОСТРАННЫХ ЯЗЫКОВ

МЕДВЕДЕВА С.А., ГОЛУБ Л.Н.

АНГЛИЙСКИЙ ЯЗЫК ДЛЯ АУДИТОРНЫХ ЗАНЯТИЙ И САМОСТОЯТЕЛЬНОЙ РАБОТЫ СТУДЕНТОВ НАПРАВЛЕНИЯ ПОДГОТОВКИ 20.04.01 ТЕХНОСФЕРНАЯ БЕЗОПАСНОСТЬ (УРОВЕНЬ МАГИСТРАТУРЫ)

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Пособие предназначено для обучающихся по направлению подготовки 20.04.01, изучающих дисциплину «Английский язык». Основной целью пособия является приобретение коммуникативной компетенции, необходимой для квалифицированной информационной и творческой деятельности в различных сферах и ситуациях делового партнерства, производственной и научной работы.

Рецензенты:
кандидат педагогических наук, доцент, заведующий кафедрой иностранных языков Брянского ГАУ **М.В. Семышев;**
доктор технических наук, профессор, заведующий кафедрой безопасности жизнедеятельности и инженерной экологии БрянскогоГАУ **Н.Е. Сакович**.

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ВВЕДЕНИЕ

Основной целью обучения в магистратуре является приобретение обучающимися коммуникативной компетенции, необходимой для квалифицированной информационной и творческой деятельности в различных сферах и ситуациях делового партнерства, совместной производственной и научной работы. Обязательным условием достижения поставленной цели является решение следующих задач

- достижение зрелого владения всеми видами чтения и перевода литературы разных функциональных стилей.
- овладение всеми видами монологического высказывания (информирование, пояснение, уточнение, инструктирование и иллюстрирование высказывания, а также умение сделать доклад на иностранном языке).
- осуществление и понимание высказываний профессионального и научного характера в ситуациях приема зарубежных специалистов, обмена профессионально-значимой информацией в процессе повседневных бесед, деловых переговоров.

Предлагаемое учебное пособие построено с учетом преемственности обучения и состоит из самостоятельных блоков (Units). Цель каждого блока - развитие умения чтения и адекватного перевода текстов по направлению подготовки и написания тезисов, докладов, рефератов и аннотаций. Работа с данным пособием способствует формированию у студентов следующих компетенций: ОК-3, ОК-4, ОПК-3, ПК-15.

Учебные тексты служат для первичного введения языковых явлений и иллюстрацией их употребления в иноязычной речи. При подборе текстов учитывалась их актуальность, информативность, частотность представленной в них лексики и уровень языковой подготовки обучающихся.

Перед каждым текстом даётся подробный список лексики, предназначенный для активного изучения и закрепления в ходе выполнения послетекстовых упражнений. Упражнения направлены на активизацию лексического материала и развитие навыков устной речи.

Грамматический материал охватывает основные явления грамматики английского языка и направлен на закрепление знаний, полученных на бакалаврском уровне подготовки.

PART 1. Unit 1
EDUCATION IN MODERN SOCIETY. HIGHER EDUCATION

1. Read and translate the text:

Text 1. HIGHER EDUCATION IN RUSSIA

learning materials — учебные материалы
to bring up to date — довести до современных требований
information explosion — информационный взрыв
training and instruction — подготовка и обучение
over years — за многие годы
curricula are enriched and broadened — программы (курсы обучения) обогащаются и расширяются

Higher education plays an important part in the life of any country as it provides the country with highly-qualified specialists for future development and progress. It trains people to become teachers, engineers, doctors and other professional workers.

In all the industrial countries standards of living are steadily changing; this means that the kind of education, which was good enough thirty years ago, is not necessarily good for them today. The serious need to find ways and means of ensuring continuous and thorough adoption of the universities to contemporary needs in our rapidly changing world is widely recognized. And this means that styles of teaching, quality of learning materials and organization of the university itself have to be continuously brought up to date and improved.

Besides, knowledge and information which comes through the mass media must also be taken into consideration. This information explosion has affected every field of study, especially, of course, in the natural and applied sciences and in all other sciences as well. The increase of information requires new methods and new approaches to students' training and instruction.

At present a new system of education is introduced in this country — a distance education system. This computer system of learning helps working professionals to continue their education while remaining at their jobs. This system enables people to get knowledge and a good foundation in the sciences basic to his or her field of study. Distance learning has developed over years from satellite video courses to modern videoconferencing through personal computers.

The academic year usually lasts 9 months and is divided into two terms (semesters). The first- and second-year students obtain thorough instructions in the funda-

mental sciences of mathematics, physics, chemistry and drawing as well as computer engineering and a number of others. The curricula are enriched and broadened by instructions in such subjects as foreign languages, history and economics.

At the third year students get more advanced knowledge and begin to concentrate on their special interests, so to say, their «major» subject and take many courses in this subject. Specialized study and courses will help students to become specialists and prepare them for their future work.

After four years students will get a bachelor's degree. Then the students may go on with their studies and in a year or two of further study and research get a master's degree. After graduating from the university they may go on with their study and research and may get a still higher degree.

About 75 percent of students receive state grants and 15 percent are sponsored by enterprises. Universities have their own students' hostels and some of them have large and excellent sport centers.

Education is a process through which culture is preserved, knowledge and skills are developed, values are formed, and information is exchanged. Education is the way to success.

2. Practise the pronunciation of the following words:

Highly-qualified, steadily, ensuring, thorough, adoption, contemporary, instructions, science, curricula, preserve.

3. Answer the questions:

1. When does the academic year begin in this country? 2. How many exams did you pass to enter the University? 3. Do you pay for your education? 4. Do students get grants? 5. What subjects do students study in the first year? 6. Which subject is the most interesting for you? 7. Is there a sport center in your University? 8. What degree do students get after four years of study? 9. What degree can a student get after two years of further study and research? 10. What new education system is introduced in this country? 11. What specialities do people get after graduating from a university? 12. Why is higher education important in the life of every country?

4. Use Active and Passive Voice.

1. Students asked the lecturer many questions. The lecturer was asked many questions. 2. The monitor told the first-year students to come to the laboratory. The first-year students were told to come to the laboratory. 3. Usually a lab assistant shows the equipment to the students. Usually the equipment is shown to the students by a lab assistant. Usually students are shown the equipment by a lab assistant. 4. Students

watched the process with great attention. The process was watched with great attention. 5. Tomorrow our teacher will give us a new task. A new task will be given tomorrow. We shall be given a new task tomorrow. 6. Practice accompanies theory. Theory is accompanied by practice. 7. He asked me to bring a dictionary. He was asked to bring a dictionary. 8. The teacher told the students to sign their drawings. The students were told to sign their drawings. 9. The dean will send the students to a big plant in summer. The students will be sent to a big plant in summer. 10. He taught us to use the lab equipment. We were taught to use the lab equipment.

5.

A. Transform into Passive Voice.

1.You open the door. 2. We asked questions. 3. He will finish his project next week. 4. He can do this exercise. 5. They invited me to their conference. 6. 1 saw a new film. 7. My sister writes letters regularly. 8. Universities develop new methods of students' training. 9. After graduating from the University the students may get a still higher degree. 10. The study of foreign languages, history and economics must improve the curricula of technological universities.

B. Translate.

1. Mathematics, strength of materials, mechanics, elements of machines as well as engineering physics are studied at technological institutes. 2. The development of science is closely connected with the development of higher education. 3. Students are provided with hostels, well-equipped laboratories and libraries. 4. Any country must be provided with good specialists in all branches of science and technology for its further development. 5. Large sums of money are spent by the state to train highly-qualified engineers. 6. Much attention must be paid to improve the standards of higher education. 7. Students of technological institutes are trained to analyse various facts and theories. 8. The scientific and technological progress of a country is determined by the qualification of specialists. 9. Some institutes of technology are reorganized into universities. 10. The country must be provided with specialists capable of working with the technology of tomorrow effectively.

6. Find Participle I and Participle II, translate.

1. The students studying at the institutes passed entrance exams in summer. 2. The subjects studied in the first two years are very important for future engineers. 3. The lecture delivered by our dean was on new methods of technology. 4. The man delivering this lecture is our professor on mathematics. 5. An article discussing the new system of school education appeared in all newspapers. 6. The results of the experi-

ments discussed yesterday will be published. 7. The attention paid to the study of fundamental subjects is great. 8. Students interested in computer engineering enter technological institutes. 9. The number of specialists connected with new branches of science and engineering is increased every year.

7. Read and translate the text.

Text 2. HIGHER EDUCATION IN THE UK AND THE USA

to consist of - состоять из
self-governing - самоуправляющийся
tuition - обучение
to proceed - продолжать делать (что-либо)
a gown - мантия
a major subject - профилирующий предмет
a graduate scool - старшие курсы
a five point scale - пятибалльная шкала

Part 1

Cambridge is one of the two main universities of England which is located at the Cam River. It was founded at the beginning of the 12th century. The University consists of 24 different colleges including 4 colleges for women. Each college is self-governing.

The head of the University is the chancellor who is elected for life. The teachers are commonly called «dons» and «tutors». Part of the teaching is by means of lectures organized by the University. Besides lectures teaching is carried out by tutorial system for which Cambridge University is famous all over the world. This is a system of individual tuition organized by the colleges.

Each student has a tutor who practically guides him through the whole course of studies. The tutor plans the student's work and once a week the student goes to his tutor to discuss his work with him. The training course lasts 4 years. The academic year is divided into 3 terms. The students study natural and technical sciences, law, history, languages, geography and many other subjects.

After three years of study a student may proceed to a Bachelor's degree, and later to the degrees of Master and Doctor. Students are required to wear gowns at lectures, in the University library, in the street in the evening, for dinners in the colleges and for official visits. All the students must pay for their education, examinations, books, laboratories, university hostel, the use of libraries, etc. Very few students get

grants. Not many children from the working class families are able to get higher education, as the cost is high. The cost of education depends on the college and speciality.

A number of great men, well-known scientists and writers studied at Cambridge. Among them are: Erasmus, the great Dutch scholar, Bacon, the philosopher, Milton and Byron, the poets, Cromwell, the soldier, Newton and Darwin, the scientists.

Part 2

There is no national system of higher education in the United States. Higher education is given in colleges and universities. There are over 2100 various higher educational institutions, including colleges, technological institutes and universities. The average college course of study is 4 years. The academic year is usually 9 months or 2 terms (semesters) of four and a half months each. Classes usually begin in September and end in June. The first-year students are called freshmen. Students choose a major subject and take many courses in this subject. After four years, they get a traditional Bachelor's degree. Then the students may go on to graduate school and with a year or two of further study get a Master's degree.

After another year or two of study and research, they may get a still higher degree as Doctor of Philosophy (Ph. D.). The student's progress is evaluated by means of tests, term works and final examinations in each course. The student's work is given a mark, usually on a five point scale. Letters indicate the level of achievement.

«A» is the highest mark. «F» denotes a failure.

Most American colleges and universities charge for tuition. The methods of instruction in the universities are lectures, discussions, laboratory and course works and seminars. Most cities have colleges or universities that hold classes at night as well as in daytime. In this way people may work for a degree or just take a course in the subject that interests them.

8. Practise the pronunciation of the following words:

Tutor, tutorial system, guide, through, languages, chancellor, major, require, sciences, law, scholar, further, evaluated, Bachelor's degree, Master's degree, failure, method.

9. Read and translate the text.

Text 3. OXFORD UNIVERSITY

Oxford is renowned the world over. It ranks in importance with Athens, Rome and Paris because of the stream scholars who, for hundreds of years, and particularly in the 20th century, have come to sit at the feet of learned men, and have returned to their own countries, their minds enriched with the distilled learning to be found here,

and imbued with an abiding love for the place. They have absorbed the almost indefinable “spirit of Oxford”, and many of them return again and again, so strong is the pull of the place.

This book is designed to help the visitor whose stay is short. So many visitors want to know where is the University. In their home country, the universities are easily identifiable because they are compact, purpose-built places, and probably isolated from the domestic and commercial buildings which form the heart of the city from which they take their name.

Oxford is different. It has a golden heart - an area of less than half a square mile in which is to be found the most varied assortment of historic buildings in the world. But they do not stand in isolation; they are intermingled, in the must delightful way, with houses, shops and offices.

Over the last decade millions of pounds have been spent in restoring and cleaning the stonework of college and university buildings, which had become blackened and decayed, and in many cases was in danger of disintegrating. Great care was taken in the restoration, and the result is that the university buildings present the honey-coloured facades which the great architects such as Wren and Hawksmoor created.

Interiors too, have been cleaned and restored - notably those of the Sheldonian Theatre and the Bodleian Library. Oxford is a place of great beauty, but it is not just a shrine to the past. It is a living entity and its historic buildings are the homes of masters and students whose learning, thinking and ideas have a profound influence on culture, education, science and politics, not only in England, but throughout the world.

The University did not come into being all at once. Oxford had existed as a city for at least 300 years before scholars began to resort to it. The end of the 12th century saw the real beginnings of the University. It is known that early in that century distinguished scholars were lecturing in Oxford, but it had no recognition as a place of learning. In about 1184 the University had become an accomplished fact as result of the migration to Oxford of students who brought their own traditions with them.

It is generally assumed that between 1164 and 1169, when Henry II forbade English clerks to go to the University of Paris, which at that time was the foremost in Europe, the scholars had to find somewhere else to continue their studies. Their choice fell on Oxford. The first group of scholars at Oxford may have been joined by others from Paris, and from other parts of Britain.

There is no '‘university” as such. Each college is practically autonomous, with its own set of rules for its good government. There is a central administration, providing services such as libraries and laboratories.

10. Practise the pronunciation of the following words:

Rank, scholars, particularly, imbued, indefinable, short, purpose, varied, delightful, autonomous, distinguished, profound, disintegrating, foremost, migration.

11. Answer the questions:

1) Why is Oxford ranking amongst the world's top universities?
2) How does Oxford differ from other educational institutions?
3) Why do the Oxford's buildings need to be restored?
4) What architects have worked on the University's facades?
5) Why didn't Oxford deserve any recognition until the 12th century?
6) When was the heyday of Oxford?
7) Why does the author claim that there's no university such as Oxford?
8) Why did English clerks give up going to the University of Paris, which was considered to be the foremost in Europe?

12. Make up definitions:

Distinguished	Ahead of all others, especially in position or rank.
A scholar	Something that exists as a particular and discrete unit.
To intermingle	Standing above others in character or attainment or reputation.
An entity	An exposition of a given subject delivered before an audience or a class, as for the purpose of instruction.
Foremost	To mix or become mixed together.
A lecture	One who attends school or studies with a teacher.

Unit 2
THE QUALITY OF ENVIRONMENT. ENVIRONMENT PROTECTION

1. Read and translate the text.

Text 1. ENVIRONMENT PROTECTION MUST BE GLOBAL

That the problem of pollution and ecology has become the most important one for mankind is evident to all. The more civilization is developing, the greater the ecological problems are becoming. Air and water pollution by industry is now reaching tremendous proportions. In our era it is changing from a national to an international problem, espe-

cially in territories where rivers cross several countries. The seas and oceans are also becoming seriously polluted. A similar situation is developing in the atmosphere. It is known that many cities throughout the world suffer from air pollution.

However, our scientific knowledge and technological advancement make it possible to eliminate it if people use good will and make considerable investments for that purpose. The development of natural resources on a global scale is alreadypossible from a scientific and technical standpoint. Large-scale experimental work in this area is successfully being carried out.

At present scientists in industrially developed countries are working on the theory of interaction of all the atmospheric and oceanic global processes that determine the climate and weather of the world. Increasing growth of population, industrialization and the use of resources are slowly but surely changing the global climate and water balance. This can be described as a great experiment, one that may bring about changes in the environment more serious than ever before.

The essential feature in the environment protection is that many problems can be solved only on the level of world community. Therefore, the planning of protection against pollution by human society as a whole is imperative today and in the near future. It is necessary to develop an international program to study data on land, forest, atmospheric and oceanic resources, both renewable and non-renewable. It is the joint efforts of many scientists and special public organizations that can deal with the problem and take necessary measures to protect the environment.

It is still a big job and much remains to be done. However, scientists are confident that planned actions of all countries can eliminate pollution and achieve successes in purifying air, water and soil and in safeguarding natural resources. At the same time one must realize that social and political circumstances may stand in the way of further progress in this field.

2. Answer the questions:

1. What is this text about? 2. What is ecology? 3. How does water (air) become polluted? 4. Why is the problem of water pollution becoming a global problem?

3. Read and translate the following international words:

Global, resources, problem, ecology, proportion, era, territory, ocean, oceanic, situation, atmosphere, process, climate, balance, experiment, social.

4. Read and translate the following words:

Environment, pollution, achieve, success, successful, successfully, purify, air,

natural, however, job, remain, mankind, reach, special, especially, serious, throughout, world, knowledge, advance, eliminate, purpose, scale, weather, essential, therefore, data, joint, measure, realize, circumstance.

5. Answer the questions according to the example:

What is one of the most important problems for mankind now? (<u>the problem of pollution and ecology</u>).

<u>The problem of pollution and ecology</u> is one of the most important problems for mankind now.

1. What problem is becoming a global problem? (the problem of air and water pollution). 2. What makes it possible to eliminate air and water pollution? (scientific knowledge and technological advance, good will and large investments). 3. What are scientists in industrially developed countries currently working on? (the theory of interaction of the atmospheric and oceanic global processes). 4. What factors are slowly changing the global climate and water balance? (the growth of population, industrialization and use of resources). 5. What actions are necessary to take to deal successfully with the problem of protecting the environment throughout the world? (planning, developing international programs to study ecological data, joint efforts of scientists and special public organizations).

6. Read and translate the following text without a dictionary:

It is difficult for mankind to predict changes in the environment accurately. It is known that natural changes in weather and climate may have more catastrophic global effects than human activity. But scientists are developing a new concept that can help make such prediction more accurately. It is based on our understanding that the Earth is an integral system. Its parts — oceans, atmosphere, land or life — cannot be understood in isolation to predict changes in the most accurate way. Modern scientific and technologi-cal progress made it possible to use new technologies for that purpose. That satellites can control physical, chemical, biological and geological changes on a global scale is well-known now. One must also know that the study of environmental problems with the help of satellites is becoming international. Russia, the US, France, Japan, Canada, India, China and Italy are planning to send their satellites in both polar and geostationary orbits.

7. Read and translate the text 2.

Text 2. LAST CHANCE FOR MOTHER EARTH?

(*From Scientific American)*

man’s intrusion upon nature - вторжение человека в природу
to intrude upon - вторгаться
to violate the laws of nature - нарушать законы природы
to destroy the balance - нарушать равновесие
to combat pollution - бороться с загрязнением атмосферы
to be faced with the problem of - стать перед проблемой
environment - окружающая среда
industrial waste - промышленные отходы
to govern the process - управлять процессом
to harm - наносить ущерб
to be aware of the consequences - осознавать последствия
radioactive fallout - радиоактивные осадки
to affect nature - влиять на природу
to threaten - угрожать
to contaminate the atmosphere - загрязнять атмосферу

The U.S. environment is seriously threatened by the garbage of the economy. The Apollo 10 astronauts could see Los Angeles as a smudge from 25000 miles in outer space. What most Americans now breathe is closer to filth than to air. Americans know pollution well. It is car-clogged streets and junk-filled landscape – their country’s visible decay.

California’s air pollution is already so bad that on many days Los Angelesschool children are warned not to breathe too deeply because of heavy smog conditions.

The United States is far from alone in its pollution and waste. The smog is dense in Tokyo. Some of Norway’s legendary fjords are awash with stinking industrial wastes.

Sections of the Rhine River which flows through the industrial Ruhr Valley to the North Sea are so toxic that even hardy eels have difficulty surviving. In Sweden, not long ago, black snow fell on the province of Smoland.

The earth has its own waste-disposal system, but it has limits. The winds that ventilate the earth are only six miles high; toxic garbage can kill the tiny organisms that normally clean rivers. Meanwhile, modern technology is pressuring nature with tens of thousands of synthetic substances, many of which almost totally resist decay. This includes aluminum cans that do not rust, inorganic plastics that may last for decades, floating oil that can change the thermal reflectivity of oceans and radioactive wastes whose toxicity lingers for centuries.

Where do most of the pollutants end up? Probably in the oceans, which cover70 per cent of the globe and have vast powers of self-purification. Yet even the oceans can absorb only so much filth; many scientists are worried about the effects on plankton — passively floating plants and animals, which produce about one fifth of the earth's oxygen. Emerging now is the importance of the science of survival — ecology. Trying to awaken a sense of urgency about the situation, ecologists sometimes do not hesitate to predict the end of the world. Yet they hold out hope too.

Ecology is the study of how living organism and the nonliving environment function together as a whole, or ecosystem, in the biosphere — that extraordinarily thin global envelope which sustains the only known life in the universe. Hundreds of millions years ago, plant life enriched the earth's atmosphere to a life supporting mixture of 20 per cent oxygen, plus nitrogen, argon, carbon dioxide and water vapour. The mixture has been maintained ever since by plants, animals and bacteria, which use and retain the gases at equal rates. The result is a closed system, a bal-anced cycle, in which nothing is wasted and everything counts.

The process is governed by distinct laws of life and balance. One is adaptation; each species finds a precise niche in the ecosystem. Another law is the necessity of diversity: the more different species in an area, the less chance that any single type will destroy the balance. Man has violated these laws — and endangered nature as well as himself.

A primitive community could harm only its own immediate environment. When it ran out of food, it had to move on or perish. But a modern community can destroy its land and still import food, thus possibly destroying ever more distant land without knowing or caring. Technological man forgets that his pressure upon nature may provoke revenge.

What most appalls ecologists is that technological man remains so ignorant of his impact. Neither the politicians nor the physicists who developed the first atomic bomb were fully aware of the consequences of radioactive fallout. The men who designed the automobile did not foresee that its very success would turn cities into parking lots and destroy greenery in favour of highways, all over the world.

Man's inadvertence has even upset the interior conditions of the earth. Wherever huge dams are built the earth starts shuddering. The enormous weight of the wa-ter in the reservoirs behind the dams puts a new stress on the subsurface strata. In consequence the earth quivers.

If technology got man into this environment crisis ant pollution mess, surely technology can get him out of it again.

There is no lack of hopeful ideas for balancing the environment and the most encouraging today is the swell of public opinion. We are at least starting to combat

gross pollution. Even so, real solutions will be extremely difficult and expensive. Ideally, entire environment should be subjected to computer analysis. Whole cities and industries could measure their inputs and outputs via air, land and water. But this is a far-off dream. Far more knowledge is needed.

Even the simplest ecosystem is so complex that the largest computer cannot fully unravel it.

Technological man is bewitched by dangerous illusion that he can build bigger and bigger industrial society with scant regard for the iron laws of nature. Pessimists argue that only a catastrophe can change that attitude – too late. By contrast, the hopeful ecologist put their faith in man`s ability.

8. Read and translate the following words and word-combinations

Garbage, smudge, breathe, decay, synthetic substances, radioactive wastes, linger, self-purification, filth, carbon dioxide, vapour, govern, species, violate, immediate environment, subjected to computer analysis, bewitched.

9. Agree or disagree with the statements given below. Use the following phrases:

1. What most Americans now breathe is very clean air and they have no idea about pollution.
2. Some other countries are faced with the same problem of pollution and waste as the U. S.
3. Modern technology does not affect nature in any way.
4. We needn't worry about the resources of our environment for they are inexhaustible.
5. The oceans can absorb as much filth as necessary.
6. It is plants that help maintain the mixture of oxygen, nitrogen, carbon dioxide and water vapour.
7. Ecology is a linguistic science.
8. Man has violated laws of nature and is going to pay for it.
9. When the primitive community ran out of food it perished.
10. The men who designed automobiles knew only too well that some day the automobiles would turn cities into parking lots and destroy all the greenery in them.
11. More attention ought to be paid to ecology.
12. We are actually ruining our own habitat.
13. It will be very difficult to balance the environment now.
14. Technical progress has greatly affected nature.
15. The big cities of today are not faced with any important problems such as traffic and so on.
16. A catastrophe is inevitable and there's no solution to the problem.

10. Sum up discussion. Use the following phrases:

Summing it up… On the whole…

Summarizing the discussion I`d like to say that…

Model: The garbage of economy is a serious threat to our environment.

Summing it up I`d like to say that the garbage of economy is a serious threat to our environment.

1. Pollution has grown into an urgent problem.
2. Nature is being seriously damaged by civilization.
3. Immediate measures must be taken to change the grave situation.
4. Politicians and scientists must realize full well dangers we are faced with.
5. The consequences of this violation of nature are hard to foretell.
6. Measures must be taken to save the plankton of oceans.
7. The problem of man and biosphere is very acute.
8. Radioactive fallout must be strictly controlled.
9. Computers must be of much help in solving the problem.
10. Technology will help man to get out of this critical situation.

11. Comment upon the following problems.

1. Modern technology and its impact upon nature.
2. The resources man has been using for centuries are not inexhaustible and there is an urgent need for an efficient research into our environment.
3. How do you picture the development of science in ten years' time

12. Dispute the problems given below. The group can be divided into two opposing parties, each advocating their viewpoint.

Use the following phrases:

It must be admitted that…

My point is that…

It seems reasonable to assume…

1. There can hardly be any solution to the problem raised in the text. A catastrophe is inevitable.
2. Big cities are now becoming self-defeating for their growth entails numerous insoluble problems. They ought not to be developed, renewed or replanned.
3. Nature is being destroyed by growing civilization. We can hardly stop or prevent it.

13. Read and translate the text 3.

Text 3.THE QUALITY OF ENVIRONMENT

emissions – выбросы в атмосферу
pollutants– загрязняющие примеси
automobile exhausts – автомобильные выхлопные газы
to expose to air pollution – подвергаться воздействию воздушного загрязнения
portable water – питьевая вода
water pipe network – городской водопровод
ferrous metallurgy – черная металлургия
mechanical engineering industry – машиностроение
non-ferrous metallurgy – цветная металлургия
eroded soil–эродированная почва
degrading land– приходящая в упадок почва
coniferous forest – хвойный лес

Poisonous atmospheric emissions by Russia's industry were close to 32 m tons in 1991. Russia's European part accounts for nearly 65% of the country's industrial air pollution. Automobile exhausts in Russian cities contaminated the air with anoth-er 21 m tons of pollutants in 1990. Some 50 m people in Russia were breathing air with harmful content amounting to 10 MAC; over 60 m were exposed to air pollution of between 5 and 10 MAC. (Maximum admissible concentration).

In 1991 the water run-off of some southern rivers was decreasing at a progressive rate, as a result of human economic activity. A lot of Russia's small rivers, most badly affected by human activity throughout the last 10 or 15 years, were deteriorating rapidly. The quality of portable water in Russia is far from satisfactory. About a quarter of municipal water pipe networks and one- third of industrial ones carry water which was not properly purified. The most common water surface pollutants include petroleum products, phenols, organic matter, copper and zinc compounds, etc. Surface water is heavily polluted by ferrous and non-ferrous metallurgy, the coal, oil, 25gas, chemical and petrochemical industries, farms, municipal drainage, etc. chemicals arc washed in large quantities into rivers and lakes from adjacent areas. Livestock farms, pastries and sown land are responsible for high content of biological and organic matters in water.

The ozone content in the atmosphere has been decreasing lately in high and medium latitudes of the Northern Hemisphere. The ozone layer depletion is especial-ly fast (10% in ten years) in the lower stratosphere, that is, at altitudes between 15 and 20 kilometers.

Many small and detached fields were overgrown with woods and shrubs. Soils

on large areas were eroded, flooded or turned into marsh. Arid lands are degrading everywhere in Russia, giving way to deserts. Soils contaminated with heavy metallic isotopes, oil products and other toxic substances lay in rings dozen of kilometers wide around big cities and centers of metallurgical, chemical petrochemical and mechanical engineering production.

The national timber wealth in standing trees totals 81.6 bn cubic meters. Over the past 20 years, timber cutting and forest fires reduced the country's reserve of ripe wood in coniferous forests by 8 bn cu meter, including by 3 bn cu m. over the past 5 years.

14. Read and translate the following international words:

Atmospheric, industry, automobile, progressive, economic, human, activity, satisfactory, industrial, portable, products, phenols, zinc , metallurgy, chemical, ozone, biological, organic, stratosphere, eroded, isotope, toxic, petrochemical, production, reserve, substance.

15. Practise the pronunciation of the following words:

Exhausts, content, admissible, throughout, deteriorating, purify, water surface, quantify, adjacent, decrease, latitude, altitude, flooded, dessert, wealth, timber, reduce, ripe, coniferous, include.

16. Sum up a discussion. Use the following phrases:

Summing it up… On the whole…

Summarizing the discussion. I'll like to say that…

Model: The garbage of the economy is a serious threat to our environment. Summing it up I'd like to say that the garbage of economy is a serious threat to our environment.

1. The atmosphere, rivers, lakes and underground stores hold less than 1% of all fresh water and this tiny amount has to provide the fresh water needed to support the Earth population.
2. Fresh water is a precious resource and the increasing pollution of our rivers and lakes is a cause for alarm.
3. Industry often uses water for cooling processes sometimes discharging large quantities of warm water back into river.
4. Raising the temperature of the water lowers the level of dissolved oxygen and upsets the balance of life in the water.
5. Contaminants in the soil can adversely impact the health of animals and hu-mans.

6. Everywhere in the world where people change a natural ecosystem into agriculture, the land degrades.
7. Soil can degrade without actually eroding. It can lose its nutrients and soil biota.
8. Probably one of the most dangerous disasters that can be averted to a great extent is a forest fire.
9. When out of control, forest can cause extensive damage not only the forest cover, but also to human life and the environment.

17. Agree or disagree with the following statements given below.
1. Nature means simply what is around us.
2. We never know the world of water till the well is dry.
3. There are no passengers on Spaceship Earth. We are all crew.
4. We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong we may begin to use it with love and respect.
5. There is enough oxygen in the water and in the atmosphere.
6. Rivers are not polluted, because factories don't produce a lot of waste and don't pour it into rivers.
7. Economic advance is not the same thing as human progress.
8. Take care of the earth and she will take care of you.
9. The ozone layer in the atmosphere protects us from dangerous radiation.
10. Understanding of laws of nature does not mean that we are immune to their operations.
11. The universe is not required to be in perfect harmony with human ambition.
12. Man is a complex being: he makes deserts bloom and lakes die.
13. In its broadest ecological context, economic development is the development of more intensive ways of exploiting the natural environment. Give the examples.
14. The system of nature of which man is a part tends to be self-balancing, self-adjusting, self-cleaning. Not so with technology.

18. Comment upon the following problems.
1. In efficiency of timber use Russia lags far behind other countries.
2. Over 80% of timber in Russia is logged in clear cutting.
3. Fortunately there are many ways to reduce erosion.

19. Fill in the blanks with the following words and word-combinations and translate the text 3.

Careful, to say nothing of, in addition, oil, urbanization, to result in, according to, growth of industry, contamination, crude oil, harmful, laundry, poisonous water-

ways, due to, catastrophe, substances, discharging, depredations, tons.

There are many causes of water pollution which may be classified into four main categories

1. pollution from chemicals, 2. pollution from solids, 3. pollution from radio-active wastes, 4. pollution from living matter.

Text 3. WATER POLLUTION

immense urbanization – колоссальный рост городов.
contamination of water from fertilizers – загрязнение воды удобрениями.
tons of detergents – моющие средства.
crude oil – неочищенная сырая нефть.
refuse – отходы.
to make worse – ухудшать.
to bring about degradation – приводить к деградации.
heavy expenditures - значительные расходы.
mass campaign – массовая компания.
sad statistics – неутешительные данные статистики

The first two causes are perhaps more dangerous than the others due to the tremendous _____and the immense_____ in large cities. Pollution from chemicals and solids includes _____of water from fertilizes and pesticides, acids, alkalis, mercury and cadmium (i.e. from heavy metals) which are widely used in industry_____ detergents from washing _____are also dumped into the water. The above-mentioned _____ are extremely _____ for the living matter and once found in water in large quantities they kill everything and turn our rivers into _____. A remarkable illustration of such pollution is the Thames in England and the Rhine in Europe - up until recently there was no fish in these two rivers.

The banks of these rivers and many others represent a sad picture of cans, plastic containers, paper and refuse. Furthermore man not only pollutes water in the rivers and lakes, but he also pollutes seas and oceans as well. Let us take for example oil from _____tankers and supertankers. As we know each supertanker is capable of carrying hundreds upon thousands of _____. Sea water is used to clean the tankers after _____ and to make things still worse almost every year _____sad statistics there occurs at least one shipwreck in the sea _____bad weather conditions, faulty navigation aids, grounding, etc. This _____ tremendous contamination of sea and the sea shore too. One of the vivid examples of such a disaster was the wreckage of the supertanker TORREY CANYON in the English Channel. Not only the sea but the

beautiful beaches in England and in France were covered with oil.

This _____ brought about huge losses of sea birds and animals _____ the heavy expenditures by the French and British governments in a mass clean-up campaign.

We should remember that we are all passengers aboard the ship "Earth". We must be more _____ and must do everything to protect our beautiful planet from the_____ of man, i.e. ourselves.

20. Read and translate the following international words:

Urbanization, classify, chemicals, radioactive, pesticides, mercury, cadmium, ocean, heavy metals, contamination, illustration, result, substances, tons, supertanker, passengers, protect, campaign.

21. Practise the pronunciation of the following words:

Cause, dangerous, tremendous, immense, fertilizer, detergent, above-mentioned, dump, quantity, turn into, discharging, remarkable, poisonous, occur, due to, shipwreck, refuse, wreckage, faulty, furthermore, laundry, according to, loss, worse, beautiful.

22. Read the text and give English equivalents to the following Russian words and word-combinations:

Бурный промышленный рост, в соответствии с, разделить на, бытовые отходы, широко применяться, в больших количествах, превратить в, до недавнего времени, загрязнить моря и океаны, происходить, приводить к, вызывать, колоссальный рост городов, тонны моющих средств, сырая нефть, отходы, загрязнение воды, значительные расходы правительств, ухудшать, гибель морских птиц и животных, неутешительные данные статистики, массовая компания.

23. Agree or disagree with the statements given below. Use the following phrases:

That's right
I don't think so
Exactly
You're wrong there
I fully agree with you
Just the reverse

1. The causes of water pollution may be classified into two main categories pollution from solids and pollution from living matter.

2. Pollution from chemicals is unknown to large cities inhabitants.
3. Chemicals and solids contaminate water.
4. Fertilizers and pesticides are seldom used in industry.
5. The above-mentioned substances including acids, mercury and cadmium kill everything.
6. The Thames in England and the Rhine in Europe bound in fish.
7. Sea water is never used to clean the tankers after discharging.
8. The shipwrecks occur due to bad weather conditions, faulty navigation aids.
9. Sea catastrophes do not cause tremendous contamination of sea and the sea shore
10. The supertanker Torrey Canyon catastrophe brought about losses of sea birds and animals.
11. Water pollution doesn't affect people's health.
12. We do everything to protect our planet.

24. Sum up a discussion. Use the following phrases:

Summing it up…
On the whole …
Summarizing the discussion…
I'd like to say that…

1. Powerful purifying systems are urgently needed in Russia.
2. Water contamination has grown into a serious problem.
3. Oil transporters should meet the ecological safety requirements.
4. Water pollution is inevitable in big cities.
5. Contamination from chemicals could hardly be avoided today.
6. The problem of biosphere is very acute.
7. Ecological education of individuals and preventive measures can do more than penalties of the violators.
8. Cars make the human life dependable, thus aggravating the hard ecological situation in small and big cities.
9. Water transport is harmful for sea nature.

25. Comment upon the following problems:

1. Nature is threatened by technological progress.
2. Human mankind acidified lakes and streams and they can't support fish, wildlife, plants or insects.
3. Acid rain is killing forests.
4. Water contamination could lead to shortage of safe drinking water.

5. Civilization has upset nature's sensitive equilibrium polluting rivers and oceans with industrial wastes.
6. Computers project that between now and the year 2030 sea levels would rise by several metres, flooding coastal area and ruining vast tracts of farmland.

26. Dispute the problems given below. The group can be divided into two opposing parties, each advocating their viewpoint. Use the following phrases:

It must be admitted that …
My point is that…
It seems reasonable to assume…

1. We are obliged to remove factories and plants from cities, redesign and modify purifying systems for cleaning and trapping harmful substances.
2. We must review our wasteful, careless ways of life, we must consume less, recycle more, conserve wildlife and nature.
3. We should act according to the dictum «think locally, think globally, act locally».
4. We are obliged to protect and increase the greenery.
5. 159 countries – members of the UNO hold conferences and set up environmental research centres.
6. The 5th of June is proclaimed the World Environmental Day by the UNO and is celebrated every year.

Unit 3
MASS MEDIA AND THEIR ROLE IN CONTEMPORARY SOCIETY

1. Read and translate the following international words:

Politics, communication, process, individual, group, term, technical, type, publication, classify, electronically, function, specific, totalitarian, democratic, electorate, idea, contrast, rehabilitation, paralyze, focus, idealize.

2. Practise the pronunciation of the following words:

Lament, among, citizen, government, heterogeneous, disperse, audience, circulation, relative, population, through, target, entertainment, interpreting, influence, agenda, socialize, moreover, official, accountable, dual, capability, view, although, prominent, particularly, doggedly, resignation, award-winning, severely, wounded.

3. Read the text and give English equivalents to the following Russian words and word combinations:

Обычная жалоба, не ладят, для того, чтобы жить мирно, передача инфор-

мации, от одного человека, разнородная аудитория, живущая в разных местах, основные примеры, тиражи, обычно, средства вещания, для целевого общения, СМИ, зарабатывать деньги, главным образом, развлекательные мероприятия, влияние на общественное мнение, формировать план работы, знакомить граждан с политической жизнью, способствовать, ответственный за свои действия, заметный, кинофильмы, наиболее сильные политические идеи, с упорством разоблачали, перенес болезненную реабилитацию, превратился.

4. Read and translate the text:

Text 1. PEOPLE, GOVERNMENT AND COMMUNICATIONS

lament - жалоба
to get along – ладить, жить мирно
heterogeneous – разнородный, различный
disperse – рассеиваться
technical device – техническое устройство, прибор
circulation —тираж
relative to – относительно, касательно
broadcast media – средства вещания
targeted - целенаправленный
entertainment – развлекательное мероприятие
agenda – повестка дня, план действий
promoting – способствующий
to be responsible to – ответственный за что-либо
moreover –более того
electorate - избиратели
accountable for – ответственный, подотчетный
voter – голосующий, избиратель
capability - способность
reflect – отражать
shape - формировать
prominent - заметный
motion pictures – кинофильм
convey – нести, содержать (информацию)
doggedly – упрямо, упорно
expose - разоблачать

resignation – уход в отставку
paramilitary - военизированный
seamy – зд. грязный

«We never *talk* anymore» is a common lament among people who are living together but not getting along very well. In politics, too, citizens and their government need to communicate in order to get along well. **Communication** is the process of transmitting information from one individual or group to another. Mass **communication** is the process by which individuals or groups transmit information to large, heterogeneous, and widely dispersed audiences. The term **mass media** refers to the technical devices employed in mass communication. The mass media are commonly divided into two types:

1. Print media communicate information through the publication of written words and pictures. Prime examples of print media are daily newspapers and popular magazines. Because books seldom have very large circulations relative to the population, they are not typically classified as a mass medium.

2. Broadcast media communicate information electronically through sounds or sights. Prime examples of broadcast media are radio and television. Although the telephone also transmits sounds, it is usually used for more targeted communications and so is not typically included within the mass media.

The mass media are in business to make money, which they do mainly by selling advertising through their major function, entertainment. We are more interested in the five specific functions the mass media serve the political system: *reporting* the news, *interpreting* the news, *influencing* citizens' opinions, *setting* the *agenda* for government action, and *socializing* citizens about politics.

Our special focus is on the role of the mass media in promoting communication from a government to its citizens *and* from citizens to their government. In totalitarian governments, information flows more freely in one direction (from government to people) than in the other. In democratic governments, information must flow freely in both directions; a democratic government can be responsible to public opinion only if its citizens can make their opinions known. Moreover, the electorate can hold government officials accountable for their actions only if voters know what their government has done, is doing, and plans to do. Because the mass media provide the major channels for this two-way flow of information, they have dual capability of reflecting and shaping our political views.

Although this text concentrates on political uses of the four most prominent mass media - newspapers, magazines, radio, and television - you should understand that political content can also be transmitted through other mass media, such as re-

cording and motion pictures. Rock actors like Peter Gabriel and U2 often express political ideas in their music.

And motion pictures often convey particularly intense political messages. In the 1976 film All the President's Men, Dustin Hoffman and Robert Redford played Carl Bernstein and Bob Woodward, the two Washington Post reporters who doggedly exposed the Watergate scandal in a series of articles that led to President Richard Nixon's resignation in 1974. This motion picture dramatized a seamy side of political life that contrasted sharply with an idealized view of the presidency. In his series of "Rambo" films Sylvester Stallone played a paramilitary superhero that solved difficult international problems through combat. In contrast, the award-winning Born on the Fourth of July starred Tom Cruise in the real-life story of Ron Kovic, who enlisted in the marines and was severely wounded in Vietnam. Paralyzed from the waist down, he underwent painful rehabilitation and turned into an antiwar-activist. This film presents a very different view of fighting.

5. Answer the questions:

1. What is the difference between 'communication' and 'mass communication?'
2. What types are the mass media divided into?
3. What are the mass media main functions?
4. What conveys particularly intense political messages?

6. Choose the right variant:

2.1. Communication is

a) speaking on the telephone
b) the transmitting information from one to another object
c) individuals transmit information to large audience
d) a device for transmitting information

2.2. The mass media are commonly divided into ..... types.

a) three
b) five
c)four
d) two

2.3. Which doesn't refer to the print media?

a) books
b) magazines
c)newspapers
d) posters

2.4. Telephone isn't typically included within the mass media because
a) the quality of the sound is bad
b) radio and television are more interesting for audiences
c) it doesn't transmit information through sounds or sights
d) it is commonly used for more specific communications

2.5. The mass media make money by
a) selling valuable information
b) interpreting the news
c) selling advertising through entertainment
d) reporting the news

2.6. Mass media reflect and shape our political views because
a) they are responsible to public opinion
b) they provide the major channels for two-way flow
c) they report topical news
d) they concentrate on political issues

7. Read and translate the text:

Text 2. THE MASS MEDIA

The mass media transmit information to large, heterogeneous, and widely dispersed audiences through print and broadcasts. The main function of the mass media is entertainment, but the media also perform the political functions of reporting news, interpreting news, influencing citizens' opinions, setting the political agenda, and socializing citizens about politics.

The mass media in many countries are privately owned and in business to make money, which they do mainly by selling space or air time to advertisers. Both print and electronic media determine which events are newsworthy, a determination made on the basis of audience appeal. The rise of mass-circulation newspapers in the 1830s produced a politically independent press in the United States and Europe. In their aggressive competition for readers, those newspapers often engaged in sensational reporting, a charge sometimes leveled at today's media.

The broadcast media operate under technical, ownership, and content regulations set by the government, which tend to promote the equal treatment of political contests on radio and television more than in newspapers and news magazines.

The major media maintain staffs of professional journalists in major cities across

the world. All professional journalists recognize rules for citing sources that guide their reporting. What actually gets reported in the media depends on the media's gate-keepers, the publishers and editors.

Although more people today get more news from television than newspapers, newspapers usually do a more thorough job of informing the public about politics. Despite heavy exposure to news in the print and electronic media, the ability of most people to retain much political information is shockingly low-and less than it was in the mid-1960s. It appears that the problem is not with the media's inability to supply quality news coverage, but the lack of demand for it by the public. The role of the news media may be more important for affecting interactions among attentive policy elites than in influencing public opinion.

The media's elite including reporters from the major television networks tend to be more liberal than the public.

From the standpoint of majoritarian democracy, one of the most important effects of the media is to facilitate communications from the people to the government through the reporting of public opinion polls. The media zealously defend the freedom of the press, even to the point of encouraging disorder through criticism of the government and the granting of extensive publicity to violent protests, terrorist acts, and other threats to order.

8. Develop the following ideas:

1. The message of an article or a TV programme is more important than the form.
2. The media zealously defend the freedom of the press.
3. The media's elite tend to be more liberal than the public.
4. To facilitate communications from the people to the government is one of the most important effects of the media in democratic countries.

9. Additional questions:

1.What electronic media are of importance nowadays?
2.What helps newspaper publishers to win the competition for readers?

10. Read and translate the text:

Text 3. THE INTERNET

The Internet is a magnificent global network with millions and millions of computers and people connected to one another where each day people worldwide exchange an immeasurable amount of information, electronic mail, news, resources and, more important, ideas.

It has grown at a surprising rate. Almost everyone has heard about it and an increasing number of people use it regularly. The current estimate is that over 70 million people are connected, in some way, to the Internet — whether they know it or not.

With a few touches at a keyboard a person can get access to materials in almost everywhere. One can have access to full-text newspapers, magazines, journals, reference works, and even books. The Web is one of the best resources for up-to-date information. It is a hypertext-based system by which you can navigate through the Internet. Hypertext is the text that contains links to other documents. A special program known as «browser» can help you find news, pictures, virtual museums, electronic magazines, etc. and print Web pages. You can also click on keywords or buttons that take you to other pages or other Web sites. This is possible because browsers understand hypertext markup language or code, a set of comands to indicate how a Web page is formatted and displayed.

Internet Video conferencing programs enable users to talk to and see each other, exchange textual and graphical information, and collaborate.

Internet TV sets allow you to surf the Web and have e-mail while you are watching TV, or vice versa. Imagine - watching a film on TV and simultaneously accessing a Web site where you get information on the actors of the film. The next generation of Internet-enabled televisions will incorporate a smart-card for home shopping, banking and other interactive services. Internet-enabled TV means a TV set used as an Internet device.

The Internet is a good example of a wide area network (WAN). For longdistance or worldwide communications, computers are usually connected into a wide area network to form a single integrated network. Networks can be linked together by telephone lines or fibre-optic cables. Modern telecommunication systems use fibreoptic cables because they offer considerable advantages. The cables require little physical space, they are safe as they don't carry electricity, and they avoid electromagnetic interference.

Networks on different continents can also be connected via satellites. Computers are connected by means of a modem to ordinary telephone lines or fibre-optic cables, which are linked to a dish aerial. Communication satellites receive and send signals on a transcontinental scale.

11. Answer the questions:

1. What is the Internet? 2. How many people are connected to the Internet today? 3. What is Hypertext? 4. What are computers usually connected into? 5. What advantagers do fibre-optic cables offer?

12. Read and translate the text:

Text 4. A “FREE PRESS” MUST MEAN JUST THAT

(by Adriana Lopez)

waffle – *ам. жарг*. болтать, пустословить
toll - потери
misdeed- преступление, злодеяние
trafficking - торговля
volatile – непостоянный, нестабильный
flawed – порочный, с изъяном
ambiguity – неясность, двусмысленность
loophole - лазейка
guerrilla – партизанский
withdraw – отзывать
take for granted –считать (что-либо) доказанным/ не требующим доказательства, само собой разумеющимся.

We take freedom of speech for granted in the United States, but in the rest of the hemisphere it is the exception, not the rule. The Organization of American States met to discuss this issue and, for a while, it looked as if the United States was waffling.

A draft of the Inter-American Declaration on Freedom of Expression stated that the OAS is «convinced that the unlawful restrictions on the exercise of freedom of expression not only violate individual human rights but threaten democratic society itself». But it also said that «freedom of expression may be subject to certain restrictions established under domestic law and international obligations».

That loophole could have licensed Latin American countries to ban – and punish – members of the press.

Journalists in Latin America already face enough threats. In the last decade the death toll has reached nearly 200. Thousands of journalists are being severely punished for exposing the misdeeds of their countries’ powerful people. Attacks come as a direct result of their work. Reporters are subjected to harassment, kidnapping, torture, imprisonment and murder.

Gustavo Gorriti, a Peruvian journalist and recipient of the 1998 International Press Freedom Award of the Committee to Protect Journalists, has been continually harassed by the Peruvian and Panamanian governments. Gorriti has said that any journalist in Latin America who engages in serious, substantive reporting «will almost certainly face certain forms of harassment. You are literally taking your life in your hands».

Latin America’s rocky road from dictatorship to democracy – with drug traffick-

ing, government corruption, left-wing guerrilla groups and paramilitary organizations all putting up obstacles – has made journalism one of the most dangerous careers in this volatile region. Peruvian novelist and one time presidential candidate Mario Vargas Llosa once noted that «a fully free press won't be secure until democratic values and a rule of law are more firmly embedded».

Fortunately, Victor Marrero, U.S. ambassador to OAS, withdrew the flawed draft late last month, citing «ambiguities which should be clarified». He requested that the draft return to a working group for further revision before being voted on. This belated move at least puts the United States on the right track. The U.S. government should not back any kind of press restriction, and Latin America should not have to deal with double standards when it comes to freedom.

13. Questions for discussion:

1. Is freedom of speech taken for granted in your country?
2. Are journalists in your country subjected to any forms of harassment? If yes, why?
3. Freedom of expression may be subject to certain restrictions. Do you agree with this statement?

Unit 4
SCIENCE AND SOCIETY IN THE USA

1. Read and translate the text. Comment on the statement: «Science is a powerful engine by which the genius of the few is magnified by the talents of the many for the benefits of all».

Text 1. SCIENCE AND SOCIETY IN THE USA

entitlement – зд. установленная норма (панацея)
maintain – сохранять
generate – порождать
outright – полный
frustratingly – потрясающе, слишком уж
volatility – смена, перемена
commitment – обязательство (зд. вклад)
vistas – перспективы
embark – начинать (дело), *зд*. основываться
superstring – суперсерия или суперряд
give an account – объяснять, описывать

resolution – *зд*. расширение
underpinning – *зд*. свидетельство, пример
forestall – предвосхищать
poise – *зд*. склоняться (балансировать)
pinnacle – *зд*. кульминация

Science on the scale that it exists and is needed today can, however, be maintained only with large amounts of public support. Large-scale public support will be provided only if science and technology are meeting the critical needs of society. Intellectual progress, as measured by advances in specific public disciplines, is not in itself sufficient to generate such support. Perhaps it should be, but it is not. Public support for science may be wise policy, but is not an entitlement.

The central problem is that the costs of meeting the needs of society are too high, and the time scale for meeting them is too long. Both the ideals and the pragmatics of American society are based on improvement in the quality of life. We expect better health care, better education, and economic security. We expect progress towards the reduction, if not outright elimination of poverty, disease, and the environmental degradation.

Progress towards these goals has recently been frustratingly slow and increasingly expensive. The heavy costs of providing and improving health care and education are examples.

The situation has produced a volatility in public opinion and mood that reflects a lack of confidence in the ability of government and other sectors of society, including science and technology, to adequately address fundamental social needs.

If this mood hardens into a lack of vision, of optimism, of belief in the future, a tremendous problem for science will result. Science, in its commitment to innovation and expanding frontiers of knowledge, is a thing of the future.

The vistas of science are inspiring. Condensed matter physics is embarked on materials by design, nanotechnology and high temperature superconductivity, each containing the seeds of new industries as well as new scientific understanding. Molecular biology is in full bloom with a vast potential for further intellectual progress, betterment of human (and plant and animal) health, and commercialization. Neuroscience seems poised for dramatic progress.

Research into the fundamental laws of physics is aiming at a pinnacle. There is a candidate theory - the superstring theory – which is proposed as a unification of all the known fundamental forces in nature and which is supposed to give an account, complete in principle, of all physical phenomena, down to the shortest distances currently imaginable. At the largest scales of distance, observational astronomy is un-

covering meta-structures which enlarge the architecture of the universe a deepening of the problem of cosmology preliminary to its resolution.

Underpinning much of this progress, and progress in countless other areas as well has been the emergence of scientific computing as an enabling technology.

All this is first-rate science. All this is not enough – either to forestall change or to ensure adequate support for science in the present climate. Why it is not enough – and what else is required – are the subjects of a special inquiry.

2. Discussion.

1. Are there statements in the text that you disagree with? What are they?
2. Are you aware of the latest achievements in your field of science? What are they?
3. Do you think the achievements of science are not sufficient to ensure adequate support for science?
4. If you were in power what would you do to support science in Russia?

PART 2. ESPECIAL FIELD OF SCIENCE AND RESEARCH.

Unit 5
FLOODS

1. Read and translate the text.

flood - наводнение, разлив
hazard - риск, опасность
impact - влиять
neighborhood - соседство
community - общество
affect - влиять
entire - общий, весь
basin - бассейн
multiple - многочисленный
flash - быстрый
sign - знак
dangerous - опасный
debris - осколки, мусор
path - тропинка
similar - подобный, похожий

Floods are one of the most common hazards in the United States. Flood effects can be local, impacting a neighborhood or community, or very large, affecting entire river basins and multiple states. However, all floods are not alike. Some floods develop slowly, sometimes over a period of days. But flash floods can develop quickly, sometimes in just a few minutes and without any visible signs of rain. Flash floods often have a dangerous wall of roaring water that carries rocks, mud, and other debris and can sweep away most things in its path. Overland flooding occurs outside a deflned river or stream, such as when a levee is breached, but still can be destructive. Flooding can also occur when a dam breaks, producing effects similar to flash floods. Be aware of flood hazards no matter where you live, but especially if you live in a low-lying area, near water or downstream from a dam. Even very small streams, gullies, creeks, culverts, dry streambeds, or low-lying ground that appears harmless in dry weather can flood. Every state is at risk from this hazard.

2. Match two parts of the sentences, using the text

All floods	when a dam breaks
Flash floods often have	is at risk from this hazard
Flooding can also occur	of flood hazards
Flash floods	are not alike
Every state	can develop quickly
Be aware	a dangerous wall of roaring water

3. Find the answers to the questions in the text

What is one of the most common hazards in the United States?
All floods are not alike, aren't they?
What floods can develop quickly?
Flash floods often have a dangerous wall, haven't they?
When does overland flooding occur?
What is at risk from this hazard?

4. Read the following text and answer the questions

WHAT WOULD YOU DO?

You and your family moved from a city neighborhood in San Francisco, CA, to a suburb of Phoenix, AZ. Since earthquakes were a threat in your area, you always kept some extra food, water, and other supplies on hand and maintained an earthquake insurance policy, just in case something happened. You think this kind of preparation is no longer necessary based on what your neighbors have told you. According to them, the biggest threat they face is lack of water caused by the very dry weather. You continue to see public service announcements from the federal government about flood insurance and the need to protect yourself from flood damage. Surely, there would be no need for flood insurance where you live with its bare hills, deep canyons, and dry land.

Yes or No? Are you at risk for flooding, or is this more of a risk to people who live elsewhere? Is there a need to have a disaster plan and a disaster supplies? Should you consider purchasing flood insurance?

5. Know the terms (familiarize yourself with these terms to help identify a flood hazard)

Flood Watch:

Flooding is possible. Tune in to NOAA Weather Radio, commercial radio, or television for information.

Flash Flood Watch:

Flash flooding is possible. Be prepared to move to higher ground; listen to NOAA Weather Radio, commercial radio, or television for information.

Flood Warning:

Flooding is occurring or will occur soon; if advised to evacuate, do so immediately.

Flash Flood Warning:

A flash flood is occurring; seek higher ground on foot immediately.

6. Study the information about protective measures and refer it:

Before a Flood

To prepare for a flood, you should:

- Avoid building in a floodplain unless you elevate and reinforce your home.
- Elevate the furnace, water heater, and electric panel if susceptible to flooding.
- Install «check valves» in sewer traps to prevent flood water from backing up into

the drains of your home.

- Construct barriers (levees, beams, floodwalls) to stop floodwater from entering the building.
- Seal walls in basements with waterproofing compounds to avoid seepage.

During a Flood

If a flood is likely in your area, you should:

- Listen to the radio or television for information.
- Be aware that flash flooding can occur. If there is any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move.
- Be aware of streams, drainage channels, canyons, and other areas known to flood suddenly. Flash floods can occur in these areas with or without such typical warnings as rain clouds or heavy rain.

If you must prepare to evacuate, you should do the following:

- Secure your home. If you have time, bring in outdoor furniture. Move essential items to an upper floor.
- Turn off utilities at the main switches or valves if instructed to do so.
- Disconnect electrical appliances. Do not touch electrical equipment if you are wet or standing in water.

If you have to leave your home, remember these evacuation tips:

- Do not walk through moving water. Six inches of moving water can make you fall. If you have to walk in water, walk where the water is not moving.
- Use a stick to check the firmness of the ground in front of you.
- Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so safely. You and the vehicle can be quickly swept away.

Driving Flood Facts

The following are important points to remember when driving in flood conditions:

- Six inches of water will reach the bottom of most passenger cars causing loss of control and possible stalling.
- A foot of water will float many vehicles.
- Two feet of rushing water can carry away most vehicles including sport utility vehicles (SUVs) and pick-ups.

After a Flood

The following are guidelines for the period following a flood:

- Listen for news reports to learn whether the community's water supply is safe to drink.
- Avoid floodwaters; water may be contaminated by oil, gasoline, or raw sewage. Water may also be electrically charged from underground or downed power lines.
- Avoid moving water.
- Be aware of areas where floodwaters have receded. Roads may have weakened and could collapse under the weight of a car.
- Stay away from downed power lines, and report them to the power company.
- Return home only when authorities indicate it is safe.
- Stay out of any building if it is surrounded by floodwaters.
- Use extreme caution when entering buildings; there may be hidden damage, particularly in foundations.
- Service damaged septic tanks, cesspools, pits, and leaching systems as soon as possible. Damaged sewage systems are serious health hazards.
- Clean and disinfect everything that got wet. Mud left from floodwater can contain sewage and chemicals.

Flood Insurance

Consider the following facts:

- Flood losses are not covered under homeowners insurance policies.
- FEMA manages the National Flood Insurance Program, which makes federally-backed flood insurance available in communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.
- Flood insurance is available in most communities through insurance agents.
- There is a 30-day waiting period before flood insurance goes into effect, so don't delay.
- Flood insurance is available whether the building is in or out of the identified flood-prone area.

7. Knowledge check (decide whether the following statements are true or false):

1. Flood emergencies occur in only 12 states.
2. A «flood watch» announcement on the radio indicates that flooding is possible.
3. Flash floods may occur with little warning.

4. Flood risk varies from one region to another.
5. National flood insurance is available only for buildings within an identified flood-prone area.
6. It is safe to walk through floodwater if you can see the ground under it.
7. It takes at least 3 feet of floodwater to make a motorized vehicle float.
8. After flood waters recede from a roadway, the road could still be dangerous.
9. To prepare for a flood emergency, you should have a NOAA Weather Radio as well as a commercial radio.

8. Read the following text

DAM FAILURE

dam - дамба, плотина
according - согласно
approximately- приблизительно
significant - значительно
property - собственность, имущество
failure - неуспех, провал
occur - случаться, происходить
levee - дамба, гать, береговой вал реки
intense - интенсивный, сильный
melt - таять

There are 79,500 dams in the United States, according to the 2005 update to the National Inventory of Dams. Approximately one third of these pose a «high» or «significant» hazard to life and property if failure occurs. Dam failure or levee breeches can occur with little warning. Intense storms may produce a flood in a few hours or even minutes for upstream locations. Flash floods occur within six hours of the beginning of heavy rainfall, and dam failure may occur within hours of the first signs of breaching. Other failures and breeches can take much longer to occur, from days to weeks, as a result of debris jams or the accumulation of melting snow.

9. Border the words, translate the sentences:
Stormsmayproduceafloodinafewhoursorevenminutesforupstreamlocations.
Damfailureorleveebreechescanoccurwithlittlewarning.

10. Find in the text the sentences with the following verbs translate them:
Pose, occur, are, produce.

11. Try to explain the following phrases in English: to pose a «high» hazard, dam failure, intense storm, flash flood, heavy rainfall.

12. Study the information about protective measures before a dam failure and refer it in Russian

Knowing your risk, making sure an Emergency Action Plan (EAP) is in place, and evacuating when directed by emergency response officials are the most important steps you can take to staying safe from a dam failure.

Ways to Plan Ahead

- Know your risk. Do you live downstream from a dam? Is the dam a highhazard or significant-hazard potential dam? To find out, contact your state or county emergency management agency or visit the National Inventory of Dams (NID) or the Association of State Dam Safety Officials (ASDSO).
- Find out who owns the dam and who regulates the dam. This information also should be available from your state or county emergency management agency, NID, or ASDSO.
- Once you determine that you live downstream from a high-hazard or significant-hazard potential dam and find out who owns the dam, see if a current EAP is in place for the dam. An EAP is a formal document that identifies potential emergency conditions at a dam and specifies preplanned actions to be followed to reduce property damage and loss of life. An EAP specifies actions the dam owner should take to take care of problems at the dam. It also includes steps to assist the dam owner in issuing early warning and notification messages to responsible downstream emergency management authorities of the emergency.
- If there is a dam failure or an imminent dam failure and you need to evacuate, know your evacuation route and get out of harms way. In general, evacuation planning and implementation are the responsibility of the state and local officials responsible for your safety. However, there may be situations where recreational facilities, campgrounds, or residences are located below a dam and local authorities will not be able to issue a timely warning. In this case, the dam owner should coordinate with local emergency management officials to determine who will warn you and in what priority.

13. Read the following text

RETURNING HOME

return -возвращаться
area - площадь, пространство, область
declare - провозглашать, объявлять
safe - безопасный
both - оба, обе
mentally - умственно
challenge - вызов, оклик
caution - осторожность
injury - повреждение, рана
unconscious - бессознательный, в обмороке

Don’t return to your flood-damaged home before the area is declared to be safe by local officials. Returning home can be both physically and mentally challenging. Above all, use caution. Check for injuries. Do not attempt to move seriously injured persons unless they are in immediate danger of death or further injury. If you must move an unconscious person, first stabilize the neck and back, then call for help immediately.

- Keep a battery-powered radio with you so you can listen for emergency updates and news reports.
- Use a battery-powered flash light to inspect a damaged home.
- Note: The flashlight should be turned on outside before entering the battery may produce a spark that could ignite leaking gas, if present.
- Watch out for animals, especially poisonous snakes. Use a stick to poke through debris.
- Be wary of wildlife and other animals
- Use the phone only to report life-threatening emergencies.
- Stay off the streets. If you must go out, watch for fallen objects; downed electrical wires; and weakened walls, bridges, roads, and sidewalks.

Before You Enter Your Home

Walk carefully around the outside and check for loose power lines, gas leaks, and structural damage. If you have any doubts about safety, have your residence inspected by a qualified building inspector or structural engineer before entering.

Do not enter if:

- You smell gas.
- Floodwaters remain around the building.

- Your home was damaged by fire and the authorities have not declared it safe.

Going Inside Your Home

When you go inside your home, there are certain things you should and should not do. Enter the home carefully and check for damage. Be aware of loose boards and slippery floors. The following items are other things to check inside your home:

Natural gas. If you smell gas or hear a hissing or blowing sound, open a window and leave immediately. Turn off the main gas valve from the outside, if you can. Call the gas company from a neighbor's residence. If you shut off the gas supply at the main valve, you will need a professional to turn it back on. Do not smoke or use oil, gas lanterns, candles, or torches for lighting inside a damaged home until you are sure there is no leaking gas or other flammable materials present.

Sparks, broken or frayed wires. Check the electrical system unless you are wet, standing in water, or unsure of your safety. If possible, turn off the electricity at the main fuse box or circuit breaker. If the situation is unsafe, leave the building and call for help. Do not turn on the lights until you are sure they're safe to use. You may want to have an electrician inspect your wiring.

Roof, foundation, and chimney cracks. If it looks like the building may collapse, leave immediately.

Appliances. If appliances are wet, turn off the electricity at the main fuse box or circuit breaker. Then, unplug appliances and let them dry out. Have appliances checked by a professional before using them again. Also, have the electrical system checked by an electrician before turning the power back on.

Water and sewage systems. If pipes are damaged, turn off the main water valve. Check with local authorities before using any water; the water could be contaminated. Pump out wells and have the water tested by authorities before drinking. Do not flush toilets until you know that sewage lines are in tact.

Food and other supplies. Throw out all food and other supplies that you suspect may have become contaminated or come in to contact with floodwater. Your basement. If your basement has flooded, pump it out gradually (about one third of the water per day) to avoid damage. The walls may collapse and the floor may buckle if the basement is pumped out while the surrounding ground is still waterlogged.

Open cabinets. Be alert for objects that may fall.

Clean up household chemical spills. Disinfect items that may have been contaminated by raw sewage, bacteria, or chemicals. Also clean salvageable items.

Call your insurance agent. Take pictures of damages. Keep good records of repair and cleaning costs.

14. Find the phrases in the text read the sentences with them:

Особенно ядовитые змеи, разрушенный огнем, не включайте свет, электрическая система.

15. Make up sentences:

1. Do not, move, attempt, to, persons, seriously, injured. 2. Damage, Enter, and, the, home, check for, carefully. 3. Flush, Do not, know, toilets, you, until, that, intact, sewage, lines, are. 4. Objects, Be, for, alert, fall, that, may. 5. Pictures, Take, damages, of.

Unit 6
EARTHQUAKES

1. Read the following text

earthquake - землетрясение
frightening - пугающий
destructive - разрушительный
sudden - внезапный
strain - напряжение
shape - форма, формировать
gradual - постоянный
lock- закрытый, запертый
unable - неспособный
populated - населенный
death - смерть
extensive -обширный, распространенный
identifying - определяющий
reduce – уменьшать

One of the most frightening and destructive phenomena of nature is a severe earthquake and its terrible aftereffects. An earthquake is a sudden movement of the earth, caused by the abrupt release of strain that has accumulated over a long time. For hundreds of millions of years, the forces of plate tectonics have shaped the earth, as the huge plates that form the earth’s surface slowly move over, under, and past each other. Sometimes, the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free. If the earthquake occurs in a populated area, it may cause many deaths and injuries and extensive property damage. Although

there are no guarantees of safety during an earthquake, identifying potential hazards ahead of time and advance planning can save lives and significantly reduce injuries and property damage.

2. Find the following phrases in the text:

Ужасные последствия, резкое движение, сотни миллионов лет, сформировали землю, если землетрясение случается, оно может вызвать, смерти и ранения, хотя нет гарантии, могут спасти, значительно уменьшить.

3. Find the antonyms to the following words:

1. Sudden, 2. Extensive, 3. Free, 4. Unable, 5. Huge.
1. Busy, 2. Able, 3. Slow, 4. Small, 5. Intensive.

4. Fill in the necessary word from the vocabulary:

1. One of the most … and … phenomena of nature is a severe earthquake.
2. The plates are … together.
3. Earthquake may cause many … and injuries and … property damage.
4. Sometimes, the movement is … ….
5. An earthquake is caused by the abrupt release of … that has accumulated.

5. Agree or disagree with the sentences, using the phrases of agreement and disagreement:

1. One of the most frightening and destructive phenomena of nature is a severe earthquake and its terrible aftereffects.
2. For hundreds of millions of years, the forces of plate tectonics have shaped the earth, as the small plates that form the earth’s surface slowly move over, under, and past each other.
3. The plates are locked together, able to release the accumulating energy.
4. When the accumulated energy grows strong enough, the plates do not break free.
5. Although there are no guarantees of safety during an earthquake, identifying potential hazards ahead of time and advance planning can save lives.

6. Know the terms

Earthquake. A sudden slipping or movement of a portion of the earth’s crust, accompanied and followed by a series of vibrations.

Aftershock. An earthquake of similar or lesser intensity that follows the main earthquake.

Fault. The fracture across which displacement has occurred during an earth-

quake. The slippage may range from less than an inch to more than 10 yards in a severe earthquake.

Epicenter. The place on the earth's surface directly above the point on the fault where the earthquake rupture began. Once fault slippage begins, it expands along the fault during the earthquake and can extend hundreds of miles before stopping.

Seismic Waves. Vibrations that travel outward from the earthquake fault at speeds of several miles per second. Although fault slippage directly under a structure can cause considerable damage, the vibrations of seismic waves cause most of the destruction during earthquakes.

Magnitude. The amount of energy released during an earthquake, which is computed from the amplitude of the seismic waves. A magnitude of 7.0 on the Richter Scale indicates an extremely strong earthquake. Each whole number on the scale represents an increase of about 30 times more energy released than the previous whole number represents. Therefore, an earthquake measuring 6.0 is about 30 times more powerful than one measuring 5.0.

7. Study the information about protective measures and refer it:

Before an Earthquake

The following are things you can do to protect yourself, your family, and your property in the event of an earthquake:

- Repair defective electrical wiring, leaky gas lines, and inflexible utility connections. Get appropriate professional help. Do not work with gas or electrical lines yourself. Bolt down and secure to the wall studs your water heater, refrigerator, furnace, and gas appliances. If recommended by your gas company, have an automatic gas shut-off valve installed that is triggered by strong vibrations.
- Place large or heavy objects on lower shelves. Fasten shelves, mirrors, and large picture frames to walls. Brace high and top-heavy objects.
- Store bottled foods, glass, china, and other breakables on low shelves or in cabinets that fasten shut.
- Anchor overhead lighting fixtures.
- Be sure the residence is firmly anchored to its foundation.
- Install flexible pipe fittings to avoid gas or water leaks. Flexible fittings are more resistant to breakage.
- Locate safe spots in each room under a sturdy table or against an inside wall. Reinforce this information by moving to these places during each drill.
- Hold earthquake drills with your family members: Drop, cover, and hold on!

During an Earthquake

Minimize your movements during an earthquake to a few steps to a nearby safe place. Stay indoors until the shaking has stopped and you are sure exiting is safe.

If you are	Then
indoors	• Take cover under a sturdy desk, table, or bench or against an inside wall, and hold on. If there isn't a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building • Stay away from glass, windows, outside doors and walls, and anything that could fall, such as lighting fixtures or furniture • Stay in bed if you are there when the earthquake strikes hold on and protect your head with a pillow, unless you are under a heavy light fixture that could fall. In that case, move to the nearest safe place • Use a doorway for shelter only if it is in close proximity to you and if you know it is a strongly supported, loadbearing doorway • Stay inside until shaking stops and it is safe to go outside. Most injuries during earthquakes occur when people are hit by falling objects when entering into or exiting from buildings • Be aware that the electricity may go out or the sprinkler systems or fire alarms may turn on • DO NOT use the elevators
outdoors	• Stay there • Move away from buildings, streetlights, and utility wires
in a moving vehicle	• Stop as quickly as safety permits and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wires • Proceed cautiously once the earthquake has stopped, watching for road and bridge damage
trapped under debri	• Do not light a match.· Do not move about or kick up dust • Cover your mouth with a handkerchief or clothing. • Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort shouting can cause you to inhale dangerous amounts of dust

After an Earthquake

- Be prepared for aftershocks. These secondary shockwaves are usually less violent than the main quake but can be strong enough to do additional damage to weakened structures.
- Open cabinets cautiously. Beware of objects that can fall off shelves.
- Stay away from damaged areas unless your assistance has been specifically requested by police, fire, or relief organizations.
- Be aware of possible tsunamis if you live in coastal areas. These are also known as seismic sea waves (mistakenly called «tidal waves»). When local authorities issue a tsunami warning, assume that a series of dangerous waves is on the way. Stay away from the beach.

8. Knowledge check.

Check your knowledge about what to do during an earthquake. For each question, choose answer A or B and circle the correct response. When you have finished, check your responses.

What action should you take during an earthquake? The answer varies by where you are when an earthquake strikes. For each situation, pick the best course of action from the choices given.

1. At home:
а) Stay inside
б) Go out to the street
2. In bed:
а) Stand by a window to see what is happening
б) Stay in bed and protect your head with a pillow
3. In any building:
а) Stand in a doorway
б) Crouch in an inside corner away from the exterior wall
4. On the upper floor of an apartment building:
а) Take the elevator to the ground floor as quickly as possible
б) Stay in an interior room under a desk or table
5. Outdoors:
а) Run into the nearest building
б) Stay outside away from buildings
6. Driving a car:
а) Stop the car in an open area
б) Stop the car under an overpass

Unit 7.
THUNDERSTORMS AND LIGHTNING

1. Read the following text

thunderstorm - гром
lightning - молния
victim - жертва
survive - выжить
hail - град
responsible - ответственный
annually - ежегодно
reach - достигать
evaporate - испаряться
wildfire - лесной пожар

All thunderstorms are dangerous. Every thunderstorm produces lightning. In the United States, an average of 300 people are injured and 80 people are killed each year by lightning. Although most lightning victims survive, people struck by lightning often report a variety of long-term, debilitating symptoms. Other associated dangers of thunderstorms include tornadoes, strong winds, hail, and flash flooding. Flash flooding is responsible for more fatalities more than 140 annually than any other thunderstorm-associated hazard. Dry thunderstorms that do not produce rain that reaches the ground are most prevalent in the western United States. Falling raindrops evaporate, but lightning can still reach the ground and can start wildfires.

2. Find in the text the equivalents for:

ранены и убиты, сильные ветра, достигает земли, ответственен за, опасности грома, каждый год.

3. Try to explain the following phrases in English:

Thunderstorms are dangerous, flash flooding, dry thunderstorms, thunderstorm-associated hazard, people are injured, most prevalent, victims survive.

4. Border the words, read and translate the sentences:

1. Mostlightningvictims survive.
2. Peoplestruckbylightningoftenreportavarietyoflong-termsymptoms.
3. Bangersofthunderstormsincludetornadoeshailflashflooding.
4.DrythunderstormsthatdonotproducerainareprevalentinthewesternUnitedStates.

5. Find the answers in the text:

1. What is dangerous? 2. What produces lightning? 3. How many people are killed each year by lightning? 4. Falling raindrops evaporate, but lightning can still reach the ground and can start wildfires, can't it?

6. Study the following facts about thunderstorms:

• They may occur singly, in clusters, or in lines.

• Some of the most severe occur when a single thunderstorm affects one location for an extended time.

• Thunderstorms typically produce heavy rain for a brief period, anywhere from 3 0 minutes to an hour.

• Warm, humid conditions are highly favorable for thunderstorm development.

• About 10 percent of thunderstorms are classified as severe one that produces hail at least three-quarters of an inch in diameter, has winds of 58 miles per hour or higher, or produces a tornado.

7. Study the following facts about lightning:

• Lightnings unpredictability increases the risk to individuals and property.

• Lightning often strikes outside of heavy rain and may occur as far as 10 miles away from any rainfall.

• «Heat lightning» is actually lightning from a thunderstorm too far away for thunder to be heard. However, the storm may be moving in your direction!

• Most lightning deaths and injuries occur when people are caught outdoors in the summer months during the afternoon and evening.

• Your chances of being struck by lightning are estimated to be 1 in 600,000, but could be reduced even further by following safety precautions.

• Lightning strike victims carry no electrical charge and should be attended to immediately.

8. Know the terms. Familiarize yourself with these terms to help identify a thunderstorm hazard:

Severe Thunderstorm Watch: Tells you when and where severe thunderstorms are likely to occur. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio, or television for information.

Severe Thunderstorm Warning: Issued when severe weather has been reported by spotters or indicated by radar. Warnings indicate imminent danger to life and property to those in the path of the storm.

9. Study the information about protective measures and refer it in Russian:

Before Thunderstorms and Lightning

- To prepare for a thunderstorm, you should do the following:
- Remove dead or rotting trees and branches that could fall and cause injury or damage during a severe thunderstorm.
- Remember the 30/30 lightning safety rule: Go indoors if, after seeing lightning, you cannot count to 30 before hearing thunder. Stay indoors for 30 minutes after hearing the last clap of thunder.

Thunderstorms. The following are guidelines for what you should do if a thunderstorm is likely in your area:

- Postpone outdoor activities.
- Get inside a home, building, or hard top automobile (not a convertible).
- Although you may be injured if lightning strikes your car, you are much safer inside a vehicle than outside.
- Remember, rubber-soled shoes and rubber tires provide NO protection from lightning. However, the steel frame of a hard-topped vehicle provides increased protection if you are not touching metal.
- Secure outdoor objects that could blow away or cause damage.
- Shutter windows and secure outside doors. If shutters are not available, close window blinds, shades, or curtains.
- Avoid showering or bathing. Plumbing and bathroom fixtures can conduct electricity.
- Use a corded telephone only for emergencies. Cordless and cellular telephones are safe to use.
- Unplug appliances and other electrical items such as computers and turn off air conditioners. Power surges from lightning can cause serious damage.
- Use your battery-operated NOAA Weather Radio for updates from local officials.

Avoid the following:

- Natural lightning rods such as a tall, isolated tree in an open area
- Hilltops, open fields, the beach, or a boat on the water
- Isolated sheds or other small structures in open areas
- Anything metal–tractors, farm equipment, motorcycles, golf carts, golf clubs, and bicycles

During a Thunderstorm

If you are	Then
In a forest	Seek shelter in a low area under a thick growth of small trees

In an open area	Go to a low place such as a ravine or valley. Be alert for flash floods
On open water	Get to land and find shelter immediately
Anywhere you feel your hair stand on end (which indicates that lightning is about to strike)	Squat low to the ground on the balls of your feet. Place your hands over your ears and your head between your knees. Make yourself the smallest target possible and minimize your contact it the ground. DO NOT lie flat on the ground

After a Thunderstorm. Call 9-1-1 for medical assistance as soon as possible. The following are things you should check when you attempt to give aid to a victim of lightning:

- Breathing - if breathing has stopped, begin mouth-to-mouth resuscitation.
- Heartbeat -if the heart has stopped, administer CPR.
- Pulse - if the victim has a pulse and is breathing, look for other possible injuries.

Check for burns where the lightning entered and left the body. Also be alert for nervous system damage, broken bones, and loss of hearing and eyesight.

10. Decide whether the following statements are true or false:

1. Never touch a person struck by lightning.
2. Dry, cold conditions favor development of a thunderstorm.
3. If you can count to 25 after seeing lightning and before hearing thunder, it is safe to stay outdoors.
4. It is safe to use a cordless telephone during a thunderstorm.
5. Rubber-soled shoes and rubber tires provide protection from lightning.

Unit 8.
TSUNAMIS

1. Read the following text

tsunamis - цунами
wave - волна
enormous - огромный
smash- разбиваться
approach - достигать
shore - побережье
drown - тонуть
recede - отступать
contamination – загрязнение

Tsunamis (pronounced soo-ná-mees), also known as seismic sea waves (mistakenly called «tidal waves»), are a series of enormous waves created by an underwater disturbance such as an earthquake, landslide, volcanic eruption, or meteorite. A tsunami can move hundreds of miles per hour in the open ocean and smash into land with waves as high as 100 feet or more. From the area where the tsunami originates, waves travel outward in all directions. Once the wave approaches the shore, it builds in height. The topography of the coastline and the ocean floor will influence the size of the wave. There may be more than one wave and the succeeding one may be larger than the one before. That is why a small tsunami at one beach can be a giant wave a few miles away. All tsunamis are potentially dangerous, even though they may not damage every coastline they strike. A tsunami can strike anywhere along most of the U.S. coastline. The most destructive tsunamis have occurred along the coasts of California, Oregon, Washington, Alaska, and Hawaii. Earthquake-induced movement of the ocean floor most often generates tsunamis. If a major earthquake or landslide occurs close to shore, the first wave in a series could reach the beach in a few minutes, even beforea warning is issued. Areas are at greater risk if they are less than 25 feet above sea level and within a mile of the shoreline. Drowning is the most common cause of death associated with a tsunami. Tsunami waves and the receding water are very destructive to structures in the run-up zone. Other hazards include flooding, contamination of drinking water, and fires from gas lines or ruptured tanks.

2. **Find the following word-combinations in the text, translate the sentences with them:**

В открытом океане, самые разрушительные цунами, над уровнем моря, загрязнение питьевой воды, может быть больше чем, огромные волны, достичь пляжа, повлияет на размер волны, вот почему, во всех направлениях, вдоль побережья.

3. Make the sentences complete, using the text

1. Tsunamis are a series of enormous …
2. Areas are at greater risk if…
3. A small tsunami at one beach…
4. The topography of the coastline…
5. From the area where the tsunami…
6. A tsunami can move hundreds…
7. Drowning is the most common…
8. Other hazards include адooding…
9. From the area where the tsunami…
10. There may be more than one…

4. Make up sentences:

1. A, can, tsunami, hundreds, move, of miles, hour, per, in, ocean, the, open. 2. Coastline, The, and, topography, of, the, ocean , the, floor, influence, will, of the wave, the size. 3. Movement, Earthquake-induced, of the ocean, generates, floor, most, tsunamis, often. 4. Can, A, strike, tsunami, anywhere. 5. Dangerous, All, are, tsunamis, potentially.

5. Ask questions to each sentence, beginning with the word, given in brackets:

1. A tsunami can move hundreds of miles per hour in the open ocean and smash into land with waves as high as 100 feet or more. (What?) 2. From the area where the tsunami originates, waves travel outward in all directions. (Where?) 3. Once the wave approaches the shore, it builds in height. (What?) 4. All tsunamis are potentially dangerous, even though they may not damage every coastline they strike. (What?) 5. A tsunami can strike anywhere along most of the U.S. coastline. (Where?) 6. The most destructive tsunamis have occurred along the coasts of California, Oregon, Washington, Alaska, and Hawaii. (Where?).

6. Find the answers in the text:

1) What is tsunami? 2) How can a tsunami move? 3) Where does the tsunami originate? 4) A tsunami can strike anywhere along most of the U.S. coastline, can't it? 5) What do other hazards include?

7. Know the terms:

Advisory

An earthquake has occurred in the Pacific basin, which might generate a tsunami.

Watch

A tsunami was or may have been generated, but is at least two hours travel time to the area in Watch status.

Warning

A tsunami was, or may have been generated, which could cause damage; therefore, people in the warned area are strongly advised to evacuate.

8. Study the protective measures:

During a tsunami. The following are guidelines for what you should do if a tsunami is likely in your area:

- Turn on your radio to learn if there is a tsunami warning if an earthquake occurs and you are in a coastal area.
- Move inland to higher ground immediately and stay there.

CAUTION: If there is noticeable recession in water away from the shoreline this is nature's tsunami warning and it should be heeded. You should move away immediately.

After a tsunami. The following are guidelines for the period following a tsunami:

- Stay away from flooded and damaged areas until officials say it is safe to return.
- Stay away from debris in the water; it may pose a safety hazard to boats and people.
- Save Yourself - Not Your Possessions

9. Read the following text

Like everyone else in Maullin, Chile, Ramon Atala survived the 1960 Chile earthquake. However, he lost his life trying to save something from the tsunami that followed. Mt. Atala was Maullin's most prosperous merchant. Outside of town, he owned a barn and a plantation of Monterey pine. In town, he owned a pier and one large building and also had private quarters in a waterfront warehouse. Mt. Atala entered this warehouse between the first and second wave of the tsunami that struck Maullin. The warehouse was washed away and his body was never found. It is unclear what he was trying to save. What is clear is that no possession is worth your life and that it is important to get to higher ground away from the coast and stay there until it is safe to return.

Unit 9.
HURRICANES

1. Read the following text

hurricane - ураган
tropical - тропический
cyclone - циклон
circulation -циркуляция
cause-причинять, вызывать
create -создавать
surge - большая волна
pressure -давление
warrant - подтверждать
torrential - проливной, обильный
excessive -чрезмерный

A hurricane is a type of tropical cyclone, the generic term for a low pressure system that generally forms in the tropics. A typical cyclone is accompanied by thunderstorms, and in the Northern Hemisphere, a counterclockwise circulation of winds near the earth's surface.

All Atlantic and Gulf of Mexico coastal areas are subject to hurricanes or tropical storms. Parts of the Southwest United States and the Pacific Coast experience heavy rains and floods each year from hurricanes spawned off Mexico. The Atlantic hurricane season lasts from June to November, with the peak season from mid-August to late October. Hurricanes can cause catastrophic damage to coastlines and several hundred miles inland. Winds can exceed 155 miles per hour.

Hurricanes and tropical storms can also spawn tornadoes and microbursts, create storm surges along the coast, and cause extensive damage from heavy rainfall. Hurricanes are classified into five categories based on their wind speed, central pressure, and damage potential.

Category Three and higher hurricanes are considered major hurricanes, though Categories One and Two are still extremely dangerous and warrant your full attention. Hurricanes can produce widespread torrential rains. Floods are the deadly and destructive result. Slow moving storms and tropical storms moving into mountainous regions tend to produce especially heavy rain. Excessive rain can trigger landslides or mud slides, especially in mountainous regions. Flash flooding can occur due to intense rainfall. Flooding on rivers and streams may persist for several days or more after the storm. Between 1970 and 1999, more people lost their lives from freshwater inland flooding associated with land falling tropical cyclones than from any other weather hazard related to tropical cyclones.

2. Find the antonym to each word:

low, Northern, near, late, dead.

3. Give Russian equivalents for the following words and word combinations:

Tropical cyclone, generic term, low pressure system, counterclockwise circulation of winds, tropical storms, experience heavy rains and floods, hurricane season, catastrophic damage, to spawn tornadoes and microbursts, to create storm surges, wind speed, central pressure, extremely dangerous, warrant your full attention, to produce widespread torrential rains, destructive result mountainous regions.

4. Find in the text English equivalents for the following wordcombinations, translate the sentences with them:

Может произойти, реки и ручьи, тропический шторм, сильный дождь, се-

зон урагана, скорость ветра, центральное давление, несколько дней, прибрежные районы, горные районы.

5. Make the sentences complete, using the text

1) Hurricanes are classified into…
2) A hurricane is a type of……
3) Winds can exceed……
4) The Atlantic hurricane season lasts……
5) Floods are the deadly and……
6) Excessive rain can trigger ……
7) A typical cyclone is ……
8) Hurricanes can cause……
9) Flash flooding can occur due to……
10) Between 1970 and 1999 ……

6. Put the questions to the following sentences, beginning with the word, given in brackets:

1. Hurricanes and tropical storms can also spawn tornadoes and microbursts, create storm surges along the coast, and cause extensive damage from heavy rainfall. (What?) 2. Hurricanes are classified into five categories based on their wind speed, central pressure, and damage potential. (Are?) 3. Category Three and higher hurricanes are considered major hurricanes, though Categories One and Two are still extremely dangerous and warrant your full attention. (Are?) 4. Hurricanes can produce widespread torrential rains. (What?).

7. Study Saffir-Simpson Scale and speak about hurricanes' categories

Scale Number (Category)	**Sustained Winds (MPH)**	**Damage**	**Storm Surge**
1	74-95	Minimal: Unanchored mobile homes, vegetation and signs.	4-5 feet
2	96-110	Moderate: All mobile homes, roofs, small crafts, flooding.	6-8 feet
3	111-130	Extensive: Small buildings, low-lying roads cut off.	9-12 feet
4	131-155	Extreme: Roofs destroyed, trees down, roads cut off, mobile homes destroyed. Beach homes flooded.	13-18 feet
5	More than 155	Catastrophic: Most buildings destroyed. Vegetation destroyed. Major roads cut off. Homes flooded.	Greater than 18 feet

8. Know the terms:

Tropical Depression: An organized system of clouds and thunderstorms with a defined surface circulation and maximum sustained winds of 38 MPH (33 knots) or less. Sustained winds are defined as one-minute average wind measured at about 33 ft (10 meters) above the surface.

Tropical Storm: An organized system of strong thunderstorms with a defined surface circulation and maximum sustained winds of 39-73 MPH (34 -63 knots).

Hurricane: An intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 MPH (64 knots) or higher.

Storm Surge: A dome of water pushed onshore by hurricane and tropical storm winds. Storm surges can reach 25 feet high and be 50 -1000 miles wide.

Storm Tide: A combination of storm surge and the normal tide (i.e., a 15-foot storm surge combined with a 2-foot normal high tide over the mean sea level created a 17-foot storm tide).

Hurricane/Tropical Storm Watch: Hurricane/tropical storm conditions are possible in the specified area, usually within 36 hours. Tune in to NOAA Weather Radio, commercial radio, or television for information.

Hurricane/Tropical Storm Warning: Hurricane/tropical storm conditions are expected in the specified area, usually within 24 hours.

Short Term Watches and Warnings: These warnings provide detailed information about specific hurricane threats, such as flash floods and tornadoes.

9. Study the information about protective measures and refer it:

Before a hurricane. To prepare for a hurricane, you should take the following measures:

- Make plans to secure your property. Permanent storm shutters offer the best protection for windows. A second option is to board up windows with 5/8» marine plywood, cut to fit and ready to install. Tape does not prevent windows from breaking.
- Install straps or additional clips to securely fasten your roof to the frame structure. This will reduce roof damage.
- Be sure trees and shrubs around your home are well trimmed.
- Clear loose and clogged rain gutters and downspouts.
- Determine how and where to secure your boat.
- Consider building a safe room.

During a hurricane. If a hurricane is likely in your area, you should:

- Listen to the radio or TV for information.
- Secure your home, close storm shutters, and secure outdoor objects or bring them indoors.

- Turn off utilities if instructed to do so. Otherwise, turn the refrigerator thermostat to its coldest setting and keep its doors closed.
- Turn off propane tanks. Avoid using the phone, except for serious emergencies.
- Moor your boat if time permits.
- Ensure a supply of water for sanitary purposes such as cleaning and flushing toilets. Fill the bathtub and other large containers with water.

You should evacuate under the following conditions:

- If you are directed by local authorities to do so. Be sure to follow their instructions.
- If you live in a mobile home or temporary structure–such shelters are particularly hazardous during hurricanes no matter how well fastened to the ground.

If you live in a high-rise building–hurricane winds are stronger at higher elevations.

If you live on the coast, on a floodplain, near a river, or on an inland waterway.

If you feel you are in danger.

If you are unable to evacuate, go to your wind-safe room. If you do not have one, follow these guidelines:

- Stay indoors during the hurricane and away from windows and glass doors.
- Close all interior doors-secure and brace external doors.
- Keep curtains and blinds closed. Do not be fooled if there is a lull; it could be the eye of the storm -winds will pick up again.
- Take refuge in a small interior room, closet, or hallway on the lowest level.
- Lie on the floor under a table or another sturdy object.

10. Knowledge check. Read the following and respond to the question below:

Your neighbor said that in the event a hurricane threatens, the household would get ready by closing the windows and doors on the storm side of the house and opening the ones on the side away from the wind. They also will tape the windows to prevent damage to the glass.

Is this a good idea?

11. Study the information and speak about evacuations during a hurricane:

Evacuation Plans

When community evacuations become necessary, local officials provide information to the public through the media. In some circumstances, other warning methods, such as sirens or telephone calls, also are used. Additionally, there may be circumstances under which you and your family feel threatened or endangered and you need to leave your home, school, or workplace to avoid these situations. The amount

of time you have to leave will depend on the hazard. If the event is a weather condition, such as a hurricane that can be monitored, you might have a day or two to get ready. However, many disasters allow no time for people to gather even the most basic necessities, which is why planning ahead, is essential.

Evacuation: More Common than You Realize

Evacuations are more common than many people realize. Hundreds of times each year, transportation and industrial accidents release harmful substances, forcing thousands of people to leave their homes. Fires and floods cause evacuations even more frequently. Almost every year, people along the Gulf and Atlantic coasts evacuate in the face of approaching hurricanes.

Evacuation Guidelines

Always	If time permits
Keep a full tank of gas in your car if an evacuation seems likely. Gas stations may be closed during emergencies and unable to pump gas during power outages. Plan to take one car per family to reduce congestion and delay	Gather your disaster supplies kit
Make transportation arrangements with friends or your local government if you do not own a car	Wear sturdy shoes and clothing that provides some protection, such as long pants, long-sleeved shirts, and a cap
Listen to a battery-powered radio and fo low local evacuation instructions	Secure your home: Close and lock doors and windows. Unplug electrical equipment, such as radios and televisions, and small appliances, such as toasters and microwaves. Leave freezers and refrigerators plugged in unless there is a risk of flooding
Gather your family and go if you are in – structed to evacuate immediately	Let others know where you are going
Leave early enough to avoid being trapped by severe weather	
Follow recommended evacuation routes. Do not take shortcuts; they may be blocked	
Be alert for washed-out roads and bridges. Do not drive into flooded areas	
Stay away from downed power lines	

Unit 10.
TORNADOES

1. Read the following text

violent - сильный, жестокий
storm - шторм, ветер
powerful - мощный
whirling - закручивающийся
obscure - незаметный
funnel- воронка

Tornadoes are nature□s most violent storms. Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Every state is at some risk from this hazard. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

The following are facts about tornadoes:

- They may strike quickly, with little or no warning.
- They may appear nearly transparent until dust and debris are picked up or a cloud forms in the funnel.
- The average tornado moves Southwest to Northeast, but tornadoes have been known to move in any direction.
- The average forward speed of a tornado is 30 MPH, but may vary from stationary to 70 MPH.
- Tornadoes can accompany tropical storms and hurricanes as they move onto land.
- Waterspouts are tornadoes that form over water.
- Tornadoes are most frequently reported east of the Rocky Mountains during spring and summer months.
- Peak tornado season in the southern states is March through May; in the northern states, it is late spring through early summer.
- Tornadoes are most likely to occur between 3 p.m. and 9 p.m., but can occur at any time

2. Match two parts of the sentences, using the text

1. Tornadoes can accompany	1. moves Southwest to Northeast
2. The average tornado	2. as a rotating, funnel-shaped cloud
3. Tornadoes are most likely to occur	3. the location of a tornado
4. Some tornadoes are	4. that form over water
5. A cloud of debris can mark	5. with little or no warning
6. A tornado appears	6. clear, sunlit skies behind a tornado
7. Waterspouts are tornadoes	7. between 3 p.m. and 9 p.m.
8. They may strike quickly	8. are clearly visible
9. It is not uncommon to see	9. tropical storms and hurricanes
10. Every state is at some risk	10. from this hazard

3. Make up the sentences complete, using the text:

1) Peak tornado season is ……
2) The average tornado moves ……
3) They may strike quickly, with ……
4) Damage paths can be in excess of… …
5) Tornadoes are nature's most ……
6) Tornadoes can accompany… …
7) A tornado appears as ……
8) The average tornado moves ……
9) Before a tornado hits ……
10) Whirling winds can reach…

4. Answer the questions:

1. Damage paths can be in excess of one mile wide and 50 miles long, can't they? 2. What is at some risk from this hazard? 3. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others, aren't they? 4. How do tornadoes develop? 5. When may the wind die down and the air become very still? 6. What can mark the location of a tornado even if a funnel is not visible? 7. Where do tornadoes generally occur? It is not uncommon to see clear, sunlit skies behind a tornado, is it?

5. Know the terms:

Tornado Watch - tornadoes are possible. Remain alert for approaching storms. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio, or television for information.

Tornado Warning - a tornado has been sighted or indicated by weather radar. Take shelter immediately.

6. Study the information about protective measures and refer it:

Before a tornado. Be alert to changing weather conditions.

- Listen to NOAA Weather Radio or to commercial radio or television newscasts for the latest information.
- Look for approaching storms.
- Look for the following danger signs:
- Dark, often greenish sky
- Large hail
- A large, dark, low-lying cloud (particularly if rotating)
- Loud roar, similar to a freight train.

During a tornado. If you are under a tornado WARNING, seek shelter immediately!

If you are in	Then
A structure (e.g. residence, small building, school, nursing home, hospital, factory, shopping center, high-rise building)	Go to a pre-designated shelter area such as a safe room, basement, storm cellar, or the lowest building level. If there is no basement, go to the center of an interior room on the lowest level (closet, interior hallway) away from corners, windows, doors, and outside walls. Put as many walls as possible between you and the outside. Get under a sturdy table and use your arms to protect your head and neck. Do not open windows.
A vehicle, trailer, or mobile home	Get out immediately and go to the lowest floor of a sturdy, nearby building or a storm shelter. Mobile homes, even if tied down, offer little protection from tornadoes.
The outside with no shelter	Lie flat in a nearby ditch or depression and cover your head with your hands. Be aware of the potential for flooding. Do not get under an overpass or bridge. You are safer in a low, flat location. Never try to outrun a tornado in urban or congested areas in a car or truck. Instead, leave the vehicle immediately for safe shelter. Watch out for flying debris. Flying debris from tornadoes causes most fatalities and injuries.

Preparing a Safe Room

Extreme windstorms in many parts of the country pose a serious threat to buildings and their occupants. Your residence may be built «to code» but that does not mean it can withstand winds from extreme events such as tornadoes and major hurricanes. The purpose of a safe room or a wind shelter is to provide a space where you

and your family can seek refuge that provides a high level of protection. You can build a safe room in one of several places in your home.

- Your basement.
- Atop a concrete slab-on-grade foundation or garage floor.
- An interior room on the first floor.

Safe rooms built below ground level provide the greatest protection, but a safe room built in a first-floor interior room also can provide the necessary protection. Below-ground safe rooms must be designed to avoid accumulating water during the heavy rains that often accompany severe windstorms.

- To protect its occupants, a safe room must be built to withstand high winds and flying debris, even if the rest of the residence is severely damaged or destroyed. Consider the following when building a safe room:
- The safe room must be adequately anchored to resist overturning and uplift.
- The walls, ceiling, and door of the shelter must withstand wind pressure and resist penetration by wind-borne objects and falling debris.
- The connections between all parts of the safe room must be strong enough to resist the wind.
- Sections of either interior or exterior residence walls that are used as walls of the safe room must be separated from the structure of the residence so that damage to the residence will not cause damage to the safe room.

Unit 11.
VOLCANOES

1. Read the following text

vent - выход
molten - растаявший
rock - гора
escape - убегать, избегать
eruption - извержение
explosive - взрывной
ash - лава
gritty - песчаный
gassy - газообразный
odorous - пахнущий
adult - взрослый
respiratory - дыхательный
mainly -в основном

A volcano is a vent through which molten rock escapes to the earth's surface. When pressure from gases within the molten rock becomes too great, an eruption occurs. There may be lava flows, flattened landscapes, poisonous gases, and flying rock and ash. Because of their intense heat, lava flows are great fire hazards. Lava flows destroy everything in their path, but most move slowly enough that people can move out of the way. Fresh volcanic ash, made of pulverized rock, can be abrasive, acidic, gritty, gassy, and odorous. While not immediately dangerous to most adults, the acidic gas and ash can cause lung damage to small infants, to older adults, and to those suffering from severe respiratory illnesses. Volcanic ash also can damage machinery, including engines and electrical equipment. Ash accumulations mixed with water become heavy and can collapse roofs. Volcanic eruptions can be accompanied by other natural hazards, including earthquakes, mudflows and flash floods, rock falls and landslides, acid rain, fire, and (under special conditions) tsunamis. Active volcanoes in the U.S. are found mainly in Hawaii, Alaska, and the Pacific Northwest.

2. Write out from the text the sentences with the following phrases, translate them in written form:

Molten rock, the earth's surface, an eruption occurs, quiet or explosive, flattened landscapes, intense heat, move slowly, volcanic ash, made of pulverized rock, small infants, electrical equipment, mixed with water, other natural hazards, active volcanoes.

3. Make up sentences, write them down:

1) Ash, mixed, accumulations, become, with, water, heavy. 2) accompanied, Volcanic, can, eruptions, be, by, other, hazards, natural. 3) or, Eruptions, explosive, can, quiet, be. 4. Everything, Lava, destroy, flows, path, in, their 5) in the U.S., Active, mainly, in, Hawaii, volcanoes, are, found.

4. Find the answers in the text:

1) What is a vent through which molten rock escapes to the earth's surface? 2) Fresh volcanic ash, made of pulverized rock, can be abrasive, acidic, gritty, can't it? 3) Why are lava flows great fire hazards? 4) What can volcanic ash also damage? 5) When does an eruption occur?

5. Agree or disagree with the statements, using the phrases of agreement and disagreement:

1) A volcano is a vent through which molten rock escapes to the earth's surface. 2) When pressure from gases within the molten rock becomes too small, an eruption occurs. 3) Volcanic ash can't damage machinery, including engines and electrical equipment. 4) Ash accumulations mixed with water become heavy and can collapse roofs. 5) Active volcanoes in the U.S. are found mainly in Hawaii, Alaska, and the

Pacific Northwest.

6. Study the information about protective measures and refer it:

Before a Volcanic Eruption

- Add a pair of goggles and disposable breathing mask for each member of the family to your disaster supply kit.
- Stay away from active volcano sites.

During a Volcanic Eruption

- The following are guidelines for what to do if a volcano erupts in your area:
- Evacuate immediately from the volcano area to avoid flying debris, hot gases, lateral blast, and lava flow.
- Be aware of mudflows. The danger from a mudflow increases near stream channels and with prolonged heavy rains. Mudflows can move faster than you can walk or run. Look upstream before crossing a bridge, and do not cross the bridge if mudflow is approaching.
- Avoid river valleys and low-lying areas.

Protection from Falling Ash

- Wear long-sleeved shirts and long pants. Use goggles and war eyeglasses instead of contact lenses.
- Use a dust mask or hold a damp cloth over your face to help with breathing.
- Stay away from areas downwind from the volcano to avoid volcanic ash.
- Stay indoors until the ash has settled unless there is a danger of the roof collapsing.
- Close doors, windows, and all ventilation in the house (chimney vents, furnaces, air conditioners, fans, and other vents.
- Clear heavy ash from flat or low-pitched roofs and rain gutters.
- Avoid running car or truck engines. Driving can stir up volcanic ash that can clog engines, damage moving parts, and stall vehicles.
- Avoid driving in heavy ash fall unless absolutely required. If you have to drive, keep speed down to 35 MPH or slower.

7. Knowledge check. Read the scenario and answer the question:

 About an hour after the eruption of Mount St. Helens, ash began to fall in Yakima, a city in eastern Washington. The ash fall was so extensive and it became so dark that lights were turned on all day. It took 10 weeks to haul away the ash from Yakima's streets, sidewalks, and roofs. Assume you were a resident of Yakima during this time. What would you need to protect yourself when going outside?

Unit 12.
LANDSLIDES AND DEBRIS FLOW (MUDSLIDE)

1. Read the following text

rapid - быстрый
saturate - насыщать
accumulate - накапливать
slurry - жидкая глина
warning - предупреждающий
avalanche - лавина
speed - скорость
source - источник
boulder - валун, галька
mudflow - грязевой поток

Landslides occur in all U.S. states and territories. In a landslide, masses of rock, earth, or debris move down a slope. Landslides may be small or large, slow or rapid. They are activated by storms, earthquakes, volcanic eruptions, fires, and human modification of land. Debris and mud flows are rivers of rock, earth, and other debris saturated with water. They develop when water rapidly accumulates in the ground, during heavy rainfall or rapid snowmelt, changing the earth into a flowing river of mud or «slurry». They flow can rapidly, striking with little or no warning at avalanche speeds. They also can travel several miles from their source, growing in size as they pick up trees, boulders, cars, and other materials. Landslide problems can be caused by land mismanagement, particularly in mountain, canyon, and coastal regions. Land-use zoning, professional inspections, and proper design can minimize many landslide, mudflow, and debris flow problems.

2. Find the synonyms to the words:

1. Landslides, 2. Territories, 3. Debris, 4. Large, 5. Human.

3. Write out the following phrases from the text:

Штаты и территории, сильные дожди, проблемы могут быть вызваны, профессиональные инспекторы, несколько миль, может уменьшить, вулканические извержения.

4. Fill in the necessary word, using the text:

1) They develop when water … accumulates in the ground. 2) Debris and mud flows

are … of rock, earth, and other debris saturated with water. 3 Land-use zoning, professional inspections can … many landslide, mudflow, and debris flow problems. 4) Landslides may be …or large. 5) They are activated … storms, earthquakes, volcanic eruptions.

5. Find the answers in the text:

1) What is activated by storms, earthquakes, volcanic eruptions, fires, and human modification of land? 2) When do they develop? 3) They also can travel several miles from their source, can't they? 4) What can landslide problems be caused by? 5) What is debris and mud flows?

6. Study the information about protective measures and refer it:

Before a Landslide or Debris Flow. The following are steps you can take to protect yourself from the effects of a landslide or debris flow:

- Do not build near steep slopes, close to mountain edges, near drainage ways, or natural erosion valleys.
- Get a ground assessment of your property.
- Consult an appropriate professional expert for advice on corrective measures.
- Minimize home hazards by having flexible pipe fittings installed to avoid gas or water leaks, as flexible fittings are more resistant to breakage (only the gas company or professionals should install gas fittings).

Recognize Landslide Warning Signs

- Changes occur in your landscape such as patterns of storm-water drainage on slopes (especially the places where runoff water converges) land movement, small slides, flows, or progressively leaning trees.
- Doors or windows stick or jam for the first time.
- New cracks appear in plaster, tile, brick, or foundations.
- Outside walls, walks, or stairs begin pulling away from the building.
- Slowly developing, widening cracks appear on the ground or on paved areas such as streets or driveways.
- Underground utility lines break.
- Bulging ground appears at the base of a slope.
- Water breaks through the ground surface in new locations.
- Fences, retaining walls, utility poles, or trees tilt or move.
- A faint rumbling sound that increases in volume is noticeable as the landslide nears.
- The ground slopes downward in one direction and may begin shifting in that direction under your feet.

- Unusual sounds, such as trees cracking or boulders knocking together, might indicate moving debris.
- Collapsed pavement, mud, fallen rocks, and other indications of possible debris flow can be seen when driving (embankments along roadsides are particularly susceptible to landslides).

During a Landslide or Debris Flow

The following are guidelines for what you should do if a landslide or debris flow occurs:

- Move away from the path of a landslide or debris flow as quickly as possible.
- Curl into a tight ball and protect your head if escape is not possible.

After a Landslide or Debris Flow

- The following are guidelines for the period following a landslide:
- Stay away from the slide area. There may be danger of additional slides.
- Check for injured and trapped persons near the slide, without entering the direct slide area. Direct rescuers to their locations.
- Watch for associated dangers such as broken electrical, water, gas, and sewage lines and damaged roadways and railways.
- Replant damaged ground as soon as possible since erosion caused by loss of ground cover can lead to flash flooding and additional landslides in the near future.
- Seek advice from a geotechnical expert for evaluating landslide hazards or designing corrective techniques to reduce landslide risk.

What you should do if a landslide or debris flow occurs:

- **Stay alert and awake**. Many debris-flow fatalities occur when people are sleeping. Listen to a NOAA Weather Radio or portable, battery-powered radio or television for warnings of intense rainfall. Be aware that intense, short bursts of rain may be particularly dangerous, especially after longer periods of heavy rainfall and damp weather.
- **If you are in areas susceptible to landslides and debris flows, consider leaving if it is safe to do so.** Remember that driving during an intense storm can be hazardous. If you remain at home, move to a second story if possible. Staying out of the path of a landslide or debris flow saves lives.
- **Listen for any unusual sounds that might indicate moving debris, such as trees cracking or boulders knocking together.** A trickle of flowing or falling mud or debris may precede larger landslides. Moving debris can flow quickly and sometimes without warning.
- **If you are near a stream or channel, be alert for any sudden increase or decrease in water flow and for a change from clear to muddy water.** Such changes may indicate landslide activity upstream, so be prepared to move quickly. Don’t de-

lay! Save yourself, not your belongings.

- **Be especially alert when driving.** Embankments along roadsides are particularly susceptible to landslides. Watch the road for collapsed pavement, mud, fallen rocks, and other indications of possible debris flows.

What to Do if You Suspect Imminent Landslide Danger

- **Contact your local fire, police, or public works department.** Local officials are the best persons able to assess potential danger.
- **Inform affected neighbors.** Your neighbors may not be aware of potential hazards. Advising them of a potential threat may help save lives. Help neighbors who may need assistance to evacuate.
- **Evacuate.** Getting out of the path of a landslide or debris flow is your best protection.
- **Curl into a tight ball and protect your head if escape is not possible.**

7. Knowledge Check. Review the following information and answer the questions:

Landslides occur in all 50 states – it is estimated that they cause between 25 and 50 deaths each year in the U.S. and thousands more in vulnerable areas around the globe. The number of landslides in the United States is expected to increase.

What might account for the projected increase in landslides?

What can you do to help reverse the upward trend?

8. Read the following text

LANDSLIDE HAZARDS PROGRAM

Landslides constitute a major geologic hazard because they are widespread, occur in all 50 states and U.S. territories, and cause $1–2 billion in damages and more than 25 fatalities on average each year. Expansion of urban and recreational developments into hillside areas leads to more people that are threatened by landslides each year. Landslides commonly occur in connection with other major natural disasters such as earthquakes, volcanoes, wildfires, and floods.

The primary objective of the National Landslide Hazards Program (LHP) is to reduce long-term losses from landslide hazards by improving our understanding of the causes of ground failure and suggesting mitigation strategies. The LHP has operated since the mid-1970's in gathering information, conducting research, responding to emergencies and disasters, and producing scientific reports and other products for a broadly based user community including geologists and engineers in government, academia and private practice, planners and decision makers from governmental entities

at all levels, and the general public. The results of these efforts have led to significant improvements in understanding the nature and scope of ground-failure problems nationally and worldwide. Such improvements are central to the role of the program, because opportunities remain for fundamental advances in understanding that promise to save lives and dollars.

9. Agree or disagree with the statements, using the phrases of agreement and disagreement:

1. Landslides constitute a major geologic hazard because they are widespread, occur. 2. Expansion of urban and recreational developments into hillside areas does not lead to more people that are threatened by landslides each year. 3. Landslides occur in connection with other major natural. 4. The primary objective of the National Landslide Hazards Program (LHP) is to reduce long-term losses from landslide hazards by improving our understanding of the causes of ground failure. 5. The LHP has operated since the mid-1990s in gathering information, conducting research, responding to emergencies and disasters.

Unit 13.
EXTREME HEAT

1. Read the following text

humidity- сырость, влажность, влага
evaporation - испарение, парообразование, выпаривание
overexpose - передерживать
sick –больной

Heat kills by pushing the human body beyond its limits. In extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature. Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children, and those who are sick or overweight are more likely to succumb to extreme heat. Conditions that can induce heatrelated illnesses include stagnant atmospheric co ditions and poor air quality.

Consequently, people living in urban areas may be at greater risk from the effects of a prolonged heat wave than those living in rural areas. Also, asphalt and concrete store heat longer and gradually release heat at night, which can produce higher nighttime temperatures known as the «urban heat island effect».

2. Fill in the necessary word, using the text:

1) Most heat disorders … because the victim has been overexposed. 2) Young children and those who are … or overweight are more likely to succumb to extreme heat. 3) People living in … areas may be at greater risk from the effects of a prolonged heat wave. 4) Evaporation is slowed and the body must work … hard to maintain a normal

temperature. 5) Asphalt and concrete store heat longer and gradually release …at night.

3. Find the answers in the text:

1) Why must the body work extra hard to maintain a normal temperature? 2) What can produce higher nighttime temperatures known as the «urban heat island effect»? 3) What kills by pushing the human body beyond its limits? 4) Conditions that can induce heat-related illnesses include stagnant atmospheric conditions and poor air quality, can't they? 5) Who is more likely to succumb to extreme heat?

4. Discuss the following in pairs:

1. Heat kills by pushing the human body beyond its limits. 2. People living in urban areas may be at greater risk from the effects of a prolonged heat wave than those living in rural areas. 3. Older adults, young children, and those who are sick or overweight are more likely to succumb to extreme heat.

5. Know the Terms:

Heat Wave. Prolonged period of excessive heat, often combined with excessive humidity.

Heat Index. A number in degrees Fahrenheit (F) that tells how hot it feels when relative humidity is added to the air temperature. Exposure to full sunshine can increase the heat index by 15 degrees.

Heat Cramps. Muscular pains and spasms due to heavy exertion. Although heat cramps are the least severe, they are often the first signal that the body is having trouble with the heat.

Heat Exhaustion. Typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in a form of mild shock. If not treated, the victim's condition will worsen. Body temperature will keep rising and the victim may suffer heat stroke.

Heat Stroke. A life-threatening condition. The victim's temperature control system, which produces sweating to cool the body, stops working. The body temperature

can rise so high that brain damage and death may result if the body is not cooled quickly.

Sun Stroke. Another term for heat stroke.

6. Study the information about protective measures and refer it:

Before Extreme Heat. To prepare for extreme heat, you should:

- Install window air conditioners snugly; insulate if necessary.
- Check air-conditioning ducts for proper insulation.
- Install temporary window reflectors (for use between windows and drapes), such as aluminum foil-covered cardboard, to reflect heat back outside.
- Weather-strip doors and sills to keep cool air in.
- Cover windows that receive morning or afternoon sun with drapes, shades, awnings, or louvers. (Outdoor awnings or louvers can reduce the heat that enters a home by up to 80 percent.)
- Keep storm windows up all year.

During a Heat Emergency. The following are guidelines for what you should do if the weather is extremely hot:

- Stay indoors as much as possible and limit exposure to the sun.
- Stay on the lowest floor out of the sunshine if air conditioning is not available.
- Consider spending the warmest part of the day in public buildings such as libraries, schools, movie theaters, shopping malls, and other community facilities. Circulating air can cool the body by increasing the perspiration rate of evaporation.
- Eat well-balanced, light, and regular meals. Avoid using salt tablets unless directed to do so by a physician.
- Drink plenty of water. Persons who have epilepsy or heart, kidney, or liver disease; are on fluid-restricted diets; or have a problem with fluid retention should consult a doctor before increasing liquid intake.
- Limit intake of alcoholic beverages.
- Dress in loose-fitting, lightweight, and light-colored clothes that cover as much skin as possible.
- Protect face and head by wearing a wide-brimmed hat.
- Check on family, friends, and neighbors who do not have air conditioning and who spend much of their time alone.
- Never leave children or pets alone in closed vehicles.
- Avoid strenuous work during the warmest part of the day. Use a buddy system when working in extreme heat, and take frequent breaks.

First Aid for Heat-Induced Illnesses. Extreme heat brings with it the possibility

of heat-induced illnesses. The following table lists these illnesses, their symptoms, and the first aid treatment.

Condition	Symptoms	First Aid
Sunburn	Skin redness and pain, possible swelling, blisters, fever, headaches	Take a shower using soap to remove oils that may block pores, preventing the body from cooling naturally. Apply dry, sterile dressings to any blisters, and get medical attention
Heat Cramps	Painful spasms, usually in leg and abdominal muscles; heavy sweating	Get the victim to a cooler location. Lightly stretch and gently massage affected muscles to relieve spasms. Give sips of up to a half glass of cool water every 15 minutes. (Do not give liquids with caffeine or alcohol.) Discontinue liquids, if victim is nauseated
Heat Exhaustion	Heavy sweating but skin may be cool, pale, or flushed. Weak pulse. Normal body temperature is possible, but temperature will likely rise. Fainting or dizziness, nausea, vomiting, exhaustion, and headaches are possible	Get victim to lie down in a cool place. Loosen or remove clothing. Apply cool, wet clothes. Fan or move victim to air-conditioned place. Give sips of water if victim is conscious. Be sure water is consumed slowly. Give half glass of cool water every 15 minutes. Discontinue water if victim is nauseated. Seek immediate medical attention if vomiting occurs.
Heat Stroke (a severe medical emergency)	High body temperature (105+); hot, red, dry skin; rapid, weak pulse; and rapid shallow eathing. Victim will probably not sweat unless victimas sweating from recent strenuous activity. Possible unconsciousness	Call 9-1-1 or emergency medical services, or get the victim to a hospital immediately. Delay can be fatal. Move victim to a cooler environment. Removing clothing Try a cool bath, sponging, or wet sheet to r duce body temperature. Watch for breathing problems. Use extreme caution. Use fans and air conditioners

Additional Information. An emergency water shortage can be caused by prolonged drought, poor water supply management, or contamination of a surface water supply source or aquifer. Drought can affect vast territorial regions and large population numbers. Drought also creates environmental conditions that increase the risk of other hazards such as fire, flash flood, and possible landslides and debris flow. Conserving water means more water available for critical needs for everyone.

7. Knowledge Check:

You and a friend have been outdoors in the sun for some time. Shortly after coming inside, your friend complains of nausea and headache but tells you not to worry as it is probably a food allergy. What would you advise him or her to do?

Unit 14.
WINTER STORMS AND EXTREME COLD

1. Read the following text

snowfall - снегопад
immobilize - мобилизировать
entire - весь, целый
hypothermia - гипотермия
slippery - скользкий
prevail – преобладает

Heavy snowfall and extreme cold can immobilize a region. Even areas that normally experience mild winters can be hit with a major snowstorm or extreme cold. Winter storms can result in flooding, storm surge, closed highways, blocked roads, downed power lines and hypothermia.

2. Know the terms:

Freezing Rain: Rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees, and power lines.

Sleet: Rain that turns to ice pellets before reaching the ground. Sleet also causes moisture on roads to freeze and become slippery.

Winter Storm Watch: A winter storm is possible in your area. Tune in to NOAA Weather Radio, commercial radio, or television for more information.

Winter Storm Warning: A winter storm is occurring or will soon occur in your area.

Blizzard Warning: Sustained winds or frequent gusts to 35 miles per hour or greater and considerable amounts of falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer.

Frost/Freeze Warning: Below freezing temperatures are expected.

3. Study the information about protective measures and refer it:

Before Winter Storms and Extreme Cold

Include the following in your disaster supplies kit:

- Rock salt to melt ice on walkways
- Sand to improve traction
- Snow shovels and other snow removal equipment.

Prepare for possible isolation in your home by having sufficient heating fuel; regular fuel sources may be cut off. For example, store a good supply of dry, seasoned wood for your fireplace or wood-burning stove. Winterize your home to extend the life of your fuel supply by insulating walls and attics, caulking and weather-stripping doors a windows with plastic.

To winterize your car, attend to the following:

- Battery and ignition system should be in top condition and battery terminals clean.
- Ensure antifreeze levels are sufficient to avoid freezing.
- Ensure the heater and defroster work properly.
- Check and repair windshield wiper equipment; ensure proper washer fluid level.
- Ensure the thermostat works properly.
- Check lights and flashing hazard lights for serviceability.
- Check for leaks and crimped pipes in the exhaust system; repair or replace as necessary. Carbon monoxide is deadly and usually gives no warning.
- Check breaks for wear and fluid levels.
- Check oil for level and weight. Heavier oils congeal more at low temperatures and do not lubricate as well.
- Consider snow tires, snow tires with studs, or chains.
- Replace fuel and air filters. Keep water out of the system by using additives and maintaining a full tank of gas.

Dress for the Weather

- Wear several layers of loose fitting, lightweight; warm clothing rather than one layer of heavy clothing. The outer garments should be tightly woven and water repellent.
- Wear mittens, which are warmer than gloves.
- Wear a hat.
- Cover your mouth with a scarf to protect your lungs.

During a Winter Storm

- The following are guidelines for what you should do during a winter storm or under conditions of extreme cold:
- Listen to your radio, television, or NOAA Weather Radio for weather reports and emergency information.
- Eat regularly and drink ample fluids, but avoid caffeine and alcohol.
- Avoid overexertion when shoveling snow. Overexertion can bring on a heart attack - a major cause of death in the winter. If you must shovel snow, stretch before going outside.
- Watch for signs of frostbite. These include loss of feeling and white or pale appearance in extremities such as fingers, toes, ear lobes, and the tip of the nose. If symptoms are detected, get medical help immediately.
- Watch for signs of hypothermia. These include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion. If symptoms of hypothermia are detected, get the victim to a warm location, remove wet clothing, warm the center of the body first, and give warm, non-alcoholic beverages if the victim is conscious. Get medical help as soon as possible.
- Conserve fuel, if necessary, by keeping your residence cooler than normal. Temporarily close off heat to some rooms.
- Maintain ventilation when using kerosene heaters to avoid build-up of toxic fumes. Refuel kerosene heaters outside and keep them at least three feet from flammable objects.
- Drive only if it is absolutely necessary. If you must drive, consider the following:

– Travel in the day, don't travel alone, and keep others informed of your schedule
– Stay on main roads; avoid back road shortcuts

If a blizzard traps you in the car, keep these guidelines in mind:

- Pull off the highway. Turn on hazard lights and hang a distress flag from the radio antenna or window.
- Remain in your vehicle where rescuers are most likely to find you. Do not set out on foot unless you can see a building close by where you know you can take shelter. Be careful; distances are distorted by blowing snow. A building may seem close, but be too far to walk to in deep snow.
- Run the engine and heater about 10 minutes each hour to keep warm. When the engine is running, open an upwind window slightly for ventilation. This will protect you from possible carbon monoxide poisoning. Periodically clear snow from the exhaust pipe.
- Exercise to maintain body heat, but avoid overexertion. In extreme cold, use road maps, seat covers, and floor mats for insulation. Huddle with passengers and use your

coat for a blanket.

- Take turns sleeping. One person should be awake at all times to look for rescue crews.
- Drink flids to avoid dehydration.
- Be careful not to waste battery power. Balance electrical energy needs - the use of lights, heat, and radio - with supply.
- Turn on the inside light at night so work crews or rescuers can see you.
- If stranded in a remote area, stomp large block letters in an open area spelling out HELP or SOS and line with rocks or tree limbs to attract the attention of rescue personnel who may be surveying the area by airplane.
- Leave the car and proceed on foot -if necessary - once the blizzard passes.

Prepare your home and family

- **Prepare for possible isolation in your home** by having sufficient heating fuel; regular fuel sources may be cut off. For example, store a good supply of dry, seasoned wood for your fireplace or wood-burning stove.
- **Winterize your home** to extend the life of your fuel supply by insulating walls and attics, caulking and weather-stripping doors and windows, and installing storm windows or covering windows with plastic.
- **Winterize your house, barn, shed or any other structure that may provide shelter** for your family, neighbors, livestock or equipment. Clear rain gutters; repair roof leaks and cut away tree branches that could fall on a house or other structure during a storm.
- **Insulate pipes** with insulation or newspapers and plastic and allow faucets to drip a little during cold weather to avoid freezing.
- **Keep fire extinguishers on hand**, and make sure everyone in your house knows how to use them. House fires pose an additional risk, as more people turn to alternate heating sources without taking the necessary safety precautions.
- **Learn how to shut off water valves** (in case a pipe bursts).
- **Know ahead of time what you should do to help elderly or disabled friends, neighbors or employees.**
- **Hire a contractor to check the structural ability of the roof** to sustain unusually heavy weight from the accumulation of snow - or water, if drains on flat roofs do not work.

Prepare your car

Check or have a mechanic check the following items on your car:

– **Antifreeze levels** - ensure they are sufficient to avoid freezing.

– **Battery and ignition system** - should be in top condition and battery terminals should be clean.
– **Brakes** - check for wear and fluid levels.
– **Exhaust system** - check for leaks and crimped pipes andrepair or replace as necessary. Carbon monoxide is deadly and usually gives no warning.
– **Fuel and air filters** - replace and keep water out of the system by using additives and maintaining a full tank of gas.
– **Heater and defroster** - ensure they work properly.
– **Lights and flashing hazard lights** - check for serviceability.
– **Oil** - check for level and weight. Heavier oils congeal more at low temperatures and do not lubricate as well.
– **Thermostat** - ensure it works properly.
– **Windshield wiper equipment** - repair any problems and maintain proper washer fluid level.
• **Install good winter tires.** Make sure the tires have adequate tread. Allweather radials are usually adequate for most winter conditions. However, some jurisdictions require that to drive on their roads, vehicles must be equipped with chains or snow tires with studs.
• **Maintain at least a half tank of gas** during the winter season.
• **Place a winter emergency kit in each car** that includes:
– a shovel
– windshield scraper and small broom
– flashlight
– battery powered radio
– extra batteries
– water
– snack food
– matches
– extra hats, socks and mittens
– first aid kit with pocket knife
– nnecessary medications
– blanket(s)
– tow chain or rope
– road salt and sand
– booster cables
– emergency flares
– fluorescent distress flag

If you are outdoors

- Avoid overexertion when shoveling snow. Overexertion can bring on a heart attack - major cause of death in the winter. If you must shovel snow, stretch before going outside.
- Cover your mouth. Protect your lungs from extremely cold air by covering your mouth when outdoors. Try not to speak unless absolutely necessary.
- Keep dry. Change wet clothing frequently to prevent a loss of body heat. Wet clothing loses all of its insulating value and transmits heat rapidly.
- Watch for signs of frostbite. These include loss of feeling and white or pale appearance in extremities such as fingers, toes, ear lobes, and the tip of the nose. If symptoms are detected, get medical help immediately.
- Watch for signs of hypothermia. These include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion.

If symptoms of hypothermia are detected:

– get the victim to a warm location
– remove wet clothing
– put the person in dry clothing and wrap their entire body in a blanket
– warm the center of the body first
– give warm, non-alcoholic or non-caffeinated beverages if the victim is conscious
– get medical help as soon as possible.

If you are driving

• Drive only if it is absolutely necessary. If you must drive, consider the following:
– Travel in the day, don/t travel alone, and keep others informed of your schedule.
– Stay on main roads; avoid back road shortcuts.

If a blizzard traps you in the car:

– Pull off the highway. Turn on hazard lights and hang a distress flag from the radio antenna or window.
– Remain in your vehicle where rescuers are most likely to find you. Do not set out on foot unless you can see a building close by where you know you can take shelter. Be careful; distances are distorted by blowing snow. A building may seem close, but be too far to walk to in deep snow.
– Run the engine and heater about 10 minutes each hour to keep warm. When the engine is running, open a downwind window slightly for ventilation and periodically clear snow from the exhaust pipe. This will protect you from possible carbon monoxide poisoning.
– Exercise to maintain body heat, but avoid overexertion. In extreme cold, use road maps, seat covers, and floor mats for insulation. Huddle with passengers and use your coat for a blanket.

– Take turns sleeping. One person should be awake at all times to look for rescue crews.
– Drink fluids to avoid dehydration.
– Be careful not to waste battery power. Balance electrical energy needs - the use of lights, heat, and radio - with supply.
– Turn on the inside light at night so work crews or rescuers can see you.
– If stranded in a remote area, stomp large block letters in an open area spelling out HELP or SOS and line with rocks or tree limbs to attract the attention of rescue personnel who may be surveying the area by airplane.
– Leave the car and proceed on foot – if necessary – once the blizzard passes.

Unit 15.
FIRES

1. Read the following text

fire - огонь, пожар
prevent - предотвращать
loss - потеря, убыток
due to - из-за
estimate - оценивать
annually - ежегодно
protect - защищать
spread - распространяться
gather - собирать
valuable - ценный
threat - угроза
flame - пламя
drowsy - сонный, дремлющий

Each year, more than 4,000 Americans die and more than 25,000 are injured in fires, many of which could be prevented. Direct property loss due to fires is estimated at $8.6 billion annually. To protect yourself, it is important to understand the basic characteristics of fire. Fire spreads quickly; there is no time to gather valuables or make a phone call. In just two minutes, a fire can become lifethreatening. In five minutes, a residence can be engulfed in flames. Heat and smoke from fire can be more dangerous than the flames. Inhaling the super-hot air can sear your lungs. Fire produces poisonous gases that make you disoriented and drowsy. Instead of being

awakened by a fire, you may fall into a deeper sleep. Asphyxiation is the leading cause of fire deaths, exceeding burns by a three-to-one ratio.

2. Border the words, translate the sentences:

1. Firespreadsquickly; thereisnotimetogathervaluables.
2. Injusttwominutes, afirecanbecomelife-threatening.
3. Infiveminutesaresidencecanbeengulfedinflames.
4. Heatandsmokecanbemoredangerousthantheflames.

3. Find in the text the sentences with the following verbs translate them:

to spread, to sear, to die, to produce, to protect, to make.

4.Translate into English:

Главная причина; каждый год; вместо того, чтобы; ядовитые газы; распространяется быстро; защитить себя; из-за пожаров.

5. Match two parts of the sentences, using the text

1. In just two minutes, a fire can	1. can be more dangerous than the flames
2. Heat and smoke from fire	2. quickly
3. Asphyxiation is the leading cause	3. can sear your lungs
4. To protect yourself, it is important	4. that make you disoriented
5. Inhaling the super-hot air	5. in fires
6. Fire spreads	6. become life-threatening
7. Fire produces poisonous gases	7. of fire deaths
8. Each year, more than 4,000 Americans die	8. to understand the basic characteristics of fire

6. Complete the sentences, using the text:

1) Fire spreads quickly; there is no time …
2) Heat and smoke from fire can be more dangerous ……
3) Each year, more than 4,000 Americans die and more than 25,000 are ……
4) Direct property loss due to fires is estimated at……
5) In just two minutes, a fire can become……
6) Asphyxiation is the leading cause of……
7) In five minutes, a residence can be engulfed in …

7. Find the answers to the questions in the text:

l) How many Americans are injured in fires each year? 2) What is direct property loss

due to fires annually? 3) What is important to understand to protect yourself? 4) What produces poisonous gases that make you disoriented and drowsy? 5) Heat and smoke from fire can be more dangerous than the flames, can't they?

8. Study the information about protective measures and refer it:

Before a Fire

Smoke Alarms

- Install smoke alarms. Properly working smoke alarms decrease your chances of dying in a fire by half.
- Place smoke alarms on every level of your residence. Place them outside bedrooms on the ceiling or high on the wall (4 to 12 inches from ceiling), at the top of open stairways, or at the bottom of enclosed stairs and near (but not in) the kitchen.
- Test and clean smoke alarms once a month and replace batteries at least once a year. Replace smoke alarms once every 10 years.

Escaping the Fire:

- Review escape routes with your family. Practice escaping from each room.
- Make sure windows are not nailed or painted shut. Make sure security gratings on windows have a fire safety opening feature so they can be easily opened from the inside.
- Consider escape ladders if your residence has more than one level, and ensure that burglar bars and other antitheft mechanisms that block outside window entry are easily opened from the inside.
- Teach family members to stay low to the floor (where the air is safer in a fire) when escaping from a fire.
- Clean out storage areas. Do not let trash, such as old newspapers and magazines, accumulate.

Flammable Items

- Never use gasoline, enzene, naptha, or similar flammable liquids indoors.
- Store flammable liquids in approved containers in well-ventilated storage areas.
- Never smoke near flammable liquids.
- Discard all rags or materials that have been soaked in flammable liquids after you have used them. Safely discard them outdoors in a metal container.
- Insulate chimneys and place spark arresters on top. The chimney should be at least three feet higher than the roof. Remove branches hanging above and around the chimney.

Heating Sources

- Be careful when using alternative heating sources.

- Check with your local fire department on the legality of using kerosene heaters in your community. Be sure to fill kerosene heaters outside, and be sure they have cooled.
- Place heaters at least three feet away from flammable materials. Make sure the floor and nearby walls are properly insulated.
- Use only the type of fuel designated for your unit and follow manufacturer's instructions.
- Store ashes in a metal container outside and away from your residence.
- Keep open flames away from walls, furniture, drapery, and flammable items.
- Keep a screen in front of the fireplace.
- Have heating units inspected and cleaned annually by a certified specialist.

Matches and Smoking

- Keep matches and lighters up high, away from children, and, if possible, in a locked cabinet.
- Never smoke in bed or when drowsy or medicated. Provide smokers with deep, sturdy ashtrays. Douse cigarette and cigar butts with water before disposal.

Electrical Wiring

- Have the electrical wiring in your residence checked by an electrician.
- Inspect extension cords for frayed or exposed wires or loose plugs.
- Make sure outlets have cover plates and no exposed wiring.
- Make sure wiring does not run under rugs, over nails, or across hightraffic areas.
- Do not overload extension cords or outlets. If you need to plug in two or three appliances, get a UL-approved unit with built-in circuit breakers to prevent sparks and short circuits.
- Make sure insulation does not touch bare electrical wiring.

Other

- Sleep with your door closed.
- Install A-B-C-type fire extinguishers in your residence and teach family members how to use them.
- Consider installing an automatic fire sprinkler system in your residence.
- Ask your local fire department to inspect your residence for fire safety and prevention.

During a Fire

If your clothes catch on fire, you should:

- Stop, drop, and roll - until the fire is extinguished. Running only makes the fire burn faster.

To escape a fire, you should:

- Check closed doors for heat before you open them. If you are escaping through a closed door, use the back of your hand to feel the top of the door, the doorknob, and the crack between the door and door frame before you open it. Never use the palm of your hand or fingers to test for heat - burning those areas could impair your ability to escape a fire (i.e., ladders and crawling).

Hot Door	Cool Door
Do not open. Escape through a window. If you cannot escape, hang a white or lightcolored sheet outside the window, alerting fire fighters to your presence.	Open slowly and ensure fire and/or smoke is not blocking your escape route. If your escape route is blocked, shut the door immediately and use an alternate escape route, such as a window. If clear, leave immediately through the door and close it behind you. Be prepared to crawl. Smoke and heat rise. The air is clearer and cooler near the floor.

- Crawl low under any smoke to your exit - heavy smoke and poisonous gases collect first along the ceiling.
- Close doors behind you as you escape to delay the spread of the fire.
- Stay out once you are safely out. Do not reenter. Call 9–1-1.

After a Fire

- The following are guidelines for different circumstances in the period following a fire:
- If you are with burn victims, or are a burn victim yourself, call 9-1-1; cool and cover burns to reduce chance of further injury or infection.
- If you detect heat or smoke when entering a damaged building, evacuate immediately.
- If you are a tenant, contact the landlord.
- If you have a safe or strong box, do not try to open it. It can hold intense heat for several hours. If the door is opened before the box has cooled, the contents could burst into flames.
- If you must leave your home because a building inspector says the building is unsafe, ask someone you trust to watch the property during your absence.

9. Knowledge Check

1. You need to escape a fire through a closed door. What, if anything, should you do before opening the door?
2. What should you do if your clothes are on fire?
3. What actions should be taken for burn victims?
4. To reduce heating costs, you installed a wood-burning stove. What can you do to reduce the risk of fire from this heating source?
5. To escape in thick smoke, what should you do?

Unit 16.
WILDFIRES

1. Read the following text

threat - угроза
precaution - предосторожность
increase - увеличиваться
responsibility - ответственность
advance - заранее запланированный
reduce - уменьшать
less - уменьшать
remote - отдаленный
devastation - опустошение
ignite - загораться, воспламеняться

The threat of wildland fires for people living near wildland areas or using recreational facilities in wilderness areas is real. Dry conditions at various times of the year and in various parts of the United States greatly increase the potential for wildland fires. Advance planning and knowing how to protect buildings in these areas can lessen the devastation of a wildland fire. There are several safety precautions that you can take to reduce the risk of fire losses. Protecting your home from wildfire is your responsibility. To reduce the risk, you'll need to consider the fire resistance of your home, the topography of your property and the nature of the vegetation close by. If you live on a remote hillside or in a valley, prairie, or forest where flammable vegetation is abundant, your residence could be vulnerable to wildfires. These fires are usually triggered by lightning or accidents. Wildfires spread quickly, igniting brush, trees, and homes.

2. Find in the text word-combinations with the following words:

Отдаленный, риск, здания, дом, молния, различный, условия.

3. Match two parts of the sentences, using the text

Advance planning	by lightning or accidents
These fires are usually triggered	consider the topography of your property
There are several safety precautions	for people is real
The threat of wildland fires for	can lessen the devastation of a fire
To reduce the risk, you'll need to	that you can take to reduce the risk

4. Complete the sentences, using the text:

1) The threat of wildland fires……. 2) To reduce the risk, you'll need to……. 3 There are several safety precautions that you…… 4) These fires are usually triggered by……. 5) Wildfires spread……6) Advance planning……. 7) Protecting your home from wildfire is …….

5. Find the answers to the questions in the text:

l) The threat of wildland fires for people living near wildland areas or using recreational facilities in wilderness areas is real, isn't it? 2) What is your responsibility? 3) When couldyour residence be vulnerable to wildfires? 4) How Wildfires spread? 5) Where
does the pollution come from? 6) These fires are usually triggered by lightning or accidents aren't they? 7) What do you need to reduce the risk?

6. Study the information about protective measures and refer it:

Prepare for a Wildfire

Listed here are several suggestions that you can implement immediately. Others need to be considered at the time of construction or remodeling. You should also contact your local fire department, forestry office, emergency management office or building department for information about local fire laws, building codes and protection measures. Obtain local building codes and weed abatement ordinances for structures built near wooded areas.

Find Out What Your Fire Risk Is

Learn about the history of wildfire in your area. Be aware of recent weather. A long period without rain increases the risk of wildfire. Consider having a professional inspect your property and offer recommendations for reducing the wildfire risk. Determine your community's ability to respond to wildfire. Are roads leading to your property clearly marked? Are the roads wide enough to allow firefighting equipment to get through? Is your house number visible from the roadside?

Learn and teach safe fire practices

- Build fires away from nearby trees or bushes.
- Always have a way to extinguish the fire quickly and completely.
- Install smoke detectors on every level of your home and near sleeping areas.
- Never leave a fire - even a cigarette - burning unattended.
- Avoid open burning completely, and especially during dry season.

Always be ready for an emergency evacuation

Evacuation may be the only way to protect your family in a wildfire. Know where to go and what to bring with you. You should plan several escape routes in case roads are blocked by a wildfire.

Create Safety Zones around Your Home

All vegetation is fuel for a wildfire, though some trees and shrubs are more flammable than others. To reduce the risk, you will need to modify or eliminate brush, trees and other vegetation near your home. The greater the distance is between your home and the vegetation, the greater the protection.

Create a 30-foot safety zone around the house

Keep the volume of vegetation in this zone to a minimum. If you live on a hill, extend the zone on the downhill side. Fire spreads rapidly uphill. The steeper the slope, the more open space you will need to protect your home. Swimming pools and patios can be a safety zone and stone walls can act as heat shields and deflect flames. In this zone, you should also do the following:

- Remove vines from the walls of the house.
- Move shrubs and other landscaping away from the sides of the house.
- Prune branches and shrubs within 15 feet of chimneys and stove pipes.
- Remove tree limbs within 15 feet of the ground.
- Thin a 15-foot space between tree crowns.
- Replace highly flammable vegetation such as pine, eucalyptus, junipers and fir trees with lower growing, less flammable species. Check with your local fire department or garden store for suggestions.
- Replace vegetation that has living or dead branches from the ground-level up (these act as ladder fuels for the approaching fire).
- Cut the lawn often keeping the grass at a maximum of 2 inches. Watch grass and other vegetation near the driveway, a source of ignition from automobile exhaust systems.
- Clear the area of leaves, brush, evergreen cones, dead limbs and fallen trees.

Create a second zone at least 100 feet around the house

This zone should begin about 30 feet from the house and extend to at least 100 feet. In this zone, reduce or replace as much of the most flammable vegetation as possible. If you live on a hill, you may need to extend the zone for several hundred feet to provide the desired level of safety.

Clear all combustibles within 30 feet of any structure

- Install electrical lines underground, if possible
- Ask the power company to clear branches from power lines.
- Avoid using bark and wood chip mulch

- Stack firewood 100 feet away and uphill from any structure.
- Store combustible or flammable materials in approved safety containers and keep them away from the house.
- Keep the gas grill and propane tank at least 15 feet from any structure.
- Clear an area 15 feet around the grill. Place a 1/4 inch mesh screen over the grill. Always use the grill cautiously but refrain from using it all during high risk times.

Protect Your Home

Remove debris from under sun decks and porches

Any porch, balcony or overhang with exposed space underneath is fuel for an approaching fire. Overhangs ignite easily by flying embers and by the heat and fire that get trapped underneath. If vegetation is allowed to grow underneath or if the space is used for storage, the hazard is increased significantly. Clear leaves, trash and other combustible materials away from underneath sun decks and porches. Extend 1/2-inch mesh screen from all overhangs down to the ground. Enclose wooden stilts with non-combustible material such as concrete, brick, rock, stucco or metal. Use non-combustible patio furniture and covers. If you're planning a porch or sun deck, use non-combustible or fire-resistant materials. If possible, build the structure to the ground so that there is no space underneath.

Enclose eaves and overhangs

Like porches and balconies, eaves trap the heat rising along the exterior siding. Enclose all eaves to reduce the hazard.

Cover house vents with wire mesh

Any attic vent, soffit vent, louver or other opening can allow embers and flaming debris to enter a home and ignite it. Cover all openings with 1/4 inch or smaller corrosion-resistant wire mesh. If you're designing louvers, place them in the vertical wall rather than the soffit of the overhang.

Install spark arrestors in chimneys and stovepipes

Chimneys create a hazard when embers escape through the top. To prevent this, install spark arrestors on all chimneys, stovepipes and vents for fuel-burning heaters. Use spark arrestors made of 12-gauge welded or woven wire mesh screen with openings 1/2 inch across. Ask your fire department for exact specifications.

If you're building a chimney, use non-combustible materials and make sure the top of the chimney is at least two feet higher than any obstruction within 10 feet of the chimney. Keep the chimney clean.

Use fire resistant siding

Use fire resistant materials in the siding of your home, such as stucco, metal, brick, cement shingles, concrete and rock. You can treat wood siding with UL-approved fire retardant chemicals, but the treatment and protection are not permanent.

Choose safety glass for windows and sliding glass doors

Windows allow radiated heat to pass through and ignite combustible materials inside. The larger the pane of glass, the more vulnerable it is to fire. Dual - or triple-pane thermal glass, and fire resistant shutters or drapes, help reduce the wildfire risk. You can also install non-combustible awnings to shield windows and use shatter-resistant glazing such as tempered or wireglass.

Prepare for water storage; develop an external water supply such as a small pond, well or pool.

Other safety measures to consider at the time of construction or remodeling.

- Choose locations wisely; canyon and slope locations increase the risk of exposure to wildland fires.
- Use fire-resistant materials when building, renovating, or retrofitting structures.
- Avoid designs that include wooden decks and patios.
- Use non-combustible materials for the roof.
- The roof is especially vulnerable in a wildfire. Embers and flaming debris can travel great distances, land on your roof and start a new fire. Avoid flammable roofing materials such as wood, shake and shingle. Materials that are more fire resistant include single ply membranes, fiberglass shingles, slate, metal, clay and concrete tile. Clear gutters of leaves and debris.

What to do Before a Wildfire

If you see a wildfire, call 9-1-1. Don't assume that someone else has already called. Describe the location of the fire, speak slowly and clearly, and answer any questions asked by the dispatcher.

Before the Fire Approaches Your House

- Evacuate. Evacuate your pets and all family members who are not essential to preparing the home. Anyone with medical or physical limitations and the young and the elderly should be evacuated immediately.
- Wear Protective Clothing.
- Remove Combustibles. Clear items that will burn from around the house, including wood piles, lawn furniture, barbecue grills, tarp coverings, etc.
- Move them outside of your defensible space.
- Close/Protect Openings. Close outside attic, eaves and basement vents, windows, doors, pet doors, etc. Remove flammable drapes and curtains.
- Close all shutters, blinds or heavy non-combustible window coverings to reduce radiant heat.
- Close Inside Doors/Open Damper. Close alt doors inside the house to prevent draft. Open the damper on your fireplace, but close the fireplace screen.
- Shut Off Gas. Shut off any natural gas, propane or fuel oil supplies at the source.

- Water. Connect garden hoses. Fill any pools, hot tubs, garbage cans, tubs or other large containers with water.
- Pumps. If you have gas-powered pumps for water, make sure they are fueled and ready.
- Ladder. Place a ladder against the house in clear view.
- Car. Back your car into the driveway and roll up the windows.
- Garage Doors. Disconnect any automatic garage door openers so that doors can still be opened by hand if the power goes out. Close all garage doors.
- Valuables. Place valuable papers, mementos and anything «you can't live without» inside the car in the garage, ready for quick departure. Any pets still with you should also be put in the car.

Preparing to Leave

- Lights. Turn on outside lights and leave a light on in every room to make the house more visible in heavy smoke.
- Don't Lock Up. Leave doors and windows closed but unlocked. It may be necessary for firefighters to gain quick entry into your home to fight fire. The entire area will be isolated and patrolled by sheriff's deputies or police.

What to do During a Wildfire

Survival in a Vehicle

- This is dangerous and should only be done in an emergency, but you can survive the firestorm if you stay in your car. It is much less dangerous than trying to run from a fire on foot.
- Roll up windows and close air vents. Drive slowly with headlights on. Watch for other vehicles and pedestrians. Do not drive through heavy smoke.
- If you have to stop, park away from the heaviest trees and brush. Turn headlights on and ignition off. Roll up windows and close air vents.
- Get on the floor and cover up with a blanket or coat.
- Stay in the vehicle until the main fire passes.
- Stay in the car. Do not run! Engine may stall and not restart. Air currents may rock the car. Some smoke and sparks may enter the vehicle. Temperature inside will increase. Metal gas tanks and containers rarely explode.

If You Are Trapped at Home

Stay calm. As the fire front approaches, go inside the house. You can survive inside. The fire will pass before your house burns down.

If Caught in the Open

- The best temporary shelter is in a sparse fuel area. On a steep mountainside, the back side is safer. Avoid canyons, natural «chimneys» and saddles.
- If a road is nearby, lie face down along the road cut or in the ditch on the uphill side. Cover yourself with anything that will shield you from the fire's heat.
- If hiking in the back country, seek a depression with sparse fuel. Clear fuel away from the area while the fire is approaching and then lie face down in the depression and cover yourself. Stay down until after the fire passes!

What to do After a Wildfire

- Check the roof immediately. Put out any roof fires, sparks or embers. Check the attic for hidden burning sparks.
- If you have a fire, get your neighbors to help fight it.
- The water you put into your pool or hot tub and other containers wilt come in handy now. If the power is out, try connecting a hose to the outlet on your water heater.
- For several hours after the fire, maintain a «fire watch». Re-check for smoke and sparks throughout the house.

EXERCISES

1. Answer the questions:

1. What is your field of science/research?
2. What is your particular area of research? What are you specializing in?
3. What are the latest achievements in this field of science?
4. What fundamental discoveries have been made in your field of science/ research?
5. Can you name some outstanding researchers in your field of science? What contribution have they made?
6. Do achievements in your branch of science/ research influence everyday life? In what way?
7. What further developments can you predict in your field of science/ research?

Active vocabulary

- to do/to carry out/ to carry on/ to conduct research
- to contribute/ to make a contribution to
- to influence/ to affect
- to study/ to investigate/ to explore

- to put forward an idea
- to suggest an idea/ a theory/a hypothesis
- to advance/ to develop/ to modify a theory
- to predict/ to forecast/ to foresee
- to accumulate knowledge
- field of science/ research
- latest/recent achievements/developments/advances
- an outstanding/prominent/world-known scientists/researcher

2. Complete the following sentences. Speak about your field of science/ research.

1. I do/ carry out research in the field of…
2. It is the branch of science that studies…
3. Major developments include advances in …
4. Remarkable advances have been made …
5. My current field of science/research is …
6. It is difficult/ not difficult to foresee/predict … .

Active vocabulary

- to deal with/ to consider the problem
- to be the subject of special/particular interest
- to be interested in
- to be of great/little/no interest/importance/significance/value/use
- to take up the problem
- to work on the problem
- a lot of/little/no literature is available on the problem

3. Answer the questions:

1. What is your research problem?
2. What is the subject of your research?
3. What is of special interest in the problem of your research?
4. Why has the interest in this problem increased considerably in recent years?
5. What concept is your research based on?
6. Is there much literature available on your research problem?
7. What are the main aspects of the problem that have been considered?

Active vocabulary

- purpose/aim/objective/goal/target
- a method/a technique/ a procedure

- detection/identification/observation
- measurement/calculation/computation/approximation
- consideration/generalization/deduction/assumption
- modeling/simulation
- advantages/merits
- disadvantages/shortcomings/limitations
- accurate/precise
- accuracy/precision
- reliable/valid/conventional/effective/useful/valuable
- data/results/method
- to make an experiment/analysis
- to reveal/to find/to confirm/to prove evidence
- to study/to examine
- to collect data
- to create
- to improve
- to work out/to develop/to design
- to verify/to check
- to approve/ to disapprove an assumption
- to use/to employ/to apply
- to allow/to permit/to provide
- to come into use
- results/findings/data/observations/evidence
- comprehensive/extensive
- detailed
- remarkable/encouraging/convincing
- preliminary
- sufficient/insufficient
- to collect/to get/to receive/to obtain data
- to treat the problem
- to succeed in/to make progress in/to be a success
- to fail in
- to be similar to/ to be the same as
- to coincide/ to be consistent with
- to agree with/to fit the assumption
- to support/in support of
- to conclude/to come to/to bring to a conclusion/to make conclusions

4. Answer the questions:

1. What is the subject of your current research?
2. What is the purpose of your research?
3. What method do you employ? Why?
4. What are the advantages of the method used over other methods or techniques?
5. What does the method consist in?
6. Do you find the method reliable/precise? Why?
7. How much time will it take you to complete your research successfully?
8. Have you already obtained any research results?
9. Has your research been successful?
10. Do your results coincide with those obtained by other researchers?
11. Are your results of theoretical or practical interest?
12. Do the data/results/observations/findings allow you to come to any definite conclusion(s)?
13. What conclusions have you come to?
14. How long will it take you to finish your research?
15. Are you going to publish the results obtained?

5. Complete the sentences with the words from the Active vocabulary section. Speak about the purpose of your current research, the method used and the results obtained.

1. Currently I …
2. I make the experiments/analyses in order to …
3. The purpose of my experiments/analyses is to …
4. In our current research we … the method of ….
5. The method/technique allows/permits … to ….
6. The method/ technique makes it possible to …
7. The method proves to be …
8. At present a lot of work is being done to …
9. The results we have … so far cannot be used to ….
10. The evidence appears to …
11. As a result of numerous experiments performed we have obtained sufficient data to ….
12. We have come to the conclusion that … .

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Медведева Светлана Александровна
Голуб Лариса Николаевна

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