МИНИСТЕРСТВО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

Государственное образовательное учреждение
высшего профессионального образования –
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Кафедра английского языка естественно-научных и инженерно-технических специальностей

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GEOGRAPHY

Рекомендовано Учёным советом государственного образовательного учреждения высшего профессионального образования – «Оренбургский государственный университет» в качестве учебного пособия для студентов, обучающихся по программам высшего профессионального образования по специальности «География»

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Введение

Данное учебное пособие предназначено для студентов II курса естественно-научного факультета специальности География. Цель учебного пособия – выработка навыков чтения и понимания литературы географического профиля. Пособие состоит из 16 уроков и трех дополнительных разделов. Каждый урок рассчитан на работу в течение 4-5 часов аудиторных занятий. Урок состоит из основного текста, заимствованного из оригинальной научной литературы на английском языке и предтекстовых и послетекстовых заданий, которые способствуют развитию навыков говорения по данной специальности. В раздел Texts for Supplementary reading включены дополнительные тексты по вопросам, связанным с географией. Раздел Test Translation содержит отдельные предложения и текст для контрольного письменного перевода. Раздел Grammar Revision Exercises представляет собой лабораторную работу, которая содержит краткий грамматический справочник, представленный в виде таблиц и правил, и упражнения для закрепления грамматического материала, составленные на основе примеров из научно-популярной литературы.

1 Lesson 1 My speciality

1.1 Words and word combinations to the text

higher educational establishment – высшее учебное заведение
to be a first (-second,-third) year student – быть первокурсником
specialist – специалист
speciality – специальность
a course of study – курс обучения
computer processing of information – информатика
scientific – научный
achievements – достижения
at our disposal – в нашем распоряжении
well-equipped – хорошо оборудованный
modern facilities – современное оборудование
course paper – курсовая работа
graduation thesis – дипломная работа
to graduate from the university – заканчивать университет
post-graduate course – аспирантура
environment – окружающая среда
surface of the earth – поверхность земли
spatial – пространственный
activity – деятельность
landscape – ландшафт
to interact – взаимодействовать
unique – уникальный

to manage – управлять
resources – ресурсы
valuable – ценный
skill – умение, навык
cartography – картография
analysis(pl. analyses) – анализ
data – данные, факты, сведения
the humanities – гуманитарные науки
to avoid – избегать
to improve – улучшать
surroundings – среда, окружение
complexity – сложность

1.2 Read and translate these words and word combinations

-establishment, educational establishment, higher educational establishment;
- science; physical science, social science, natural science, the Faculty of Natural Sciences;

-chemistry;
-geography, geology, geodesy;
-biology, biogeography;
-processing, computer processing of information;
-language, foreign languages;
-well-equipped, well-equipped laboratory, it will be equipped;
-surface, the surface of the earth;
-environment, environmental process;
-subject, university subject;

1.3 Give the principal forms of the following verbs and translate them

to organize	to keep	to teach
to compose	to study	to use
to master	to continue	to develop
to learn	to include	to introduce
to begin	to provide	to understand

1.4 Read and translate the text

My speciality

Orenburg State University is the largest higher educational establishment in our town. There are 1 Institute and 15 Faculties in the University. I am a second-year student of the Faculty of Natural Sciences. Our faculty was organized in 1998. It

trains specialists on the following specialities: geography, biology, chemistry, geology. A course of study lasts five years. The academic program is composed of such subjects as history, philosophy, computer processing of information, chemistry, geology, geodesy, topography, biogeography, foreign languages and others. Mastering one of the foreign languages enables us to read foreign literature and learn about the latest scientific and technical achievements abroad.

At our disposal we have lecture halls, well-equipped laboratories, a new computer center. A new library will be equipped with modern facilities, and it'll keep 1,6 million volumes.

While studying at the University students are to fulfil course papers and a diploma paper (graduation thesis) which is submitted at the end of the fifth year. Students take an active part in research expeditions. After graduating from the University students can continue their studies at the post-graduate course. The graduates of our faculty can work as teachers, engineers, research workers, inspectors, managers.

My future speciality is geography. Geography studies the varying character of economic, social and cultural life, of the environment and of the surface of the earth. Geography includes studies of the spatial organization of human activities, the environmental processes that shape the world's landscapes and the ways in which environment and society interact. It provides unique insights into the character of our world and its problems, examines how to manage the earth's resources and fragile environment. It teaches valuable skills, including the use of computers, cartography and geographical information systems, as well as the collection, analysis and presentation of data.

Geography as a university subject (discipline) is an exciting blend of the physical sciences, environmental studies, the humanities and the social sciences. Understanding and research help us to avoid potential problems or to improve our surroundings.

Geography introduces students to the characteristics, peoples, economics, cultures and problems of many different regions of the world. The best reason for choosing geography is the desire to understand the world around us in all its complexity!

1.5 Look through the text and find English equivalents for the following word combinations

-готовить специалистов
-выполнять курсовые работы
-курс обучения
-различные регионы мира
-принимать активное участие
-будущая специальность
-учебный предмет
-второкурсник

-характеристики
-географические информационные системы
-поверхность земли
-последние достижения в науке и технике

1.6 Reproduce the dialogue. Use the words and word combinations in brackets instead of given ones

-Where do you study?
-I study at **Odessa University.**
(Oxford University; a medical school; an art school; the Timiryazev Academy; Orenburg State University).
- How many faculties are there in your University?
-There are 15 faculties and 1 Institute in our University. Among them **the Faculty of Civil Engineering, the Faculty of Food Production and others.**
(the Faculty of Power Engineering; Transport Faculty; the Faculty of Natural Sciences; the Faculty of Economy and Management).
-What subjects are taught in the second year at your faculty?
-We study quite a number of subjects including **history and philosophy**. (mathematics and physics; languages and literature; geography and ethnography; music and folk dances; chemistry and biology).

1.7 Translate these sentences into English

1. В прошлом году я был первокурсником.
2. Наш факультет готовит специалистов по разным специальностям.
3. Я должен выполнить курсовую работу к концу семестра.
4. Вчера мы переводили статью о последних научных достижениях за рубежом в области биогеографии.
5. Лучшие выпускники имеют возможность продолжать обучение в аспирантуре.
6. Новая библиотека - это уникальный комплекс, оснащенный современным оборудованием.
7. География – это комплекс физических, гуманитарных и общественных наук.
8. Умение пользоваться компьютером очень важно для будущего специалиста.

1.8 Complete the following sentences

Geography helps us ..…..... . Students of our faculty may choose one of the following specialities: ……..... . Students can do laboratory tests and carry out experiments in …… . We study many interesting subjects: ……..... . We can learn about latest scientific and technical achievements abroad if ……..... . I am going to become a geographer because …… .

1.9 Answer the following questions

What university do you study?
How many faculties and institutes are there in your university?
What faculty do you study at?
When was it founded?
Are you a second-year student?
What specialists does your faculty train?
What subjects is the academic curriculum composed of?
What does the course of study end with?
In what way can the graduates continue their study?
What is your future speciality?
What is geography and what does it deal with?

1.10 Text for written translation

Geography at St Andrews University (Britain) covers a wide range of subject matter united by its focus on the spatial dimensions of human and physical environments. In the geography course students «visit» many different parts of the world and examine a whole range of natural and social features crucial to an understanding of the landscape and the place. Geography is often a «synthetic discipline» for it occupies a unique position bridging the Arts and the Sciences and bringing together knowledge of the natural and human worlds. It thus provides a rounded view of its subject matter and ensures that Geographers have a broader insight than other specialists into some of the big problems of the world today.

Famines, floods and earthquakes make front-page headlines in the newspapers and all take their toll in terms of human life and misery. Their causes and their effects are both natural and human, often involving complex interaction between the two. The same range of factors must be used when trying to understand the equally serious problems of environment pollution, inequalities in economic development and well-being, global warming and population growth. Geography provides the breadth of knowledge necessary for an awareness of the complexity of these issues.

Geography students at St Andrews also learn a range of useful techniques during their 4-year course. They learn how to interpret aerial and satellite photographs, how to read, design and draw maps (including the creation of computer graphics), and how to conduct and interpret a social survey.

1.11 Make up all possible types of questions to the text 1.10: a) general, b) alternative, c) disjunctive, d) special, e) question to the subject

1.12 Speak on:

1. our university
2. your speciality
3. geography course at St Andrews

2 Lesson 2 Geography

2.1 Words and word combinations to the text

distribution - распределение
to investigate - исследовать
to analyse - анализировать
approach - подход
phenomenon (pl. phenomena) – феномен, явление
particular - конкретный
association - сообщность
distinctive - отличительный
similar – схожий
geomorphology – геоморфология
climatology – климатология
oceanology – океанология
to treat - рассматривать
movement - движение
manufacturing - производство
commercial - торговый
to emphasize – подчеркивать
sovereignty - суверенитет
to subdivide - подразделять

2.2 Find Russian equivalents to the following word combinations

on the basis	природные условия
agricultural characteristics	такие как
similar factors	на поверхности земли
natural conditions	наука о Земле
on the face of the earth	специальный раздел
a specialized field	на основе
a study of the earth	сельскохозяйственные характеристики
such as	схожие факторы

2.3 Read and translate these words and word combinations

to distribute – distribution;
to investigate – investigation;
to associate – association;
to subdivide – subdivision;
similar – similarity – similarities;
agriculture – agricultural – agricultural characteristics;

separate – separately;

2.4 Read and translate the text

Geography - A Study of the Earth and What It Holds

The distribution of things on the face of the earth can be investigated and analysed in either of two ways. One approach is called **topical geography**, or sometimes systematic geography. This approach involves the investigation and analysis of such phenomenon as the earth's landforms, its climate, its political divisions, or its agricultural characteristics.

The other approach is called **regional geography**. It focuses attention upon a particular area or region. Within the region it investigates the distribution and association of elements which give the region its distinctive character.

Subdivisions of topical geography

Topical geography may by focused on physical or human phenomena. Analysis of the distribution of landforms, climates, water, soils, minerals, and similar factors is called **physical geography**. The principal branches of physical geography are geomorphology, climatology, biogeography, oceanology and soil geography. Certain aspects of physical geography, in turn, are sometimes studied separately. These include the plant geography, animal geography, geography of minerals and other aspects. The speciality which treat the form, size, and movements of the earth is called *mathematical geography*. *Human geography* analyses the distribution of human phenomenon. *Economic geography* includes such specialities as the geography of manufacturing, transportation geography, commercial geography. *Political geography* emphasizes the pattern of the earth's political sovereignties. A specialized field of topical geography known as *urban geography*, is devoted to analysing of the distribution of cities and things within them. Cartography takes a special place among geographic studies.

Subdivisions of regional geography

In regional geography analysis is concentrated on associations which give the character to a particular area. The area may be continental in size, or it may by subdivided into units such as countries, states and counties. Subdivisions of the world that are made on the basis of similarities of human life provide *culture regions*. Subdivisions on the basis of similarities of natural conditions provide *physical regions*. Thus, there are a geography of North America, a geography of United States, a geography of California, and a geography of Boston.

2.5 Say whether the following statements are true or false. Use the following: *that's right; nothing of the kind; I don't agree; I think that's exactly so; that's true; that's not right.*

1. Topical geography may be focused on physical or human phenomena.
2. One of the geographic branches is climatology.
3. The speciality which treat the form, size and movements of the earth is called urban geography.
4. Political geography emphasizes the pattern of the earth's political sovereignties.
5. Subdivisions on the basis of similarities of natural conditions provide culture regions.

2.6 Find the right definition for the following concepts

a. Political geography	Отрасль географии, изучающая природные явления и объекты земной поверхности.
b. Economic geography	Отрасль географии, изучающая особенности, объекты и феномены земной поверхности, которые непосредственно связаны с человеком и его деятельностью.
c. Urban geography	Отрасль географии, изучающая границы, административное деление и владения государств.
d. Physical geography	Наука, изучающая распределение живых организмов по земному шару и причины его изменения.
e. Human geography	Отрасль географии, изучающая закономерности территориального размещения производства, экономической структуры хозяйства стран и регионов
f. Biogeography	Учение о месте, эволюции, структуре и классификации городских поселений и городов.

2.7 Translate into English

География - наука, предметом изучения которой является описание форм и физических особенностей земли, ее природных и политических градаций, а также климата, общественного производства, населения и т.д. разных стран.

2.8 Answer the following questions

What does topical (regional) geography investigate?
What is called physical geography?
What aspects of physical geography are studied separately?
What can you say about mathematical geography?
What does human (economic, political, urban) geography deal with?
How is regional geography subdivided?

2.9 Retell the text “Geography”
2.10 Text for written translation

One of the central problems in human geography is to explain the distribution and characteristics of people – this is the province of *population geography*. Population geography examines particularly the distribution of population in relation to its various characteristics, such as growth, number, density, age, sex, fertility, mortality, natural increase, and occupations, divisions into rural and urban, ethnic, linguistic, or religious groupings; and migrations. Some geographic studies are concerned mainly with spatial distribution, spatial mobility, or spatial diversity in relationship to environment or resources, all of which are often depicted on maps. Other studies are more concerned with fertility, mortality, population growth, and forecasting through the use of demographic models.

Interest in population geography in the second half of the 20 th century has been heightened by the sharp and growing contrast between economically developed countries (which have long experienced a demographic transition from high to low birth and death rates and thus to low rates of population increase) and the less – developed countries (in which death rates have declined dramatically but birth rates have remained high, resulting in rapid population growth that has posed extremely difficult problems). The emphasis in population geography has shifted to effect how much less people are bound to the land as a result of transformation in agriculture, increased industrialization, improved transportation and trade, changes in sources and forms of energy, urbanization and the expansion of service industries.

2.11 Make up all possible types of questions to the text 2.10

Read and smile Inky hands and geography

During a geography lesson the teacher is speaking to his pupils about the points of compass. He tells them that when they are facing the north, the south is behind them, while the east is on their right hand and the west on their left hand. Just then he sees that one of the boys, named Bobby, is not listening. He calls to him: "Bobby, stand up and tell me what's on your left hand?" Bobby stands up and says: "Please, sir, there's some ink on it, and I can't get it off."

3 Lesson 3 Geography and Maps

3.1 Words and word combinations to the text

arrangement–распределение
interaction – взаимодействие
essential – важный
accurate – точный
entire – целый, весь
latitude – широта
longitude – долгота
error – ошибка
to contain – содержать
to revive – возрождать
voyage – путешествие
discovery – открытие
invention – изобретение
observation – наблюдение
photoengraving – фотогравирование
to employ – применять
encyclopedia – энциклопедия
precipitation – осадки
pressure – давление
technique – метод
to locate – определять
to ascertain – выяснять
to measure – измерять
to interpret – объяснять

3.2 Find Russian equivalents to the following word combinations

a source of information	поверхность земли
spatial correlation	аэрофотосъемка
to measure distances	измерять расстояния
the earth's surface	объяснять символы
to find out smth	источник информации
to locate places	определять местонахождение
to interpret symbols	узнавать что-либо
aerial photography	пространственное соотношение
the Middle Ages	составление карт
map making	средние века

3.3 Read and translate these words and word combinations

accurate – accurately;
constant – constantly;
to refer – reference;
to invent – invention;
to make – makers –map makers – map maker's symbols;
geography – geographer;
ability – inability;

3.4 Read and translate the text

Geography and Maps

The arrangement of things over the earth and the interactions between two or more areas can be presented with clarity and simplicity on maps. Although maps are used in many other studies, in geography they become the one constantly essential tool.

The ancient Greeks were the first to make accurate maps of the entire world as they knew it, using latitude and longitude. All their knowledge, with many errors, was contained in maps by the Egyptian Ptolemy [1] of Alexandria [2]. During the Middle Ages map making was neglected. About the time of Columbus, Europeans obtained Arabian copies of Ptolemy's maps. They revived the use of latitude and longitude on maps. Then came the great voyages of discovery, and map makers soon developed new methods to show the entire world. They were troubled, however, by inability to determine longitude accurately. Invention of the telescope made it possible to do this from astronomical observations. In 1682 J.D. Cassini [3] produced the first really accurate map of the world.

In the 19 th century inexpensive maps were made possible by the invention of photoengraving. The 20 th century brought aerial photography to the aid of map makers. Today maps are employed in countless ways. Schools use them constantly, not only in the study of geography, but as aids for understanding plant and animal life, history and current events. Outside of school we encounter maps in almost every newspaper and magazine.

Three kinds of maps are important. They are (1) the reference maps, may be used like an encyclopedia as a source of information. A road map is a good example of a reference map. Drivers refer to such maps to find out how to get from one place to another; (2) the illustrative maps show the distribution of specific phenomena or the spatial correlation of two or more phenomena on the earth's surface. The weather map reproduced in daily newspapers is a good example of an illustrative map. It shows how temperatures, precipitation, winds and pressure are related in space; (3) the analytical maps suggest ideas that can be tested by mathematical and statistical

techniques. This type of map is used mostly by professional geographers in their research.

To make and to read maps involve several abilities. These are the ability to locate places, to ascertain directions, to measure distances and to interpret the map maker's symbols. Exceptional skill in the use of maps is required in many professions, such as geography, civil engineering, geology, navigation and others.

Ptolemy (Claudius Ptolemaeus) - Клавдий Птолемей (ок. 90 - ок. 160), др.-греч. астроном. Написал трактат «География», где дал сводку географических сведений античного мира.
Alexandria - Александрия, столица Египта (305 - 30 д.н.э.)
J.D. Cassini - Джованни Доменико Кассини - (1625 - 1712) французский ученый, астроном и геодезист.

3.5 Say whether the following statements are true or false

1. Maps show the arrangement of things over the earth.
2. First maps were made by the ancient Romans.
3. During the Middle Ages map making was revived.
4. The invention of the telescope made it possible to determinate longitude accurately.
5. The reference map shows the distribution of specific phenomena on the earth’s surface.
6. Exceptional skill in the use of maps is required in many professions.

3.6 Translate the words and word combinations given in brackets

1. The Egyptian Ptolemy was the first to make maps (используя широту и долготу).
2. (Изобретение телескопа) helped map makers in their work.
3. The first really (точная карта) was produced in 1682.
4. The 20 th century brought (аэрофотосъемка) to the aid of map makers.
5. Maps are used in many professions, such as (география, гражданское строительство, геология, навигация).
6. The weather map shows how (температура, осадки, ветры, давление) are related in space.

3.7 Read the text and reproduce it in the form of a dialogue

Men have made and used maps since the dawn of history. They have done so because maps serve much better than words for giving information. Even primitive peoples recognize this. When an explorer in a wild land asks directions from a native, the native often answers by drawing a map on the ground, on a shell, or on a piece of

bark. Explorers have found the Eskimos to be unusually skilful in doing this.

3.8 Answer the following questions

What can be presented on maps?
When did people begin to make and use maps?
Who was the first to attempt to make a map of the world?
When was map making revived?
How did the great voyages of discovery influence the development of map making?
What inventions helped map makers in their work?
What are three kinds of maps? Speak about each kind.
What abilities help to make and to read maps?

3.9 Make up the plan of the text "Geography and Maps". Retell the text

3.10 Text for written translation

Exhibit of Old Maps More Than Geography

The maps in the exhibit, titled "Russia and the Rest of the World", date from the 16 th to the beginning of the 20 th century and give insight into the politics and attitudes of their time.

Russia had maps before Peter the Great, but they were more impressionistic than scientific. They showed approximately where different athnic groups were located, as opposed to showing rivers, roads and other geographical features. But Europeans who traded Russia needed accurate maps and most of maps in the exhibit were created by foreigners. A map drawn by Dutchmen Gessel Gerrits in 1614 is an excellent illustration of the Western attitudes toward Russia. One corner is dominated by a map of Moscow and Central Russia is drawn in a fair amount of detail. On the right-hand side, the map drops off abruptly, and Gerris simply wrote the word "Tartar" to depict all of modern day Siberia. This map and the others from the same atlas were used as the basis for most 17 th – century maps of Russia.

The two most noticeable maps located at the gallery are not actually part of the exhibit but are on permanent display. One depicts Europe in 1914 but has none of the usual borders and geographical features. Instead, a caricature of the tsar represents Russia, while different animals represent other European countries. The other map shows Russia as a large black bear.

3.11 Make up all possible types of questions to the text 3.10

Read and smile
Teacher: Who helped you to draw this map, Jack?
Jack: Nobody, sir.
Teacher: Didn't your brother help you?

Jack: No, sir. He drew it all himself.

4 Lesson 4 Components of Maps

1.1 Words and word combinations to the text

component – составная часть, элемент
title – название
legend/key – легенда карты/ключ карты
direction indicator – указатель направления
scale – масштаб
data – дата, данные
figure – цифра
to misunderstand – неправильно понять
arrow – стрелка - указатель
to point – указывать
parallel – параллель
meridian – меридиан
grid – градусная сетка
degree – градус
observatory – обсерватория
noon – полдень
post meridiem (p. m.) – после полудня
ante meridiem (a. m.) – до полудня
projection – картографическая проекция
to transfer – переносить
flat – плоский/ровный
distortion – искажение
inevitable – неизбежный
property – качество/свойство

4.2 Find the Russian equivalents to the following word combinations

similar components	местное время
distribution of population	статическая информация
capital city	сферическая поверхность
imaginary grid	неискажённая черта
precise location	сходные элементы
local time	столица
statistical information	воображаемая сеть
curved surface	распределение населения
spherical surface	точное расположение
undistorted feature	неровный рельеф

4.3 Read and translate the text

Components of maps

Despite their variety, all maps have similar components, or parts. These include a title; a legend or key; a direction indicator; and a scale.

The title of a map identifies what the map is about and what parts of the earth it shows. The title of some maps includes a date. Dates are useful on maps showing features that change over time. A map with the title "Distribution of Population in France: 1920", for example, should not be used when looking for figures on the present population of France.

A legend or **key** explains the meaning of colors and symbols used on a map. A map with areas shown in green, red, and blue might be misunderstood unless the user knows what the green, red, and blue represent. The legend also explains the meaning of symbols used on a map, such as stars for capital cities.

Every map should have **a direction indicator.** One such indicator is an arrow that points north. A different way to find directions on a map is to study the parallels and meridians. East and west directions follow parallels, or lines of latitude. North and south directions follow meridians, or lines of longitude. Parallels and meridians cross each other to form an imaginary grid over the earth. Because each degree can be broken into 60 minutes (') and each minute can be broken into 60 seconds ("), this grid can be used to fix the precise location of any point on the earth's surface.

The most important longitude is called the Greenwich Meridian, because it passes through a place called Greenwich in London where there is a famous observatory. The longitude of the Greenwich Meridian is 0 degrees. At Greenwich local time is called Greenwich Mean Time (GMT). All places on the same meridian have the same local time. When it is noon at a given meridian, it is after noon *or post meridiem* (p.m.) at places which lie to the east of it. This is because the earth rotates from west to east. At the same time the sun will be before noon or *ante meridiem* (a.m.) at places lying to the west.

Map scales and projections. A map scale provides statistical information used to measure distances on a map. While maps have similar components, they do not always show areas of the world in exactly the same way. The size and shape of North America, for example, may look somewhat different on two different maps. The differences occur because the two maps use different map projections, or methods by which the features of the earth's curved surface are transferred onto a flat map.

No matter which projection is used, every map has some distortions that are inevitable in the process of illustrating the earth's spherical surface on a flat map. Certain distortions, however, are worse on some projections than on others. Mapmakers choose which projection to use depending on what undistorted features, or map properties, are most important to be illustrated. The four most useful map

properties are correct shape, correct size, correct distance, and correct direction. No world map can have all four map properties. Maps of smaller areas, however, may have less distortion than maps of larger areas.

4.4 Say whether the following statements are true or false

1. Every map has a title, legend or key, a direction indicator and a scale.
2. A legend or key identifies what the map is about and what part of the earth it shows.
3. One of the ways to find directions on a map is to study the meridians and parallels.
4. Each degree can be broken into 60 seconds(").
5. The latitude of the Greenwich Meridian is 0 degrees.
6. The earth rotates from east to west.
7. The most useful maps properties are correct size, correct shape, correct distance, correct direction.
8. Maps of larger areas may have less distortion than maps of smaller areas.

4.5 Guess the words in brackets

1. An important town or city where the central government of a country is. (…….)
2. The relations between the size of a map, drawing, or model and actual size of the place or thing it represents. (…….)
3. An image of something that has been projected, especially an image of the world surface on a map. (…….)
4. An imaginary line drawn from north pole to the south pole over the surface of the Earth, used to show the position of places on a map. (…….)
5. An imaginary line drown on a map of the Earth, that is parallel to the equator. (…….)
6. The time as measured at Greenwich in London. (…….)
7. It explains the meaning of symbols and colors used on a map. (…….)
8. A sign in the shape of an arrow, used to show direction. (…….)
9. A kind of inaccuracy contained on maps. (…….)

4.6 Complete the following sentences

1. Despite their variety, all maps have ……. .
2. The title of some maps includes ……. which are useful on maps showing ……. .
3. East or west directions follow ……. , the north and south directions follow ……. .
4. An imaginary grid over the earth can be used to ……. .
5. The most important longitude is ……. .
6. When it is noon at Greenwich it is ……. at places which lie to the east of it, and ……. at places lying to the west.

7. ……. are inevitable in the process of illustrating the earth's spherical surface on a flat map.
8. Mapmakers choose which projection to use depending on ……. .

4.7 Read the texts and render them into English

***

Меридианом называют кратчайшую линию, условно проведённую на поверхности Земли от одного географического пояса к другому. Все меридианы представляют собой полуокружности, сходящиеся у полюсов и имеют одинаковую длину (40 009 км). В переводе на русский язык слово «меридиан» означает «полуденная линия». Её направление совпадает с направлением тени от предметов в полдень. В каждой точке поверхности земли меридиан направлен на север и на юг.

Параллелями называют линии, условно проведённые по поверхности Земли параллельно экватору. Все точки данной параллели находятся на одинаковом расстоянии от экватора. В каждой точке параллель направлена на восток и на запад. Параллели – это окружности, длина которых уменьшается от экватора (самая длинная параллель) к полюсам.

***

Географическая широта – величина дуги в градусах от экватора к северу или к югу от западной точки. Географическая широта экватора равна 0^0; северный и южный полюса имеют широту 90^0; точки, расположенные к северу от экватора, имеют северную широту (N); точки в южном полушарии имеют южную широту (S).

Географическая долгота – величина дуги в градусах от начального (нулевого) меридиана к востоку или западу от заданной точки. Все точки на земной поверхности, расположенные от начального меридиана до противоположному ему -180^0, имеют восточную долготу (E), а к западу от него до 180^0 – западную долготу (W).

4.8 Answer the following questions

What are the four major components of all maps?
What does the title identify?
What does the legend explain?
What does the direction indicator identify?
What do we call Greenwich Mean Time?
Explain the meaning of the words post meridiem and ante meridiem.
What does a map scale provide?
Maps always show areas of the world in exactly the same way, don't they?
What are the most useful map properties?

4.9 Give the title to each paragraph of the text “Components of maps”. Retell the text according to your plan

4.10 Text for written translation

Remotely sensed images, including aerial photographs and satellite images are the new modern tools of geography. Geographers use the aerial photographs – pictures taken from above the earth – to study relationships involving peoples and places that are not easily seen from ground level. Aerial photographs of traffic patterns, for example, can be used for planning new highways. Aerial photographs even show features of the ocean floor. Because aerial photographs provide such accurate and detailed information, cartographers rely on them as a source of information when making maps. Most aerial photographs used to make maps are taken by cameras in high-altitude airplanes and are developed in strips of overlapping pictures. An instrument called a stereoscope converts a pair of overlapping aerial photographs into a three-dimensional view of the area.

Many of the satellites circling the earth have special sensors called multispectral scanners. These scanners record observations electronically and send them to ground stations. Computers than translate the data into electronic images, making false-color pictures. Even though the pictures are taken from far in space, they are so detailed that they can show houses or even sailboats on a lake.

In addition to globe, maps, and remotely sensed images, geographers use tables, charts, graphs, and diagrams to help them in their work. They also use computers to solve geographic problems as well as to make maps and graphics.

4.11 Make up all possible types of questions to the text 4.10

5 Lesson 5 Weather and Climate

5.1 Words and word combinations to the text

prevailing – преобладающий
atmosphere – атмосфера
average – обычный, средняя величина
condition – состояние, условие
humidity – влажность
cloudiness – облачность
grassland – район лугов и пастбищ
semiarid region – засушливый район
desert – пустыня
tundra – тундра
to surround – окружать
insular (climate) – островной (климат)
moist – влажный, сырой
equable – равный, равномерный
current – течение
moderate – умеренный
abundance – изобилие, богатство
lack – недостаток
to hinder – препятствовать
cultivation – разведение
species – вид, род

5.2 Find Russian equivalents to the following word combinations

prevailing winds	западные берега
temperate belt	виды растений
grain crops	умеренное влияние
moderating influence	теплое течение
species of plants	преобладающие ветры
strong frosts	зерновые культуры
abundance of rainfall	умеренный пояс
lack of sunshine	сильные морозы
western shores	недостаток солнечного света
warm current	избыток дождей

5.3 Read and translate the text

Weather and Climate

Climatology is concerned with the prevailing state of the atmosphere, including average climatic values, the frequency of values within stated ranges, weather types and their characteristics, and the explanation and distribution of both climatic elements and general climatic types. Of particular geographic interest are the interrelationships of climatic elements and types with other physical and biologic features and with human activity.

The conditions of the atmosphere which determine an area's weather or climate are temperature, precipitation (rain and snow), atmospheric pressure, winds, humidity and percentage of cloudiness and sunshine. The average of these conditions over a period of many years make up an area's climate. Tropical climate reigns over 36.2 per cent of the earth's surface, moderate – over 37.2 per cent, cold – over 18.8 per cent, dry – over 10.5 per cent, snow-bound climate – 7.3 per cent.

Because the combination of climatic conditions differs from place to place, geography is concerned with the classification of areas according to climate. **Forests** are commonly found where the climate is humid and not too cold for trees to grow. **Grasslands** generally develop in subhumid or semiarid regions where the rainfall is less than that necessary for trees. **Deserts** occur in places where there is so little rainfall that even grass has difficulty for growing. **Tundras** are found where the climate is cool to cold throughout the year.

The climate of the British Isles

The British Isles which are surrounded by the ocean have an insular climate. The climate is moister and more equable than of Central Europe. The three things that chiefly determine the climate of Britain are: 1) the position of the island in the temperate belt; 2) the fact that the prevailing winds blow from the west and southwest; 3) the warm current – the Gulf Stream that flows from the Gulf of Mexico along the western shores of England.

The British Isles are situated in the parallels on which Moscow and Kiev are situated. The climate is mild and strong frosts are rare. Due to the moderating influences of the sea and the Gulf Stream, the January temperature is higher and the July temperature lower than in any other country of the same latitude.

Its hard to say that Britain has typical weather because of the sudden changes that occur: showers from what was only a few hours before the clear sky; sunshine that makes you want to leave off most of your clothes followed by winds that set your wishing for two other coats. There is an abundance of rainfall in the west. As a result, there are thick fogs, which last for days and weeks at a time during the autumn and winter. The lack of sunshine hinders the cultivation of many species of plants, especially grain crops. However, grasses grow all the year round, providing fodder

for cattle.

5.4 Say whether the following statements are true or false

1. Weather is the conditions of the atmosphere over a period of some years.
2. Deserts are commonly found where the climate is humid and not cold.
3. The position of the island in the temperate belt is one of the facts that determine the climate of Britain.
4. The British Isles are situated on the parallels on which Moscow and Minsk are situated.
5. Weather in Britain is characterized by sudden changes.
6. There is an abundance of sunshine in the west.

5.5 Translate the words and word combinations given in brackets

1. Geography is concerned with the classification of areas (в соответствии с климатом).
2. What is (средняя температура) here in spring?
3. (Атмосферное давление) was very high last week.
4. The climate of this region is (влажный).
5. The weather map shows how (температура, осадки, ветры и давление) are related in space.
6. The British Isles have (островной климат).
7. (Суровые морозы) are not rare in this part of the country.

5.6 Read and translate these dialogues. Answer the following questions

1. What is the difference between weather and climate?
2. What facts suggest that climates have been constantly changing?

* * *

A: What nasty weather we are having this summer.
B: Yes, indeed. Is it often so cool and damp here as it is this summer?
A: I wouldn't say so. The climate here is rather healthy. The winters are not very cold and the summers are warm and dry.
B: By the way, what is the difference between weather and climate?
A: Well, I'll try to explain it. If we speak about "weather", we mean the conditions of the atmosphere at any given moment. Weather can be cloudy, sunny, damp, dry, warm, hot, cool, windy and so on. These conditions can be change frequently. "Climate" can be defined as the average weather over a long period of time.

* * *

A: Climates in the past haven't been as they are today, have they?
B: Certainly, not. There's much evidence that climates have been constantly changing. Coal and some other deposits in such northern regions as Greenland and

Spitsbergen were certainly formed in hot climates.
On the other hand, in India, South Africa and Australia there are signs of former glacial conditions.
A: Do these facts suggest that continents have wandered?
B: If continents haven't, the poles have done so. That is to say, the positions of the North and South Poles and the Equator have been different at different times.

5.7 Answer the following questions

Why is climatology of particular interest to the geographers?
What are the conditions of the atmosphere which determine the area's weather and climate?
What is weather? What is climate?
Give the classification of areas according to climate.
What climate have the British Isles?
What things determine the climate of the British Isles?
The weather in Britain changes very quickly, doesn't it?
What hinders the cultivation of many species of plants?
Why is sheep-breeding developed in Britain?

5.8 Read and memorize the following information

centigrade thermometer [ˊsentigreid] - термометр Цельсия, термометр со стоградусной шкалой
Celsius [ˊselsjəs] – шкала Цельсия
Fahrenheit [ʻfærənhait] - Фаренгейт
degree - градус
15 ^{0}C (Centigrade) – 15 ^{0} по Цельсию
80 ^{0}F (Fahrenheit) – 80 ^{0} по Фаренгейту (27 ^{0} по Цельсию)

Temperature Conversion

Officially temperature is measured in degrees Centigrade (^{0}C), but Britain and some other countries also use degrees Fahrenheit (^{0}F).

To convert Fahrenheit to Celsius subtract 32 ^{0}, multiply by 5 and divide by 9.

$$70\ ^0\text{F} - 32\ ^0 = 38\ ^0 * 5 = 190\ ^0 : 9 = 21\ ^0\text{C}$$

To convert Celsius to Fahrenheit multiply by 9, divide by 5 and add 32 ^{0}.

$$21\ ^0\text{C} * 9 = 189\ ^0 : 5 = 38\ ^0 + 32\ ^0 = 70\ ^0\text{F}$$

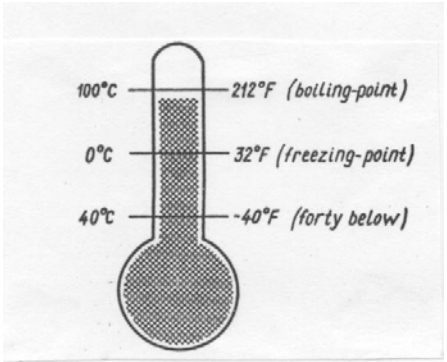

Figure 1

Fulfil these tasks:

1. Convert 80 ^{0} Fahrenheit to Celsius.
2. Convert 17 ^{0} Centigrade to Fahrenheit.

5.9 Read and translate this weather forecast. Make up your own weather forecast using vocabulary given below

Weather Forecast

London: Sunny intervals and showers; wind NW light or moderate; max. temp. 10^{0}C (50 ^{0}F).
East Britain: Early mist or fog, mostly cloudy, rain at times; wind N moderate; max. temp. 8 ^{0}C (46 ^{0}F).
Scotland: Mainly dry with sunny periods but becoming more cloudy later; wind S moderate; max. temp. 7 ^{0}C (43 ^{0}F).
Outlook for tomorrow and Sunday: All areas have showers or longer period of rain and also some sunny intervals. Temperature will be near normal.
Long Range Forecast: October will be warm everywhere. According to the long weather forecast, the first half of the month will be dry with some morning fog. Temperature will be above average generally.

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weather forecast /outlook – прогноз погоды
Weather Bureau – Бюро погоды
a change in the weather – изменения в погоде
5 ^{0} below (zero) – 5 ^{0} ниже нуля
5 ^{0} above (zero) – 5 ^{0} выше нуля
drizzle – мелкий дождь, моросить
pouring rain – проливной дождь
light wind, breeze – легкий ветер
strong wind – сильный ветер
cutting wind – пронизывающий ветер

thunderstorm – гроза
storm cloud – грозовая туча
hurricane – ураган
hail – град
sleet – дождь со снегом
cyclone – циклон
anticyclone – антициклон

fair, dry, warm, hot, cold, mild, changeable	weather	hot, warm, cold, cool, sunny, rainy, bright, misty	day	humid, dry, continental, tropical, subtropical, equatorial, moderate, mediterranean	climate	low, high, average	humidity

frosty

5.10 Speak on:

1. The difference between weather and climate
2. The classification of areas according to climate
3. The climate of the British Isles
4. The climate of the Orenburg region

5.11 Text for written translation

The only thing you can rely on is that New York weather is entirely unreliable. A temperature change of as much as 40 degrees (Fahrenheit) within a single day is not uncommon. It may be freezing cold one afternoon, and bright, warm and sunny the very next morning, or unfortunately vice versa. According to the US Weather Bureau, New York City has a modified continental climate.

New Yorkers live in a relatively damp climate of cold winters and warm, humid summers. Hot spells can be difficult to bear. During the summer months there are brief but intense thunder storms. Rains which continue for a few days are not uncommon. On an average it will rain or snow 120 days out of the year. New York has many beautiful sunny days, especially during autumn.

July is the hottest month of the year, with an average temperature of 73.9 (Fahrenheit) and the coldest months are January and February with an average temperature of 30.8 degrees. Most of the strong winds that visit New York are from the northwest.

5.12 Make up all possible types of questions to the text 5.11

Read and smile

About two hundred years ago there lived a man in London whose name was Partridge. Mr. Partridge was famous all over the world for his almanacs in which he predicted the weather for each day of the year.

One summer day he went on a visit to a friend of his who lived in the country. He left London early in the morning. Then he stopped for lunch at an inn. The inn was quite near his friend's village and Mr. Partridge decided to walk there. He was going to leave the inn when the waiter said, "Don't go now, sir. It'll rain soon. Stay here for the night and walk to your friend's house in the morning". Mr. Partridge looked at the waiter with surprise. There was not a cloud in the sky and the sun was shining brightly.

Mr. Partridge left the inn and walked about a hundred yards when the sky became cloudy and it started raining. He went back to the inn. "How did you know about the rain?" Mr. Partridge asked the waiter. "Oh, it's very simple. We have Partridge's almanac. It says that today the weather will be fine and there'll be no rain. If it says "no rain" it is sure to rain".

6 Lesson 6 The Universe and the Solar System

6.1 Words and word combinations to the text

cosmos/ universe – вселенная, космос
aggregation – скопление
galaxy – галактика
spiral – спиральный
radius – радиус
light year – световой год
diameter –диаметр
satellite – спутник
planetary dust – планетарная (космическая пыль)
core – ядро
gaseous – газообразный
hydrogen – водород
trace – след
inner – внутренний
outer – внешний
to rotate – вращаться (more around a central point)
to revolve – вращаться (go round in a circle)
axis (pl. axes) – ось
path – траектория
gravitation – притяжение
asteroid – астероид
comet – комета
meteor – метеор
major planets – большие планеты
minor planets – малые планеты
solid – твердый
to tear away – отрывать(ся)
nebular theory – небулярная (космогоническая) теория
nebula – туманность
capture – поглощение
to agglomerate –собирать(ся)

6.2 Find Russian equivalents to the following word combinations

a medium-sized star	космическое вещество
the mean diameter	бинарная (двойная) система
gradually	по крайней мере
artificial satellite	звезда средней величины
binary system	постепенно

at least	средний диаметр
interstellar matter	явление приливов и отливов
the Solar System	искусственный спутник
tidal phenomena	Солнечная система

6.3 Pay attention to the names of the planets. Mind their pronunciation

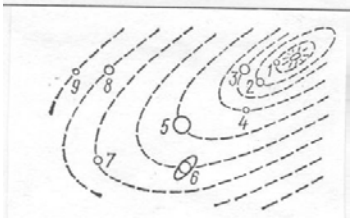
Mercury [ˊmə:kjuri]	Mars [ma:z]	Uranus [ˊjuərənəs]
Venus [ˊvi:nəs]	Jupiter [ˊʤu:pitə]	Neptune [ˊneptju:n]
Earth [ə:θ]	Saturn [ˊsætən]	Pluto [ˊplu:təu]

6.4 Read and translate the text

The Universe and the Solar System

The cosmos or the universe as we view it today is made up of at least a billion aggregations of stars called galaxies. The galaxies vary in shape and texture and are divided into a number of general groups. Our own galaxy, the Milky Way, is classified as a spiral galaxy. The Milky Way in turn is a member of a supergalaxy that consists of seventeen galaxies of all types, concentrated within a radius of about one million light years.

The Solar System is a tiny family of the universe. There may well be millions of star systems like our own in the universe. It consists of the sun (a medium-sized star with a diameter of about 850,000 miles), its nine planets and a variety of smaller bodies ranging from satellites such as our moon to planetary dust. The sun's mass is 33,000 times that of the earth and its temperature ranges from 6,000 degrees C at its surface to energy values equivalent to an estimated 25 million degrees C at its core. The sun is almost entirely gaseous, the most prevalent gas being hydrogen with traces of 65 other elements.



Solar System:

1. Mercury
2. Venus
3. Earth
4. Mars
5. Jupiter
6. Saturn
7. Uranus
8. Neptune
9. Pluto

Figure 2

Of all nine planets Mercury is closest to the sun, followed by Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto in that order, the mean diameter of the solar system being about 7 billion miles. The inner planets are closer together and the outer ones are farther apart.

The planets rotate around their axes and revolve around the sun in elliptical paths determined by the force of the gravitation. Included in the solar system are the 31 satellites of the planets (not counting the earth's artificial satellites), thousands of asteroids which are minor planets ranging from one mile to 300 miles, comets, small masses of solid particles, held loosely together, and meteors.

There exist several hypotheses of the origin of the Solar System, there are two of them:

The “catastrophic” theory. This held that the planets were formed of material torn away from the sun by the action of another star, either by collision or by tidal phenomena. This star may have been one which its proper motion brought into the neighbourhood of the sun or it might have been a “companion”, assuming the sun to have once been a double star, like many binary systems in the universe.

The nebular theory. This theory suggested that the sun was originally surrounded by a mass of gas extending beyond the limits of the present solar system. This nebula resulted either from the evolution of the sun, or from the capture by the sun of a cloud of interstellar matter, which, condensing, separated from it and gradually agglomerated to form the planets. Our solar system seems to have developed according to this latter pattern.

6.5 Say whether the following statements are true or false

1. Galaxy is a great star system.
2. Our own galaxy, the Milky Way, is classified as an elliptical galaxy.
3. Seventeen galaxies of a supergalaxy are concentrated within a radius of about one million kilometeres.
4. The Solar System consists of the sun, its nine planets and a variety of smaller bodies.
5. The sun’s temperature is equal at its surface and at its core.
6. The sun is almost entirely solid.
7. Of all nine planets Pluto is closest to the sun.
8. Asteroids are small masses of solid particles, held loosely together.
9. There exist several hypotheses of the origin of the Solar System.

6.6 Fill in the blanks with the suitable words from the text

1. Of all nine planets Mercury is ……. to the sun ……... by Venus, Earth, Mars, ..……., Saturn, Uranus, Neptune and Pluto in that order.
2. The ……. planets are closer together and the ……. ones are farther apart.
3. The planets ……. around their axes and ……. around the sun in elliptical ……. determined by the force of ……. .
4. The ……. diameter of ……. is about 7 billion miles.
5. As to the ……. of the Solar System there exist several hypotheses.
6. The ……. theory suggested that the planets are formed of material torn away from ……. by the action of another star.

6.7 Ask questions to which these sentences are the answers

1. The Universe as we view it today is made up of at least a billion aggregations of

stars called galaxies.
2. Yes, there may be millions of star systems like our own in the universe.
3. The approximate age of our Solar System as determined by the radioactive method is about 4,5-5 thousand million years.
4. The planets rotate around their axis and revolve around the sun.
5. No, Neptune isn't the farthest planet to the sun. It's Pluto.
6. According to the "catastrophic" theory the planets were formed of material torn away from the sun by the action of another star.
7. Our Solar System is believed to have originated from an immense cloud of gas and dust.
8. Stars differ in surface temperature that's why they are of different colour: white, blue, yellow and even red.

6.8 Translate into English

1. Галактики различаются по форме и структуре. Млечный Путь – это спиральная галактика.
2. Солнечная система – это крошечная частица вселенной. Она состоит из солнца, планет, спутников, космической пыли.
3. Структура солнца газообразная. Преобладающий газ – водород.
4. Солнечная система включает 31 спутник планет (не считая искусственных спутников Земли).
5. Астероиды – это малые планеты, размером от 1 мили до 300 миль.
6. Небулярная теория предполагает образование небесных тел путем концентрации космического вещества.

6.9 Read and translate the dialogue. Reproduce it

A.: Did the sun and the planets form at the same time?
B.: You see, there exist several concepts of the origin of the solar system. Some of them suggest that the sun and the planets originated at the same time from a tremendous cloud of gas, mostly hydrogen and cosmic dust.
A.: And what do other hypotheses suggest?
B.: Other hypotheses suggest that the planets are younger than the sun, that first the center of the cloud condensed and became a star – the sun, and then various densities gave birth to the planets.
A.: I see.
B.: But it must be said that there is still no generally accepted theory to explain how and when the sun and the planets formed.

6.10 Using the given chart , answer the following questions

1. Which planets have a longer day than year?
2. Which planet has the most moons?

3. Which is the hottest planet?
4. Which planet has the shortest day and the longest year?
5. Which planet has the closest length of a day to the Earth?
6. Which is the smallest planet?
7. If an Astronomical Unit is the distance from the Earth to the Sun, how many astronomical units away is Pluto?

Table 1

Name	Moons	Average Temp.C	Rotation	Orbit	Av. distance from Sun (million miles)	Diameter (miles)
Mercury	0	-167to427	58.6 days	87.97 days	36.04	3031
Venus	0	427	243.2 days	224.70 days	67.11	7521
Earth	1	-51 to 48	23.9 hrs	365.26 days	92.99	7926
Mars	2	-123to-30	24.6 hrs	686.98 days	141.61	4217
Jupiter	16	-117	9.8 hrs	11.86 years	483.66	88734
Saturn	18	-180	10.7 hrs	29.46 years	886.72	74566
Uranus	15	-221	17.2 hrs	84.01 years	1783.38	31566
Neptune	3	-216	16.0 hrs	164.79 years	2794.38	30758
Pluto	1	-230	6.3 days	247.69 years	3666.19	1429

6.11 Answer the following questions

What is the cosmos? What is the Universe?
What galaxy do we live in?
What does the Solar System consist of?
Give all the data relating to the sun.
How are the planets arranged in the Solar System?
Distinguish between the asteroids and the comets.
How could the Solar System have originated according to the “catastrophic” theory?
How could the Solar System have originated according to the nebular theory?

6.12 Write down a summarizing sentence for each paragraph of the text “The Universe and the Solar System”. On the basis of the above task prepare an oral

summary of the text

7 Lesson 7 The Earth

7.1 Words and word combinations to the text

sphere – сфера, шар
spheroid – сфероид
pole – полюс
layer – оболочка
atmosphere – атмосфера
hydrosphere – гидросфера
lithosphere – литосфера
liquid – жидкий
crust – земная кора
mantle – мантия
boundary – граница
granite – гранит
sedimentary rocks – осадочные породы
silicate rocks – силикатные породы
basalt – базальт
density – плотность
property - свойство
radioactivity – радиоактивность
lead – свинец
uranium – уран
to yield – давать
approximately – приблизительно

7.2 Find Russian equivalents to the following word combinations

to compare with	масса Земли
a tiny speck	различные свойства
the mass of earth	период времени
rigid shell	дно (ложа) океана
the ocean floor	газообразное состояние
the earth's interior	сравнивать с …
different properties	твердая оболочка
length of time	крошечная частица
gaseous state	внутренняя часть Земли
liquid state	твёрдое состояние
solid state	жидкое состояние

7.3 Read and translate the text

The Earth

Our planet on which we live, the earth seems to be a very large body. But compared with quite an ordinary star, like the sun the earth is only a tiny speck in the universe. The earth is not a true sphere but a spheroid flattened at the poles so that the axis on which it rotates is shorter by 27 miles than the equatorial diameter. The outer layers of the earth are the atmosphere, the hydrosphere, and the lithosphere. The atmosphere, the outermost layer, is the envelope of gases that surrounds the earth. The hydrosphere includes all the bodies of water on the earth in gaseous, liquid, and solid states. It makes up only 0.02 per cent of the mass of the earth.

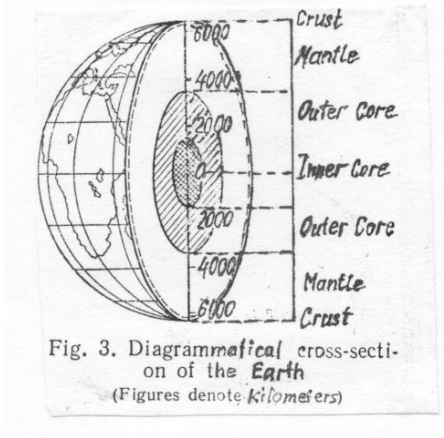


Fig. 3. Diagrammatical cross-section of the Earth
(Figures denote kilometers)

Figure

The three major parts of the earth are the crust, the mantle, and the core. The outermost more or less rigid shell covering the earth constitutes the earth's crust. It includes the rocks of the continents as well as the rocks beneath the ocean floor. The lower boundary of the crust is 20 to 25 miles beneath the surface of the continents and only about 4 miles beneath the ocean. The continents are made up of a rock type known as granite covered by a thin layer of sedimentary rocks, and underlain by basalt, while the floor of all ocean basins is mostly underlain by basalt with a thin layer of sedimentary rocks above.

The mantle composed of materials much denser than those making up the crust extends to a depth of 1800 miles, its density increasing with depth. It is believed to consist of dunite or some closely allied ultrabasic silicate rock.

The core of the earth seems to consist of two parts having different properties. The outer core, more than 1,000 miles thick below the mantle behaves like a liquid. The inner core, 18 times as dense as water, behaves like a solid, although its temperature may be as high as that at the surface of the sun.

How old is the earth? The discovery of radioactivity around 1900 gave the scientists a new means of estimating the age of the earth. All naturally radioactive elements are known to change finally into lead. One gram of uranium will yield 1/7 000 000 000 of a gram of lead a year. Thus by measuring the amount of lead present in rocks containing uranium we can estimate how much radioactive change occurred and what length of time needed for this change. The oldest rock so far discovered has been dated at about 3.7 billion years old. We know the earth was formed earlier than that and astronomers believe it to have been approximately 4.5 billion years ego.

a mile – 5,2800 feet – 1,609 kilometres

7.4 Say whether the following statements are true or false

1. The earth is a spheroid flattened at the poles.
2. The axis on which the earth rotates is longer by 27 miles than the equatorial diameter.
3. The hydrosphere includes all bodies of water in liquid state.
4. The lower boundary of the crust is 20-25 miles beneath the ocean and only about 4 miles beneath the surface of the continents.
5. Materials the mantle composed of, are much denser than those making up the crust.
6. The temperature of the outer core may be as high as that at the surface of the sun.
7. All naturally radioactive elements are known to change finally into lead.

7.5 Fill in the blanks with the suitable words from the text

1. ……. makes up only 0.02 per cent of the mass of the earth.
2. ……. is composed of materials much denser than those making up the crust.
3. The atmosphere, the hydrosphere and the lithosphere are the ……. layers of the earth.
4. The earth is not a true ……. but a ……. .
5. The discovery of ……. gave the scientists a new means of estimating ……. of the earth.
6. ……. includes the rocks of the continents as well as the rocks beneath the ocean floor.
7. The continents are made up of ……. covered by a thin layer of ……, and underlain by ……. .

7.6 Complete the following sentences

1. Compared with quite an ordinary star, like the sun, the earth ……. .
2. By measuring the amount of lead present in rocks containing uranium we can ……. .
3. The atmosphere, the outermost layer, is ……. .
4. The floor of the ocean basins is mostly underlain by……. .
5. The mantle is believed to consist of ……. .
6. The oldest rock so far discovered has been dated at ……. .
7. One gram of uranium will yield ……. .

7.7 Translate into English

1. Атмосфера, гидросфера и литосфера – это внешние оболочки Земли.
2. Атмосфера – воздушная оболочка Земли, гидросфера – водная оболочка Земли, литосфера – земная кора + часть мантии.

3. Гидросфера включает воды Мирового Океана, воды суши и воду в атмосфере.
4. Газы, из которых состоит атмосфера: 78 % азот, 21 % кислород, 1 % другие газы.
5. Земная кора – это твердая оболочка, покрывающая землю.
6. Земная кора, мантия и внутренняя часть ядра твердые, внешняя часть ядра считается жидкой.
7. Ученые считают, что Земля образовалась около 4.5 миллиардов лет назад.

7.8 Read and translate the dialogue. Reproduce it

A: We can easily study the outer layer of the earth but how do scientists form theories about the inside of the earth?
B: Well, theories about the structure of the earth are based on facts. Being unable to penetrate into the centre of the earth scientists must collect facts indirectly. Most information comes from studying earthquakes.
A: Perhaps it is the waves caused by earthquakes that are being studied, isn't it?
B: Quite right. A record is kept of the intensity, time and direction of the waves send from the earthquake centres.
A: Do the waves travel at a uniform speed?
B: No. It seems that the waves bounce off from certain layers and it is this information which shows us that the earth has different layers, that it is not uniform from the surface to the core.

7.9 Answer the following questions

What are the outer layers of the earth?
What is atmosphere? hydrosphere? lithosphere?
What are the three major parts of the earth?
What kinds of materials are the crust and the mantle composed of?
The core is believed to vary in structure and composition, isn't it?
What method has been used to estimate the age of the earth?
What is the approximate age of the earth?

7.10 Write down a summarizing sentence for each paragraph of the text "The Earth". On the basis of the above task, prepare an oral summary of the text

8 Lesson 8 The Ocean

8.1 Words and word combinations to the text

to permit – позволять
to comprise – составлять
source – источник
quantity – количество
mankind – человечество
ignorant – несведущий
volcano – вулкан
cone – конус
to jut – выдаваться, выступать
solution – раствор
sodium chloride – хлорид натрия (поваренная соль)
oxygen – кислород
carbon dioxide gas – углекислый газ
to derive – получать, извлекать
to alter – изменять(ся)
wastes – отходы
chemicals – химические препараты
pollutants – загрязняющие вещества
depository – хранилище
silver – серебро
gold – золото
magnesium – магний
bromine – бром
seaweed – морская водоросль
iodine – йод

8.2 Find Russian equivalents to the following word combinations

as far as we know	общая площадь
the total area	самый распространенный
square/cubic mile	запасы пресной воды
fresh water supply	потенциальный источник металлов
until recent years	до недавних пор
the most abundant	квадратная/кубическая миля
a potential source of metals	насколько нам известно

8.3 Pay attention to the pronunciation of the following geographical names

the Marianas Deep [ma:ri´a:n∂z di:p] – Марианская Впадина

the Hawaiian Islands [ha:ˊwɔiiɔn ˊailɔndʒ] – Гавайские острова
8.4 Read and translate the text

The Ocean

The earth is unusual among the planets of the Solar System in possessing a surface temperature that permits water to exist in all three states: liquid, solid and gas. The earth is also the only body in the solar system, as far as we know, to have oceans. Actually one should say "ocean", because the Pacific, Atlantic, Indian and Arctic oceans all comprise one connected body of salt water in which the Europe-Asia-Africa mass, the American continents and smaller bodies such as Antarctica and Australia can be considered islands.

The statistics of the world ocean are impressive. It has a total area of 140 million square miles and covers more than 70 per cent of the earth's surface. It contains 98 per cent of all the H_2O on the earth and is the source of the earth's fresh water supply as well, for 80,000 cubic miles of it are evaporated each year to fall again as rain.

The ocean is of peculiar importance to life. Almost certainly, the first forms of life originated there, and from the standpoint of sheer quantity, the oceans still contain most of our planet's life.

And yet, until recent years mankind has been as ignorant of the oceans and particularly of the ocean floor as of another planet. Even today, astronomers know more about the surface of the moon than geologists know about the surface of the earth under the oceans.

It was once assumed that the deepest levels of the seas would be found farthest from land. But now we do know, that the deepest parts of the ocean are all near land, the Marianas Deep being the deepest of them (36,198 feet deep, south of Japan).

Volcanoes have been found by the hundreds in the deep sea, rising as cones from many parts of the ocean floor, occasionally reaching high enough to jut up above the sea level, as in the Hawaiian Islands.

Sea water is a solution of various salts, sodium chloride being the most abundant of the salts. In addition to salts, seawater contains small amounts of dissolved gases, such as oxygen and carbon dioxide. Most of this content is derived from the atmosphere and some is produced by the life present in the oceans. The natural composition of the sea has been gradually altered by the addition of man-made wastes, chemicals and pollutants of various kinds.

The oceans are a giant depository for elements, including metals, which have been brought from land by rivers and streams. Because it has been found to contain almost all the metals and other elements used by man, sea water can be considered a potential source of the metals to be needed in the future. As much as 20 billion tons of uranium, 500 million tons of silver, 10 million tons of gold, magnesium and bromine, seaweed (an important source of iodine) are contained in the oceans.

8.5 Say whether the following statements are true or false

1. The earth is unusual among the planets of the Solar System because water can exist in all three states: liquid, solid and gas.
2. Some planets of the Solar System have oceans.
3. The world ocean covers more than 98 per cent of the earth's surface.
4. The deepest parts of the ocean are found far from the land.
5. Sea water is a solution of various substances; the most abundant of them is calcium.
6. Most of the oxygen and carbon dioxide content in the ocean water is derived from the atmosphere.
7. Many various elements, including metals, are contained in the oceans.

8.6 Fill in the blanks with the suitable words from the text

1. The oceans are a giant ……. for elements.
2. All four oceans comprise one ……. of salt water.
3. ……. of the world ocean is 140 million square miles.
4. ……. is the deepest part of the ocean.
5. ……. have been found by the hundreds in the deep sea, rising as ……. from many parts of the ocean floor.
6. 800,000 cubic miles of water are ……. each year to fall again as ……. .
7. Sea-water can be considered ……. of the metals to be needed in the future.

8.7 Complete the following sentences

1. Speaking about the oceans of the earth one should say "ocean" because…… .
2. The ocean is the source of the earth's fresh water supply for…… .
3. Even today, astronomers know more about the surface of the moon than geologists ……. .
4. The world ocean has been gradually altered by the addition of ……. .
5. The oceans contain various elements, among them …… .
6. Sea-water can be considered a potential source of the metals to be needed in the future because ……..... .
7. In addition to salts, sea-water contains …… .

8.8 Translate into English

1. Вода на нашей планете существует в жидком, твердом и газообразном состоянии.
2. Ежегодно 80 000 кубических миль воды испаряется и затем выпадает в виде дождя.
3. Первые формы жизни появились в океане.

4. Некоторые вулканы очень высокие. Они выступают над поверхностью моря.

5. Большинство элементов химического состава морской воды поступает из атмосферы, а некоторые вырабатываются живыми морскими организмами.
6. Важным источником йода являются водоросли.

8.9 Read and translate the dialogue. Reproduce it

A: I've read a very interesting book about the oceans and the ocean floor.
B: What facts were the most interesting?
A: The greatest geographical discovery made in modern times was that of the mid-oceanic ridge, a great mountain range, some 40,000 miles long, winding its way through every ocean of the world.
B: Why is this discovery considered to be of great importance?
A: We now know that it has a number of branches and that a fracture zone is to be found at the centre of the entire ridge. Most of the earthquakes that take place under the sea are centred along this zone.

8.10 Answer the following questions

Why is the earth unusual among the other planets?
Give all the data relating to the world ocean.
Why is the ocean of peculiar importance to life?
Where is the deepest part of the ocean situated?
What is the chemical composition of sea water?
Why is the world ocean called "a giant depository for elements"?

8.11 Write down a summarizing sentence for each paragraph of the text "The Ocean". On the basis of the above task prepare an oral summary of the text

9 Lesson 9 The Map of the World

9.1 Употребление артиклей с географическими названиями

Артикль не употребляется:

a) с названиями стран и материков
Europe, Africa, Japan
Исключения:
The United States of America, the United Kingdom of Great Britain and Northern Ireland, the Netherlands, the Ukraine, the Crimea, the Congo, and some others.

b) с названиями городов
Moscow, Rome, London
Исключение:
The Hague [heig] – Гаага

c) с названиями озер
Lake Baikal, Lake Superior, Lake Ladoga
(но: the Baikal, the Ontario)

d) с названиями горных вершин
Elbrus, (Mount) Everest, Ben Nevis.

e) с названиями отдельных островов
Sicily, Cuba, Cyprus, Haiti

f) с названиями отдельных полуостровов
Kamchatka, Indo-China, Scandinavia
(если присутствует слово ‘’ peninsula ’’, употребляется определенный артикль: the Kola peninsula, the Balkan peninsula)

g) с названиями заливов
Hudson Bay, Baffin Bay

Определенный артикль употребляется

a) с названиями четырех сторон света
the North, the West, the East, the South, the north of England, the south of Spain
(но: northern England, southern Spain)

b) с названиями океанов
the Atlantic Ocean, the Pacific Ocean

c) с названиями морей
the Black Sea, the Mediterranean (Sea)

d) с названиями рек
the Nile, the Thames, the Rhine

e) с названиями проливов
the English Channel

f) с названиями каналов
the Suez Canal, the Panama Canal

g) с названиями пустынь
the Sahara, the Gobi, the Kara-Kum

h) с названиями горных цепей
the Andes, the Rocky Mountains (the Rockies), the Pamirs

i) с названиями групп островов
the Philippines, the Bermudas, the British Isles.

Определенный артикль используется при следующей схеме: имя нарицательное + of + имя собственное

the City of New York, the Cape of Good Hope, the Gulf of Mexico, the Straits of Dover, the Bay of Biscay, the Island of Majorca

9.2 Read the following geographical names, mind their pronunciation, memorize them. Find them on the map

Africa [ˊæfrikə] - Африка
America [ˊæmerikə] - Америка
Antarctica [ænˊta:ktikə] - Антарктида
Asia [eiʃə] – Азия
Australia [osˊtreiljə] - Австралия
Europe [‘juərəp] - Европа
Eurasia [juəˊreiʃə] – Евразия

* * *
the Arctic [‘a:ktik] Ocean – Северный Ледовитый океан
the Atlantic Ocean [ətˊlæntik] – Атлантический океан
the Indian [ˊindjən] Ocean – Индийский океан
the Pacific [pəˊsifik] Ocean – Тихий океан

* * *

the Cordilleras [ko:di'ljɛəɾəs] – Кордильеры
the Andes [´ændi:z] – Анды
the Himalayas [himə´leiəz] – Гималаи
the Caucasus [´ko:kəsəs] – Кавказ
the Carpathians [ka:´peiθjənz] – Карпаты
the Altai [æl´tai] – Алтай
the Urals [juəɾəlz] – Уральские горы
the Tien Shan [ti´en´ʃa:n] – Тянь-Шань
the Atlas Mountains [ætləs´mauntinz] – Атласские горы
Mount Chomolungma (Everest) [tʃəumə u´luŋma] – Джомолунгма (Эверест)

* * *

the Mississippi [´misi´sipi] - р. Миссисипи
the Missouri [mi´zuəri] – р. Миссури
the Amazon [´æməzən] – р. Амазонка
the Lena [´leinə] – р. Лена
the Enisei [ˌjeni´sei] = Yenisei – р. Енисей
the Amur [ə´muə] – р. Амур
the Ob [ob] – р. Обь
the Volga [volgə] – р. Волга
the Danube [´dænju:b] – р. Дунай
the Brahmaputra [ˌbra:mə´pu:trə] – р. Брахмапутра
the Ganges [´gændʒi:z] – р. Ганг
the Yangtze [´jæŋtsi] – р. Янцзы
the Nile [nail] – р.Нил
the Congo [´kongəu] – р. Конго
the Niger [naidʒə] – р. Нигер
the Orange River – Оранжевая река
the Zambezi [zæm´bi:zi:] - р. Замбези

9.3 Find Russian equivalents to the following word combinations

the World Ocean	западные границы
above the level of the sea	прибрежные равнины
in order of size	за исключением
coastal plains	Мировой Океан
western margins	полноводная река
with the exception of	над уровнем моря
full-flowing river	по размеру

9.4 Read and translate the text

The map of the world

If you look at the map of the world, you will see continents and oceans, seas and islands, rivers and mountains, lakes and deserts, etc. You will see that the greater part of the earth's surface, about 71 percent is occupied by water. The large continuous bodies of water, broken info irregular parts by continents and islands are known as the oceans. Four are commonly recognized – the Pacific, Atlantic, Indian and Arctic. All the oceans are linked up, forming great ocean, the World Ocean.

The continents are the large masses of land stand above the level of the sea. In order of size they are Asia, Africa, North America, South America, Antarctica, Europe and Australia. Together they occupy only about 29 per cent of the earth surface.

The earth's surface can be described as being rough or smooth. The rough lands include the world's mountains and hilly uplands. The flat lands are its plateaus and plains. Each continent has an individual arrangement of landforms, though similarities do exist. For example, high mountain ranges are located along the western part of both North and South America. Each part has older, worn-down mountains near its eastern borders. Wide plains drained by great river system full the spaces between the mountain masses. Both have narrow coastal plains along their western margins and wider plains in the east. The largest river system in North America is the Mississippi - the Missouri. The longest river of South America is the Amazon.

Eurasia (Europe and Asia combined) and Africa differ remarkably from North and South America in their surfaces. A long mountain axis extends across south – central Eurasia. To the north and north-west of this mountain core lies the largest lowland in the world, stretching from the Atlantic ocean far info Asia. The main mountain systems in Eurasia are the Himalayas (Mount Chomolungma (Everest) is the highest in the world, 8,848 metres), the Alps, the Caucasus, the Carpathians, the Altai, the Urals, the Tien Shan. There are a lot of rivers there, for example, the Lena, the Enisei, the Amur, the Ob, the Volga, the Danube, the Brahmaputra, the Ganges. The longest river is the Yangtze.

Africa is not nearly as mountainous as Asia. With the exception of the Atlas Mountains, in the north-west, the highest mountains are in the east-central part of Africa. Most inner Africa is a vast plateau. It is co cut and worn by rivers that it has become a hilly or mountainous region. The main rivers are the Nile (the longest river in the world, 6671 km.), the Congo, the Niger, the Orange River, and the Zambezi.

Australia has three dominant landforms. They are the highlands in the east, the plateaus in the west, and a vast plain is covering the east-central part of the continent. The most full-flowing river is the Murray.

Antarctica is a mountainous land, which has many ranges and peaks. Of all continents only Antarctica is uninhabited. Only scientific stations and expeditions from a number of countries are to be found there. And the most populated continent is Eurasia.

9.5 Say whether the following statements are true or false

1. About seventy-one per cent of the earth's surface is occupied by land.
2. Four oceans form the World Ocean.
3. North America is the biggest continent while Australia is the smallest one.
4. Twenty-nine per cent of the earth's surface is occupied by the seas.
5. Both North and South America have similar surfaces.
6. The longest river of South America is the Missouri.
7. Mount Chomolungma is situated in Africa.
8. The longest river in the world is the Yangtze.
9. Three dominant landforms of Australia are the highlands, the plateaus and the plains.

9.6 Translate words and word combinations given in brackets

1. (Поверхность земли) can be described as being rough or smooth.
2. (Необозримые равнины) are situated in the east-central part of Australia.
3. South America has older, worn-down mountains (вдоль ее восточных границ).
4. (Самый населенный континент) is Eurasia.
5. (За исключением Атласских гор), the highest mountains are in the east-central part of Africa.
6. (Из всех континентов только Антарктида) is uninhabited.
7. Eurasia and Africa (значительно отличаются) from North and South America.

9.7 Ask questions to which the following sentences are the answers

1. There is more water than land on our planet.
2. The largest and deepest ocean in the world is the Pacific Ocean.
3. No, Antarctica isn't the largest continent. It's Asia.
4. Yes, the earth surface can be described as being rough or smooth.
5. The rough lands are the world's mountains and hilly uplands and the flat lands are its plateaus and plains.
6. The boundary between Europe and Asia runs along the Ural Mountains.
7. The rivers in Europe are much shorter than the rivers in Asia.
8. The Suez Canal is the shortest waterway connecting Europe with the land washed by the Indian Ocean.
9. Mount Everest is almost 9.000 metres high.
10. Asia is four times the size of Europe.
11. No, Africa is not nearly as mountainous in Asia.
12. Australia is situated in the Southern Hemisphere.

9.8 Make up the plan of the text "The map of the world". Retell this text.

9.9 Read the texts. Find the answers to the given questions

Why is the sea between Africa and Arabia called the Red Sea?

We all know from our maps that the Red Sea is the part of ocean between Africa and Arabia. At the top of it is the Suez Canal. But does any reader know why it is called red? After all its water is just like the water of any other sea – it doesn't look like red ink. One of the answers is that much of the bottom of the sea, and much of the land around it is red sandstone. It also has red coral reefs and seaweed. Perhaps it looked red enough to the ancient Greeks and Romans, because it was known as the Red Sea even in those times.

How were the Victoria Falls discovered?

Have you ever seen a really big waterfall? At the Victoria Falls the blue Zambezi River, about two kilometres wide, falls down for over a hundred metres. These Falls were first discovered by an explorer called David Livingstone in 1855. He was trying to follow the Zambezi River to its mouth in a small boat when he came to the fall. At first he did not see the great waterfall from his boat. But the noise of the falling water made him stop at an island in the river and he was saved. He called it "Livingstone island". Nowadays there is a road and a railway bridge across the river, but in those days it was very difficult even to walk near the fall because of the thick tropical jungle.

9.10 Read the dialogue and say what it is about. Read the dialogue once again and answer the following question:

What mountain turns out to be the highest one and how has it been proved?

A: I say, can you name the highest mountain in the world?
B: Certainly, it's Mt. Everest. I'm sure every school-boy knows that.
A: Well, that's not quite so. The thing is that if you measure from sea level, Everest – at 29,028 feet – still claims the prize. But if you measure from the centre of the earth, the highest point turns out to be the top of Mount Chimborazo.
B: Chimborazo? Where is that?
A: It's an Andean peak in Ecuador. It lies just 2 degrees south of the equator. Since our planet is not a perfect sphere, it has a measurable bulge around the equator. Having used satellite data, it was calculated that the radius of the earth at this point plus the altitude of Chimborazo makes 20,946,233 feet between the summit and the earth's centre whereas Everest sits at a comparatively low-lying latitude of 28 degrees north by 7,058 feet.

9.11Read the text and give a title

The largest ocean is the Pacific having a total area of 63,530,000 square miles. The Atlantic Ocean, the next largest, is only 31,530,000 square miles, the Indian Ocean with 28,350,000 square miles comes third. The longest river is the Nile which is more then 4,000 miles longer or about twice the distance by air from London to Beirut. The biggest island is Greenland which belongs do Denmark and is about 840,000 square miles in extent. The largest lake is the Caspian Sea. Geographers consider it as a lake because it is not connected with any of the great oceans. It has an area of about 170,000 square miles. Which is the deepest sea? So far, as we know at present the greatest depth is in the Pacific Ocean near the Philippines and goes down to 37,000 feet, which is much more than the height of Everest (20,002 feet). The biggest volcano is in Ecuador, South America. It is still active and 19,612 feet high. There is another one between Argentina and Chile and it is more than 3,000 feet higher.

9.12 Read the text and reproduce it in the form of a dialogue

The world's smallest countries.

The world's smallest independent state is Vatican City, where the Pope lives. It is only forty-four hectares in area. Next smallest is Monaco, on the south coast of France (about 150 hectares). One of the smallest countries is San Marino, a republic high in the mountains of Italy. It is also the oldest, because it was founded some 1,500 years ago. San Marino covers sixty-one square kilometres and has over seventeen thousand people. Andorra is the mountain state of even thousand people. Andorra is situated high in the Pyrenees, between France and Spain.

9.13 Check yourself. Answer these geographical questions

1. How many continents/oceans do you know?
2. Which is the smallest ocean? Which is the smallest continent?
3. Which is the largest island in the world? Which is the largest sea?
4. Which is the deepest lake in the world?
5. Where are the Caucasus situated? Where are the Appalachians situated?
6. Great Britain is separated from the continent by the Mediterranean sea, is not it?
7. Which countries do you cross if you travel from Moscow to Holland?
8. Is Teheran the capital of Iran or Iraq?
9. Are the Great Lakes in North or South America?
10. Which river flows through Vienna, Budapest, and Belgrade?
11. New Zealand is situated to the south-west of Australia, is not it?
12. Of which country is Manila the capital? Where is Bolivia? Where is Senegal?
13. What joins the Atlantic and Pacific Oceans?
14. Why is Ireland often called Emerald Isle?

10 Lesson 10 Asia

10.1 Words and word combinations to the text

outlying – отдалённый
to extend – простирать(ся)
to bound – ограничивать, граничить
archipelago – архипелаг
tableland – плоскогорье, плато
monsoon – муссон
semiannual – полугодовой
drought – засуха
maximum of rainfall – максимальное количество осадков
permafrost – вечная мерзлота
meadow – луг
rain forests – дождевые леса / влажно-тропические леса
coniferous forests – хвойные леса
deciduous forests – лиственные леса
mixed forest – смешанные леса
steppe – степь
xerophytic vegetation – ксерофитная (ксерофильная) растительность
to account – насчитывать
race – раса
to spread – распространять
evenly – равномерно
religion – религия

10.2 Practise reading the following words

The Embo River, the Suez Canal, the Red Sea, the Mediterranean Sea, Sri Lanka, Taiwan, Indonesia, the Philippines, Japan, Siberia, Turan, Mesopotamia, India, the Arabian plateau, the Deccan Plateau, the Indo-Pacific plateau, the Thar, Pakistan, the Gobi, Mongolia, China, the Euphrates, Tigris, Indus, Canges, Brahmaputra, Irrawaddy, the Ob, Lena, Yenisey, the Aral sea, the Dead Sea, Mongoloid, Negroid, Caucasoid race, Bangladesh, the island of Java, Hinduism, Judaism, Islam, Buddhism, Christianity.

10.3 Read and translate the text

Asia

Asia is the world's largest continent. With outlying islands, it covers about one third of the land area on Earth. The mainland is situated between latitude 78 ^{0}N and 1 ^{0}N and longitude 26 ^{0}E and 170 ^{0}W; it extends for about 9,700 km from east to west and 6,500 km from north to south. The continent is bounded on the north by the Arctic Ocean, on the east by the Pacific Ocean, and on the south by the Indian Ocean; the western boundary, with Europe, rungs roughly north-south along the eastern Ural Mountains, the Embo River, the Caspian Sea, the Mediterranean Sea, the Suez Canal, and the Red Sea. The islands of Sri Lanka and Taiwan and archipelagoes of Indonesia, the Philippines, and Japan also form part of Asia.

Topographically, Asia is a ridge and valley system. The center of Asia is the Himalayas which is nearly 10 kilometers above sea level. Low plains occupy about one fifth of Asia and include the plains of northern and western Siberia, Turan, Mesopotamia, northern India and Southeast Asia. Tablelands and plateaus include the Arabian plateau, the Deccan Plateau, and the Indo-Pacific Plateau. Of the many desert regions, the largest ones include the Thar in India and Pakistan, the Gobi in Mongolia and China. Rivers, including the Euphrates, Tigris, Indus, Ganges, Brahmaputra, and Irrawaddy drain about half of the continent into the Indian Ocean. The Ob, Lena, Yenisey rivers drain into the Arctic Ocean. The Caspian Sea is the world's largest body of inland water; the Aral and Dead seas are Asia's major saltwater lakes.

Climate ranges from the arctic in the north of Asia and sharp continental in Western Siberia to the equatorial in the Indonesia. Southern Asia is hot, seasonally wet tropical region under the control of the monsoon winds. The monsoon marks the semiannual rhythm of rainfall and drought. The characteristic effects of the monsoon are the seasonal reversal of wind direction, the strong summer maximum of rainfall, and the long winter dry season.

Vegetation types range from Arctic permafrost and tundra meadows along the northern coast in Siberia to tropical rain forests in the south-east. Between these two extremes are extensive coniferous taiga forests (north), deciduous and mixed forests (south), vast steppes (central), and xerophytic vegetation (south-east).

More people live in Asia than in any other region on Earth. Its people account for three fifths of the world's population. In the early 1990s, Asia had more than 3,2 billion inhabitants. All three major races – Mongoloid, Negroid and Caucasoid – make up Asia's population. But its huge population is not spread evenly over its vast lands. Some parts of Asia's interior are cold, too dry, or too mountainous to support people. Four main areas in which the population is highly concentrated are the Ganges River Valley in India and Bangladesh; the island of Java in Indonesia, eastern China; and southern Japan.

Asia is the birth place of all the world's major religions and hundreds of minor ones: Hinduism, Judaism, Islam, Buddhism, Christianity; Taoism and Confucianism.

10.4 Find these Asian countries on the map and name their capitals

Азербайджан – Azerbaijan – Baku
Армения – Armenia – Erevan
Афганистан – Afghanistan –
Бангладеш – Bangladesh –
Бахрейн – Bahrain (Bahrien) –
Бирма (Мьянма) – Burma (Myanmar) –
Бруней – Brunei –
Бутан – Bhutan –
Вьетнам – Vietnam –
Грузия – Georgia –
Западный берег реки Иордан и Сектор Газа –West Bank and Gaza –
Израиль – Israel –
Индия – India –
Индонезия – Indonesia –
Иордания – Jordan –
Иран – Iran –
Ирак – Iraq –
Йемен – Yemen –
Казахстан – Kazakhstan –
Камбоджа – Cambodia –
Катар – Qatar –

Кипр – Cyprus –
Китай – China –
Кувейт – Kuwait –
Кыргызстан – Kyrgyzstan –
Лаос – Laos –
Ливан – Lebanon –
Малайзия – Malaysia –
Мальдивы – Maldives –
Монголия – Mongolia –
Непал – Nepal –
Объединенные Арабские Эмираты – United Arab Emirates –
Оман – Oman –
Пакистан – Pakistan –
Россия – Russia –
Саудовская Аравия – Saudi Arabia –
Северная Корея – North Korea –
Сингапур – Singapore –
Сирия – Syria –
Таджикистан – Tajikistan –
Таиланд – Thailand –
Тайвань – Taiwan –
Туркменистан – Turkmenistan –
Турция – Turkey –
Узбекистан – Uzbekistan –
Филиппины – Philippines
Шри Ланка – Sri Lanka –
Южная Корея – South Korea –
Япония – Japan –

10.5 Say whether the following statements are true or false

1. Asia covers over 30 percent of the land area on Earth.
2. Asia is bounded on the east by the Atlantic Ocean.
3. The surface of Asia includes mountains, low plains, tablelands, deserts regions, etc.
4. The Himalayas are situated in the central part of Asia.
5. The Aral Sea is the world's largest body of inland water.
6. Monsoons occur in South Asia.
7. Vegetation types differ greatly depending on the parts of the continent.
8. The whole territory of Asia is densely populated.
9. Christianity was originated in Europe.

10.6 Fill in the blanks with the suitable words and word combinations from the text

1. Topographically, Asia is ……. system.
2. South Asia is a hot region under the control of ……. .
3. Vast steppers are found in ……. of Asia.
4. ……. are Asia's major saltwater lakes.
5. All three major races – ……. – make up Asia's population.
6. ……. occupy about one fifths of the continent.
7. Asia is the birth place of ……. .
8. The continent is situated between ……. 78 ^{0}N and 1^{0}N and ……. 26 ^{0}E and 170 ^{0}W.
9. Vegetation types range from the ……. in the north to the ……. in the southeast.

10.7 Make up a table distributing the enumerated animals between the different regions of Asia

The Arctic coast	Taiga forests	Central Asian Highlands	Southern Asia

Animals: migratory birds, elephant, arctic fox, brown bear, elk, leopard, seal, walrus, marmot, cobra, the Siberian tiger, Arctic hare, lynx, wild yak, crocodile, snow leopard, sable, gibbon, peacock.

10.8 Answer the following questions

What percentage of the world's land is occupied by Asia?
Where is Asia situated?
Where does the boundary between Asia and Europe run?
How high are the Himalayas from the sea level?
Which rivers flow into the Arctic Ocean? the Indian Ocean?
How is climate range?
What are the monsoons?
Describe the flora and fauna of Asia.
What regions of Asia are the most populated?

10.9 Text for written translation

Despite large expanses of mountainous, Arctic and desert wastelands, more than 15 percent of Asia's land area is arable. At least three fourths of this is developed to basic cereal and tuber crops (rise, wheat). About 1 percent of the continent is pasture of rangeland, supporting nearly a third of the world's cattle. Asia is well endowed with nearly every mineral resources required by modern industrial society: antimony, magnesium, tin, iron, bismuth, titanium, manganese, nickel, two third of the global reserves of both petroleum and natural gas.

Asia is marked by great disparities in wealth between different countries and within those countries. A few parts of the continent, notably Japan, Singapore, and the oil-rich nations of Arabia, have achieved very high standards of living, and such East Asian countries as South Korea and Taiwan are industrializing rapidly. Other parts of Asia, however, such as Bangladesh, Indonesia, Vietnam, Myanmar (Burma) have very low standards of living. Between these two extremes lie Russia and some of the Central Asian nations that once formed part of the USSR. The economies of most Asian countries are not fully industrialized. The economies of most Southwest Asia countries are based largely on traditional agriculture and the production and export of petroleum; the manufacturing sector is limited in large part to traditional artisanship and petrochemical industries. Southwest Asia exports rice and cash crops such as rubber, copra, and kapok; most manufacturing industries centre on processing domestic raw materials and assembling consumer goods.

10.10 Make up all possible types of questions to the text 10.9

10.11 Speak on:

1. geographical position of Asia
2. its flora and fauna
3. population
4. agriculture and industry

10.12 Get ready to speak about any Asian country you like. Make use the following:

1. Geographical position (be located, lie off, longitude, latitude, size, be separated from, be washed by, etc.)
2. Climate and relief (damp, humid, mild, continental, temperature, volcano, plateau, mountain, etc.)
3. Economy (branches of industry, produce, manufacturing, be rich in, agriculture, etc.)
4. State system (constitutional monarchy, empire, parliament, federation, election, consist of, etc.)

11 Lesson 11 Africa

11.1 Words and word combinations to the text

to embrace – охватывать
confluence – слияние
to crack – раскалывать(ся), давать трещину
shift – сдвиг, смещение
fault – разлом
trench – узкая продольная длина, впадина
lava – лава
to pour out – извергаться
freshwater lake – пресноводное озеро
hydrology – гидрология
to affect – влиять, воздействовать
astride – по обе стороны
to modify – изменять(ся)
big-game – крупный зверь
to roam – бродить
savanna – саванна
reserve – заповедник
suppler – поставщик
diamonds – алмазы
cobalt – кобальт
copper – медь
chromium – хром
platinum – платина
bauxite – боксит
manganese – марганец
tin – олово
processing plants – перерабатывающие заводы
developing nations – развивающиеся страны

11.2 Practise reading the following words

Cape of Good Hope, Madagascar, Sahara, Sub-Saharan Africa, Mountain Kenya, Mountain Kilimanjaro, Syria, Mozambique, Nyasa, Tanganyika, Nile, Congo, Benguela Current, Mozambique Current, Uganda, Tansania, South Africa, Zaire, Zambia

11.3 Read and translate this text

Africa

Africa is the second largest continent on Earth, embracing one fifth of its land area and occupying 30,217,000 square kilometers, some 2 percent of which is inland water. The continent is bounded on the north by the Mediterranean Sea, on the west by the Atlantic Ocean, and on the south by the confluence of the Atlantic and the Indian oceans off the Cape of Good Hope. There are a number of islands associated with Africa, the largest of those, lying to the southeast, is Madagascar.

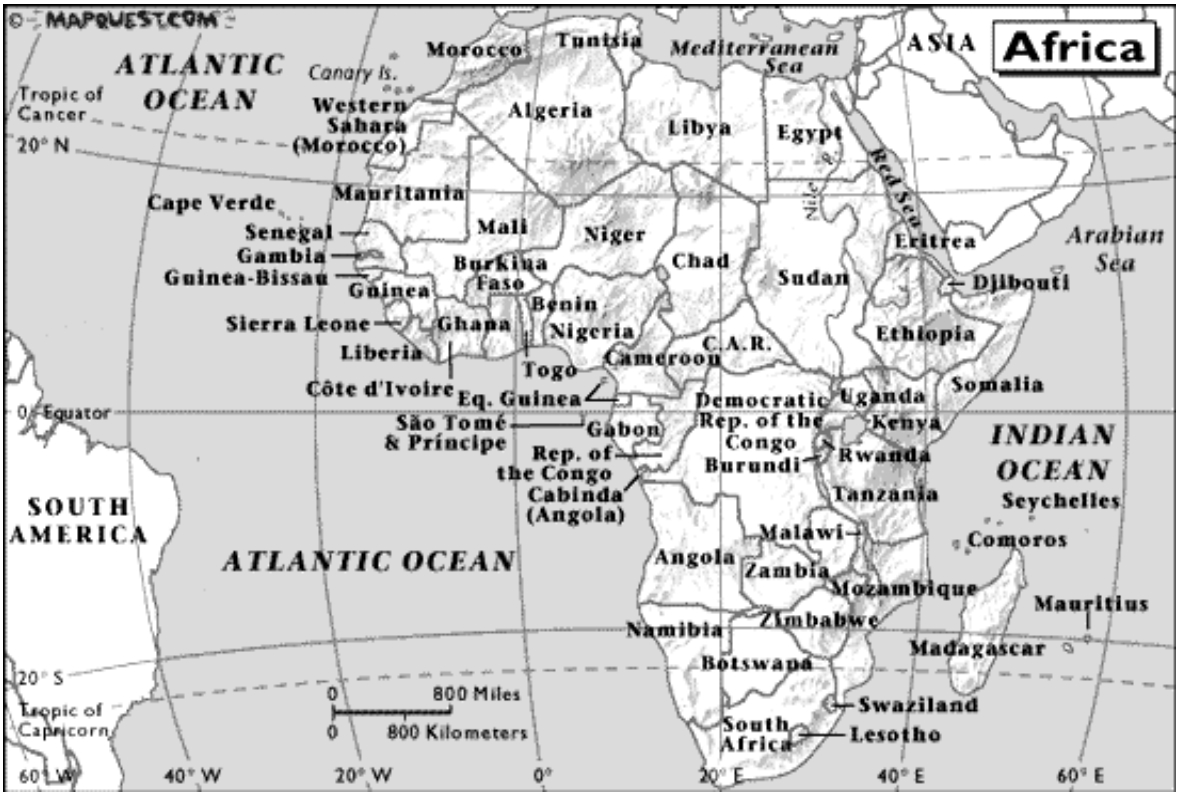
Africa's great area includes a variety of landforms and climates. The vast desert lands of the Sahara separate North Africa from the continent – central lands and southern Africa, which together are called Sub-Saharan Africa. Much of Africa's interior consists of plateaus and hilly uplands. In southern and eastern Africa, high mountains surround the plateaus near the coast. The plateaus in eastern Africa were long ago cracked by a shift in the land that created a huge fault. When the land shifted, a series of deep trenches formed between the cracked surfaces. Lava poured out and built up higher plateaus, sometimes topped volcanic peaks. Mountain Kenya and Mountain Kilimanjaro in eastern Africa are two of the volcanic peaks formed when the land shifted.

The series of trenches extend all the way from Syria in the Middle East to Mozambique in the southern Africa. Together the trenches form the Great Rift Valley. In some places, the trenches are about 60 km wide and 450 m deep. Two of Africa's largest lakes, Nyasa and Tanganyika, lie in Great Rift trenches. Lake Tanganyika, 676 km long, is the longest freshwater lake in the world. Africa's hydrology is dominated by the Nile and the Congo river basins, which together drain nearly one-fourth of the continent's area.

Africa's climate is greatly affected by its position astride the equator. Temperatures are high for most of the year in the northern and the southern tropical zones, but they are modified by elevation in the mountains and by the influence of ocean currents on the coasts – e.g., the cooling Benguela Current (southwest) and the warming Mozambique Current (southeast). Only 6 percent of the African continent is arable while nearly one-fourth is forested or wooded. The continent is well known for its wide variety of animal life. Big-game animals are found roaming the savanna regions. Some of the world's finest national parks were established as game reserves in Kenya, Uganga, Tansania, South Africa, and other countries.

African countries have abundant minerals resources. They possess some of the world's richest deposits of certain minerals, gold and diamonds are among the most important. Zaire and Zambia supply most of the cobalt and copper used throughout the world. Other minerals important to the modern nations include chromium, platinum, bauxite, iron ore, tin and manganese, oil. Many countries have not yet developed the technology to use these resources efficiently. Africa still has few manufacturing industries and the governments try to set up more processing plants. Economists classify all the countries of Africa, except South Africa as developing nations. But there are definite signs of the economic growth of the African nations.

11.4 Find these African countries on the map and name their capitals



Алжир – Algeria – Algiers
Ангола – Angola – Luanda
Бенин – Benin –
Ботсвана – Botswana –
Буркина-Фасо – Burkina Faso –
Бурунди – Burundi –
Габон – Gabon –
Гамбия – Gambia –
Ганна – Ghana –
Гвинея – Guinea –
Гвинея-Бисау – Guinea-Bissau –
Джибути – Djibouti –
Египет – Egypt –
Заир – Zaire –
Замбия – Zambia –
Западная Сахара – Western Sahara –
Зимбабве – Zimbabwe –
Камерун – Cameroon –
Кабо-Верде – Cape Verde –
Кения – Kenya –
Коморские острова – Comoros –
Конго – Congo –
Кот-д'Ивуар – Côte d'Ivoire –

Либерия – Liberia –
Ливия – Libya –
Лесото – Lesotho –
Маврикий – Mauritius –
Мавритания – Mauritania –
Мадагаскар – Madagascar –
Марокко – Morocco –
Малави – Malawi –
Мали – Mali –
Мозамбик – Mozambique –
Намибия – Namibia –
Нигер – Niger –
Нигерия – Nigeria –
Руанда – Rwanda –
Сан-Томе и Принсипи – São Tomé & Principe –
Свазиленд – Swaziland –
Сейшельские острова – Seychelles –
Сенегал – Senegal –
Сомали – Somalia –
Судан – Sudan –
Сьерра-Леоне – Sierra Leone –
Танзания – Tanzania –
Того – Togo –
Тунис – Tunisia –
Уганда – Uganda –
Центральная Африка – Central African Republic –
Чад – Chad –
Экватор. Гвинея – Equatorial Guinea–
Эритрея – Eritrea –
Эфиопия – Ethiopia –
Южная Африка – South Africa –

11.5 Say whether the following statements are true or false

1. Madagascar is the largest of islands associated with Africa.
2. Sub-Saharan Africa includes central lands of the continent and its northern part.
3. Plateaus and hilly uplands make up Africa's interior.
4. The plateaus were long ago cracked by a shift and it caused a huge fault.
5. Together the trenches form the Great Barrier Reef.
6. Half of the continent's land is drained by the Nile and the Conge river basins.
7. There is no arable land in Africa.
8. Economists classify all the countries of Africa as developing nations.

11.6 Complete the following sentences

1. Africa occupies ……. .
2. The continent is bounded on the south by ……. .
3. Mountain ……. and Mountain ……. were formed when ……. .
4. The series of trenches extend all the way from ……. .
5. Temperatures are modified by ……. .
6. Kenya, Uganda, South Africa and some other countries have ……. .

11.7 Read this text and render it into English

К северу и югу от Саванн в Африке располагаются зоны тропических пустынь и полупустынь. В Северной Африке – это грандиозная Сахара (площадь 8,7 млн. км^2). В Южной Африке – пустыни и полупустыни впадины Калахари, пустыня Намиб на побережье Атлантического океана. В пустынях Африки экстремальные климатические условия. Годовая сумма осадков не превышает 100 – 200 мм; иногда годами не бывает дождей. Характерны крайняя сухость воздуха; очень высокие дневные и сравнительно низкие ночные температуры, пыльные и песчаные бури. Растительность африканских пустынь представлена в основном ксерофитами. Животный мир пустынь и полупустынь приспособился к жизни в аридных условиях. В поисках скудной жизни и воды они могут преодолевать большие расстояния (например, мелкие антилопы) или подолгу обходиться без воды (пресмыкающиеся, верблюды). Основная хозяйственная деятельность в пустынях сосредоточена в оазисах. Отдельные народы и племена (берберы в северной Африке, бушмены и готтентоты в Калахари) ведут кочевую жизнь, занимаясь скотоводством, собирательством и охотой.

11.8 Answer the following questions.

Where is Africa situated?
What oceans and seas wash the coasts of Africa?
Where is the boundary between North Africa and the rest of the continent lie?
How were the trenches formed?
What are the largest rivers and lakes of Africa?
What factors affect the climate of the continent?
What mineral resources are found in Africa?

11.9 Text for written translation

Africa's overall population density is low by world's standards, because much of its vast desert area is uninhabitable; the population per unit of arable land, however, its near the world average. Wide variations in density occur from country to country and within countries. Africa's effort to achieve sustained economic growth have been plagued by the region's very high fertility level. The continent is a developing region with all the associated demographic and social problems. It is estimated that the continent's annual rate of population growth is about 3 per cent, the highest of any continent and several times higher than Africa's real economic growth. Birth and death rates, the major factor in population growth, vary widely from region to region. Southern Africa, for example, has the lowest crude birth rate and the lowest rate of growth and western Africa has the highest birth rate.

The peoples inhabiting Africa probably speak more separate and distinct languages (800 to 1,000) than those of any other continent. The most homogeneous region, in terms of language, is North Africa, where Arabic is predominant. The languages spoken by the Sub-Saharan peoples are known collectively as Bantu. The forest-dwelling Pygmies, inhabiting various parts of central Africa, form a distinctive ethnic and cultural group but have no distinctive language of their own. In southernmost parts of the continent, people of European descent are found. Dutch migrations began in the 17 th century. The English first settled in what is now Zambia, Zimbabwe, and the East African Highlands in the 19 th century. The Portuguese settled in Angola and Mozambique, while Germans settled in what is now Namibia.

11.10 Make up all possible types of questions to the text 11.9

11.11 Speak on:

1. geography of Africa
2. flora, fauna, climate
3. mineral resources and industry
4. population;
5. African deserts

11.12 Get ready to speak about any African country you like (see Lesson 9, ex. 9.12)

12 Lesson 12 North America

12.1 Words and word combinations to the text

adjacent islands – близлежащие острова
isthmus – перешеек
inverted triangle – перевёрнутый треугольник
ancient rocks – древние породы
to encircle – окружать
prairie –прерия
tributary – приток
mammal – млекопитающие
musk ox – овцебык
caribou – карибу, северный олень
preyed on by … – служить добычей для …
seal – тюлень
moose – американский лось
wolverine – росомаха
songbird – певчая птица
biome – биом (совокупность различных групп организмов и среды обитания в определённой географической зоне)
woodland bison – лесной бизон
marten – куница
wild turkey – дикий индюк
insects – насекомые
coyote – койот
bob cat – рыжая рысь
skunk – полосатый скунс
jack rabbit – заяц

12.2 Practise reading the following words

Northern Hemisphere, Isthmus of Panama, Columbia, equator, Bering Strait, Greenland, Arctic Canadian Archipelago, Newfoundland, Antilles and Bahama Islands, Aleutian, Queen Charlotte, Vancouver, Alexander Arch (Archipelago), Canadian Shield, Interior Lowlands, Precambrian, Cordilleran system, Alaska, Rocky Mountains, Appalachian Mountains, Mississippi, Great Lakes, Canada, the USA, Saint Lawrence River, Great Salt Lake, Florida, Virginia, Maryland, New Jersey.

12.3 Read and translate this text

North America

North America is the third largest continent, the total area of the continent with the adjacent islands is 24,250 thousand sq. km. The population for the entire continent is estimated to be 424,523,000. North America lies in the Northern Hemisphere relative to the equator. Except where the relatively narrow Isthmus of Panama extends southeastward to connect with Colombia in South America, the continent shaped like an inverted triangle, is completely surrounded by water. It is bounded on the east by the Atlantic Ocean, on the west by the Pacific Ocean, and on the north by the Arctic Ocean. The narrow Bering Strait separates North America from Russia. There are big islands off the coasts of North America. In the north lies the world's largest islands, Greenland (2,200 thousands sq. km.) as well as Arctic Canadian Archipelago. To the east of North America is Newfoundland, to the north-east are the Antilles and Bahama Islands. In the north-west and west lie such islands as Aleutian, Queen Charlotte, Vancouver and Alexander Arch (Archipelago).

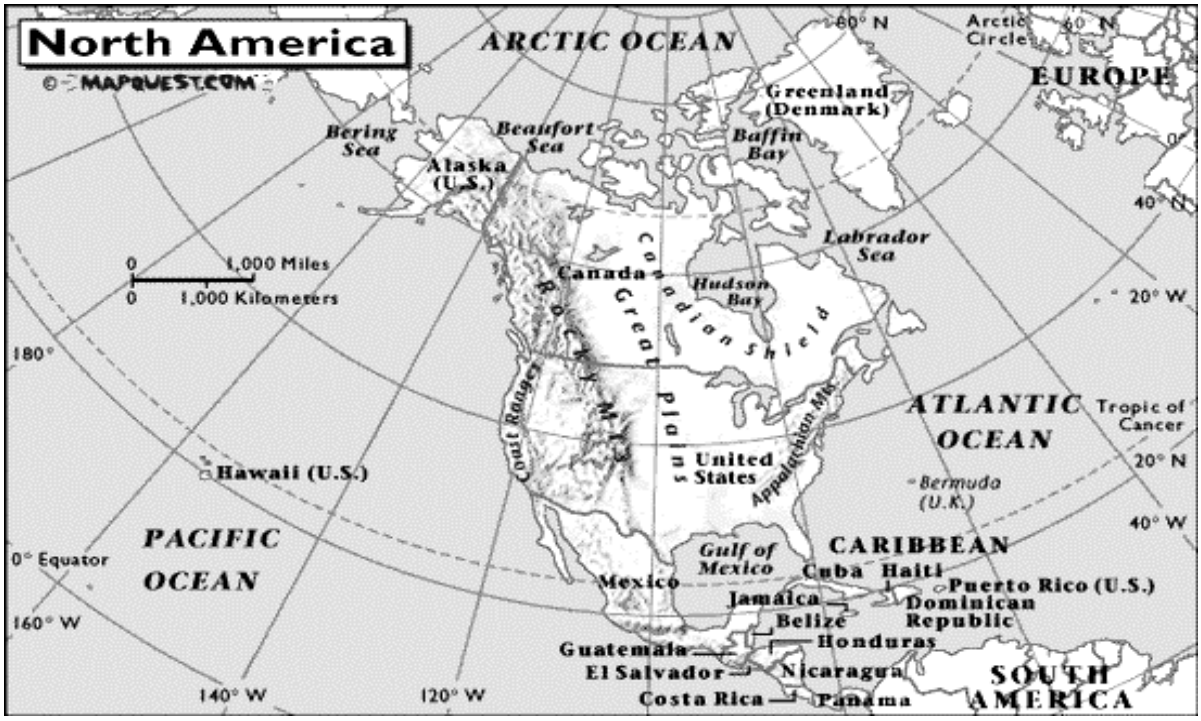
In the north-central part, mainly in Canada, lies the Canadian Shield made up of ancient rocks. Nearly encircling the Shield and Interior Lowlands are various mountain systems, formed at different times since the Precambrian. On the south-east is the Appalachian system. On the west are the Cordilleran system, extending from Alaska to the Isthums, and the Rocky Mountains. Between the Rocky Mountains and the Appalachian Mountains are the central lowlands, which are called the prairie, and the eastern lowlands, called the Mississippi valley. The Mississippi River with its far-reaching tributaries is one of the major river systems of the world. The five Great Lakes, between the USA and Canada, are joined together by short rivers or canals, and the Saint Lawrence River joins them to the Atlantic Ocean. In the west there is another lake called the Great Salt Lake.

Looking at the East Coast of the continent, we see that the southern tip of Florida has a tropical savanna climate. This gives way almost immediately to the humid subtropical climate of the southern states. Then the humid subtropical climate changes to humid continental, hot summer climate. Further north, there is humid continental climate with mild summers. Moving still further north, we see that most of Canada has a subarctic climate until we reach a latitude of 55 ^{0} to 60 ^{0}N, or 65 ^{0} to 70 ^{0}N in the western part of the country. Poleward to these latitudes the climate is described as polar tundra.

The wild life of tundra includes such large mammals as musk oxen and caribou, preyed on by wolves, and sea mammals such as seals and walruses, preyed on by polar bear. Directly to the south of the tundra is the coniferous forest, which is inhabited primarily by moose, black bears, wolves, lynxes and wolverines, as well as numerous kinds of songbirds. South of the coniferous forest lies the great deciduous forest biome. The wild life of these forests include woodland bisons, deer, mountain lions, martens, wild turkeys. The grassland covers the heart of the continent. In spite of the severe conditions of the North American deserts, insects population is large. Coyotes, foxes, bob-cats, skunks, wild mice, jack rabbits dwell this region.

12.4 Find these countries of the North American continent on the map, name their capitals

Антигуа и Барбуда – Antigua and Barbuda – Saint Johns
Багамские острова – Bahamas –
Барбадос – Barbados –
Белиз – Belize –
Бермудские острова – Bermudas –
Гаити – Haiti –
Гватемала – Guatemala –
Гондурас – Honduras –
Гренландия – Greenland (Denmark) –
Доминика – Dominica –
Доминиканская Республика – Dominican Republic –
Канада – Canada –
Коста-Рика – Costa Rica –
Куба – Cuba –
Мексика – Mexico –
Никарагуа – Nicaragua –
Панама – Panama –
Пуэрто-Рико – Puerto Rico
Сальвадор – El Salvador
Сент-Винсент и Гренадины – St Vincent and the Grenadines –
Сент-Китс и Невис – St Kitts and Nevis –
Сент-Люсия – St Lucia –
США – the United States –
Тринидад и Тобаго – Trinidad and Tobago
Ямайка – Jamaica –



12.5 Say whether the following statements are true or false

1. North America takes the third place among the continents according to the size of the territory.
2. North America lies in the Northern Hemisphere relative to Greenwich.
3. The largest island in the world, Greenland, is situated in the North.
4. American mountain systems were formed at different times since the Pre-Permian epoch.
5. The eastern lowlands are called the prairie.
6. Most of Canada has a polar climate.
7. The Great Salt Lake is situated in the region of the Great Lakes.
8. Vegetation and wild life of North America vary according to the climatic regions.

12.6 Complete the following sentences

1. North America is connected with South America by ……. .
2. ……. separates North America from Russia.
3. The Canadian Shield, made of ……., lies in ……. of continent.
4. The Rocky and Appalachian mountains are situated ……. .
5. ……. joins the five Great Lakes to the Atlantic Ocean.
6. Tropical savanna climate can be found in ……., while polar tundra occupies ……. .
7. The wild life of the deciduous forest includes ……. .
8. ……. dwell the North American deserts.

12.7 Read the text and reproduce it in the form of a dialogue

***

Originally inhabited by Indians, North America long remained a sparsely settled and economically undeveloped land in global terms, but with the coming of Europeans (particularly the Spanish, French and British) and the Africans they introduced as slaves, the continent underwent a profound transformation.

The process of removing the Indians from their lands led to bitter disputes and to the creation of Indian “territories” that were eventually reduced to small isolated “reservations”. In Canada the system of reservations was adopted early and protected Indian settlements throughout the eastern part of the country. Intermarriage between whites (notably the French) and Indians was much more common in Canada than that in the USA and produced the sizable French-and-Indians Metis community. In Mexico, racial admixture went much farther; mestizos, of mixed Indian and white descent, now account for some three-fifths of the population. European immigration to Central America has been negligible since the Spanish conquest, and the Indians make up much of the population there (as high as 50 percent in Guatemala).

12.8 Answer the following questions

1. Where is North America situated?
2. What are the total area? the population of the continent?
3. Which is the largest island of the world?
4. Has North America any adjacent islands? What are they?
5. How are the mountains systems encircling the Shield and Interior Lowlands called?
6. In what direction does the Cordilleran system extend?
7. Where is the region of Great Lakes located?
8. What are the peculiarities of North American climate?
9. What animals dwell the American continent?

12.8 Text for written translation

The Mississippi River is the longest river in the United States, and with its far-reaching tributaries one of the major systems of the world. Long ago Ojibway Indians, roaming the forests of Wisconsin, called it Missisipi, or "Great River". Other tribes termed it the "Father of the Waters". Both names were appropriate, for the scope and volume of this vast stream have made it almost a synonym for great rivers everywhere: even the Volga has been termed the Russian Mississippi. The length of the Mississippi has been variously interpreted. The Mississippi River Commission calculates the length at 6,415 km from the headwaters of the Missouri to the delta outlet on the Gulf of Mexico. The Mississippi system cuts a wedge of 3,220,000 sq. km out of the heart of the continent. Geographically, the true source of the Mississippi lies in western Montana. There, three streams unite to form the Mississippi. Fed by the melting snows and gushing springs of the Rockies, it sweeps on through the Northwest. Some 320 km to the south the rivers of the north unite with their eastern branch, the Ohio. The Ohio and its many tributaries drain the ridges and valleys of the Appalachian Mountain. Father south the Mississippi attracts other tributaries, chief among these are the Arkansas and the Red River. The Mississippi is quite deep, its channel ranging usually from 15 to 30 m or more. It would be difficult to exaggerate the influence of the Mississippi on the development of America.

12.9 Make up all possible types of questions to the text 12.9

12.10 Speak on:

1. geographical position of North America
2. landforms of the continent
3. climatic regions
4. the Mississippi river

12.12 Get ready to speak about any country of North American continent (See Lesson 10 ex. 10.12)

13 Lesson 13 South America

13.1 Words and word combinations to the text

tapering – конусообразный
cape – мыс
passage – пролив
topographic sections – топографические районы
crystalline – кристаллический
sediment – осадочная порода, отложение
sedimentary – осадочный
seismically active – сейсмически активный
prone – склонный (к чему либо)
pampas – пампа (зона субтропических степей)
immense – огромный
accumulation – скопление
loose – рыхлый
dust storms – пыльные бури
fertile soils – плодородные земли
hydrology – гидрология
to empty (into) – впадать (о реке)
foothill – предгорье
to diminish – исчезать
indigenous – местные (животные, растения)
llama – лама
jaguar – ягуар
alpaca – альпака
capybara – капибара
sloth – ленивец
ant-eater = ant-bear – муравьед
manatee – ламантин
piranha – пиранья

13.2 Practise reading the following words

New World, Tierra del Fuego, Point Gallinas, Colombia, Cape Horn, Chile, Carribean Sea, Antarctica, Drake Passage, Isthmus of Panama, Andes, Guiana, Brazilian, Himalayas, Asia, Argentina, Amazon River, Orinoco, Parana-Paraguay-Rio de la Plata, Sao Francisco, Lake Titicaca, Peru, Bolivia, Peru Current, Atacama Desert.

13.3 Read and translate the text

South America, fourth largest continent and southernmost of the two main New World landmasses. It covers an area of some 17,814,000 sq km, or about one-eight of Earth's land area. The continent, broad in the north and tapering in the south at Tierra del Fuego, extends about 7,600 km from Point Gallinas (Colombia) in the north to Cape Horn (Chile) in the south. Bounded by the Carribean Sea to the northeast, east and southeast, and the Pacific Ocean to the west, the continent is separated from Antarctica by the Drake Passage. In the northeast it is joined to North America by the Isthmus of Panama, which forms a land bridge narrowing to about 80 km at one point. Some years ago the population of the continent was estimated to be 302,819,000.

The continent may be divided into three topographic sections: the geologically young mountain chains of the Andes in the west; the ancient, crystalline Guiana and Brazilian continental shields in the east and north-centre; and the sedimentary basins peripheral to the shields. The Andes Mountains stretch north - south for about 8,800 km and are second in average height only to Himalayas of Asia. The Andes region is seismically active and prone to earthquakes. The Pampas of eastern Argentina consists of an immense accumulation of loose sediment brought down from Andes by rivers or dust storms. Covering an area of about 707,000 sq km, the Pampas and its fertile soils constitute one of South America's most productive agricultural areas.

South America's hydrology is dominated in the north by the Amazon River basin, which drains a third of the continent's land area into the Atlantic Ocean. Three other important river systems, the Orinoco, the Parana-Paraguay-Rio de la Plata, and Sao Francisco, also empty into the Atlantic Ocean. Most of the lakes of South America are mountain lakes in the Andes or along their foothills. Lake Titicaca, lying at an elevation of about 3,810 km between Peru and Bolivia, is the highest freshwater lake in the world.

South America can be divided into four well-marked climatic regions: tropical, temperate, arid, and cold. One of the features that moderates South American climate is the Peru Current along South America's western coast. The waters of the Peru Current keep temperatures between northern Chile and the equator cooler than average for the low latitudes. The Peru Current also helps to create the Atacama Desert on South America's western coast. Winds crossing the cold current from the west lose all their moisture over the water. Some people in the Atacama have never seen rain.

Over half the total land area is covered by forest, principally the enormous but steadily diminishing Amazon Rain Forest. About 2,500 different species of trees grow in the rain forests. Almost one-fourth of all the world's known species of animals live in the rain forests, plateaus, rivers, and swamps. They include such rare and indigenous forms as the llama, jaguar, alpaca, capybara, sloth, giant ant-eater, manatee, and piranha.

13.4 Find these South American countries on the map and name their capitals

Аргентина – Argentina – Buenos Aires
Боливия – Bolivia –
Бразилия – Brazil –
Венесуэла – Venezuela –
Гайана – Guyana –
Гвиана – French Guiana –
Колумбия – Colombia–
Парагвай – Paraguay–
Перу – Peru –
Суринам – Suriname–
Уругвай – Uruguay –
Чили – Chile –
Эквадор – Ecuador –

13.5 Say whether the following statements are true or false

1. South America covers an about one-eight of the world's total area.
2. The Drake Passage separates South American continent from North America.
3. The narrowest point of the Isthmus of Panama is about 80 km.
4. Himalayas of Asia are higher than the Andes Mountains of South America.
5. The Amazon River basin drains a third of the continent's land area.
6. The Peru Current influences climate on the western continent.
7. The Atacama Desert is situated on the eastern coast of South America.
8. Enormous Amazon Rain Forest is steadily diminishing.

13.6 Complete the following sentences

1. South American continent extends about 7,600 km from ……. .
2. ……. separates South America from Antarctica.
3. The ancient Guiana and Brazilian continental shields are situated ……. .
4. The Pampas of eastern Argentina consists of ……. .
5. Lake Titicaca lies at ……. between ……. .
6. The four climatic regions of the continent are ……. .
7. The Peru Current helps to create ……. .
8. Plant and animal life of South America include ……. .

13.7 Answer the following questions

Where is South America situated?
What is the area? the population of the continent?
How is the continent joined to North America?
What mountain range forms South America's western edge?
What is the Pampas?
What are the major river systems of South America?
Where are most of the lakes situated?
What is unusual about Lake Titicaca?
How can South America be divided according to the climatic regions?
How does the Peru Current influence South America's climate?
What can you say about wild life of the continent?

13.8 Read and translate the texts and reproduce them in the form of a dialogue

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South America possesses abundant reserves of several important minerals. Its deposits of iron found mainly in Brazil and Venezuela represent almost one-fifth of the world's total. South America's imports substantially out-weigh exports, and many countries suffer chronic balance-of-trade deficits.

Most export trade is with the USA and the members of the European Community (EC). Intraregional trade within the continent is slowly increasing. Agriculture employs approximately one-fourth of the overall South American work force. Despite the continent's reputation as a food producer, agricultural productivity is generally low, and land utilization is inefficient.

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Four main ethnic components have contributed to the present-day population of South America: American Indians, who were the continent's pre-Columbian inhabitants; the Iberians, Spanish and Portuguese who conquered and dominated the continent until the beginning of the 19 th century; the Africans, imported as slaves by the colonizers; and finally, the post-independence immigrants from the overseas, mostly Germans and Southern Europeans but also Lebanese, South Asians, and Japanese. Spanish is the official language throughout South America except for Portuguese and Brazil, French in French Guiana, English in Guyana, and Dutch in Suriname. Less than 10 percent of South America's total population are speakers of Indian languages. South America is predominantly Christian in religious affiliation.

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Страны Южной Америки три века были колониями Испании и Португалии. Политической независимости они добились в начале 19 века, но затем оказались в экономической зависимости от европейских государств, а затем – от США. Сравнительно недавно освободились от колониальной зависимости Гайана и Суринам. Сохраняет свой колониальный статус Гвиана – « заморский департамент » Франции. Государства Южной Америки относятся к группе развивающихся стран. Они сильно различаются по уровню социально-экономического развития. Наиболее развитые страны Южной Америки – Аргентина, Бразилия, Уругвай.

13.9 Text for written translation

The Peru Current, which flows northward along the western coast of South America, sometimes behaves in ways that scientists do not fully understand. Because this usually occurs soon after Christmas, it is called El Nino, Spanish for "the [Christ] Child". Occasionally northerly winds replace the prevailing southerly winds and the cold Peru Current moves westward. In its place comes a warm current – El Nino. The warm waters of El Nino stop the *upwelling* (a climatic condition brought on by winds that persistently drive water away from the coast), and completely break down the normal ecological system. Most of the marine life moves in search of plankton – rich cooler waters.

Scientists now recognize that El Nino's influences reach far beyond the west coast of South America. Indeed, it is now known that El Nino interacts with worldwide weather patterns. Rainfall shifts from the normally wet western Pacific toward the drier eastern Pacific. The Philippines and Indonesia experience drought.

Intense heat and drought sweep Australia. Ecuador and Peru receive heavy rain and floods take heavy tolls in human lives and property losses. Record-breaking snowfalls paralyze the east coast of North America, while western Canada and Alaska experience unusually mild winters. All result from a still-unexplained change in the weather.

In 1972 El Nino appeared quite suddenly. When it stopped, upwelling resumed. But most of the fish were gone. Without fish to consume the plankton, they overmultiplied and exhausted their food sources. Billions died and decomposed on the ocean floor. Decomposition used large quantities of the water's oxygen, making the ocean off Peru unable to support fish until balance was restored.

13.10 Make up all possible types of questions to the text 13.9

13.11 Speak on:

1. geographical position of South America
2. physical features
3. climate
4. flora and fauna
5. El Nino

13.12 Get ready to speak about any South American country you like (see Les. 10, ex.10.12)

14 Lesson 14 Antarctica

14.1 Words and word combinations to the text

Antarctica /Antarctic Continent – Антарктида
Antarctic Region – Антарктика
pronounced – явный, резко выраженный
irregularity – неровность
to thrust – выступать, выдавать(ся)
enduring shelf – длинный риф/отмель
indentation – углубление
dimensions – размеры
glacier – ледник
save – за исключением
angular – треугольный
negligible – незначительный
discontinuous – прерывистый
devoid – лишённый (чего-либо)
marsh – болото, топь
pack ice – паковый лёд (пак)
to breed – размножаться
albatross – альбатрос
petrel – буревестник
penguin – пингвин
flightless bird – нелетающая птица
lichen – лишайник
moss – мох
algae – морские водоросли
steepness – крутизна
embayment – залив
tapering projection – конусообразный выступ
little precipitation – малое количество осадков
to drift – дрейфовать

14.2 Practise reading the following words

Weddell Sea, Antarctic (Palmer) Peninsula, Cape Horn, Ross Sea, Ross Barrier, Gondwanaland, outward, downward, varieties, enormous, supercontinent, concentrically, persistent, steep-sided, interior, creatures, compactness, altitude.

14.3 Read and translate the text

Antarctica

Antarctica, fifth in size among the world's continent, lies concentrically about the South Pole, with a landmass almost wholly covered by a vast ice sheet. The area of the continent is about 14,200,000 square kilometers. The southern portions of the Atlantic, Indian and Pacific oceans form the Antarctic ocean around Antarctica.

Antarctica is a compact, mountainous plateau having only three pronounced irregularities along the coastline: the Weddell Sea facing the Atlantic; the Antarctic (Palmer) Peninsula thrust northward in the direction of Cape Horn to latitude 63^0; and farther west the deep indentation of Ross Sea, which supports on its inner reaches a broad expanse of enduring shelf called 'Ross Barrier'. This is the largest area of persistent, water-born ice, with dimensions of about 300 by 500 miles. From place to place huge glaciers, tongues of inland ice, extend downward through rocky, steep-sided coastal valleys from the interior high plateau to the sea.

All of Antarctica, save a scattering of high, angular peaks and negligible, discontinuous tracts of coastal lowland is covered with a deep mantel of enduring ice and snow. It is estimated that 90 per cent of the world's ice is concentrated in this single, enormous expanse. Most of it stands at high altitude, averaging more than 6,000 feet above the sea. The thickness of the ice cap has been seismically measured to average about 8,000 feet.

Antarctica is a continent almost devoid of lakes, without rivers, marshes, having no soil, no forests, no grasslands, nor any deserts of the sort found in milder latitudes. Its fauna are creatures of the sea, such as certain varieties of whales, giant Weddel seal, flying birds like the albatross, petrel, etc. The most prominent inhabitant of Antarctica is the penguin. A flightless bird, it lives on the pack ice and in the oceans around Antarctica, and breeds on the land or ice surfaces along the coast. Most typical are the Adelie and emperor penguins. Plant life includes over a hundred species of lichens and mosses found on bare rock areas along the coast. Algae often color the snow of coastal tracts and are found in a few freshwater lakes.

The size, latitude, altitude and comparative compactness of Antarctica, the height and steepness of its coastal margins, the broad embayments of Ross Sea and Weddell Sea, and the tapering projection of a single peninsula, all surrounded by the unfrozen sea, combine to establish the essential climatic character of the South Polar ice cap.

Antarctic weather may be described as a combination of very cold air, high winds, and blowing snow. Antarctica's coldest temperatures often reach -73^0 C. The almost constant wind intensifies the cold. The snow that falls never melts and the pressure caused by the enormous weight of the snow turns it to ice. Despite the large amounts of ice and snow that cover the continent, geographers regard Antarctica as desert because it receives little precipitation.

Antarctica was a central part of the former supercontinent Gondwanaland. As Gondwanaland broke apart to form the continents of the southern hemisphere, Antarctica drifted from the tropical zone to its present polar position. Within the mountains are found many coal deposits and fossil remains related to the earlier tropical climate of Antarctica.

14.4 Say whether the following statements are true or false

1. Antarctica is larger than Europe and Australia.
2. Ninety per cent of the world's ice is known to be concentrated on the North Pole.
3. The thickness of the ice cap has been measured to average about 800 feet.
4. There are many rivers in Antarctica.
5. Antarctica is devoid of plant and animal life.
6. Many factors influence the climatic character of Antarctica.
7. Antarctica's coldest temperatures often reach -73^0 C.
8. Antarctica was a central part of the former supercontinent Gondwanaland.

14.5 Complete the following sentences

1. Antarctica lies ……. .
2. Antarctica's three pronounced irregularities are ……. .
3. All of the continent is covered with ……. .
4. The largest area of persistent water-born ice is called ……. .
5. Plant and animal life of Antarctica includes ……. .
6. Factors that influence the climate character of the continent are the following ……. .
7. Antarctic weather can be described as ……. .
8. As Gondwanaland broke apart to form the continents of the southern hemisphere, Antarctica ……. .

14.6 Read the texts and reproduce them in the form of a dialogue

Географы различают понятия «Антарктика» и «Антарктида». Название «Антарктика» происходит от греческих слов «анти» – против, «арктикос» – северный, то есть лежащая против северной полярной области земли – Арктики. Антарктика включает материк Антарктида с прилегающими к нему островами и южные полярные воды Атлантического, Индийского и Тихого океанов до зоны так называемой антарктической конвергенции, где сходятся холодные антарктические воды с относительно тёплыми водами умеренных широт. В среднем эта зона лежит около 53^0 05' ю.ш.

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В недрах Антарктиды обнаружены разнообразные полезные ископаемые: руды горных и цветных металлов, крупные запасы слюды и графита, уран, золото, алмазы. Геологи предполагают, что громадная впадина между морями Росса и Уэдделл хранит большие запасы нефти и газа. Но все эти запасы полезных ископаемых считают пока потенциальными, так как их современная добыча в суровых условиях Антарктиды связана с большими трудностями и экономически нерентабельна.

14.7 Answer the following questions

Where is Antarctica situated?
What pronounced irregularities has Antarctica?
What is the largest area of persistent, water-born ice? Give its dimensions.
Are there any rivers, lakes, marshes, or swamps in Antarctica?
What kinds of plant life are found in Antarctica?
What can you say about Antarctica's fauna?
What factors determine Antarctica's climate?
Why do geographers regard Antarctica as a desert?
What signs of former tropical climate has Antarctica?

14.8 Text for written translation

The Antarctic region was first penetrated by European explorers in the 18 th century. Cook's circumnavigation in 1772–1775, and the resulting awareness of the large population of whales and seals there, ushered in the first era of marine mammal exploitation in the Antarctic waters. Fur seals were massively ever exploited, and eliminated from some islands by 1820s. Sealers and whalers become major explorers of Antarctica and Sub-Antarctica in the 19 th century while searching for new hunting grounds. National expeditions began to be sent to Antarctica in the middle of the 19 th century. The first deliberate overwintering was in 1898 and the South Pole was reached by Roald Amundsen in 1911, although the mapping of Antarctica was only completed in the late 1940s. Permanent human presence in Antarctica dates mainly from the establishment of year-round research station in the 1940s – although the Argentina station «Orcadas» has been continuously operated since 1904.

In 1959, twelve countries, including the United States and the Soviet Union, agreed to allow freedom of scientific investigation on Antarctica. They also agreed not to use the continent for military purposes. This meant that they would not test nuclear weapons there. Later four other nations signed the agreement, called the Antarctic Treaty. Subsequent agreements in what has been termed the Antarctic Treaty System (ATS) include the 1972 Convention for the Conservation of Antarctic Seals (CCAS), the 1980 Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), and the 1991 Protocol of Environment Protection.

14.9 Make up all possible types of questions to the text 14.8

14.10 Speak on:

1. geographical position of Antarctica;
2. flora, fauna, climate;
3. exploration of Antarctica;
4. the Antarctic Treaty

15 Lesson 15 Europe

15.1 Words and word combinations to the text

to project – выступать, выдаваться
peninsula – полуостров
physiographic – физиографический
majestic beauty – величественная красота
frightening silence – пугающая тишина
desolate stretches – безлюдное пространство
relatively – относительно
sizable – порядочного размера
of glacial origin – ледникового происхождения
maritime – морской, приморский
transitional – переходный, промежуточный
occasionally – время от времени
mistral – мистраль (холодный северный ветер)
to damage – повреждать
crops – урожай
sirocco – сирокко (юж. или юго-восточный ветер в Средиземноморье)
vegetation belt – растительная зона (пояс)
boreal – северный

15.2 Practise reading the following words

Europe, Australia, Eurasia, the North Sea, Baltic Sea, Mediterranean Sea, Ural Mountains, Emba River, Novaya Zemlya, Iceland, the British Isles, Corsica, Sardinia, Sicily, Crete, Malta, the Scandinavian, Iberian, Italian, Balkan, Jutland peninsulas, the Sierra Nevada, Pyrenees, Alps, Apennines, Carpathians, Balkan Mountains, the Black Sea, Caspian Sea, the Danube, Dnieper, Don, Rhine, Vistula, Elbe, Oder, Lake Ladoga, Arctic Circle, North Africa's deserts.

15.3 Translate into English

восточная граница	Полярный круг
территория Европы	менее двух процентов
одна-пятнадцатая часть	возвышенности и плато
горные хребты	разнообразный ландшафт
сильные ветры	полуостров

15.3 Read and translate the text

Europe

Europe, second smallest of the world's continents (after Australia), composed of the westward-projecting peninsulas of Eurasia, occupies nearly one-fifteenth of the world's total area. The territory of Europe – 10,400,000 sq km, population – 718,500,000 people. Europe is bordered on the west by the Atlantic Ocean, on the north by the North Sea, Baltic Sea, and English Channel, on the south by the Mediterranean Sea.

The continent's eastern boundary runs along the eastern Ural Mountains and the Emba River. Europe's islands and archipelagoes include Novaya Zemlya, Iceland, the British Isles, Corsica, Sardinia, Sicily, Crete, Malta. Its major peninsulas include the Scandinavian, Iberian, Italian, Balkan, Jutland.

Europe can be divided into two major parts –western peninsular Europe, and eastern continental Europe. And it can be divided into several distinct physiographic regions - the central uplands and plateaus, the south-central mountains and the southern fringe. The varied landscape includes the majestic beauty of the Alps, the frightening silence of the sparsely populated British uplands, the almost desolate stretches of the northern tundra, and the flat plains that have been reclaimed from the sea. The mountain ranges include (from west to east) the Sierra Nevada, Pyrenees, Alps, Apennines, Carpathians, and the Balkan Mountains.

Europe is well-watered continent with many rivers but relatively few sizable lakes. The river systems may be divided into three groups: the members of the first drain west and north directly into the Atlantic and its marginal seas (the North and Baltic seas); those of the second drain south into the Mediterranean; and those of the third drain east and south-east into the Black and Caspian seas. The Volga River is the longest river (3,529 km). Other major rivers are the Danube, Dnieper, Don, Rhine, Vistula, Elbe and Oder. Lakes covering less then 2 percent of Europe's surface, are mostly of glacial origin (f. ex. Lake Ladoga).

Lying south of the Arctic Circle and north of the tropics, Europe exhibits a wide range of climates: the maritime climate of the west (abundant rainfall, mild temperatures, both in winter and summer); the transitional climate of Central Europe (500 to 1,000 mm of annual rainfall, cold winters, and warm summers); the continental climate of the north-east (250 to 500 mm of annual rainfall, long and cold winters, and hot summers); the Mediterranean climate of southern coastal Europe (moderate rainfall, mild and wet winters, hot and dry summers). Strong winds occasionally blow over the area of Southern Europe. In winter the mistral – a cold dry wind often damage sensitive crops. In summer hot winds called siroccos bring hot, dry, and dusty air from North Africa's deserts.

The continent can be divided into five major vegetation belts; tundra zone, coniferous taiga or boreal zone, deciduous mixed forest zone, the steppe zone, the Mediterranean zone.

15.4 Find these European countries on the map, name their capitals

Австрия – Austria – Vienna
Албания – Albania –
Андорра – Andorra –
Белоруссия – Belarus –
Бельгия – Belgium –
Болгария – Bulgaria –
Босния и Герцеговина – Bosnia and Herzegovina –
Ватикан – Vatican (Holy See) –
Великобритания – Great Britain (UK) –
Венгрия – Hungary –
Германия – Germany –
Греция – Greece –
Дания – Denmark –
Ирландия – Ireland –
Исландия – Island –
Испания – Spain –
Италия – Italy –
Латвия – Latvia –
Литва – Lithuania –
Лихтенштейн – Liechtenstein –
Люксембург – Luxembourg –
Македония – FYRO Macedonia (the Former Yugoslav Republic of Macedonia) –

Мальта – Malta –
Молдавия – Republic of Moldova –
Монако – Monaco –
Нидерланды – Netherlands –
Норвегия – Norway –
Польша – Poland –
Португалия – Portugal –
Россия – Russian Federation –
Румыния – Romania –
Сан Марино – San Marino –
Сербия – Serbia and Montenegro –
Словакия – Slovakia –
Словения – Slovenia –
Украина – Ukraine –
Финляндия – Finland –
Франция – France –
Чехия – Czech Republic –
Хорватия – Croatia –
Швейцария – Switzerland –
Швеция – Sweden –
Эстония – Estonia –
Югославия – Yugoslavia –

15.5 Say whether the following statements are true or false

1. Europe is smaller in size than Australia.
2. The Atlantic Ocean washes the western coast of European continent.
3. The continent's southern boundary runs along the Ural Mountains.
4. Europe can be divided into several distinct physiographic regions.
5. The Sierra Nevada and Pyrenees mountains are situated in the west of the continent.
6. Rivers of the first group drain into the Black and Caspian seas.
7. Maritime climate means moderate rainfall, mild and wet winters, hot and dry summers.
8. Siroccos bring hot, dry, and dusty air from North Africa's deserts.

15.6 Complete the following sentences

1. Europe is composed of ……. and occupies ……. of the world's total area.
2. It's major peninsulas include ……. .
3. The continent's eastern boundary runs along ……. .
4. Europe can be divided into two major parts - ……. .
5. The varied landscape of the continent includes ……. .
6. Lake Ladoga is of ……. origin.

7. Stretching from ……. to ……., Europe exhibits a wide range of climates.
8. Strong cold winds are called ……., hot summer winds are called ……. .

15.7 Read and translate the texts, reproduce them in the form of a dialogue

***

The people of Europe constitute about one-seventh of the world's population. The vast majority of Europe's inhabitants belong to the European geographic race. Europe is the most densely populated continent, yet it has the lowest rate of natural increase primarily because of low birth rates. In general, Europe's population is highly urbanized, with the degree of urbanization increasing in proportion to the degree of industrialization. Thus the United Kingdom and Germany are among Europe's most urbanized countries, while Albania and Portugal are among its least urbanized.

Europe's population is overwhelmingly Christian in religion, with all free major divisions of that faith (Roman Catholic, Protestant, Eastern Orthodoxy). There are some Muslims in southeastern Europe.

Europe has been a major source of emigrants for settlement and economic development of America, Australia, South Africa, New Zealand. Since the early 1800s estimated 60 million persons have emigrated overseas.

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Politically fragmented Europe contains countries none of which covers much territory. Despite their small sizes their economics rank among the world's most productive. All western European nations have democratic forms of government. Many are constitutional monarchies in which the rulers, whose powers are limited, share the powers of government with elected or appointed officials. The monarchies include kingdoms, such as the United Kingdom; principalities, such as Monaco and Liechtenstein and the Grand Duchy of Luxembourg.

15.8 Answer the following questions

Which continents have a larger area than Europe?
What is the territory? The population of Europe?
What oceans and seas wash the continent?
Name Europe's islands, archipelagoes and peninsulas.
What are Europe's physical regions?
What are the major mountain ranges of the continent?
How are Europe's river systems divided?
What percentage of continent's area is covered by lakes?
What climatic types does Europe exhibit?
What are the five major vegetation belts?

15.9 Text for written translation

Europe is relatively poor in minerals with the exception of coal and some petroleum, natural gas, iron ore, lead, zink. Russia, on the other hand, is one of the most favourably endowed nations in the world in terms of mineral reserve. Though being dependent to a large extent on imported raw materials, Europe was the first of the world's major regions to develop a modern economy based on commercial agriculture and industrial development, and it remains one of the world's major industrial regions. Western Europe in particular has progressed beyond basic heavy industries into a post-industrial economic structure reliant on an array of service industries and the manufacture of high-quality machine and metal products, electrical goods, synthetic textiles, petrochemicals, automotive vehicles, aircraft, computers. The economies of Eastern Europe are considerably less advanced; they rely more heavily on basic iron and steel industries, textiles and food processing.

Europe accounts for approximately one-half of the world's international trade. Exports represent more than one-fifth of the aggregate gross national product (GNP) of the EC, which constitutes the world's largest trading bloc. In 1958, six Western European nations founded an organization called the European Economic Community, or the Common Market. Now the EEC comprises 12 countries. The purpose of the organization is to allow goods and workers of the member countries to move free across each other's borders.

15.10 Make up all possible types of questions to the text 15.9

15.11 Speak on:

1. geographical position of Europe
2. landforms
3. climate
4. population
5. economy

15.12 Get ready to speak about any European country you like
(see Lesson 9 ex. 9.12)

16 Lesson 16 Australia and Oceania

16.1 Words and word combinations to the text

Oceania – Океания
Polynesia – Полинезия
Micronesia – Микронезия
Melanesia – Меланезия
a single name – единое название
continental islands – материковые острова
volcanic islands – вулканические острова
coral islands – коралловые острова
very little rain – малое количество осадков
to displace – замещать, вытеснять
eucalyptus – эвкалипт
ever-green – вечнозелёные
native animals – местные животные
kangaroo – кенгуру
koala – коала
wombat – вомбат
Tasmanian devil –сумчатый волк (в Тасмании)
young – детёныш
stomach pouch – сумка
parrot – попугай
lyrebird – лирохвост
plumage – оперение
to represent - представлять
Commonwealth of Australia – Австралийский Союз
Governor-General – Генерал-губернатор

16.2 Practise reading the following words

European, Latin, Greek, geologically, Southern Hemisphere, Timor Sea, Arafura Sea, Papua New Guinea, Torres Strait, Coral Sea Islands Territory, Great Barrier Reef, New Zealand, Tasman Sea, Tasmania, Central Lowlands, Eastern Highlands, New South Walles, Sydney, Victoria, Melbourne, Queen, Brisbone, South Australia, Adelaide, Western Australia, Perth, Hobart, Northern Territory, Darwin, Australian Capital Territory, Canberra.

16.3 Read and translate this text

Australia and Oceania

Scattered across the Pacific Ocean are thousands of islands. They range in size from Australia to tiny islands, so small that no one has ever lived on them. Years ago a European geographer thought that he needed a single name for this region. He decided that since the region was located “in the Great Ocean”, he would call it Oceania. Because Oceania is so vast, another geographer divided it into four parts: Australia, Polynesia, Micronesia, and Melanesia. Australia means “southern island” in Latin. The other three names come from Greek. Polynesia means “many islands”, and Micronesia means “small islands”; and Melanesia, “black islands”, so-called because of the dark-skinned people who live there. Geologically all the islands are of three types: continental islands, volcanic islands and coral islands.

Australia, the smallest continent and one of the largest countries on Earth, lies between the Pacific and Indian oceans in Southern Hemisphere. The continent is bounded by latitudes 10^0 and 44^0 S and by longitudes 112^0 and 154^0 E. Australia is separated from Indonesia by the Timor and the Arafura seas; from Papua New Guinea by the Torres Strait; from the Coral Sea Islands Territory by the Great Barrier Reef; from New Zealand by the Tasman Sea and from Antarctica by the Indian Ocean. The territory of Australia (including Tasmania) is about eight million square kilometers. The western part of Australia forms a plateau which occupies half of the continent. The Central Lowlands, a great part of which is very dry, lie between the Western Australian plateau and Eastern Highlands. Through the eastern part of these central Lowlands run Australia’s greatest rivers, the Murray and the Darling. Australia has several different climatic regions, from warm to subtropical and tropical. The climate in the west is very dry and more than half of Australia gets very little rain. There are two hot deserts in the central and western parts of the continent. Tropical forests are situated in the north-east because the winds from the sea bring heavy rainfalls. The tropical forests are displaced by savanna or grassland. In the south-east and on the sides of the mountains there are forests of eucalyptus and other ever-green trees.

The native animals of Australia include some of the strangest mammal on the earth, such as the kangaroo, koala, wombat and Tasmanian devil, all of which carry their young in stomach pouches. Australia’s bird life includes a great variety of parrots, the lyrebirds, with its unusual plumage, the brush turkey, and other interesting species.

Australia, officially the Commonwealth of Australia, is the federal state within the Commonwealth of Nations. Formally the head of the state is the King or Queen of England represented by the Governor-General. The Commonwealth of Australia consists of six states and two territories: New South Walles (the capital is Sydney), Victoria (Melbourne), Queensland (Brisbane), South Australia (Adelaide), Western Australia (Perth), Tasmania (Hobart), Northern Territory (Darwin), Australian Capital Territory (Canberra).

16.4 Find these Pacific Islands on the map and name the capitals of the countries

American Samoa (United States), Australia, Cook Islands, Fiji, Fresh Polynesia (France), Guam (United States), Kiribati, Micronesia, Marshall Islands, Nauru, New Caledonia (France), New Zealand, Northern Mariana Islands (United States), Palau, Papua New Guinea, Pitcairn Islands (United Kingdom), Samoa, Solomon Islands, Tokelan (New Zealand), Tonga, Tuvalu, Vanuatu, Wallis and Futuna (France).

16.5 Say whether the following statements are true or false

1. Thousands of islands scattered across the Pacific Ocean were called Oceania.
2. New Zealand is the largest island among the Pacific Islands.
3. Australia has three dominant landforms: the highlands, the lowlands and the plateaus.
4. Central and western parts of the continent are characterized by abundant rainfall.
5. Eucalyptus and other ever-green trees are predominant forest types in the south-east and on the sides of mountains.
6. Australia has animals and plants found nowhere else.
7. Australia is an independent federative state within the Commonwealth of Nations headed by the British Queen.

16.6 Complete the following sentences

1. Oceania is divided into ……. .
2. Melanesia is called “black islands” because of ……. .
3. Geologists describe the Pacific Islands as ……. .
4. Australia is bounded by ……. .
5. Australia (including Tasmania) has an area about ……. .
6. The Central Lowlands are located ……. .
7. Tropical forests are situated in the north-east of the continent because ……. .
8. Flora and fauna of Australia include ……. .
9. The Commonwealth of Australia consists of ……. .

16.7 Read the texts and reproduce them in the form of a dialogue

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Hundreds of years ago there were stories about a large continent in the Southern Hemisphere. But no one could say what it was like and whether it was inhabited. People called this land “terra australis incognita” or “the unknown southern land”. The Dutch were the first Europeans to visit Australia. They discovered it while making their journeys to the island of Java, a Dutch colony in Southeast Asia. When the Dutch found themselves on the west of Australia they gave the name New Holland to this western part of the continent. In 1770, the English captain James

Cook discovered the cast coast of Australia. In 1788, the first English settlement was established at Port Jackson, the site of the present city of Sydney.

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The brown-skinned Aborigines of Australia, of whom about 50,000 pure-blooded representatives and about 150,000 mixed bloods, are an ancient people with a rich cultural inheritance. This race has existed for 25,000 years. During this time the Aborigines established a life style that is very different from European culture. The Aboriginal people did not practise agriculture or keep domestic animals other than the dog. Natives supported themselves by hunting, gathering and fishing. When European settlers arrived and started grabbing lands from them, the Aborigines were doomed to starvation. Like the American Indians, Australia's Aborigines are strangers in their own land.

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Australia ranks among the world's top ten gold producers. The continent has very large iron deposits. Steel mills in Japan and South Korea depend on Australian mines for iron ore. Australia also leads the world in mining bauxite, while Australian oil fields produce only about two-thirds of what the country needs. The rest is imported. Today, manufactured goods account for 25 per cent of Australia's gross national exports. The largest manufacturing industries are those that make steel, automobiles, machinery, chemicals, and electronic equipment.

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Ecologists call the Great Barrier Reef one of the seven natural wonders of the world. Biologists classify it as the largest living organism on earth. Geographers describe it as the largest coral reef in the world. This vast coral reef forms an almost continuous wall off the eastern shore of Australia, from the Torres Strait to the Tropic of Capricon. The reef received the name "barrier reef" because it forms a barrier between the water of the open ocean and the water near the shore. The multi-hued structure is made of billions and billions of coral polyps, tiny animals that live in warm tropical water. The underwater world of coral provides shelter for an unbelievable diversity of marine life, including starfish, sea urchins, lobsters, and millions of fish.

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Speaking of Australia and neighboring islands don't forget than the seasons are the opposite way round in that part of the world. December to February is summer; March to May, autumn; June to August, winter, and September to November, spring. Due to the general changeableness of the weather at all times and the predominance in almost any landscape of ever-green trees and bush, you will find the change of seasons far less noticeable than in Britain. And when it is midnight in Britain, it will be exactly midday of the following day.

16.8 Answer the following questions

What part of the world do we call Oceania?
Why is it called Oceania?
Of how many parts does Oceania consist?
Explain the origin of the Pacific Islands.
Where does Australia lie?
How is Australia separated from neighboring islands?
Where are the Central Lowlands situated?
What climatic regions are found in Australia?
What is the state system of Australia?

16.9 Text for written translation

While Australia is one of the most sparsely populated countries of the world, two of its cities Sydney and Melbourne, runk among the fourty largest in the world. The density of population, though rising, is still only five persons per square mile; only Canada has a comparably low figure. About 58% of the population lives in the six state capitals – Sydney, Melbourne, Brisbane, Adelaide, Perth and Hobard. Apart from this cities and the federal capital of Canberra there are less than two dozen cities with a population of more than 20,000. Country towns are usually small, with populations between 5,000 and 10,000. Some have small secondary industries, but most exist merely as centres to serve the surrounding districts. Canberra, the capital city of Australia is situated in the south-east of the continent. When the federal government was created, Melbourne and Sydney viewed for the honour of becoming the capital of a new nation. Neither city wanted the other to become the permanent capital. So a new capital city was built at Canberra, halfway between Melbourne and Sydney. Canberra is situated on the Molonglo River, a tributary of the Marumbidgee River. The plains surrounding Canberra are used chiefly for sheep raising, wheat and corn growing, dairying, fruit growing. Canberra as a capital of the country, is the seat of Parliament and the other branches of government. Some 30 embassies, legations, and offices of high commissioners give the city an international flavour. The broad avenues and residential streets are lined with trees, and Canberra is often called the Garden City of Australia.

16.10 Make up all possible types of questions to the text 16.9

16.11 Speak on:

1. Oceania
2. geographical position of Australia
3. landforms and climate
4. flora and fauna
5. cities of Australia

16.12 Get ready to speak about any Pacific Islands you like (See lesson 10, ex. 10.12)

17 Тексты для дополнительного чтения

17.1 The librarian who first measured the Earth

Part I

One morning the heralds spread the news through the town: King Ptolemy III Evergetes had appointed Eratosthenes of Cyrene librarian of the great library of Alexandria.

Some people might have found it dull to be a librarian, but Eratosthenes was not despondent. He decided to read everything he could find on travels and on discoveries of the Earth's secrets. Then he would write a big scientific book containing all the geographical knowledge of those times.

This work, which Eratosthenes called *Geographica*, took up a great deal of time. Still sometimes the librarian would leave his quiet office and go out into the sunny streets of the city. He would make his way to the Alexandrian bazaar where simple folk argued and bargained.

The royal librarian was wont to sit down somewhere in the shade of a shop wall and start a conversation with the visiting merchants. One of them said: " Our town of Syene is the hottest place ever. They say there is no other such place on the sacred Earth. Here when we sit in the shade it seems a bit cooler. But in Syene there is a day once a year when there is no shade to be found . "

Eratosthenes was surprised.

" Wait, I don't quite understand what you mean. A shadow may grow longer or shorter, but I've never seen there to be none at all. "

" Nevertheless, in our Syene, on June 22 at mid-day you will find no shade at all, " retorted the merchant stubbornly. " Oh yes, on that day you can see the bottom of the deepest and narrowest well. Believe me".

Part II

The stranger's story made Eratosthenes fall to thinking. He sought out and reread manuscript after manuscript, trying to understand: " How can such a thing be? " It was the works of the great Aristotle that suggested the answer. That wise philosopher asserted that the sun illuminates different parts of the Earth's surface differently and that its rays have different angles of incidence because the Earth is a sphere; hence, the length of the sun's shade cannot be the same everywhere at the same time.

Now what if we turn to the Sun for help in measuring the size of the globe?

That is just what the Alexandrian librarian decided to do. He had no intention of making a long journey to measure the distance from one town to another step by step. His idea was to measure the Earth without leaving the little courtyard of the Alexandrian library. He constructed a special scatha or bowl, resembling a greatly enlarged half nutshell. At the centre of the bowl he fixed a column. Then he set up his

invention in the library courtyard and waited for the longest day in the year.

On June 22 the sun arose in the sky above Alexandria. At that moment the scientist measured the length of the shadow the column threw on to the bottom of the bowl. He found it to be one-fiftieth of the scatha circumference. At that same moment there was no shade at all at Syene (vicinity of the modern Aswan): there the sunbeams fell vertically. The distance between the two cities was 5,000 stadia (the stadium was a Greek unit of length) or 800 kilometres. Such would be the length of one of 50 equal arcs constituting the complete circumference of the Earth. From this Eratosthenes calculated the entire circumference to be $800*50=40{,}000$ kilometres. Then by a simple calculation he found the radius of the globe to be equal to 6,370 kilometres.

Since then investigators have measured the Earth's surface many times, but their results always coincide in the main with the figures derived in ancient times by Eratosthenes. The space laboratories of artificial Earth satellites have also confirmed these figures.

Thus, the Alexandrian librarian measured the earth correctly almost 2,200 years ago.

17.2 A Hook to the Earth

Comparatively not so long ago our country as far as the Carpathians and the south Urals was covered with ice, as were also Canada and the north of the United States. This fact is beyond any shadow of doubt. About 12,000 years ago the ice melted: this is also an authentic fact. But why did it happen?

Ludwig Seidler, a Polish scientist, made a careful study of the circumstances of this event. The explanation he found is based mainly on what would seem to be a rather unimportant fact.

In north-eastern Siberia there are cemeteries of extinct animals where tens of thousands mammoths are buried in the permafrost layers. The flesh of these animals has been excellently preserved, because the animals lived under conditions of Arctic cold. But this is not so. Undigested remains of food were found in the stomachs of the dead mammoths, remains of cones and needles of spruce and larch, which do not grow in the north tundra.

This means that the ancient elephants lived in a moderate climate and they perished from the unexpected cold. It means that a great catastrophe fell on the planet 12,000 years ago. What was this catastrophe?

Ludwig Seidler thinks that the Earth collided with a very large cosmic body, which made it shudder and displace. The geographic poles quickly shifted 30 degrees in the direction of the action of the outer force. The North Pole moved out of Hudson Bay into its present position, and the "ice cap" shifted rapidly from Labrador to the mouth of the Yenisei, freezing a herd of mammoths. The equator changed its position accordingly. Previously it has passed through the highest peak in the world – Mount Everest. That is how some regions of our planet grew sharply colder, and others much warmer. That is how the climate changed unexpectedly.

Of course, this catastrophe made the waters of the World Ocean rush as a gigantic wave into the lowland regions of America and Europe, drowning the hypothetical Atlantica and tearing through Gibraltar into the Mediterranean Sea. All this is mentioned in the works of the ancient Greek chronicler Plato. Perhaps this was the basis for the biblical legend of the “world flood”.

Some scientists think that in the past the geographical and magnetic poles coincided, but nowadays they do not because they have moved many hundreds of kilometres apart. But what if it is just that the magnetic axis has not yet caught up with the geographic axis, being closer as yet to their precatastrophic direction?

The Polish scientist even indicated the landing site of the supposed planetoid, which had landed such a hook on the Earth, as boxers would say. He considered this site to be not far from the Bahama Islands. A daring, almost fantastic conclusion, isn’t it?

17.3 Gold mines under the sea

Man is only just beginning to realize how much he must look to the sea. When we got to the bottom of the sea, we find things that no one dreamed existed until recently. Lands which were covered with water when the ice melted at the end of the Ice Age are rich in minerals. Off the South African coast, for example, is a place where there are five times the number of diamonds as in the mines on the land. One of these diamond mines on the sea of the bottom is near the mouth of the Orange River. Oil is brought from the bottom of the Caspian Sea near Baku. Sand with gold in it has been found off the Alaskan coast near Nome, and tin is mined off Thailand and Indonesia. But if man wants to continue gathering riches from the sea he is going to have to look after it. The effects of radio-activity, and even of household detergents are harmful to the creatures that live in the sea and can be harmful to the people who eat them. One recent discovery shows that there is now ten times more lead in the upper levels of the sea than there was forty years ago because lead from the high-octane petrol used in motor-cars goes into the atmosphere**.**

17.4 Getting into Deep Water

The dark depths of the Gulf of Mexico, once frequented by only the sea creatures, are now alive with human activity. Miniature submarines and robot-like vehicles move around the ocean bottom while divers make their way around incredible underwater structures-taller than New York City skyscrapers but almost totally beneath the surface of the waves. Modern-day explorers are using technology worth of Jules Verne and Jakques Cousteau to find fresh supplies of oil and natural gas.Until recently, drilling in the Gulf was concentrated close to shore in water as deep as 9 km. But now the scientists are looking to hundreds of meters deep and 160 kilometres and more from land. The deep water research began in 1984. Since many American companies have built the world’s deepest production platforms of more than 100 stories high.

17.5 Climate and Man

It's easy to think of the earth's climate as unchanging, and for many purposes this would be an adequate assumption. However, the climate does change, slowly but continually. Paleoclimatologists have found convincing evidence of major climatic variations. Recorded history going back some 2,000 years clearly shows changes in climate and their effects on man, animals, plants and the landscape. Great migrations of people and animals accompanied periods of unusual cold and prolonged droughts. The movement of plant communities toward different latitudes and different elevations indicate important alterations in climate. The rise and fall of lake levels, particularly those more or less closed from the sea, show period of wet or dry climate. The extent of sea ice and its effect on shipping to the ports of northern Europe point to the warming or cooling of the earth's atmosphere.

There is no doubt that climate changes continually, and that it did so long before man and his technology came on the scene.

Until fairly recent times, man's effect on climate must have been insignificant. The discovery and the Industrial Revolution signalled the start of man's competition with nature on a major scale. Internal combustion engines using such fossil-fuel-powered furnaces and so forth, began to introduce into the atmosphere huge masses of gases, particles, and grey amounts of heat.

As the population of the earth has been increasing at an alarming rate, the quantity of pollutants put into the air has done likewise. There is growing conviction that the increasing concentrations of carbon dioxide and particles put into the atmosphere by human activities are playing an important role in causing changes in climate. Theoretical analysis have shown that small changes in the cloud cover of the earth can have important effects on the air temperature near the ground. Atmosphere pollution might be affecting climate by causing changes in the cloud cover.

17.6 Temperature Scales

Daniel Gabriel Fahrenheit (1686 – 1736) gave his name to the temperature scale which is still used in some weather reports. Fahrenheit was a scientific- instrument-maker from Holland. Here is a belief that one day a cold winter wind came through the window of his room and froze his tea with milk on the table. This made him think of artificial mixtures of low temperatures. The lowest temperature Fahrenheit could produce in his experiments was with a freezing mixture: the scientists mixed ice and ammonium chloride. He called this temperature 0 ^{0}F (0 degree Fahrenheit) on his temperature scale. Ice melted at 32 ^{0}F and normal human blood temperature was 96 ^{0}F. The improved modern version of the Fahrenheit scale uses 32 ^{0}F and 212 ^{0}F, as the lowest and highest points on the scale. The scale became popular both in Britain and through out the English-speaking world.

Actually, the Celsius temperature scale is taught in all modern schools today. It was introduced in 1742 by the Swedish astronomer Anders Celsius (1701 – 1744), who chose the melting point of the ice as 0 ^{0}C and the boiling point of water as

100^0C. The scale in between these points was divided into 100 equal degrees and was called a Centigrade or the Celsius scale. The scale was simpler than Fahrenheit's, and was soon adopted by scientists throughout the world. In 1948 it became officially known as the Celsius scale, which is now part of the International System of Units.

Another temperature scale was made in 1848 by Scottish physicist William Thomson-Lord Kelvin (1824 – 1907). Kelvin knew that when oxygen and other gases were cooled, their volume became smaller. The lower the t^0, the smaller the volume. Experiments proved that at certain t^0 the molecules do not move, and their energy becomes zero. That represented the lowest possible temperature, and was called absolute zero on the Kelvin temperature scale. On the Celsius scale absolute zero is -273,15 ^{0}C.

17.7 Mountains that explode

Since ancient times volcanoes have struck terror and awe into the heart of man: but scientists tell us they do more good than harm. Many of the islands in the seas and oceans have been thrown up by volcanoes. They have thrown up whole mountain ranges too, some of which are very useful because they increase rainfall. The best thing of all, however, is the way the lava from volcanoes enriches the soil. This explains why farmers crowd the sides of volcanoes, risking death and destruction from new eruptions. They can grow such good crops there that they think the risk well worth while.

Some volcanoes are dangerous. Of all the thousands and thousands of them scattered about the earth, only about 500 are active. Perhaps not more than 50 volcanoes are erupting at this moment like Stromboli in the Mediterranean and Izalco in El Salvador [1]. Such volcanoes are watched by scientists. Most of the great volcanic disasters have been caused by surprise outbursts from volcanoes which have not erupted for so long that everyone imagines them to be quite harmless.

In 1952, one of these, Mount Lamington, in New Guinea [2], erupted and caused six thousand deaths. That disaster was bad but there have been much worse ones. Think of Vesuvius which erupted in 79 A.D. burying the towns of Herculaneum and Pompeii [3] under its ashes. Have you heard of Krakotoa [4]? Thirty – six thousand lives were lost when Krakotoa erupted, and the smoke and dust from the explosion was so thick that it was blown right around the world.

There is so much power in an exploding mountain that man can not attempt to control it. But at least he is learning how to save himself from the volcano's fury. Scientists are studying volcanoes ways and learning how to tell in advance when they are going to erupt. Thanks to scientists we are not so helpless as people were in earlier days, when they were too often caught before they could even try to get away.

17.8 Glaciers

Late in the Pleistocene Epoch, some 30.000 or 40.000 years ago, nearly half of North America, all of northern Europe, Greenland and Antarctica and much of northern Asia were covered by great blankets of snow and ice called continental glaciers. At the same time valley glaciers in all the high mountain regions of the earth were much larger than the present ones, and thousands were in existence where none are now. It is estimated that more than one - fifth of the whole land surface, about 12.000.000 square miles, was covered with ice during this time.

Much has been written on the length of time represented by the Pleistocene Epoch but since many of the factors are indeterminate, no accurate statement can be made. Estimating the time has elapsed since the continental glaciers entirely disappeared from Europe and North America is also impossible. Several methods have been used for determining the length of the postglacial time both in Europe and North America but most of them are unreliable.

Now 5.000.000 square miles of Antarctica and 600.000 square miles of Greenland are covered with glacial ice. In addition, there are hundreds of valley glaciers in the high mountains of North America, the Alps, the Caucasus, the Andes and the Himalayas. Nearly all present glaciers are the remnants of the much greater ones of Pleistocene times. Our studies of present glaciers help us in understanding the Pleistocene glaciation which occurred so recently that it is in a large measure responsible for the topography of several million square miles of the earth's surface.

Three conditions are necessary for the formation of a glacier: abundant snowfall; second, cool or cold temperatures; and third, a sufficiently low rate of summer melting and evaporation, so that snow fields endure and increase in size through a long period of years. Snow field may accumulate on plains, plateaus or mountains. Wherever the conditions are favourable, the snow field grows in depth and in surface area from year to year. The transformation of snow to glacial ice occurs chiefly in the snow fields. As it falls through the air, snow consists of delicate, thin, tabular, hexagonal crystals. After having lain on the ground for some time and having been covered by later falls, the snow gradually changes to granular ice which is called *névé*. This change is brought about by the partial melting of the snow crystals due to the weight of the overlying load. The water from the melting snow trickles down and almost immediately freezes, thus making grains of ice. A thick snow bank formed by the successive snowfalls of only one winter will have ice at the bottom, thoroughly granular snow in the centre and slightly altered snow at the top. After many years of accumulation the ice at the bottom of the snow field becomes very thick and, at last, is ready to move.

17.9 Types of Glaciers

Glaciers may be divided into four principal types: continental, ice caps, valley glaciers and piedmont glaciers.

Continental glaciers. These are the largest of all glaciers. There are good examples today in Antarctica and Greenland. Continental glaciers may form regardless of topography, on plains, plateaus or mountains. From the centre of accumulation the ice moves slowly outward in all directions.

Ice caps. An ice cap is the covering of snow and ice on mountains from which alpine glaciers spring and move in different directions.

Valley glaciers. There are glaciers which rise in ice caps or single snow fields and occupy mountain valleys. They are sometimes called alpine because this type of a glacier was first studied in the Alps. There is a great difference in the size of these glaciers. Some are many miles long and hundreds of feet thick near their heads. Others are only a fraction of a mile in length, nearly as wide as they are long and only a few score of feet thick. Many modern valley glaciers are but tiny remnants of their former size.

Piedmont glaciers. Two or more valley glaciers that combine on a plain or in a broad intermontane valley at the foot of a mountain constitute a piedmont glacier. There were many glaciers of this type on the plains which border the Northern Rocky Mountains during the Pleistocene ice age, and there are fine examples in Alaska at the present time.

The Malaspina glacier in Alaska is probably the most typical and certainly is the most interesting piedmont glacier known. Situated immediately west of Yakutat Bay and south-east of Mount St. Elias, it is fed by numerous alpine glaciers, some of which are very large. The total area of this great ice sheet is about 1,500 square miles. Its central portion is a great plateau of clear white ice cut by thousands of shallow crevasses. Its margins, except where the larger glaciers come in, are covered with a thick mantle of morainal debris. Proceeding from the clear ice toward the sea, on the outer margin of this belt of morainal material there are, first, scattered flowers then clumps of alder and finally, thick forest of large spruces. Yet the whole area is underlain by glacial ice stagnant in some places, but moving in many others. The movement is plainly shown by new crevasses and great trees that have been overturned in the forested areas. The surface slope from the mountain front to the outer margin is about 70 feet to the mile. The morainal belt shows characteristic kettle and hummock topography (бугристо-котловинный рельеф).

Crevasses are numerous, as are small lakes of peculiar hour-glass shape formed in the underlying ice. Beneath the marginal ice are subglacial streams of large size. Hundreds of such streams, all loaded with silt flow out from the south margin of the glacier. One, the Yahtre, flows through a tunnel 6 to 8 miles long.

17.10 Tides

The term tide is applied to the periodical rising and falling of the water of the ocean caused by the attraction of the sun and moon. Periodical alterations in the direction of the wind, and periodical variations in atmospheric pressure, may give rise to alterations in the level of the sea, but true tides are attributed (are due to) to astronomical causes. It is supposed that the attraction of the sun and moon may affect not only the waters of the ocean but also the solid crust of the earth, producing an alternating change in its shape, but so small as to be difficult of detection.

Anyone living at the seaside must have observed the gradual advance and retreat of the sea about twice in the 24 hours, or to be more exact, twice in 24 hours 50 minutes, the average interval between two successive high waters being 12 hours 25 minutes. The time of high-water thus changes from day to day, and is evidently related to the position of the moon, which passes the meridian on an average 50 minutes later on each succeeding day. The height to which the water rises varies also from day to day, the range from high-water to low-water being greatest about the time of full moon and new moon, when the tides are called “spring-tides”, and least about the time of the moon’s first and third quarters, when the tides are called “neap-tides”. The tide generating effect of the moon is more than double that of the sun, because of the very much greater distance of the sun, in spite of its greater mass. When the sun and the moon are both on the same side of the earth and when they are diametrically opposed to each other their tide-generating effects are additive, but when they are at right angles to each other the effects are subtractive, so that the spring-tides have a range three times greater than the neap-tides.

17.11 Eurasia

The origin of the largest of the continents-Eurasia – goes to the very beginning of our planet. Basically, it was represented by an archipelago of giant islands, rising above the surface of the vast seas which then covered much of the world. These islands were five in number: the Scandinavian shield in the northwest; the Siberian shield, largest of all, in the north; the Chinese shield in the east; the Thailand – Cambodjian in the southeast; and the Indian shield in the south.

The seas above which these islands rose in these earliest days of the earth’s formation have disappeared, but two of them, the Tethys and the Uralian existed for so long that they played an important role in the history of Old World flora and fauna.

The Tethys was the southern of these two enormous bodies of water: it reached from the Alps and the Mediterranean basin all the way to the Timor Sea in the Indonesian archipelago, covering the entire width of southern Asia, Turkey, Iran, the Himalayas and Vietnam. Its shorelines changed during the more than 560 million years of its existence. Some 36 million years ago the Tethys began to dry up, eventually leaving behind it some of the familiar contours of the lands we know today. Great upheavals of the earth’s crust gave rise to the Alps and the Himalayas, isolated its entire central area, and the two ends of this enormous sea became separated by thousands of miles of emerged land.

But the common parentage of the Mediterranean and the seas around Japan is still evident in the great resemblance of the fishes found in this widely separated waters: by contrast, the Mediterranean and the Red sea, separated by only a hundred miles or so of land, have quite different fishes, and it wasn't until the Suez Canal was cut in 1869 that they began to mix.

The second and more northern sea, the Uralian ran north from the Tethys to what is now the Arctic Ocean and it separated the Siberian from the Scandinavian shields. About 240 million years ago, what were to be the Ural mountains began to emerge. There was a general rising of land which lifted the level of the continent – to be above the waves, giving Eurasia its shape. The Ural Sea disappeared – but only for a while. Succeeding upheavals and subsidences of the continental crust created new seas separating east from west more than once before the continent was again reunited. Thus Eurasia, as we know it today has existed only for about 25 million years.

17.12 Ural Mountains

The Ural mountain range stretching for 2500 kilometres, runs along the meridian from cold tundra in the north to the arid semi-desert in the south, separating the European part of Russia from the Asian one.

These are not mountains like you find in the Caucasus or the Crimea where there is a brilliant sunshine and luxuriant and exotic vegetation. These mountains are just part and parcel of that same Central Russia, those same fir groves, but with hillocks, those same meadows carpeted with dandelions and clover, but undulating.

The Urals ridge adhered in a long narrow bundle to the so-called Russian platform, forming its eastern edge. The range took shape some 300.000.000 years ago, and, although it survived it was eroded. The Urals were lifted again by a fresh upsurge of the earth's forces, reaching a height of 1.895 metres above sea level in the north (Mount Narodnaya) and 1.640 metres (Mount Yamantay) in the south.

Over millions of years water, wind, heat, frost and creatures have eaten away and eroded the Ural mountains and laid bare the wealth concealed in them. We can count as many as a thousand minerals there, about half of all known minerals on our planet. There are more than 12 000 places in the Urals where minerals have been prospected. Among these minerals there are the platinum, nickel, chromium, copper. A streak of grey Ural granites stretches along the mountain sides. The granites brought with them gold and precious stones from lesser depths. Gems of rare beauty have been crystallized in the veins in the granite. Boron is responsible for the formation of tourmaline of different colors (red, black, green). There are also jaspers, emeralds, rubies, sapphires, aquamarines and amethysts, beautiful stones with beautiful names.

Where the magma has serged upwards from the depths and come into contact with the ancient limestone rich deposits of iron ores have been formed like that of the well-known Mount Magnitnaya in the South. There are also great deposits of coal, oil and other mineral resources.

18 Test translation

Translate into Russian

– When the geo-student consider the environment, and particularly when he is concerned with the diversified relations of man to his total physical environment, he takes an exceptionally broad field because all of the physical features of the earth are the subject matter of his interest.
– Cartography is the art and science of map making. Recent developments in mathematics, computers, and electronics have expanded cartography to include the study and analysis of aerial photographs and remotely sensed (satellite) images.
– Political geography deals with the administration of areas, territorial acquisitions, political boundaries, and patterns of government. Political geography is closely tired to social geography, the study of the interrelationships of groups and communities, the study of human movements within and between communities.
– A globe is the only model of the earth in the shape of a sphere, just like the earth. The globe provides the most accurate representation of the shape of the earth.
– Earthquakes usually take place along faults or at the edges of the earth's plate. About three quarters of the world earthquakes occur in a zone which borders the Pacific Ocean from New Zealand to the southern tip of South America. Because of its volcanic activity, this belt is known as the "Ring of Fire".
– Large masses of moving ice, known as glaciers, erode the land in the colder regions of the world. As the glaciers move through mountain passes, they create distinctive U-shaped mountain valleys by eroding soil and rocks from the valley floor and walls.
– Ice is our common water reservoir. A progect has been worked out for hauling an icebirg 100×500×200 meters in size from the Antarctic to Australia.
– Because of Island's geographical position, elements of both southern and arctic faunas live there under peripheral conditions and react quickly to climatic changes.
– Cities have been on Earth for more than 5000 years and, during all of this time, there have been various types of environmental problems associated with urbanization, with urban growth, and the tendency for the inhabitants of rural areas to drift to cities in an effort to improve their material well – being.
– While the high-level atmospheric zones are important in such fields as space research, remote sensing, and telecommunications, it is the largest layer, the troposphere, which is of the greatest interest to physical geographers and weather forecasters who survey the changing conditions of the atmosphere in a study known as meteorology.
– Cyclone is a center (a cell) of low pressure that is typified by the convergence of air. All cyclonic storms move from west to east in the prevailing westerlies and swing northeastward across the Atlantic Coast. Anticyclone – a cell of high pressure in which air diverges. Often clear weather. Thunderstorm – a convectional storm accompanied by thunder and lightning.

– Vast in area, elevated well above the level of the surrounding seas, centered approximately around the South Pole of the earth's axis, and thus far removed from the effective warmth of the sun for most of the year, Antarctica is the largest single region of constant cold in the world. The cooling effects of the air above it are repeatedly felt deep within the middle latitudes of the southern hemisphere, sometimes as far north as the equator.
– Scientists are still uncertain whether the Arctic Ocean can technically be called an ocean basin because structurally it is smaller than some seas. It is more than 3,600 meters deep in some places, but so little is known of it that it has not been determined whether the rocks that underline it are similar to those under the larger oceans.

Translate into English

– Во внутреннем строении Земли различают следующие части. Наружная оболочка, мощность которой изменяется от 6-8 до 60-80 км, называется земной корой или литосферой. Глубже располагается мантия Земли, мощностью около 2900 км. Центральную часть земли занимает ядро, радиус которого равен 3470 км.
– Гидросфера – водная оболочка Земли. Включает всю воду, расположенную на поверхности и в толще земной коры в жидком, твёрдом и газообразном состоянии. Происхождение воды на Земле пока окончательно не известно. Предполагают, что она выделилась в процессе образования земной коры из вещества мантии.
– Границу между Европой и Азией проводят по восточному подножию Урала, реке Эмбе, северу Каспия, Кумо-Манычской впадине севернее Кавказа, по Азовскому и Чёрному морям, по проливам между Чёрным и Средиземным морям.
– По размерам территории выделяют 7 самых больших стран мира (Россия, Канада, Китай, США, Бразилия, Австралия, Индия), крупные, средние, небольшие страны, микрогосударства (Андорра, Лихтенштейн и др.). По количеству населения выделяют 10 самых больших стран с числом более 100,000,000 человек в каждой (Китай, Индия, США, Индонезия, Бразилия, Россия, Япония, Пакистан, Бангладеш, Нигерия).
– Карта – модель действительности. Это важнейшее средство научного познания в географии и других областях знаний о Земле. Карта незаменима при изучении и освоении территорий, использовании и охране природных ресурсов, прогнозировании погоды, для морской и воздушной навигации, и т.д.
– Погода – это совокупность атмосферных процессов в данное время и над определённой территорией. Климат – многолетний режим погоды, типичный в данном месте.
– Солнечная Система – это, прежде всего, звезда Солнце и девять планет, вращающихся вокруг неё. В порядке расстояния от светила они располагаются следующим образом: Меркурий, Венера, Земля, Марс, Юпитер, Сатурн, Уран, Нептун, Плутон.

– Россия находится в северном полушарии на крупнейшем материке земного шара Евразии, в двух частях света – Европе и Азии. С севера территория России омывается водами морей Северного Ледовитого Океана, с востока морями Тихого океана, с запада и юго-запада – морями Атлантического океана. Россия – самое большое государство в мире. Её площадь составляет 17,1 миллионов км^2. Территория страны с севера на юг протянулась от арктических пустынь до пустынь умеренного пояса. Наибольшая протяжённость с запада на восток составляет около 10 тыс. км. Когда на Балтийском побережье наступает вечер, на Чукотке зарождается новый день.

Рельеф страны весьма неоднороден и контрастен. Высшая точка – г. Эльбрус на Кавказе достигает 5642 м, а побережье Каспийского моря лежит на 28 метров ниже уровня Мирового Океана. Более половины территории страны занимают равнины. К западу от Енисея находятся преимущественно низкие равнины: Восточно-Европейская (Русская) и Западно-Сибирская. Их разделяют Уральские горы. К востоку от Енисея территория приподнята. Здесь расположена обширная возвышенная равнина – Среднесибирское плоскогорье. На востоке и частично на юге России поднимаются горы. К юго-востоку от Западно-Сибирской равнины расположены хребты Алтая и Саян. Вдоль Тихоокеанского побережья протянулась почти сплошная цепь нагорий и хребтов от Чукотского нагорья до Сихотэ-Алиня. На крайнем юго-западе, от Чёрного до Каспийского моря протянулись очень высокие Кавказские горы. Лишь одно горное сооружение расположено среди обширных равнин западной части страны – это средневысотные Уральские горы, протянувшиеся сравнительно узкой полосой с севера на юг более чем на 2000 км.

Внутренние воды России представлены реками и озёрами, болотами и подземными водами, многолетней мерзлотой и ледниками. В России насчитывается около 2,5 миллионов рек и почти столько же озёр. Около 10% территории страны занимают болота, свыше 60% многолетняя мерзлота. Самой длинной рекой в России является Обь с Иртышом (5410 км). Волга – крупнейшая река Европы.

На климат России оказывает влияние четыре группы факторов: географическое положение, солнечная радиация, движение воздушных масс и рельеф. Протяжённость территории с севра на юг почти от 78^{0}с.ш. до 41^{0}с.ш. определяет её положение в арктическом, субарктическом и умеренном поясах. Преобладающая часть территории находится в умеренном поясе.

Леса занимают более 40% площади нашей страны. Они расположены там, где средние месячные температуры июля превышают +10^{0}С, а увлажнение достаточное и избыточное. Тундровая растительность формируется при малом количестве тепла. Степи расположены в районах недостаточного и неустойчивого увлажнения. Пустыни занимают территории, наименее благоприятные для существования растений.

19 Grammar Revision Exercises

19.1 Времена Indefinite, Continuous и Perfect Active

Таблица 2

Время	Present	Past	Future
Indefinite	He **swims** (always, usually, often, sometimes, seldom, every day)	He **swam** (yesterday, last week (month, year), a week ago, last time)	He **will swim** (tomorrow, in a week, next time(month, year))
Continuous	He **is swimming** (now)	He **was swimming** (all the morning, from 2 till 5 o'clock, when you came, at that time yesterday)	He **will be swimming** (from 2 till 5 o'clock tomorrow, when mother comes)
Perfect	He **has swum** (already, still, yet, recently, today, just, ever, never, this week (month, year))	He **had swum** (by 5 0`clock yesterday, before you come, by the end of…)	He **will have swum** (by 5 o'clock, tomorrow, before you come)

Translate into Russian paying attention to the forms of the verbs

1. Scientists continue to study Lake Baikal.2. There is a risk that the contamination will spread to the water wells which supply the city. 3. Scientific investigation of the Antarctic region has been predominant human activity since the 1950s. 4.In 1972 Ceylon became the Republic of Sri Lanka. 5. Even after a hundred years of observational study, the oceans remain underexplored and our knowledge of many of the key-processes occurring within them is still fragmentary. 6. According to statistics the population of Africa is growing. 7. The north of Canada near the Arctic is tundra with great forests to the south. 8. Water managers are also becoming increasingly concerned about the unpredictable effects of climatic variability on water resources.

Open the brackets and put the verbs in the proper tenses

1. Seismology, the study of the earth's movements, (become) a science only in the nineteenth century when special instruments were invented. 2. Geologists (know) much about the outside of the Earth, but they (be) not quite sure about the inside. 3. Australia (have) several climatic regions, from warm to subtropical and tropical.

4. Ecologists (express) concern for the fate of the Aral Sea and Lake Balkhash. 5. In geography, Lomonosov (evolve) a project for putting the great Northern Route to use, and (conduct) a number of valuable climatological observation. 6. Lying between latitudes 34 and 48 degrees, New Zealand position in the Southern Hemisphere (correspond) with that of Italy in the Northern Hemisphere. 7. Volcanic eraptions (kill) nearly 200,000 people in the last 600 years.

19.2 Степени сравнения прилагательных и наречий (Degrees of Comparison)

Таблица 3

Положительная степень	Сравнительная степень	Превосходная степень
I. fast	fast**er**	**(the)** fast**est**
happy	happi**er**	**(the)** happi**est**
II. difficult	**more** difficult	**(the) most** difficult
III. good, well	**better**	**(the) best**
little	**less**	**(the) least**
bad, badly	**worse**	**(the) worst**
much, many	**more**	**(the) most**

Translate into Russian paying attention to the Degrees of Comparison

1. Dublin is the largest city and principal seaport of the Republic of Ireland. 2. Forests protect the soil and water resources better than the most excellent artificial measures. 3. The most accurate and complete method to determine the minimum age of the Earth is to study radioactive minerals. 4. Another method to estimate the age of the oldest rocks is to compare the rate of decomposition today with the total thickness of sedimentary rocks formed throughout all geologic time. 5. Rain is the most common precipitation form. 6. Though longer than the British Isles, New Zealand is narrower, with no greater breadth than 280 miles an any point. 7. The Niagara Falls, on the Niagara River between Lake Erie and Lake Ontario, are one of the most splendid sights in the world. 8. The Dnieper is not so long as the Volga.

19.3 Типы вопросов (Types of Questions)

I. Общий вопрос (general question)
Did he study English at school? Yes, he did.
II. Специальный вопрос (special question)
Where do you study? When was Moscow founded?
III. Альтернативный вопрос (alternative question)
Was Moscow founded in 1147 or in 1247?

IV. Разделительный вопрос (disjunctive question)
He lives in Moscow, doesn't he?
They are playing tennis now, aren't they?
V. Вопрос к подлежащему или его определению (question to the subject)
Who works in this office?
What books are on the table?

Make up different questions to the following sentences

1. The Gulf Stream originates in the Gulf of Mexico. 2. The years which are evenly divisible by 4 are called leap years. 3. We may determine the relative age of different rock formations by fossil remains. 4. The earth has a definite amount of sea water, about 1370 million cubic kilometres. 5. Lake Baikal lies at a high of 456 metres above sea level. 6. The land of the Chinese dominates eastern Asia. 7. More than 300 rivers and streams flow into Lake Baikal, while only the Angara flows out of it. 8. Forests are an important geographical and ecological factor.

19.4 Страдательный залог (Passive Voice)

Страдательный залог показывает, что предмет или лицо, являющееся подлежащим, подвергается действию, а не само его совершает.

Таблица 4 – Времена Indefinite, Continuous и Perfect Passive

Время	Present	Past	Future
Indefinite	The letter **is written**	The letter **was written**	The letter **will be written**
Continuous	The letter **is being written**	The letter **was being written** all day	-
Perfect	The letter **has been written**	The letter **had been written** by yesterday evening	The letter **will have been written** by tomorrow evening

Translate into Russian paying attention to Passive Voice

1. England is separated from Scotland by the Cheviot Hills, running from east to west. 2. The famous Egyptian pyramids at Giza were being built for more then forty years. 3. Coal, oil, peat, etc., were all formed as the result of evolution. 4. Since primitive ages, men have been fascinated by the sun, the moon, stars and their ceaseless movements. 5. India is bordered on the North by China and Nepal, on the east by Bangladesh and Burma, on the north-west by Pakistan and Afghanistan. 6. Ptolemy's conception of the universe was built around the notion that the earth

was a fixed, inert immovable mass, located at the center of the universe, and all celestial bodies, including the sun and the stars, revolved around it. 7. Weather changes are often caused by cyclones and anticyclones. 8. Australia as a landmass has been isolated from the rest of the world for million years and has animals and plants found nowhere else.

19.5 Причастие (The Participle)

Причастие – неличная форма глагола, в которой сочетаются признаки прилагательного или наречия с признаками глагола.

Таблица 5

	Participle I		Participle II
Indefinite	Active	Passive	changed
	changing	being changed	
Perfect	having changed	having been changed	

Translate into Russian paying attention to different forms of the Participle used as attributes

1. The moving wall of ice changes everything in its path. 2. Precipitation totalling more than 20 inches annually occurs mainly in the winter months in the Crimea. 3. Metamorphic rocks are the changed products of igneous or sedimentary rocks or other metamorphic rocks. 4. It has long been known that Venus has an atmosphere, a solid layer of clouds concealing its surface.5. The atmosphere maintains a state of approximate balance whereby the amount of heat given off by radiation is about equal to the amount received. 6. He spoke about the experiments being carried on at the polar stations. 7. The polar station being built on the island is of great importance.

Translate into Russian paying attention to different forms of the Participle used as adverbial modifier

1. Making its way down the valley, the river cuts through rocks of different resistance. 2. Beginning in Asia Minor, a chain of mountains runs eastward to northwestern India.3. Writing his thesis on the exploration of Siberia he used the material of many expeditions. 4. Korea is rich in minerals including iron, coal, copper and silver. 5. Situated on a narrow strip of land between the mountains and the sea, Rio de Janerio has one of the world's finest harbours. 6. Seen under a microscope, a fresh snowflake has a delicate sixpointed shape. 7. Being situated on the south-western section of the sea, the Murman coast is ice-free throughout the year. 8. Being

drained by five rivers the soil of the Ukraine is very fertile. 9. Having reached the depth of 15,000 feet we began to examine the drill cuttings.

19.6 Независимый причастный оборот (The Absolute Participle Construction)

Независимый причастный оборот – это сочетание существительного в общем падеже (или местоимения в именительном падеже) с Participle I или Participle II, в котором существительное (или местоимение) выполняет роль подлежащего по отношению к причастию и не является подлежащим всего предложения.

На русский язык переводится, как правило, придаточным предложением с союзами так как, когда, если, после того как (независимый причастный оборот находится в начале предложения) и с союзами а, и, причем, но (независимый причастный оборот стоит в конце предложения).

The weather being fine, we went for a walk.
He works hard to pass his examination, his sister doing her best to help him.

Translate into Russian paying attention to the Absolute Participle Construction

1. Certain volcanoes throw out very little solid matter, their products being molten lavas. 2. The slopes of the main ridge are forested, conifers predominating in the north and deciduous in the south. 3. The southern part of the Crimea being protected by mountains from the cold wind of the steppes, the climate is mild enough to grow vines. 4. The forests having been cleared, farming became one the principle occupation of the people of this area.

Compare grammar constructions in each pair of sentences

1. New specimens having been secured, the scientists sorted them. Having secured new specimens the scientists sorted them. 2. The drill cuttings having been examined, we could determine the nature of the rock. Having examined the drill cuttings we could determine the nature of the rock. 3. The students having been shown some specimens, the teacher began his lecture. Having shown some specimens to the students the teacher began his lecture.

19.7 Герундий (The Gerund)

Герундий – неличная форма глагола, имеющая грамматические особенности как глагола, так и существительного и выражающая действие как процесс.

Таблица 6 – Формы герундия

	Active	Passive
Indefinite	writing	being written
Perfect	having written	having been written

Функции герундия:

Seeing a good film is a pleasure. (подлежащее)
His favorite occupation is seeing a good film. (часть составного сказуемого)
I like seeing an interesting film. (прямое дополнение)
We thought of seeing a film after supper. (предложное дополнение)
We went home without seeing the film. (обстоятельство)
I'm glad to have the opportunity of seeing this film. (определение)

Translate into Russian paying attention to the different functions of the Gerund

1. Forecasting weather with great accuracy is no easy matter. 2. Cooling may be caused by radiation, by contact with cold surfaces, by mixing masses of air of different temperatures. 3. The sole object of our expedition was exploring the floor of the Pacific Ocean. 4. The most important thing in contemporary weather analysis is studying the properties of individual, discrete masses of air and the changes resulting when they meet. 5. The students insisted on being sent to the mine. 6. The students were against being helped with their work. 7. Improved methods of observing atmosphere are developed. 8. There are reasons for believing that the floor of the Pacific is composed of basalt. 9. A seismograph is an instrument for recording vibrations of the earth's crust. 10. Nobody knew of their having returned from the expedition. 11. By analysing satellite cloud photographs, meteorologist may even estimate the maximum wind speed of different storms. 12. On leaving the Strait Florida, the Gulf Stream is several hundred feet deep and about one hundred miles wide. 13. When large ice masses reach the warmer lower altitudes they stop advancing and begin to melt.

19.8 Инфинитив (The Infinitive)

Инфинитив – наличная форма глагола, представляющая собой основу глагола, которой обычно предшествует частица **to**

Функции инфинитива.

To work with computer was new to many of us. (в функции подлежащего)
Our aim is to translate these articles without a dictionary. (в функции именной части сказуемого)
To translate such an article without a dictionary you must know English well. (в функции обстоятельства цели)
I'm glad to have spoken to our teacher about my work. (в функции дополнения)
He was the first to come. (в функции определения)

Translate into Russian paying attention to the functions of the infinitive.

1. The aim of geography is to study the earth in its relation to man. 2. This group of students want to observe pressure and wind irregularity of the area. 3. Many theories to explain the origin of the continents have been put forth. 4. To explore the North the prospectors used airplanes. 5. The prospectors used airplanes to explore the North. 6. Geology attempts to interpret the earth in the light of knowledge of chemistry, physics, astronomy and other sciences. 7. The Dutch were the first Europeans to visit Australia.

19.9 Субъектный инфинитивный оборот (Complex Subject)

Субъектный инфинитивный оборот – это конструкция, выраженная существительным в общем падеже или местоимением в именительном падеже с инфинитивом.

Asia is known to be four times the size of Europe.

Translate into Russian pointing out the Subjective Infinitive Constructions

1. The air is known to extend about 200 miles above the earth. 2. All glaciers around the Northern Atlantic coast are reported to be shrinking. 3. The surface of the sun is estimated to have a temperature of more than 10.000 °F. 4. Changes in atmosphere pressure appear to have some effect on animals. 5. Greater solar activity seems to produce lower earth temperatures. 6. The importance of radiation in the ablation process seems to increase with decreasing latitude. 7. Heat and cold are believed to be distributed by ocean currents over thousands of miles.

8. Volcanic actions are known to cause great distractions especially in the near-by areas. 9. This discovery is considered to be of great importance to geographers.

19.10 Объектный инфинитивный оборот (Complex Object)

Объектный инфинитивный оборот – это сочетание имени существительного в общем падеже или местоимения в объектном падеже с инфинитивом.

Gravitation makes water run down a hill.

Translate into Russian pointing out the Objective Infinitive Constructions

1. We know the earth's crust to be constantly changing. 2. The teacher wanted the students to make this experiment at once. 3. The students expected him to explain them different hypotheses of the earth's early history. 4. Cooling causes the surface layers of the rocks to contact. 5. Subtropical climate enables the farmers to grow two crops each year. 6. Moulten and Chamberlain believed the earth and other planets to have come originally from the sun.

19.11 Условные предложения (Conditional Sentences)

Таблица 7

Тип предложения. Степень реальности условия	Время, к которому относится условие	Главное предложение	Придаточное предложение
1	2	3	4
I. Реальное, вероятное	Настоящее, будущее, прошедшее	He **will go** to the country… Он поедет за город,…	if the weather **is** fine. Если погода будет хорошей.
II. Маловероятное, почти нереальное	Настоящее, будущее	He **would go** to the country… Он поехал бы за город,…	if the weather **were** fine. Если бы погода была хорошей. (сегодня, завтра)

III. Невероятное, нереальное	Прошедшее	He **would have gone** to the country… Он поехал бы за город,…	if the weather **had been** fine. Если бы погода была хорошей. (вчера)

Translate into Russian, paying attention to Conditional Clauses

1. If the air is warmed it will rise and expand. 2. Trees will not thrive in dry regions unless they grow along the banks of streams. 3. If the earth were flat the sun would be visible at all places on the earth's surface at the same time – directly it appears above the horizon. 4. It would be very difficult if every town in a country had its own time. 5. Were there no atmosphere the temperature of the earth would soar to over 200 ^{0}F in the day-time and drop to around - 300 ^{0} at night. 6. If all the atmospheric moisture were precipitated it would create a layer averaging only one inch in depth over the entire globe. 7. By reconstructing the (now eroded) folds, it is evident that ranges would have towered 20,000 to 25,000 feet above the sea if there had been no erosion. 8. Were the earth-spheroid a homogeneous ball, the value of gravity would be the same for all points in the same latitude. 9. If the scientists had found the ways to predict earthquakes, it would have been possible to evacuate people from these regions.

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