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Методические указания

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LESSON I
THE SCIENCE OF BIOLOGY

Active Vocabulary

1) **according to**, prep – согласно, в соответствии
2) **acquaint**, v – знакомить; to be ~ed (with) – знакомиться (с)
acquaintance, n – знакомство
3) **acquire**, v – приобретать; to ~ knowledge – приобретать знания
acquisition, n – приобретение
4) **biology**, n – биология
biologist, n – биолог
biological, adj – биологический
5) **carry out**, v – проводить, выполнять; to ~ an experiment – проводить эксперимент; syn.: **to perform**
6) **circulate**, v – циркулировать
circulation, n – кровообращение (тж. blood ~)
7) **construct**, v – строить
construction, n – строение (тела)
8) **contribute** (to), v – способствовать, содействовать
contribution, n – вклад; to make a ~ (to) – делать вклад (в)
9) **define**, v – определять, давать определение
definition, n – определение
definite, adj – 1) определённый; 2) точный, ясный
10) **develop**, v – 1) развивать(ся); 2) разрабатывать
development, n – развитие, эволюция
developmental, adj – эволюционный
11) **differ** (from), v – различаться, отличаться (от)
difference, n – разница, различие
different, adj – различный, разный
12) **digest**, v – переваривать(ся) (о пище)
digestion, n – пищеварение
13) **discover**, v – открывать
discovery, n – открытие

14) **engage**, v – занимать, вовлекать; to be ~d (in) – заниматься
engagement, n – дело, занятие
15) **exist**, v – существовать, жить
existence, n – существование, жизнь
16) **field**, n – область, отрасль (науки); syn.: **branch**
17) **graduate** (from), v – окончить учебное заведение
graduate, n – выпускник; a post-~ course of study – аспирантура
graduation, n – окончание учебного заведения
18) **grow**, v (grew; grown) – 1) расти; 2) выращивать
growth, n – 1) рост; 2) выращивание
19) **investigate**, v – исследовать; syn.: **to research**
investigation, n – (научное) исследование; syn.: **research**
20) **know**, v (knew, known) – знать
knowledge, n – знания
21) **observe**, v – наблюдать
observation, n – наблюдение
22) **proper**, adj – 1) присущий, свойственный; 2) правильный, должный, надлежащий, подходящий
property, n – свойство, качество
23) **reproduce**, v – воспроизводить
reproduction, n – размножение
24) **resemble**, v – иметь сходство, походить
resemblance, n – сходство, подобие; syn-s: **likeness**, **similarity** (**similar** (to), adj – сходный, подобный)
25) **science**, n – наука
scientist, n – учёный
scientific, adj – научный
26) **sense**, v – 1) чувствовать, ощущать; 2) понимать
sense, n – 1) чувство, ощущение; 2) смысл
sensitive, adj – чувствительный, восприимчивый
sensitivity, n – 1) чувствительность; 2) способность реагировать на внешние раздражители
27) **solve**, v – решать; to ~ a problem – решать проблему
solution, n – решение *(*проблемы, вопроса и т. п.*)*
28) **specialize** (in), v – специализировать(ся) (в)

speciality, n – специальность
specialization, n – специализация
special, adj – специальный, особый

29**) species**, n (pl species) – *биол.* вид

30**) vary**, v – менять(ся), изменять(ся)
variation, n – изменение
variety, n – 1) разнообразие; 2) разновидность
various, adj – 1) различный, разный; 2) разнообразный

31**) value**, v – ценить
value, n – 1) ценность; to be of great ~ (to) – иметь большую ценность (для); 2) значение
valuable, adj – ценный

Texts

Biology

Biology is the science of life. The word "biology" comes from two Greek words: bio – "life" and logos – "discourse" or "study". Biology includes all the facts and principles which have been derived from a scientific study of living things.

Biology tells us about our body: how it is constructed and how it functions. It gives us important information about other living things and how their lives affect mankind. Knowledge of biology will help you to keep healthy. It will be your guide in solving many of everyday living and scientific problems.

People who are engaged in biology are called biologists. They study the secrets of living things: how they feed, breed and survive. A biologist's laboratory is a fascinating place. In it you may find powerful microscopes and other instruments. Biologists make great efforts to find out everything that is possible about living things by carrying out experiments. They always keep very complete and accurate records of their observations. Biologists' discoveries are of great value to all mankind.

Biologists have solved many mysteries of the body. They have discovered how blood circulates, how food is digested and many other secrets of life. They are now working in different fields of biology and their studies may lead to a solution of many problems.

Biologists have made a great contribution to science. They have increased our food supply; they have developed new and better varieties of plants and animals. Scientific methods of farming have given us much more food. Biologists control many diseases. They have saved millions of lives by discovering the causes of these diseases and methods of prevention and cure. Vaccines, penicillin and sulfa are products of the biological laboratory.

The special study of plants, Botany, and of animals, Zoology, are the two great subdivisions of the science of biology. Plants and animals are called organisms, and each different type of animal or plant is called a species, so biology may also be defined as the science of organisms.

There are millions of different plants and animals, some of which are invisible to the naked eye. They exist all over the Earth's surface, often in spite of very difficult conditions – from the icy Arctic and Antarctic to the dry, baking deserts near the Equator. They also live in the seas and oceans, from the shallow waters of warm tropical seas to the gloomy ocean depths.

Most people think that plants are not alive in the same sense that animals are, or that there is some fundamental difference between plant and animal life. But this is not so. Plants and animals have much in common. Their more important points of resemblance are: 1) The living substance of plants and animals is organized into protoplasm. Protoplasm is the basic material of all living systems and its general properties are fundamentally the same in each system both in plants and animals. 2) Both plants and animals consist of microscopic structural units called cells. 3) Certain vital processes take place in plant bodies in the same manner as in animal bodies. These processes are respiration, sensitivity, digestion, growth and reproduction. 4) Both animals and plants can not live without certain necessary conditions. All living things need water, oxygen, food, light and proper temperature.

Both plants and animals are of different shapes, sizes and colours. In fact, the differences are not so many as the likenesses although they are more apparent. Plants get all the energy they need to live from sunlight by the process of photosynthesis. Animals get the energy by eating plants, animals or other organisms. Most animals can move about, and they have senses, such as sight, hearing, touch, smell and taste, which plants lack.

Subdivisions of Biology

Biology may be divided in two ways, depending upon whether the emphasis is placed: 1) on the type of organisms or 2) on processes, structures, and functions. With the first system there are two principal divisions: botany, which deals with plants, and zoology, which deals with animals.

Botany may be subdivided as follows:

Bacteriology – study of bacteria.

Mycology – study of fungi.

Algology (sometimes called phycology) – study of algae.

Bryology – study of mosses.

Pteridology – study of ferns.

Zoology is similarly divided as follows:

Protozoology – study of single-celled animals.

Entomology – study of insects.

Ichthyology – study of fishes.

Herpetology – study of amphibians and reptiles.

Ornithology – study of birds.

Mammalogy – study of mammals.

Anthropology – study of man (with reference to physical rather than cultural characteristics).

As experimental science developed, another system of classification based upon finer aspects of structures, functions and processes came into use. In this system there are such subdivisions as the following:

Cytology – study of cells.

Histology – study of tissues.

Anatomy – study of internal structure as revealed by dissection.

Morphology – study of gross structure, the organism viewed as a whole.

Physiology – study of functions and processes.

Genetics – study of heredity and variation.

Pathology – study of aberrant conditions and diseases and their effects.

Evolution – study of origin and changes in species.

Paleontology – study of fossil organisms.

Taxonomy – classification of organisms.

Ecology – study of organism-environment interrelations.

Psychology (experimental psychology) – study of the animal mind.

Embryology – study of individual development.

Endocrinology – study of the endocrine gland system in animals.

Parasitology – study of parasitism.

In the process of development biology as an exact science has become more dependent on the other exact sciences for interpretation of its data and their significance. Biochemistry, a branch of chemistry, deals with the chemistry of living organisms and their products. Biophysics involves physics in studying the structure, development and functioning of living organisms. Biometrics is a special field of mathematics concerned with the analysis of biological data.

Exercises

I. 1. *Find in the text the English equivalents of the following:*

быть здоровым	иметь большую ценность
решать проблему	делать вклад
заниматься чем-либо	несмотря на
прилагать усилие	иметь много общего
проводить эксперимент	как…так…

2. *Make up 10 sentences with these word-combinations.*

II. 1. Read and translate the text:

My Biological Faculty

I am a student of the biological faculty. Our faculty is one of the largest faculties of the University. We study different subjects: botany, anatomy, microbiology and many others. Besides these subjects we study political economy, philosophy and English. We study English to be able to read scientific books on biology.

There are many departments in our faculty: of botany, of zoology, of microbiology, of physiology of man and animals, of physiology of plants, of genetics, of soil science, of conservation of nature, of bionics, etc. Besides there are research laboratories and museums. Every student has an opportunity to work in modern, well-equipped laboratories, where different problems of biology are under investigation.

Students are acquainted with all branches of biology. We are lectured in various subjects of natural science, namely botany, zoology, anatomy, microbiology, biophysics, biochemistry, soil science, bionics, genetics.

During the first two years we attend lectures on mathematics, physics, chemistry, political subjects and foreign languages. In the third year more narrow specialization begins. We have several specialized courses and additional practical and research work in the subject we have chosen as our future speciality. Besides attending lectures we may join some scientific circle and choose a problem to work on according to our bents. All of us know that biology is the science of glorious past and great future. We do our best to acquire as much knowledge as possible.

Graduates of the biological faculty can work at laboratories, schools, research institutes. Those who have a bent for research work may apply for a post-graduate course of study.

2. *In 5 sentences answer the question: "What department will you choose? Why?". Start with the words: "As for me ..."/*

III. *Translate the text into Russian:*

Biology gives us an acquaintance with the world of living things and an understanding of some of the great fundamental laws and processes of nature. There are many special fields of knowledge and many principles to which elementary training in general biology is essential.

These include medicine, physiology, agriculture, horticulture, forestry, sanitation, hygiene and many others. Because man is an organism subject to the same laws which govern all living things and is built according to the same plan as other higher animals, an elementary knowledge of biology gives us a basis for an understanding of our own body.

IV. *Translate the following text into English using the active vocabulary:*

Биология — наука о живых организмах. Она изучает тайны живой природы: как устроены живые организмы, как они функционируют. Результаты исследований биологов имеют большое значение для развития многих отраслей науки. Исследования биологов помогают решить многие проблемы современной науки. Они помогают понять взаимосвязь (relationship) между всеми организмами и окружающей средой (environment). Определение сущности жизни (essence of life) – одна из основных задач общей биологии.

V. *Translate the text into Russian; say what new information about plants and animals you have got from it:*

Biology is the study of living things. In studying them we learn the relations of plants and animals to one another, with the world about them and how we can control them. Biology is commonly divided into two branches — botany and zoology. Both animal and plant life is continually changing and there are great differences and likenesses between them.

In external appearance, plants are usually green. Some plants have varied and colourful flowers and others have no apparent blossoms. Among animals there is great variety of sizes, shapes and colours. The basic difference between plants and animals lies in the

unit of structure and function of each, namely, the cell. Plant cells have a cell wall which is actually non-living in chemical nature. Animal cells do not have this.

All organisms are capable of responding to changes in the environment by reacting to external stimuli.

In animals this response to stimuli is accomplished by sense organs, the endocrine and nervous systems.

Plants lack the nervous system and specific sense organs, but they respond to external stimuli in somewhat analogous to that regulated by the endocrine system of animals.

Both plants and animals have hormones. Thus substances are produced in one part of the organism and in very small amounts, influence specific physiological processes when transported to another part of the organism. Plant hormones, however, are not produced in specific glands as animal hormones are, and they differ chemically from the hormones of animals, being in general simpler substances. Other substances which act like hormones are called plant regulators. The study of plant hormones and these synthetic substances is one of active fields of plant physiological research and their use in agriculture has become very important.

VI. *Translate the following text into English:*

Биология изучает жизненные процессы как у животных, так и у растений. Эти два больших подразделения в биологии называются ботаникой и зоологией. Как растения, так и животные должны иметь определенные условия для существования. Как животные, так и растения не могут жить без воздуха, воды, пищи и света. Одинаковые жизненные процессы имеют место как у животных, так и у растений. Эти процессы называются дыханием, пищеварением, ростом и размножением.

Очень важный принцип живых организмов – это способность реагировать на внешние раздражения. Животные реагируют на внешние раздражения через нервную систему и органы чувств. Растения также приспосабливаются к окружающей среде и реагируют на внешние воздействия. Однако механизм ответной реакции на раздражения у растений сильно отличается от животных.

VII. *Answer the following questions based on the text "Biology":*

1. What is biology? Define it.
2. What does the word "biology" mean?
3. How are people engaged in biology called?
4. What do biologists study?
5. Why is biology of great value to mankind?
6. What are the two great subdivisions of biology?
7. How is each type of animal or plant called?
8. Where do living things exist?
9. Are plants and animals similar in their fundamental composition?
10. What are the differences and likenesses of plants and animals?
11. How do plants and animals depend on one another?

VIII. *Compose short dialogues for the following imaginary situations:*

1. Your friend studies at the faculty of chemistry. He urges you to transfer to this faculty. Reject his proposal and tell him that biology is your dream.

2. Next year you graduate. Tell your friend what you would like to do in the new year. Recollect how interesting it was to study at the University. Say you will do everything depending on you to make your work as interesting.

3. You are the Dean of the biological faculty. Tomorrow you are to speak to the first-year students. What would you tell them? What would you wish your future students?

4. Students of various faculties meet at a tourist camp. Everybody speaks about the importance of the science he studies. Prove that biology is the most vital of all the sciences.

5. You are to write a report about the work of the biologists of your faculty. You have written a little. Ring your friends up, tell them what you have already written and ask them what can be added.

6. You are discussing professional interests with your friends. Tell your friends about your future speciality and ask them about their choice of the subject they will specialize in.

7. The boy next door is in the fifth form. He states that he studies botany but not biology. Explain his mistake to him.

8. One of your friends believes that only animals are living organisms, another one thinks that both animals and plants are alive with no difference whatsoever. Are they right? Why? Discuss the ways in which living things differ from lifeless objects.

9. Your friend alleges that there is no life on the bottom of deep seas. Prove that life exists nearly everywhere on earth. What evidence can you give to prove this?

10. You are working at a biological laboratory. Suddenly the door opens and a man comes in. "It's a biological laboratory, isn't it?", he asks. Tell him about your laboratory and its peculiarities.

LESSON II
ANIMALS AND PLANTS

Active Vocabulary

1) **apply**, v – 1) обращаться (for – за работой, помощью, справкой и т. п.; to – к кому-л.); 2) применять, употреблять; to ~ knowledge to practice – применять знания на практике; 3) касаться, относиться (to)
application, n – 1) заявление, заявка; 2) применение
applicant, n – претендент, кандидат
applicable (to), adj – применимый, пригодный, подходящий

2) **appear**, v – появляться; ant.: to disappear
appearance, n – 1) появление; 2) (внешний) вид, наружность

3) **belong** (to), v – 1) принадлежать; 2) относиться (к); 3) быть связанным (с)

4) **care**, n – 1) забота; to take ~ (of) – заботиться; (о) 2) внимание, тщательность; 3) осторожность
careful, adj – 1) заботливый; 2) внимательный, старательный, тщательный; 3) точный, аккуратный; 4) осторожный

careless, adj – 1) беззаботный; 2) легкомысленный; 3) небрежный; 4) неосторожный

5) **cause**, v – быть причиной, причинять, вызывать
cause, n – причина

6) **change**, v – менять(ся), изменять(ся)
change, n – перемена, изменение
changeability, n – изменчивость, непостоянство
changeable, adj – изменчивый, непостоянный

7) **classify**, v – классифицировать
classification, n – классификация
class, n – биол. класс

8) **compare**, v – сравнивать
comparison, n – сравнение
comparative, adj – сравнительный

9) **consist**, v – 1) состоять (of – из); 2) заключаться (in – в)

10) **depend** (on), v – зависеть (от)
dependence, n – зависимость; ant.: independence
dependent, adj – зависимый

11) **describe**, v – описывать
description, n – описание

12) **divide** (into), v – делить(ся), разделять(ся) (на)
division, n – 1) деление, разделение; 2) раздел, часть, отдел

13) **estimate**, v – 1) оценивать; 2) насчитывать, подсчитывать
estimate, n – 1) оценка; 2) смета
estimation, n – 1) суждение, мнение, оценка; 2) подсчёт

14) **found**, v – 1) основывать, учреждать, создавать; 2) обосновывать; 3) основываться (on – на; о доводах и т. п.)
foundation, n – 1) основание, основа; 2) обоснованность; 3) организация, учреждение
founder, n – основатель, учредитель

15) **include**, v – содержать в себе, включать; ant.: to exclude (from)
inclusion, n – включение

16) **number**, v – 1) нумеровать; 2) числиться, быть в числе (among, in)
number, n – 1) число, количество; 2) номер; 3) мат. сумма, число, цифра
numberless, adj – бесчисленный, неисчислимый

17) **power**, n – 1) сила, мощность, энергия; 2) могущество, власть; 3) способность, возможность
powerful, adj – 1) сильный, мощный; 2) могущественный; 3) сильнодействующий
powerless, adj – бессильный, слабый

18) **provide**, v – 1) снабжать, обеспечивать; 2) заготовлять, запасать(ся); 3) доставлять, давать
provision, n – 1) снабжение, обеспечение; 2) заготовление, заготовка; 3) pl провизия, запасы провианта

19) **struggle**, v – бороться (for – за; against – с, против)
struggle, n – борьба; the ~ for existence (life) – борьба за существование (жизнь)

20) **young**, adj – 1) молодой, юный; 2) младший
young (the ~), n – pl собир. 1) молодёжь; 2) потомство, детёныши (sg cub – детёныш)

Texts

The Beginning of Life

Almost three-quarters of your body is water. In your blood scientists have found all the chemicals and minerals that make up sea water. Why? Many scientists think that all life began in the waters of the sea.

For two billion years the Earth had no living thing on it. Then, sunlight acted upon certain chemicals in the warm mud on the sea-floor near the land. Lifeless chemicals joined together. They formed a new kind of molecule, or particle. These molecules had new powers: they could grow by taking food. And they could reproduce. Life **had begun!**

The first bits of living matter were tiny pieces of protoplasm. Protoplasm was in the form of tiny shapeless spots. After a long time those tiny spots of protoplasm began to change. One type began to make food by using the energy of the sun. This type developed into the first plants. Others lived by eating plants or other organisms. These were the first animals.

These shapeless bits of living matter, or as we call it protoplasm, changed their form very many times. At last, maybe 50 million years ago, after real life had begun, a new form of protoplasm appeared. In the new form, only one part of the protoplasm did the work of getting food. Another part, the nucleus, divided the protoplasm into two. In this way a new being was formed. This was a cell. With the first cell, modern life appeared, because all plants and animals are made up of cells – from single-celled animals to man.

The sea gave birth to living matter. It also played a part in bringing many of the great changes in the forms of life. And the sea has left us the story of later changes, written in stones. Scientists know the earliest forms of life, because they study the simple forms of sea life today.

The sea had risen and fallen for billions of years before the first, one-celled beings appeared. Scientists call those first single-celled beings protozoa. After this great event, another long period went by. Very many soft-bodied animals appeared in the sea; they tried to eat each other. Little by little, in the terrible **struggle for life** some of the soft-bodied animals developed hard shells.

For 75 million years, numberless hard-shelled animals lived in warm seas. Then came one of the greatest changes in the level of the ocean. Waters fell back from the land, leaving great, dry beds of sea-floor, which became rock. Scientists find shells of dead sea creatures between rock layers even today.

Later, a new kind of sea creature appeared. It was the fish. It could swim. It had a bony framework inside its body.

Again the sea changed its level, leaving lakes and marshes behind. Life in the marshes had to change, or die out. Sea plants changed and some began to live in the open air.

A few fish learned to get oxygen from the air, and not from the water. They grew feet and not fins. They could live on dry land and returned to the sea only to lay eggs and to raise their young. They were the first *amphibians.* The amphibians continued to live on the edge of water. But when they grew up they stayed on the land.

Then the sea began again very slowly to cover the edge of the land. Some amphibians returned to the sea. Others learned to lay eggs and raise their young on dry land. They were a new form of life. They were all *reptiles*, from tiny lizard to dinosaur.

Strange animals of a new kind appeared in the marshes. They carried their young in their bodies and fed them with milk from their own bodies. Their bodies stayed at about the same temperature in cold or warm weather. They were the first *mammals*.

From these earliest beginnings have come all the living plants and animals on land and sea: birds, insects, free-swimming fish and mammals. They all have developed from the first tiny bits of matter that could eat, grow and reproduce. All trees, grasses, vegetables and flowers, and all sea plants have developed from the first green cell that could get energy from sunlight and sea water.

Classification of Animals and Plants

No one knows how many different kinds of plants and animals there are. Some scientists estimate the number at three million. Many of them provide us with food, clothing, shelter and medicines. Some, including several kinds of insects, pierce our skin and feed on the blood. Others, both plants and animals, even live and grow inside our bodies. In this way they may cause a disease. You can see why scientists study living things with great care. Our lives may depend on how much we have learned about the living things around us.

Because there are so many different kinds of plants and animals, the task of the biologists is not an easy one. Up to the present time it was named and described more than 840,000 kinds of animals and 345,000 kinds of plants. To keep track of this great number of living things a system of classification has been set up.

Plants and animals are sorted into groups according to the way they are built. For example, the tiger, the leopard, and the lion will be

all grouped together. All of them belong to the cat family. All the members of the cat family, in turn, belong to a larger group that includes such meat-eating animals as the dog, the bear. They have teeth that are built for tearing and cutting flesh. Their sharp claws help them to capture and eat their prey. In this way, all plants and animals were classified by their structure.

All living things were divided into 5 kingdoms: Animals, Plants, Fungi, Bacteria and Protista.

The animal kingdom includes many thousands of different animals. Scientists classify them further as follows:

Invertebrates (animals without backbones) are:

1. One-celled animals
2. Sponges
3. Cup animals (jelly-fishes and corals)
4. Spiny-skinned animals (star-fishes and their relatives)
5. Worms (roundworms, flatworms and segmented worms)
6. Mollusks (oysters and snails)
7. Jointed-legged animals (insects, arachnids, myriapods and crustaceans)

Vertebrates (animals with backbones) are:

1. Fishes
2. Amphibians (frogs, toads and salamanders)
3. Reptiles (snakes, lizards and turtles)
4. Birds
5. Mammals

The plant kingdom includes cryptogamic plants and phanerogamic plants. Cryptogamic plants produce spores; mosses, liverworts, horsetails, club mosses and ferns belong to cryptogamic plants. Phanerogamic plants produce seeds and are divided into gymnosperms, which bear cones, and angiosperms, which bear flowers. Angiosperms, in turn, fall into two subgroups: monocotyledons and dicotyledons.

Some plants have no roots, stems or leaves. Some of them consist of only one cell and can be seen only with a powerful microscope. Others, like the great redwood and sequoia trees of the Pacific coast, are the oldest and the largest living things on earth.

Fungi have no green chlorophyll. They get their food by breaking down other organisms and absorbing the results.

Bacteria are one-celled organisms without a nucleus. This kingdom also includes blue-green algae.

One-celled living things with a nucleus are called **Protista**. They are protozoa and filamentous algae.

Among the smallest and simplest living things there are some that are difficult to classify. There are tiny plant-like cells that can swim about actively in the water. In some cases, the classification of these is still in doubt.

Exercises

I. *Answer the following questions based on the text "The Beginning of Life":*

1. Why do scientists think that life began in the sea?
2. How many years had the Earth no living thing on it?
3. How did life begin?
4. What powers had the first molecules?
5. What were the first bits of living matter?
6. What types did they develop into?
7. In what way was a cell formed?
8. Why did modern life appear with the first cell?
9. Why do scientists know the earliest forms of life?
10. How are the first single-celled beings called?
11. Why did some soft-bodied animals develop hard shells?
12. What was the difference of fish from other sea creatures?
13. How were amphibians formed?
14. How did reptiles appear?
15. Why were mammals called strange animals?

II. 1. *Find in the text the English equivalents of the following:*

заботиться о	прослеживать
обеспечивать кого-л. чем-л.	классифицировать по
питаться	делить на

вызывать болезнь	сомневаться в
зависеть от	состоять из

2. *Make up 10 sentences with these word-combinations.*

III. *Form nouns from the following verbs and translate them into Russian:*

to construct, to engage, to include, to develop, to specialize, to resemble, to digest, to provide, to discover, to contribute, to divide, to investigate, to know, to depend, to vary, to acquaint, to define, to sense, to estimate, to differ, to solve, to describe, to grow, to classify, to reproduce.

IV. *Translate the following text into English using the active vocabulary:*

Учёные утверждают, что существует более миллиона различных видов растений и животных. Растения и животные сильно отличаются друг от друга по размерам, виду, окраске и т.д. Эти различия хорошо видны (to be well seen), если сравнивать растения, травы, деревья, цветы или различных насекомых, птиц, рыб, людей. Несмотря на все различия, живые организмы имеют много общего. Как растения, так и животные зависят друг от друга в поддержании (maintenance) жизненных функций.

V. *Read the text "Classification of Living Things" and say what you have known about Linnaean system of classification:*

Taxonomy, derived from the Greek words for "rank" and "law", is the orderly classification of living things. The categories are called taxa, and the biologists who determine them are called taxonomists. The categories used in classifying living organisms are as follows: Kingdom, Phylum, Class, Order, Genus, and Species. Organisms are slotted into these taxa based on structural similarities and differences. The Greek philosopher Aristotle began classifying plants into major groups such as trees, shrubs, and herbs. But the organization that is still followed today was devised by the 18th century Swedish naturalist **Carolus Linnaeus**.

Species is the final unit of the Linnaean classification system which builds a hierarchy whose largest category is a domain. The domain Eukaryota includes all life forms whose cells include nuclei inside membranes, which means all higher life forms.

Traditionally, species have been classified according to their phylogeny – their relationship through a common evolutionary ancestor. It can be difficult even for experts to determine scientifically how the branches of an ancestral family tree evolved. The study of how and through what criteria classifications should be determined is called systematics.

Here is the taxonomic classification of a bald eagle:

Domain: Eukaryota
Kingdom: Animalia
Phylum: Chordata
Class: Aves
Order: Falconiformes
Family: Accipitridae
Genus: Haliaeetus
Species: H.leucocephalus

Recent advances in technology, especially in the field of microbiology with its focus on the tiny, and genetic science with its advances in DNA sequencing techniques, have led to the discovery of many unknown branches of the tree of life, even major branches where entire previously unknown phyla have been discovered.

Advances in classification in the 1980s led biologists to rearrange the basic view of the roots of the tree of life from five kingdoms into three domains: Archaea, Bacteria, and Eukaryota. Archaea and Bacteria are both single-celled organisms that lack cell nuclei. Until recently they were lumped together as "prokaryotes". Improved understanding of Archaeans' biochemistry and genetics made scientists realize that they were a completely different group.

VI. Translate *the text "The History of the Science of Taxonomy" into English:*

Современная наука таксономия была признана отдельной областью биологии более 200 лет назад. Основателем

таксономии, или учении о классификации живых организмов, был Карл Линней (Carolus Linnaeus 1707–78).

В 1732 г. шведский учёный Карл Линней предпринял научную экспедицию в Западную Европу и Англию, где он собрал и изучил различные виды растений и животных. Результатом его исследований стала новая система классификации растений и животных, которую он опубликовал в своей книге «Система природы» 3 года спустя в 1735 г. В этой книге Линней впервые применил бинарную номенклатуру.

Согласно системе классификации Линнея каждому растению и животному было дано двойное латинское название: первое слово обозначало класс, к которому растение или животное принадлежало, второе слово обозначало его вид. В своей системе Линней основывался на морфологические характеристики и рассматривал вид как нечто постоянное и неизменное. Однако теория эволюции Ч. Дарвина опровергла эту идею.

Метод классификации Линнея был инновационным для того времени и стал основой для развития современной системы классификации живых существ. Карл Линней создал международный язык для обозначения биологических видов, он описал и классифицировал около 1500 видов растений и дал название человеческому виду – homo sapiens, которое сохранилось до сих пор.

VII. *Compose short dialogues for the following imaginary situations:*

1. Your friend doesn't believe in evolution. With the help of a time-machine you have managed to take him to the primitive age (several million years back). You see only amphibians and primitive scorpions around. Trace the development of life on the Earth.

2. Your friend's grandmother is religious. She believes man was created by God. Try to make her change her mind. Speak about this problem from a scientific point of view.

3. You are going to be a guide for a group of schoolchildren who have come to visit your faculty. Tell them about the biological museum and what they will see there.

4. Address your teacher with a request to tell about the study of the dolphins in our country and abroad. Ask him what branches of science treat this problem and discuss it all together.

5. Your family has just moved to a new flat. Your mother has placed flowerpots on the cupboard and wardrobe. Ask her to put them on the window-sill and explain why they should be there.

6. Your friend says that our lives depend on how much we have learned about living things around us. What is your opinion? Discuss why it is important to study living things with great care and how men use plants and animals.

7. You are to prepare for an exam in general biology. Now you are learning the system of classification of living organisms, but you have missed this lecture because of being ill. Ask your friend to help you.

8. You are a first-year student of the biological faculty. Today in the botanical laboratory you have seen a portrait of Carl Linnaeus. Ask your friend, a third-year student, to tell you about Linnaeus's contribution to the science of biology.

9. You saw a picture of a tiger with a sign "Panthera Tigris". Ask your friend to explain what it means.

10. The teacher points to the tree and asks what it is. One student says that it is a common birch, the other – that it is Betula verrucosa. Each insists that he is right. How will you settle their argument?

LESSON III
THE SEA LIFE

Active Vocabulary

1) **arm**, n – 1) рука (от кисти до плеча); 2) передняя лапа (животного); зд.: щупальца

2) **attach**, v – прикреплять; to be ~ed (to) – прикрепляться (к)

3) **bottom**, n – дно (моря, реки и т.п.); syn-s: **sea-floor**, **sea-bed**; **bottom**, adj – донный, обитающий на дне

4) **catch** (caught, caught), v – ловить, поймать, схватывать
catch, n – 1) поимка, захват; 2) улов, добыча
5) **chain**, v – скреплять цепью
chain, n – цепь; food ~ – пищевая цепь
6) **contain**, v – содержать в себе, вмещать
container, n – сосуд, контейнер, резервуар
7) **create**, v – творить, создавать
creation, n – творение, создание
creative, adj – творческий
creator, n – творец, создатель, автор
creature, n – создание, живое существо; syn.: **living being**
8) **danger**, n – опасность
dangerous, adj – опасный
9) **defend**, v – оборонять(ся), защищать(ся); to ~ oneself (from) – защищать себя (от)
defence, n – оборона, защита
defensive, adj – оборонительный
10) **dive**, v – 1) нырять, бросаться в воду; 2) бросаться вниз
dive, n – 1) ныряние, прыжок в воду; 2) прыжок вниз
11) **enemy**, n – враг, неприятель, противник
enemy, adj – враждебный, вражеский, неприятельский
12) **get** (got, got), v – получать, доставать, добывать; to ~ food – добывать пищу
13) **hide** (hid, hidden), v – прятать(ся), скрывать(ся)
hide, n – укрытие
14) **inhabit**, v – жить, обитать, населять
(**in**)**habitation**, n – 1) проживание; 2) жилище, местожительство
(**in**)**habitant**, n – житель, обитатель
(**in**)**habitable**, adj – 1) обитаемый; 2) годный для жилья;
habitat, n – место распространения (животного, растения), естественная среда обитания
15) **invent**, v – изобретать
invention, n – изобретение
inventor, n – изобретатель
16) **level**, v – выравнивать

level, n – уровень; sea ~ – уровень моря

17) **poison**, v – отравлять

poison, n – яд

poisonous, adj – ядовитый

18) **produce**, v – производить, вырабатывать, создавать

production, n – производство, изготовление

productive, adj – 1) производительный, продуктивный; 2) плодородный; 3) плодовитый

19) **protect**, v – защищать (from – от, against – против)

protection, n – защита

protective, adj – защитный; ~ colouration – защитная окраска

20) **pump**, v – качать; to ~ in – накачивать, to ~ out – выкачивать

pump, n – насос

21) **reach**, v – достигать, доходить, доезжать до

reach, n – досягаемость; within ~ (of) – в пределах досягаемости, out of ~ (of) – вне досягаемости

22) **save**, v – 1) спасать; 2) беречь, экономить

safe, adj – невредимый, сохранный, в безопасности

safety, n – безопасность, сохранность

23) **send** (sent, sent), v – посылать, отправлять; to ~ up – поднимать, выпускать

24) **shallow**, v – мелеть

shallow, adj – мелкий; ~ bottom – отмель, мелководье, мель

25) **shell**, n – раковина, панцирь

shelled, adj – покрытый раковиной, панцирем

26) **suck**, v – сосать; to ~ in – всасывать

suction, n – сосание, всасывание, присасывание

suctorial, adj – сосущий, приспособленный для сосания

27) **surface**, n – поверхность

surface, adj – поверхностный, обитающий на поверхности

28) **survive**, v – остаться в живых, выжить, уцелеть; syn.: **to stay alive**

29) **survival**, n – выживание
tiny, adj – очень маленький, крошечный
30) **way**, n – 1) путь, дорога; 2) способ, манера, образ действия

Texts

The Endless Chain of Food

When new forms of life developed, the earlier forms did not disappear. The sea today contains very many single-celled beings. Masses of tiny plants still make food from sunlight and sea water.

Many plants float near the surface, carried by the movements of the sea. The masses of plants attract millions of animals almost as small as they are themselves. Small, helpless animals need food. They are not only single-celled protozoa but also young lobsters and deep-sea fishes.

The plants and tiny animals make up colonies which scientists call plankton. Millions of tiny fish in this wandering mass eat the plants of the plankton. Baby fish that swim along with the plankton eat the tiny plants until they are strong and can swim fast.

In their growing time in spring and autumn plankton are so numerous that the sea becomes green, yellow and brown. At night some seas are lightened from the glow of a bluish light, thrown off by many plankton creatures. The surface of some cold waters is covered with these moving masses, which make food for the larger creatures of the sea.

The largest masses of plankton are found near the west coasts of North and South America and near the coasts of Newfoundland, of Portugal and Japan. Here, especially in springtime, come free-swimming fish of the upper levels of the ocean. They eat millions of tiny animals, living in the colony of plankton. Some of the fish also eat each other.

Most animals of the sea live on fish or smaller animals. But the plant life of the plankton is the first and most important link in the endless chain of food.

Different Ways of Getting Food

Many living creatures that stay in the bottom of the sea have soft bodies (such as sea anemones); others have strong shells (such as the dog whelk). Most bottom creatures are brightly coloured and have strange forms. Some have waving "arms". Others have tubes like tree branches, with which they can suck water into their soft bodies. Many inhabitants of the shallow bottoms are attached to rocks, or to the backs of other animals. And, of course, all of them have different ways of getting food.

Many get their food by pumping sea water in and out of their bodies. Others get their food from green plants growing on undersea rocks. There are sea creatures that catch and eat tiny fish.

Some sea creatures gather in colonies and are sometimes an inch high. They feed on minerals in the water.

Other sea creatures, like sea anemones, often ride on the backs of crabs and kill fish with their poisonous stinging threads.

Sea fish do not wait for food to come to them but travel a long way to find something to eat.

There are bottom creatures (the barnacle, for example) that catch tiny bits of food with the help of the long hairy bristles on their legs.

The sea-urchin’s body is round. This sea creature is omnivorous and feeds mainly on algae. But its strong teeth help the sea-urchin to crush tiny shells.

And so, the shallow bottom of the warm waters is full of life. Soft-bodied creatures live here, attached to one place all their lives. The red-bearded sponge opens a hundred hungry mouths, sucking in the sea water from which it gets its food.

Just below is a rock covered with green plants. Beyond are starfish with bright colours. The sea anemones look like flowers. They live on the sea-floor and a sea-urchin nestles below them.

While phosphorescent fish get food on the surface, the powerful eagle ray dives to the sea-floor to get its food. Its rays are huge. The

powerful eagle ray uses them for propelling itself in its quick dive. When the eagle ray reaches the sea bottom, it sends up clouds of sand.

The Struggle to Stay Alive

The creatures of the sea spend much time eating or trying to stay alive and not to be eaten by other sea creatures. It is not easy to survive in such a place as the sea-bed. Almost all sea creatures are meat-eaters, except the very smallest animals.

Now you can well understand that sea creatures have "invented" and developed many interesting ways of defending themselves from their enemies. First of all, the size of the creature plays a role in its struggle to stay alive. But it is not always the main thing. Sometimes a small free-swimming fish can swim away from a large creature. Some fish have developed great speed in swimming: from 25 to 50 miles an hour.

The octopus is afraid of many other sea creatures and it tries to swim away from them when it is in the open sea. It is interesting to know that the octopus has a thick cloak on. When an octopus is in the open sea, it always has its cloak on. But when the octopus comes down to the sea-bed, it folds away its cloak and stretches out its long arms. With the help of the arms the octopus catches blue crabs.

The animals of the plankton masses and the slow soft-bodied creatures of the shallow bottoms cannot save themselves by swimming away from attack. So they defend themselves in other different ways.

Many of the bottom creatures have hard shells which they "shut" when danger is coming. Others send up clouds of sand or streams of water. With the help of a cloud of sand or a stream of water they can hide themselves from the enemy.

A few creatures of the sea have unusual ways of defending themselves. Some of these animals are able to produce smoke screens, and they hide themselves behind such smoke screens. The sea-hare is a mollusk, named for its long antennae which look like rabbit's ears. The sea-hare struggles against its enemies by sending up a stream of dark, ink-coloured substance.

Some sea animals have sharp spines looking like needles. Others spend most of their lives, hiding in the sand or in a cave. But the best way to survive is to change one's shape and colour.

Very many sea creatures take on the shape or colour of the things that are near them, i.e. of the things surrounding them. The narrow pipe-fish, for example, hides from the enemy by standing upright among sea grass. It is very difficult to see the fish in the grass.

Protective colouration helps sea creatures in their struggle against their enemies at every level of sea life. Some bottom animals have shells the colour of sand and it is difficult to see their shells in sand. At the surface, where there is much sun, most fish are blue, green or violet on their backs and silver-coloured underneath. Most sea animals that live a thousand feet deep, where the light is grey, are silvery grey. In the deep sea, where no light reaches, the fish are brown, or black, or bright red (which looks the same as black when everything around is dark).

Exercises

I. *Answer the following questions based on the texts "The Endless Chain of Food" and "Different Ways of Getting Food":*

1. What kind of numerous beings does the sea contain today?
2. What is their method of making food?
3. Why do masses of tiny plants attract millions of small animals?
4. What are these small animals?
5. What do scientists call plankton?
6. What is the function of plankton?
7. Why does the sea become green, yellow and brown in spring and autumn?
8. Where are the largest masses of plankton found?
9. What is the first and most important link in the endless chain of food?
10. What places do living creatures inhabit in the sea?
11. What ways of getting food do different sea creatures have?

II. *Make up 10 questions to the text "The Struggle to Stay Alive".*

III. *Translate the following text into English using the active vocabulary:*

Существует более 85 000 видов живых организмов в море. Некоторые из них – мягкие существа с желеобразными телами, у других – твёрдые раковины. В открытом море плавает множество рыб с внутренним костным скелетом и плавниками. Также можно увидеть различных млекопитающих, таких как дельфинов и т. д.

Учёные думают, что отмель была местом зарождения жизни на земле. Сегодня ил, песок и подводные камни этого тёплого морского дна содержат больше живых организмов, чем другие части моря.

IV. *Read and translate the text "Oceans and Corals" and be ready to give the main points of it:*

Oceans cover more than 70 percent of the planet and contain at least as many species as live on land. Marine biologists divide ocean species into three groups: plankton, which are floating, weak swimmers; nekton, which are stronger swimmers such as fish; and benthos, or bottom feeders. Plankton includes both photosynthesizers called phytoplankton and microscopic animals called zooplankton. Phytoplankton makes up the base of the marine food chain.

Limiting factors for life in the oceans include sunlight, dissolved oxygen, and availability of nutrients. Because of this, most sea creatures live within 30 feet (9 m) of the water's surface. When water is cloudy, sunlight cannot penetrate very far, which means less photosynthesis can take place.

Humans have had a large impact on ocean life. For instance, modern fishing techniques are extremely destructive. Populations of many species of fish have declined precipitously because of overfishing. Some fishing techniques destroy habitat on the bottom of the ocean, where corals, seaweeds, and bottom feeders live.

Marine ecosystems along coasts, where seawater comes together with fresh water from rivers and other runoff, are often very productive and full of life. One such ecosystem, the sea grass

meadow, is an important part of many coastal water zones. **Sea grass** serves as a nursery for minnows and mollusks, which in turn provide food for others farther up the food chain, including bigger fish, crabs, and birds. Sea grass meadows, with their strong roots help protect coastlines and prevent erosion. They serve to store carbon, and they make coastal marine environments healthier by filtering and cycling nutrients. Sea grass can be damaged by runoff from sewers and fertilizer, as well as by boat propellers.

Some parts of the ocean have very high biological diversity concentrated in a small area. These places include **coral reefs** and **kelp forests**, sometimes called rain forests of the ocean, because they concentrate biodiversity and are also fragile and vulnerable to destruction. Coral reefs are made by colonies of small soft creatures called polyps, which secrete a calcium carbonate (limestone) house. The brilliant colours of most shallow-water polyps generally come from microscopic algae that live in their tissues. A coral reef has so many niches and crevices that it is a favourite habitat for a great number of fish, anemones, starfish, and crustaceans.

In addition to supporting biodiversity and being a nursery for many ocean fish and other creatures, coral reefs protect about 15 percent of the world's coastlines from erosion. This is particularly important for many island nations that would not exist without their protective barriers.

Coral reefs are very fragile because they grow slowly and can be sensitive to changing conditions. The familiar shallow reefs are threatened by warming seas, as well as destructive fishing and tourism practices. Deep-water reefs, which appear to be as brilliant and diverse as their shallow-water cousins yet are only just being explored, are often destroyed by fishing trawlers.

IV. *Translate the text "Corals and Coral-Reefs" into English:*

Кораллы обитают на мелководных участках тёплых тропических морей вокруг экватора. Они прикрепляются к подводным скалам и образуют твёрдые структуры, похожие на деревья, – коралловые рифы.

Коралловые рифы состоят из множества скелетов кораллов, крошечных беспозвоночных существ. Кораллы принадлежат к кишечнополостным животным и являются полипами, как и актинии.

Когда кораллы умирают, их скелеты формируют коралловые рифы различных цветов и форм. Постепенно они превращают дно моря в фантастический тропический сад, который населяют самые красивые живые существа на земле.

Наиболее интересные коралловые рифы – атоллы, коралловые острова. Атоллы имеют форму сплошного или разорванного кольца и возвышаются над поверхностью воды в тропических широтах Тихого и Индийского океанов. Основанием для атолла обычно является вершина подводного вулкана.

В центре атолла может образоваться мелководная лагуна с тёплой чистой водой. Дно лагуны кишит морскими звёздами, морскими ежами и другими разнообразными существами. А колонии кораллов продолжают расти на атолле год за годом.

SUPPLEMENTARY READING
SPECIES IN VIEW

Hedgehog

Name Hedgehog
Class Mammal
Order Insectivora
Family Erinaceidae
Terms Male – boar; female – sow; young – piglet, hoglet or pup; home – nest

Distribution: Hedgehogs may be found around Africa and Eurasia

Habitat: They live in hedgerows, grasslands and gardens.

Size: They grow to around 25 cm in length from head to tail.

Weight: Up to 2 kg

Description: Hedgehogs are usually brown and yellow in colour. Their bodies are round and bulky, with a short tail at the back. They are covered in spines, apart from their face and underside.

Lifespan
In the wild: 3–4 years.
In captivity: Up to 8 years. 1 human year is said to be equivalent to 10 hedgehog years.

When most commonly seen: Hedgehogs are nocturnal animals. They are seen between April and October and hibernate for the rest of the year.

Diet: They eat around 200 g of food each night, including slugs, snails, caterpillars and other insects.

Reproduction: Hedgehogs reach sexual maturity in their second year after birth. The ideal time for breeding is between May and June. Hedgehogs generally have two litters per year of between 4 and 6 young. The gestation period tends to last 4 weeks.

Swan

Name	Mute swan (Cygnus olor)
Class	Aves
Order	Anseriformes
Family	Anatidae
Terms	Male – cob; female – pen; young – cygnet

Distribution: Swans are found throughout Britain and Europe; they also live in some parts of Australasia, Asia, South Africa and North America.

Habitat: Swans inhabit a variety of waters, including lakes, reservoirs, canals, rivers, ponds and sheltered coasts.

Size: Swans grow to about 140–160 cm in length and have a wingspan of 220–240 cm.

Weight: Females tend to be slightly lighter than males, but swans can weigh up to 20 kg.

Description: The mute swan is the largest of Britain's birds. They have white feathers, with long, slender necks. They have an orange bill with black parts underneath and around the nostrils. The area between the bill and the eyes is featherless and forms a black lump called a 'cere' which is commonly larger on males. Cygnets are a light grey colour, with grey bills.

Lifespan
In the wild: Usually 5–15 years.
In captivity: Can live up to 50 years.

When most commonly seen: Swans are seen all the year round.

Diet: Mute swans are mainly vegetarian, eating aquatic plants, grain and grasses. However, they do occasionally eat insects and small fish.

Reproduction: Swans become sexually mature after 3 or 4 years. It is commonly believed that swans pair up for life. However, this is not necessarily true. Mute swans mate during March and April. Both the male and female build the nests, which are situated close to the water and are often used year after year. A typical brood consists of 5–7 eggs, which are laid at 48-hour intervals. The female incubates the eggs for about 34–38 days, though the male does take over at times. The cygnets then often stay with the parents until the winter.

Fox

Name Red fox (Vulpes vulpes)
Class Mammal
Order Carnivora
Family Canidae
Terms Male – dog; female – vixen; young – cub; home – den or earth (for breeding)

Distribution: The red fox can be found across the UK, Europe, North Africa, North America and even some parts of Asia

Habitat: A huge range, from sand dunes to cities to mountain tops.

Size: The average size of a male's body is 67–72 cm long, a female roughly 62–67 cm. Their tails grow to 40cm in length.

Weight: Male (average) 6–7 kg; female (average) 5–6 kg.

Description: Foxes look like small dogs and vary widely in colour and size. They can range from red to yellow to black-looking. Their most recognizable features are the white chin, underbelly and tip of the tail.

Lifespan
In the wild: On average about 2–6 years, but occasionally up to 10.
In captivity: Anywhere up to a record 15 years.

When most commonly seen: Foxes can be seen during the day but are predominantly nocturnal. Foxes do not hibernate at any time of year.

Diet: Their preferred food is small mammals, such as rabbits. However, they also eat insects to supplement their intake.

Reproduction: Foxes tend to breed between late December and February. The usual litter size is around 4–6 cubs, and the gestation period lasts about 2 months.

Tawny Owl

Name Tawny owl (Strix aluco)
Class Aves
Order Strigiformes
Family Strigidae

Distribution: Tawny owls live across Britain and Europe and range as far south as North Africa and parts of Asia.

Habitat: Tawny owls typically live in forests, but they also inhabit trees and hedgerows in gardens, parks and farmlands. They also occasionally shelter in disused buildings and rocks.

Size: Tawny owls grow to around 35–45cm tall and have a wingspan of 90–100 cm.

Weight: Females weigh slightly more than males. Males range from about 400 to 550 g, while females tend to be between 550 and 700 g.

Description: Tawny owls have a reddish brown coat, with grey, brown and black streaks. They have round faces, with large, deep-set black eyes.

Lifespan
In the wild: The oldest wild bird is thought to have been 19 years old.
In captivity; Up to 23 years.

When most commonly seen: Tawny owls are nocturnal, so are usually seen only at night, all year round.

Diet: They mainly eat small mammals. small birds, fish and insects.

Reproduction: Tawny owls pair up for life. They form territories in the autumn, and the female begins to lay eggs between March and April. The incubation period lasts up to 30 days, as the eggs are laid at intervals and hatch at different times. The chicks are fully fledged after about 35 days.

Roe Deer

Name	Roe deer (Capreolus capreolus)
Class	Mammal
Order	Artiodactyl
Family	Cervidae
Terms	Male – stag; female – doe; young – fawn

Distribution: Roe deer can be found in most parts of Europe and Asia. They are, however, absent in Ireland and large parts of Britain.

Habitat: Roe deer typically live in woodlands and grassy valleys.

Size: They grow to about 100–130 cm in length, and 60–70 cm tall (to shoulder).

Weight: 20–30 kg

Description: The coats of roe deer can be a variety of colours, depending on the time of year, from red to brown to black. They have white patches on their backside and chin. They have short antlers, growing up to only 25 cm. Fawns are born with lots of white spots, which they lose with age.

Lifespan
In the wild: 10–12 years (average).
In captivity: Can live to over 20 years.

When most commonly seen: Roe deer can be active throughout 24-hour period, but the main peaks of activity occur at dawn and dusk.

Diet: They are quite fussy eaters, choosing only the plants, shoots and grass that are most healthy.

Reproduction: Roe deer mate around July and August. The gestation period lasts about 9 months, which includes a 4-month period when there is no embryonic growth, then a 5-month period of foetal development. The female usually gives birth to 1–2 fawns of opposite sexes. They are born the following spring and, although weaned within 10 weeks, may stay with their parents for up to a year.

European Rabbit

Order	Lagomorpha
Family	Leporidae
Genus & Species	Oryctolagus cuniculus

Description

A small mammal with dense soft fur, grey-brown in colour and prominent ears, which can sometimes measure over 10cm long. They have very powerful hind legs and a short tail – usually a small puff of hair. They are full bodied and almost egg-shaped. They have five toes and hop around on their tip toes. Their hind legs are heavily furred to protect them from injury from constant hopping. As a lagomorph, not a rodent, the European Rabbit has an upper and lower set of two sharp incisors, which grow continually through life, for shearing grass and vegetation. It also has two peg teeth behind the upper incisors, again setting it apart from the rodent family.

Size

Average head and body length:	34–35 cm
Average weight:	1.3–2.2 kg

Breeding

Breeding Season:	Can be all year round, peak times spring and summer
Gestation Period:	31 days
Litter size:	2–8 kittens
Weaning Age:	4 weeks
Eyes Open:	2–3 weeks
Fully Independent:	8 weeks
Sexually Mature	4–5 months

Rabbits give birth to altricial young, meaning they are born blind and furless and are totally dependent on the mother. They are born in a fur-lined nest in the warren and the mother may only return once or twice a day to feed them as her milk is so rich.

Lifestyle

Diet: Rabbits feed on a variety of food stuffs including plants, herbs, weeds, etc, but the main part of their diet is grass.

Behaviour: Rabbits are gregarious and social animals, living in colonies. They are mainly crepuscular, being active at dawn and dusk, although often active in the day. Rabbits can be extremely aggressive in the wild with competition between males leading to injury or even death. Often males will spray urine over challengers as territorial marking. They use their powerful hind legs to kick opponents and will also bite and scratch with the paws.

Lifespan: 8 to 9 years.

Distribution

The European Rabbit is a species originally native to Spain and Portugal that was widely introduced elsewhere. Rabbits are found in several parts of the world. There are seven genera classified as rabbits, including the European rabbit, Cottontail and the Amami Rabbit in Japan, an endangered species. In 1859, 24 rabbits were introduced to Australia. They spread rapidly due to: a lack of natural predators, an abundance of ideal available food sources and mild winters allowing them to breed all year round. Their numbers soared to over 600

million in a century and they became a huge pest which then resulted in the introduction of Myxomatosis (a manmade disease that was introduced to kill rabbits) to control the population.

Habitat

Rabbits are ground-dwellers, in habitats ranging from tropical rainforest to desert. They are well known for digging extensive networks of burrows called warrens, where they spend most of their time when they are not feeding. The burrows are mainly excavated by the females and usually during pregnancy. She will dig short blind tunnels for nesting, where she will leave the kittens covered in fur.

The Words of Latin and Greek Origin

SINGULAR	PLURAL	TRANSLATION
alga [ˈælgə]	**algae** [ˈældʒi:]	**морская водоросль**
amoeba [əˈmi:bə]	**amoebae** [əˈmi:bi:]	амёба
analysis [əˈnæləsis]	**analyses** [əˈnæləsi:z]	**анализ, разложение** *(хим.)*
antenna [ænˈtenə]	**antennae** [ænˈteni:]	щупальце, усик
axis [ˈæksis]	**axes** [ˈæksi:z]	ось
bacillus [bəˈsiləs]	**bacilli** [bəˈsilai]	бацилла
bacterium [bækˈtiəriəm]	**bacteria** [bækˈtiəriə]	**бактерия**
basis [ˈbeisis]	**bases** [ˈbeisi:z]	основа, базис
chela [ˈki:lə]	**chelae** [ˈki:li:]	клешня
chorda [ˈkɔ:də]	**chordae** [ˈkɔ:di:]	спинная струна, хорда
cilium [ˈsiliəm]	**cilia** [ˈsiliə]	ресничка
crisis [ˈkraisis]	**crises** [ˈkraisi:z]	кризис, перелом *(в ходе болезни)*
criterion [kraiˈtiəriən]	**criteria** [kraiˈtiəriə]	критерий
datum [ˈdeitəm]	**data** [ˈdeitə]	**данное, данная величина**
fungus [ˈfʌŋgəs]	**fungi** [ˈfʌŋgai]	**гриб, плесень**
ganglion [ˈgæŋgliən]	**ganglia** [ˈgæŋgliə]	ганглий, нервный узел
genus [ˈdʒi:nəs]	**genera** [ˈdʒenərə]	**род, сорт, вид**
larva [ˈla:və]	**larvae** [ˈla:vi:]	личинка, головастик

maxilla [mækˈsilə]	**maxillae** [mækˈsili:]	верхняя челюсть *(позвоночных животных)*
maximum [ˈmæksiməm]	**maxima** [ˈmæksimə]	максимальная величина
medium [ˈmi:djəm]	**media** [ˈmi:djə]	среда
metamorphosis [ˌmetəˈmɔ:fəsis]	**metamorphoses** [ˌmetəˈmɔ:fəsi:z]	метаморфоза, превращение
nucleus [ˈnju:kliəs]	**nuclei** [ˈnju:kliai]	**ядро, зародыш, нервный центр** *(в головном мозгу)*
pallium [ˈpæliəm]	**pallia** [ˈpæliə]	мантия *(моллюсков)*
palpus [ˈpælpəs]	**palpi** [ˈpælpai]	щупальце
paramecium [pərəˈmesjəm]	**paramecia** [pərəˈmesjə]	парамециум (туфелька)
phenomenon [fiˈnɔminən]	**phenomena** [fiˈnɔminə]	**явление**
phylum [ˈfailəm]	**phyla** [ˈfailə]	тип
pupa [ˈpjupə]	**pupae** [ˈpju:pi:]	куколка
species [ˈspi:ʃi:z]	**species** [ˈspi:ʃi:z]	**вид, род, разновидность**
stimulus [ˈstimjuləs]	**stimuli** [ˈstimjulai]	**стимул, раздражитель**
stoma [ˈstʌmə]	**stomata** [stəˈmætə]	устьице *(на листьях растений)*
stratum [ˈstra:təm]	**strata** [ˈstra:tə]	слой, пласт
trachea [trəˈki:ə]	**tracheae** [trəˈki:i:]	трахея
vertebra [ˈvə:tibrə]	**vertebrae** [ˈvə:tibri:]	позвонок

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