«ION CREANGĂ » STATE PEDAGOGICAL UNIVERSITY

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ENGLISH FOR BIOLOGY LEARNERS

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Foreword

The book "*English for Biology Learners*" is intended for the students at the A2 level and B1 level on the Council of Europe scale, and namely, for the learners of the Faculty of Biology.

The aim of the book is to initiate students into the lexical, grammar peculiarities of professional English in the sphere of Biology. Moreover, the aim is to form students' professional communicative competences, skills, knowledge and attributes that are specifically valued and connected to their future career.

This book has a lot of practical activities to help learners with listening, reading, speaking and writing. Thus, there are texts on biological topics, reading comprehension tasks, vocabulary items and also communicative activities.

The new vocabulary, organized around topics, is practised through a wide range of exercise types. The lexical and grammar activities generally progress from easier to more difficult exercises, with items often tested receptively first, e.g. through a matching or grouping exercise, before moving on to more challenging productive exercises such as gap-fill texts or sentence transformations, discursive tasks designed through case studies and problem-solving strategies. Much of the new vocabulary is presented through different types of texts, and then explained immediately after the item appears, or in a separate glossary below the text; some words are contextualised in sentence examples; some of the grammar points are presented in tables at the end of the book.

Students might use the book on their own or in combination, or as supplementary material to support other materials. We are confident that this book will help learners progress in English and, above all, that they will enjoy using it.

1. FROM CELLS TO SYSTEMS

What are the smallest parts of the body?

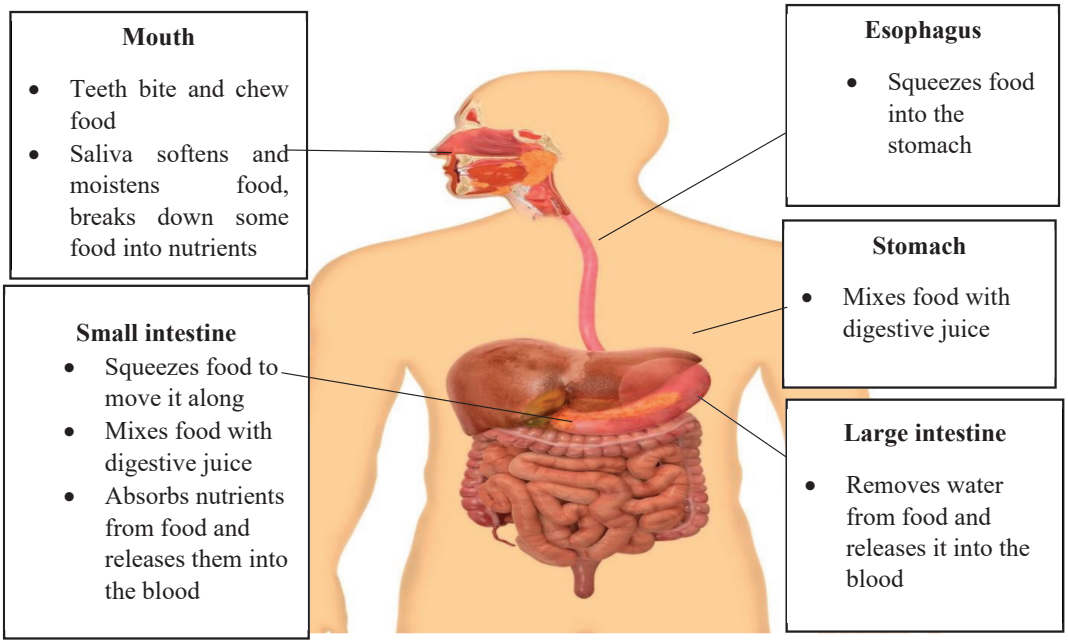
In what way are you like your toy? Your toy can move because it has energy. The energy comes from the battery. Without energy, you could not move. Your body needs energy to move, talk, think, sleep, and grow. The parts of your body also need energy. Your hands need energy. Your fingers do, too. Even the smallest parts of the body need energy. The smallest part of the body is a **cell**. The body is made up of billions of cells. Most are so small that they can be seen only with a microscope. Even the largest cell in the body is only about the size of a pinpoint.

The body is made of many kinds of cells. Blood is made of blood cells, and bone is made of bone cells. As you know, cells have different shapes and sizes.

How do body parts work together?

Have you ever tried to do a hard job, such as cleaning up the schoolyard? The job would be easier if you worked with a group of your classmates. In the body, cells of the same kind work together. This makes it easier to do certain jobs. A group of cells that work together is called a *tissue*.

Muscle tissue is made of muscle cells. Muscle cells work together and help move parts of the body. Bone tissue is made of bone cells. Bone cells work together and support parts of the body.



Groups of tissues also work together in the body. A group of tissues that work together is called an *organ*. Organs have special jobs in the body. Your heart is an organ. It is made of muscle tissue, nerve tissue, and other tissues that work together. The heart

pumps blood throughout the body. Your brain is an organ that is made mainly of nerve tissue. The brain controls most of the body's activities.

Organs also work together in the body. A group of organs that work together is called an *organ system*. The body has many important organ systems. The skeletal supports and protects the body. The organs of the skeletal system are the bones. They are made of several kinds of tissues and cells,

Another important organ system is the digestive system. The organs of this system are listed in the table. As you can see, each organ does a special job. The organs work together and help your body to use the food you eat.

***Why is the digestive system important*?**

You have learned that the cells in your body need energy. Without energy, the parts of the body could not work. Your heart could not beat and your muscles could not move. The energy that cells need comes from the food you eat. Food also provides materials that cells need. Cells use these materials to grow, repair themselves, and produce new cells. By adding and repairing cells, your body grows and stays healthy.

Every piece of food you eat is too big to enter a cell. So food must be changed. Changing food into a form that cells can use is called *digestion*. During digestion, food is broken down into tiny particles called *nutrients.* Nutrients are small enough to enter even the smallest cell in the body.

I. Pronunciation Task:

1. ***Get acquainted with the following words and pronounce them properly:***

Tissue, battery, billion, microscope, blood, throughout, skeleton, esophagus, stomach, intestine, nutrient, saliva, to soften, to moisten, digestive, system, for a while.

2. Remember!

Tissue-țesut;
Bone-os;
To pump-a pompa;
Mainly-în deosebi, în special;
To squeeze- a presa, a strange;
To release- a da drumul, a elibera, a transmite;
To moisten- a umezi;
To soften- a muia;
Tiny- mic, mârunt.

II. LANGUAGE IN CHUNKS

1. ***Name some nouns which can be appropriate for these verbs:***

To protect…	to produce…
To break down…	To make…
To pump…	To enter…
To control…	To need…
To repair…	To do…
To soften…	To chew…
To support…	To moisten…

2. ***Give synonyms to the words****:*

To suppose, small, to try, hard, of the same kind, to support, to turn on/off, mainly, to control something, to provide, to produce, to break something down into, to absorb

3. ***Give antonyms to the words bellow:***

To talk, important, to move, to release, each, to enter, to protect, to clean up

4. ***Find some adjectives for the following nouns:***

   Toy, energy, hands, size, job, classmate, muscle, heart, food, mouth, water.

5. ***Give Romanian equivalents to the following words or word-combinations and make up sentences with them.***

   To turn on/off, to run on a battery; to be made up of something; to do a job; mainly; to beat; to provide; throughout; for a while; shape.

6. ***Give all the meanings of the word „****hand****". Put them into sentences.***
7. ***Act as an interpreter using the new words***

   1. Știi că corpul uman are nevoie de energie? Da, știu.
   2. Celulele nervoase nu se restabilesc, de aceia aveți grijă.
   3. Creierul dirijează toate activitățile corpului.
   4. Rana de la picior este de mărimea unei palme.
   5. Intestinul mic absoarbe substanțele nutritive din hrană și le transmite (eliberează) în sânge.
   6. Persoanele ce au aceleași funcții se numesc omologi.
   7. Fiori de spaimă îmi cutremură tot corpul.
   8. Aerul pătrunde în plămâni și asigură viața omului.

III. GRAMMAR FOCUS

1. Insert articles or prepositions where necessary.

1) The parts of our body need … energy.
2) What is bone tissue made… ?
3) Your stomach is … organ.
4) The energy comes … food you eat.
5) … blood runs … the body.
6) …you know, the heart is … important organ … our body.
7) Don't enter … classroom.
8) The body is made … cells.
9) … billions … cells form our body.
10) Mozart was born _____ Salzburg _____ 1756.
11) It starts _____ Tuesday.
12) Halloween is _____ October.
13) The course begins _____ February 18th.
14) There are usually a lot of parties _____ New Year's Eve.
15) _____ Saturday night I went to bed _____ 11:00
16) We travelled overnight and arrived _____ Paris _____ 5:00 _____ the morning.
17) I like the picture hanging _____ the wall _____ the kitchen.
18) I wasn't sure this was the right office. There is no name _____ the door.
19) You'll find the sports results _____ the back page.
20) I wouldn't like an office job. I couldn't spend the whole day sitting _____ a desk.
21) My brother lives _____ a small town _____ the southeast of England.
22) The headquarters are _____ Milan.
23) My office is _____ the 2nd floor.
24) I keep my keys _____ my pocket.

2. Make the following sentences negative and interrogative.

1) The energy comes from the battery.
2) Bone cells worked together.
3) Food has provided materials for cells.

IV. COMPREHENSION TASKS

1. ***Answer the following questions.***

a) What is the smallest part of the body?
b) How does a tissue differ from an organ?
c) Why do cells need food?
d) What happens to food during digestion?

Think! Explore and Apply!

1. Imagine that your school is made up of cells. Think of a way that a group of „cells" might work together. For example window „cells" might work together letting light into the classroom.
2. In what ways is the human body like a machine?
3. Do you have a toy that runs on a battery? Suppose you turn on the toy and let it run for a while. Why does the toy keep moving? What will happen if you forget to turn it off?
4. ***Summarize the text using the new vocabulary.***
5. ***Find out some proverbs or sayings containing parts of the body (3-4 proverbs). Comment on them.***

2. **THE NERVOUS SYSTEM**

Divisions of the nervous system

The nervous system is made up of the brain, the spinal cord and nerves that extend throughout the body. Coordination of the different actions of the body is one of two major functions of the nervous system. The second major function of the nervous system is coordination of the body's response to the outside world. The nervous system gets information about the outside world. It can send massages to parts of the body to respond to that information. The information and messages are in the form of electrical signals. The structures that receive information from the environment are called *receptors*. For example, the eyes have receptors that gather visual information about the outside world. In addition to receiving, relaying, and processing information from the environment, signals from the nervous system may cause some actions or response to the information. The structures or organs that produce the response are referred to as *effectors.* Muscles and glands are examples of effectors. Information from the outside world may result in movement of the body through the action of effectors. Other information may result in a change within the body through secretions from glands.

The brain and spinal cord make up the *central nervous system*. This system receives and processes information from receptors. The processing of information includes determining what action to take in response to the received information. The central nervous system coordinates the body's organ systems.

Some actions controlled by the central nervous system are *voluntary.* Voluntary acts, such as movement of the skeletal muscles, are under conscious control. Other actions controlled by the central nervous system are *involuntary*. They occur automatically without conscious control over them. Maintaining the body at a steady temperature is an involuntary function involving the central nervous system.

The central nervous system is enclosed by protective membranes known as *meninges.* There are three layers of meninges around the brain and spinal cord. The space between the second and third layers is filled with *cerebrospinal fluid*. Cerebrospinal fluid is a liquid cushion that protects the central nervous system from injury. This fluid flows around the brain and spinal cord. It also flows through a series of chambers and canals inside the brain and spinal cord.

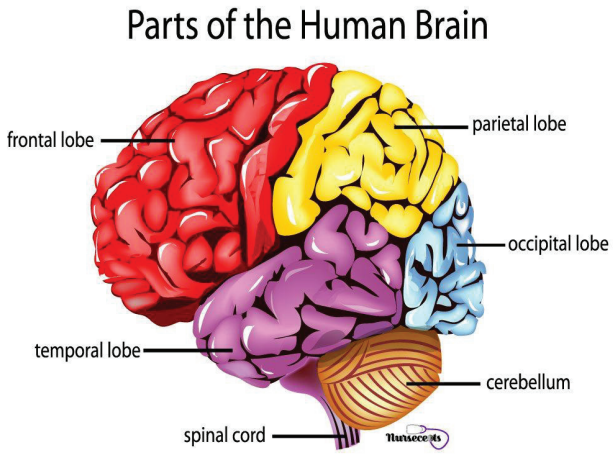
The *peripheral nervous system* consists of the nerves that extend from the brain and spinal cord to all parts of the body. The function of this system is to relay messages between the central nervous system and the receptors and effectors that are found throughout the body.

The Brain

The brain is the major controlling structure of the nervous system. The human brain is an extremely complex organ. It is thought to contain over 10 billion neurons. Much progress has been made in recent decades in learning the details of brain function.

But much more remains to be done. For example, it is known that memory is stored in the brain. But there is as yet no clear explanation of how memory storage occurs.

The largest part of the brain is the cerebrum. Conscious sensation and voluntary control of the skeletal muscles are among the many activities controlled by the *cerebrum***.**



Below the cerebrum and to the rear of the brain is the cerebellum. The *cerebellum* is concerned with coordination of muscular activities, thus producing smooth movements. Beneath the brain is the brainstem, which is continuous with the spinal cord. The *brainstem* regulates a number of internal functions, including the heartbeat.

The outer layer of the cerebrum is the *cerebral cortex*. This layer is the distinctive part of the human brain. Human thought and ability to reason are believed to be functions of the cerebral cortex. Lower vertebrates have no cerebral cortex at all. Mammals other than humans have a cortex, but it is not as developed as it is in humans. The cerebral cortex is made up of a tissue called *gray matter.* Gray matter contains the cell bodies of neurons along with many dendrites and axons that do not have myelin sheaths. Gray matter is a tissue in which neurons interact with one another.

The inner parts of the cerebrum, along with other parts of the brain, are made up of *white matter*. This tissue consists mostly of myelinated axons, which are whitish. White matter is a tissue through which impulses pass on the way to other areas.

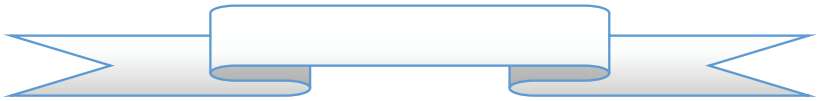
The cerebrum is divided into right and left halves by a large groove. These halves are the *cerebral hemispheres*. In general, the right cerebral hemisphere controls activities on the left side of the body. The left hemisphere controls activities on the right side of the body. Some functions, however, seem to be centered in only one hemisphere. The control of speech and the use of language are thought to take place in the left cerebral hemisphere of most people. Artistic and musical abilities are believed to be centered in the right hemisphere of most people.

Activities equally divided between the two cerebral hemispheres include controlling the skeletal muscles and interpreting sensations from the surface of the body. These activities are controlled from the cerebral cortex.

The Spinal Cord

The spinal cord is a cord of nerve tissue located within the vertebral column. The white matter of the spinal cord consists mainly of myelinated axons that carry impulses to or from the brain The gray matter contains cell bodies. It is a region in which many contacts between neurons occur. The spinal cord gives rise to 31 pairs of spinal nerves.

The spinal nerves exit between the bones of the vertebral column and connect to all parts of the body. Spinal nerves are connected to the spinal cord by two roots. The *dorsal root* of each spinal nerve contains sensory neurons. *Sensory neurons* are neurons that carry impulses from receptors to the central nervous, system. The *ventral root* of each spinal nerve contains motor neurons. *Motor neurons* are neurons that carry impulses from the central nervous system to the effectors. Within the gray matter of the spinal cord are found association neurons. *Association neurons*, also called *interneurons*, lie totally within the central nervous system and serve as connections between other neurons. The dorsal root of the spinal nerve contains a thickening called the *dorsal root ganglion*. A *ganglion* is a mass of cell bodies of neurons found outside the brain or spinal cord. The dorsal root ganglion contains the cell bodies of sensory neurons. The dendrites of these sensory neurons may reach such distant locations as the skin of the fingers. The axons of these sensory neurons pass from the dorsal root ganglion into the gray matter of the spinal cord.



I. PRONUNCIATION TASK:

Mind the pronunciation of the words below:

Throughout	Hypothalamus	Amphetamines
To gather	Medulla oblongata	Barbiturates
Meninges	Groove	Seizure
Fluid	Ganglion	Acetylcholine
Dendrites	Hallucinogenic	
Myelin sheaths	Epilepsy	

II. LANGUAGE IN CHUNKS:

1. Explain in your own words the following word combinations:

Outside world	Distant location	Skeletal muscles
Side effects	Voluntary acts	Parkinson's disease
Spinal cord	Hallucinogenic drug	Steady temperature
Nervous system	Brain electrical activity	Myelin sheaths

***2. Find in the text synonyms for the following words**:*

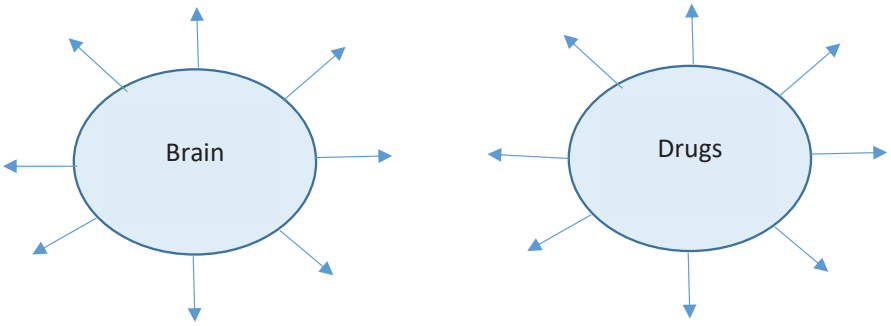
Drink (n), principal (adj), to happen (v), to find (v), fat (adj), to intensify (v), medicine (n), motive (n), to join, to create, characteristic (n).

3. Form some derivatives from:

Voluntary	To inform	To move
Nerve	Effect	To develop

To interact	Center	To increase
Sensor	Distant	To prescribe
Spine	To abuse	Rest

***4. Identify all the words which may refer to**:*



5. Think of the advantages and disadvantages of the stimulants they (brain/drugs) have on the body. Complete the T-chart

Advantages	Disadvantages

6. Correct the false sentences:

1) The cerebral cortex is made up of a tissue called ,,white matter".
2) The outer layer of the cerebrum is the cerebral cortex.
3) The smallest part of the brain is the cerebrum.
4) Stimulants slow the heartbeat, blood pressure and respiration.

***7. Complete the sentences below with suitable words**:*

Stored, heartbeat, ganglion, receptors, brainstem, muscular, drugs, poppy.

a) The central nervous system receives and processes information from … .
b) It is known that memory is ….. in the brain.
c) The … regulates a number of internal functions, including the … .
d) The cerebellum is concerned with coordination of … activities.
e) A … is a mass of cell bodies of neurons.
f) … are used by people for medical reasons.
g) Opiates are a group of drugs made from the … plant.

***8. Say what can be**:*

Electrical	Harmful	Smooth
Dangerous	Nervous	Distant
Conscious	Emotional	Whitish

Steady	Automatical	Uncontrollable
Complex	Compound	Involuntary

9. Form nouns from the verbs below:

To explain, to determine, to store, to lose, to produce, to stimulate, to treat.

10. List a series of adjectives that characterize the following words:

Stress	Memory	Skin
World	Cushion	Breathing
Injury	Animal	Information
Signal	Movement	Body

11. Ask questions to the underlined words:

1) The white matter of the spinal cord consists of <u>myelinated</u> <u>axons</u> (2 questions).
2) The outer layer of the cerebrum is the <u>cerebral cortex</u>. (1 question).
3) The medulla connects the other structures of the brain to <u>the spinal cord</u> (1 question).
4) A third type appears when <u>an individual is under emotional stress</u> (1 question).

12. Translate into English using the new vocabulary:

1) Creierul și măduva spinării alcătuiesc sistemul nervos central.
2) Structurile care primesc informația de la mediul înconjurător se numesc „receptori”.
3) A doua funcție principală a sistemului nervos este coordonarea răspunsurilor/ recepției corpurile la lumea exterioară.
4) Multe droguri care sunt legitim folosite în caliatate de medicament au și ele reacții adverse.
5) Depresantele sunt droguri care micșorează activitatea sistemului nervos.
6) Senzația conștientă și controlul voluntar al mușchilor scheletici sunt printre multele activități controlate de cerebel.

III. GRAMMAR FOCUS

1. ***Write the plural form of the nouns given below***. child…….....
man…… woman…… wife…….....
knife…… half…… mouse…….....
goose…… tooth…… foot…….....
elf…… loaf…… leaf…….....
knife…… potato…… tomato…….....
piano…… cactus…… medium…….....
phenomenon…… category…… syllabus…….....
analysis…… thesis…… diagnosis…….....

crisis…… nucleus…… criterion…….....
toe…… datum…… fox…….....
lily…… dish…… wrench…….....
goose…… flash…… deer…….....
sheep…… reef…… dwarf…….....
church…… diary…….....

2. ***Give the plural forms of these special nouns.*** 1. I can see two (fish) _____ in the fish tank. 2. How many (child) _____ are there in the school yard? 3. We still need three more forks and (knife) _____ for our dinner guests. 4. Many trees lose their (leaf) _____ in the fall. 5. Many (deer) _____ live in that forest. 6. Sharks can grow thousands of (tooth) _____ in a lifetime. 7. What is the population of Mexico? How many (person) _____ live there? 8. Cats like to catch (mouse) _____. 9. I really want to sit down. My (foot) _____ are killing me! 10. (Octopus) _____ have eight arms and live in the sea. 11. There are lots of ducks and (goose) _____ in this park. 12. The policeman followed the three (man) _____ out of the bank. 13. Many husbands and (wife) _____ eat at restaurants on Valentine's Day. 14. (Wolf) _____ look very much like large dogs. 15. Farmer Brown has lots of (sheep) _____. 16. How many (woman) _____ work in your office?

Think! Explore and Apply!

Scan the picture and listen to the podcast and answer the questions: *What do we actually know about the so-called brain drain hypothesis*? Analyse it and point out the main ideas.

Supplementary text

DRUGS AND THE NERVOUS SYSTEM

Drugs are often used by people for medical reasons. Sometimes drugs are abused because of the effects that they have on the body. Many drugs have effects on the central nervous system.

Stimulants are drugs that increase the number of impulses con- ducted along neurons and at synapses. In other words, they increase the activity of the nervous system. Caffeine is a stimulant found in coffee, tea, and some colas. Caffeine stimulates activity in the cerebral cortex of the brain. Nicotine, a stimulant in cigarette smoke, increases the activity at synapses in which acetylcholine is the neurotransmitter.

Depressants are drugs that decrease the activity of the nervous system. Ethyl alcohol, the depressant found in alcoholic beverages and liquors, interferes with

transmission of nerve impulses at synapses. Barbiturates, often prescribed as sleeping pills, slow transmission in the center of the brain and then in the cerebral cortex. Opiates are a group of drugs made from the poppy plant. They include opium, heroin, and morphine. These drugs dull pain and slow impulse movement at various places in the nervous system.

Hallucinogenic drugs affect the user's perception of reality. Marijuana is a drug that affects electrical activity, nervous system enzymes, and the chemistry of the brain. The exact nature of the effects is not fully understood. LSD is a hallucinogenic drug that is similar to a certain brain transmitter. However, it does not transmit signals in the same way the brain transmitter does. The result is mixed and distorted signals. Each of these types of drugs affects more than just the nervous system. Stimulants increase heartbeat, blood pressure, and respiration rate. Depressants slow these body processes. Other drugs have a variety of effects on different body systems. Because of the effects that drugs have on the nervous system and other body systems, they are very dangerous when abused. Also, there is much that is not yet known about drug effects. Use of something as a drug without knowing the effects is dangerous. Many drugs that are used legitimately as medicines also have side effects. Side effects are effects other than the intended ones. Side effects may be harmful.

Nervous Disorders

With its billions of neurons, the brain is in a state of constant electrical activity. This activity results in electrical waves that can be detected on the outside of the head. A device called an *electroencephalograph*, or EEG, is used to record these brain waves. Several types of brain waves are recorded by an EEG. One type of wave is most apparent during restful activity. Another sort of wave appears during sleep. A third type appears when an individual is under emotional stress. Recording changes in brain waves by an EEG is an important method for identifying disorders of the brain. A variety of disorders can affect the brain and other parts of the nervous system.

Epilepsy is a serious and often permanent disorder. Abnormal electrical impulses throughout the brain are a feature of this disorder. The electrical activity can be detected as abnormal waves on an EEG recording. In severe cases this abnormal electrical activity may cause a seizure, or violent contractions of the skeletal muscles, and unconsciousness. Seizures occur with periods of normal activity in between. Many cases of epilepsy can be controlled with medication, allowing the victims to live normal lives.

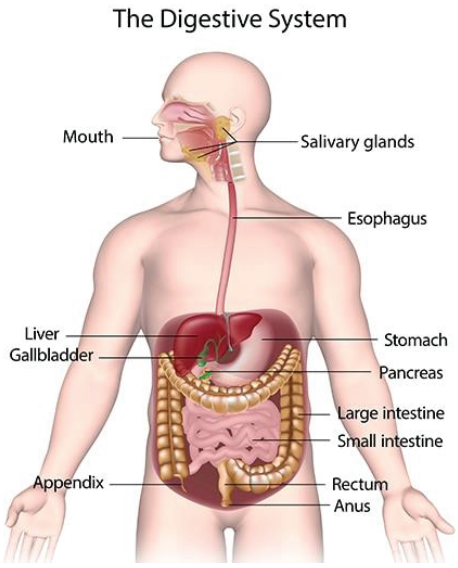
Parkinson's disease is a disorder most often found in the elderly. It involves contraction of the skeletal muscles, which results in rigid joints and uncontrollable trembling. Parkinson's disease appears to affect the region of the cerebral cortex that controls skeletal muscles. Some of the neurons in this region have dopamine as their neuro- transmitter. It appears that not enough dopamine is produced in individuals with Parkinson's disease. The disease can often be controlled by medication.

3. THE DIGESTIVE PROCESS

Where does digestion begin?

When food is eaten, it goes through many parts of the digestive system. Each part does a special job in the digestion of food.

Food enters the *mouth***,** the place where digestion begins. In the mouth two things happen. First, food is broken into smaller pieces as it is chewed by the teeth. You have different kinds of teeth. Incisors have sharp edges that cut and bite food. Canines have sharp points that tear food. Molars have flat tops that crush and grind food. As you chew, a second thing happens. A digestive juice called saliva mixes with the food. This liquid comes from body parts connected to the mouth. Saliva helps to make food soft and wet. Soft, wet food is easy to swallow. Saliva also breaks down some of the food into nutrients.



During this time the tongue is also at work. The tongue moves the food around in the mouth. This helps to mix the food with saliva. The tongue also pushes food to the back of the mouth, where it is swallowed. By the time you swallow, one step in digestion is complete. Your teeth, tongue, and saliva have changed large pieces of food into a soft, wet ball.

What happens when food is swallowed?

When food is swallowed, it moves from the mouth into a tube called the *esophagus*. The esophagus is made of strong muscles. Food moves down this tube in a few seconds. But it does not simply fall through. Instead, it is squeezed through by the muscles, as toothpaste is squeezed through a tube. The muscles are strong enough to push food downward to the stomach.

From the esophagus, food enters the stomach. The *stomach* is a baglike organ made of muscles. An empty stomach is about as big as your two fists. But as you eat, it stretches and becomes much larger. Food stays in the stomach several hours. While food is there, the stomach muscles squeeze together. This mixes the food with more digestive juices. These juices come from the cells in the stomach wall. Like saliva, the juices help to break down food into nutrients.

What happens when food leaves the stomach?

When food leaves the stomach, it is like thick soup. The liquid moves into the small intestine. The *small intestine* is an organ shaped like a long, narrow tube. Like the esophagus, the small intestine is made of muscles that push food along. But it may take 9 hours to squeeze food through this very long tube.

As the muscles squeeze together, the food is mixed with more digestive juices. These juices come from the small intestine and from organs connected to it. The inside of the small intestine has many finger-shaped parts, called villi. The villi stick out into the liquid food. Nutrients from the liquid enter blood inside the villi. Then the blood carries the nutrients to all the cells of the body.

Where does the digestive system end?

After the nutrients are absorbed in the small intestine, some liquid remains. It is made up of water and food that cannot be digested. This watery liquid moves into the large intestine. The *large intestine* is an organ shaped like a wide tube. It is much wider and shorter than the small intestine. Water is removed from the liquid in this organ. There, water moves out of the large intestine and enters the blood. The unused food is pushed along by muscles in the large intestine. At the end of the large intestine, this material leaves the body as waste.

Healthy Digestion

How can you take care of your digestive system?

Where do you get the energy to make a fist? As you have learned, this energy comes from the food you eat. But before your body can get this energy, the food must be digested. So it is important to keep your digestive system healthy. One way to take care of the digestive system is to eat the proper kinds of foods. Fruits and vegetables contain a material called fiber. Foods with fiber help to keep the digestive system healthy.

A second way to take care of the digestive system is to keep your teeth healthy. Dairy products should be part of your diet. They contain calcium, which helps to make teeth strong and healthy. You should also brush your teeth often and clean between your teeth with a dental floss. This removes food and plaque (plak) from your teeth. Plaque is a sticky material that can cause tooth decay.

A third way to take care of the digestive system is to exercise every day. Then the eat will be digested more easily. Active play, sports, and other kinds of exercise also make you feel better. Feelings affect the way the digestive system works. When you feel happy, for example, the muscles in your stomach and intestines work better.

What are some problems of digestion?

You should not do active exercise right after you eat. Do you know why? The muscles in your digestive system use energy. The muscles you use to exercise also use energy. If you exercise, the digestive muscles may not get enough energy to keep on working. Food may stay in the stomach and intestines longer. Then you may get a stomachache. Stomachaches are a common problem of the digestive system.

Another problem is choking on food. Suppose you do not chew your food well enough before swallowing it. Then food may get stuck in the windpipe. The windpipe is a tube near the esophagus. The windpipe carries air to your lungs. When it is blocked, a person starts to choke. A choking person cannot breathe or speak.

The best way to help a choking person is: First, get behind the person. Wrap your arms around the person's waist. Then make a fist with one hand. Put your other hand over

your fist. Press hard into the person with quick upward pressing. This will force air windpipe and push the food out.

I. PRONUNCIATION TASKS

1. ***Pay attention to the pronunciation of the following words. Pronounce them thoroughly.***

Mouth, to chew, teeth, to tear, to grind, liquid, incisor, canine, to crush, to push, juice, thick, diet, calcium, stomachache, to breathe, diabete, varicose, deficiency, carbohydrate, cholesterol, duodenum, mucus, appendicitis, jaundice, peptic ulcer, malnutrition.

Remember!

Sharp-ascuțit;
Edge-margine;
To tear (tore, torn)- a rupe a sfâșia;
Flat-plat(ă), lat(ă);
Top-vârf;
To crush-a strivi, a zdrobi;
To grind (ground, ground)-a rumega, a mesteca, a măcina;
To swallow-a înghiți;
Instead-în schimb;

II. LANGUAGE IN CHUNKS

1. Give the English definitions to the words listed below:

Mouth, incisors, canines, saliva, tongue, muscle, blood, waste, dental floss, windpipe, lungs.

2. Make up sentences using the word combinations:

To make somebody happy
To be connected to
To get stuck in
To force something up

To crush and grind food
To break something down into

To push something downward of
To keep on working
To take care of
To stick out
To fall through
By the time you

3. Give synonyms:

Sharp, flat, connected, piece, empty, to squeeze, to leave, narrow, shape, wide, waste, proper, to take care of, to occur, to make up, approach, restless, to store.

4. Find in the text antonyms for the following words:

To get out, to stick up, to get stuck, harsh, dry, wide, to penetrate, sick, to neglect, insignificant, to let something go, seldom.

5. Look up in the dictionary and give the meanings of the words:

Flat, top, to stick, to choke. *Make up sentences with each meaning.*

6. Identify and correct the false sentences:

a) I am sure that food stays in the stomach several minutes and while food is there, the stomach muscles have a rest for a week.
b) The tongue moves the food around in the nose, then it pushes food to the esophagus.
c) Before your body can get energy, the food must be digested. It is important to have your digestive system filthy.
d) If you don't chew your food well enough then food can't get stuck in the windpipe.
e) The best way to help a choking person is to force air up the windpipe and push the food put.

7. Arrange the words to make sentences:

a) a, If, has, very, person, bad, stomachache, a, he, feels.
b) throughout, blood, The, body, the, carries, nutrients, the.
c) exercises, brush, to care, keep, to, teeth, and, your, do, digestive, take, system, have, the, you, to, healthy, be, order, to, In, of, diet, your.

8. Form some verbs from the adjectives below:

quick, soft, stuck, stiff, watery, digestive, strong, long.

9. Choose the best term to complete the sentences:

1) Food is broken into small pieces due to… .
   a) The tongue;
   b) The watery liquid;
   c) The teeth;
2) … carries the nutrients to all the cells of the body.
   a) The lung;
   b) The energy;
   c) The blood;
3) A … voice is always pleasant for everybody.
   a) Harsh;
   b) Soft;
   c) Pointed;
4) If you want to drink lemon juice you have to … the fruit.
   a) Grind;

b) Bite;
c) Squeeze;

5) If you have a decayed tooth you have to … .
   a) Push it out;
   b) To clean and fill your tooth;
   c) Swallow it.

10. Fill in with the words from the box:

Digestion, mouth, esophagus, small intestine, large intestine, stomach.

Food provides the energy needed by the cells of the body. Before food can be used by the cells, it must be changed. Changing food into a form that cells can use is called_____ . Digestion begins in the _____. There the food is chewed and mixed with saliva. After the food is swallowed, it moves into a tube called the _____. There it is squeezed along until it enters the baglike_____. Stomach muscles mix the food with digestive juices until it forms a thick soup. This liquid then moves into a long, narrow tube called the _____. There most of the nutrients in the liquid food enter the blood. The rest of the liquid enters a wide tube called the_____.

***11. Complete the sentences**:*

1) When I have lunch and food gets stuck in the windpipe I ……. .
2) When I have a stomachache and I can't consult a doctor I ……. .
3) If you do active exercises right after you eat ……. .
4) When the doctor advises me to keep on the diet I was told to …….. .

12. Work out rules to keep the digestion healthy.

Ex. 1. Wash the fruits and vegetables before being consumed.
2. Don't …. .

13. Make up a dialogue using the new words from the second part of the text „Healthy digestion" and the rules from the exercise above.

***14. Translate into English**:*

1) Dacă nu ești atent când mănânci și te grăbești poți să te îneci. Deci rumegă mâncarea bine și înghite bucăți mici deoarece hrana poate săs se blocheze în trahee.
2) Mușchii sunt destul de puternici ca să împingă hrana în stomac.
3) În fiecare dimineață trebuie să vă spălați pe dinți și să curățați printre cu o scobitoare.
4) În cazul când aveți o durere de stomac adresați-vă medicului.
5) Emoțiile afectează într-o oarecare măsură funcționarea sistemului digestiv.

6) Produsele lactate conțin calciu care contribuie la păstrarea dinților puternici și sănătoși.

III. GRAMMAR FOCUS

1. Open the brackets using the Degrees of Comparison of Adjectives/Adverbs.

1) This summer is _____ than the previous summer. (hot) 2) Harsha is the _____ boy in the class. (intelligent) 3) Her doll is _____ than yours. (pretty) 4) Name the _____ city in the world. (big) 5) He is the _____ friend I have. (good) 6) Iron is _____ than any other metal. (useful) 7) Ram's work is bad, Hari's is _____, but Govind's work is the _____. (bad) 8) Silver is _____ than gold. (cheap) 9) The Eiffel Tower is _____ than the Qutub Minar. (tall) 10) Akbar was the _____ Mughal Emperor. (great) 11) Prevention is _____ than cure. (good) 12) Mathematics is the _____ subject. (difficult) 13) Apples are _____ than oranges. (costly) 14) Mr. Sharma is the _____ person I have ever seen. (fat) 15) This suitcase is _____ than that one. (heavy) 16) The number of boys present was _____ than the number of girls present in the class. (many) 17) Sita was the _____ tired of them all. (little) 18) Rohan's house is the _____ from college. (far) 19) Have you heard the _____ news? (late) 20) He is the _____ member in the Rajya Sabha. (old).

2. Rewrite the sentences given below using different degrees of comparison.

1. Shakespeare is the most famous of all writers in English. 2. Iron is more useful than any other metal. 3. I earn as much money as Ram. 4. China is larger than India. 5. Greenland is the largest island in the world. 6. Air is lighter than water. 7. I am taller than my brother. 8. Shyam is the strongest boy in the class.

IV. COMPREHENSION TASKS

1. Answer the following questions:

a) What is the connection between: the bile, the liver and gall-bladder?
b) List four functions of the liver.
c) What is the function of the gall-bladder?
d) How is the bile involved in the digestion of fats?
e) List two causes of obesity.
f) Why is obesity considered a health problem?
g) What are some of the side effects associated with the use of diet pills?
h) What factors can contribute to malnutrition?
i) Identify two diseases that result from vitamin deficiencies.
j) Why is appendicitis more common in young people than in adults?
k) How do teeth and saliva help to digest food?
l) Where does digested food move into the blood?

m) Name an important organ system. How do the organs in this system work together?

n) How is food changed during digestion?

o) Which foods contain fiber?

p) What is plaque?

q) What can cause a stomachache? When you are worried or frightened, the muscles in the digestive system may work more slowly. What digestive problem might happen then?

r) Why isn't it a good idea to jump rope right after eating a meal?

s) When astronauts are in space, they may float upside down while they eat. Why can food still move through the digestive system?

t) What should you do if someone is choking on food?

u) Do brushing and flossing help remove plaque? How do you know?

v) Do you think you can do a better job of caring for your teeth? Explain your answer.

w) What special problems related to vitamins and proteins may result from a vegetarian diet?

x) Retell the text in details.

y) Tell a story about things someone did to improve the health of this important organ system.

Think! Explore and Apply!

- People who are sick or recovering from operations are given only liquids and soft food to eat. Why do you think they are given this kind of food?
- Suppose you have lunch today at twelve noon. When you go home at three o'clock where in your digestive system will the food probably be then?
- Suppose a person has a section of small intestine surgically removed. The person losses weight. Explain why weight loss might follow such surgery
- The small intestine is very long. The large intestine is very short. Why have these two organs these names?
- Describe the processes of diffusion and active transport in the absorption of nutrients.
- How does each of the following aid in the treatment of ulcers:
  1) Reducing stressful situation;
  2) Reducing the amount of highly acidic food?
- What problems might arise if a person had an abnormally short small intestine?
- Describe the best ways to prepare foods so as to maintain the maximum amounts of vitamins in the foods.

- Using references determine the role of the intrinsic factor in preventing pernicious anemia.
- Describe the cause and treatment of a peptic ulcer.
- What is ART and what does ART do?
- Think about your favorite food. Close your eyes and picture how it looks. Think about how it smells. As you do this, what happens inside your mouth?
- Hold up one of your hands and make a fist. Now open and close your fist as fast as you can. Why do you think you could not do this without stopping?
- How can you remove the plaque from the teeth?

SUPPLEMENTARY TEXT

PROBLEMS OF NUTRITION

Obesity and weight control

Obesity is a major health problem for over 20 percent of adult Americans. Obesity is a condition in which a person's body weight is above the normal weight by 10 percent or more. Overeating is a factor in causing obesity. A person may overeat to lower tension. Improper functioning of the appetite control center of the brain as well as a slow metabolic rate may be linked with obesity. An overweight person may have larger than normal fat storage cells. He or she may not be able to break down stored fat quickly. Obesity is a factor in a number of diseases. These diseases include certain types of diabetes, high blood pressure, heart and artery disease, and varicose veins.

The health hazards linked with obesity have been given wide publicity in recent years. This knowledge has sparked great interest in fad diets, most of which lack many of the nutrients the body needs for proper functioning. To maintain a healthful weight, a person should maintain the correct level of nutrients while reducing the level of Calories. Regular exercise is an important part of a weight control program. A doctor should always be consulted before a person begins a special diet or an exercise program.

For some people, dieting can become an obsession. Some people take diet pills that decrease the appetite and stimulate body metabolism. Such pills may produce harmful side effects, such as increased blood pressure, rapid heartbeat, restlessness, dizziness, and sleeplessness. An extreme obsession to lose weight is the condition called *anorexia nervosa*. Although the exact cause of this condition is unknown, the basis of it is probably both psychological and physiological.

Malnutrition and dietary deficiencies

Malnutrition is the condition that occurs when the body cells do not get enough of the nutrients needed for growth and health. Some people suffer from malnutrition even though they eat a balanced diet. In such cases the persons may be unable to absorb certain nutrients from the intestine. For many people in the world, however, malnutrition is caused by not having enough food. For other people, malnutrition results from choosing foods that do not give a balanced diet.

Severe malnutrition results when a person does not have enough food. Proteins and carbohydrates are lacking in the diet. In such cases there is a breakdown of body tissues, loss of weight, lowered rate of metabolism, and lowered resistance to infection. Choosing a diet of junk foods can also lead to malnutrition. Foods high in sugar but low in other nutrients do not make up a balanced diet Such a diet can lead to a variety of nutritional problems.

Disorders of the digestive organs

Disorders may affect various digestive organs and can interfere with digestion of food. The stomach and duodenum can be affected by a condition called *peptic ulcer*, which causes mild to great pain. A peptic ulcer is a wearing away of the lining of a digestive organ. A peptic ulcer occurs when hydrochloric acid and pepsin break down an area of the lining of one of these organs. If the mucus that normally coats and protects the lining is lacking, a peptic ulcer may result. Treatment includes lowering the intake of alcohol, caffeine, and aspirin. All of these substances can irritate the stomach. Another approach is to use medicines that decrease stomach secretions.

A disorder of the digestive system that happens more often in children than in adults is *appendicitis.* This disorder is an inflammation of the lining of the appendix. In children the opening between the cecum and the appendix is quite large. Waste substances may enter the appendix and irritate the lining, causing abdominal pain and vomiting. Appendicitis may cause death if the appendix ruptures and empties its contents into the body cavity. As a person ages, the opening to the appendix becomes smaller. Thus, there is less chance of developing this condition.

Another problem of the digestive system can take place in the gall bladder. The gall bladder stores bile, which is produced in the liver. Bile contains cholesterol in solution. If the cholesterol in bile solidifies, *gallstones* form. A gallstone is a stone like mass formed in the gall bladder. Gallstones may block the duct leading to the small intestine, thus blocking the flow of bile out of the liver. If bile pigments, which have a yellow color, enter the bloodstream, they produce a yellow color in the skin and in the whites of the eyes. This condition is called *jaundice*.

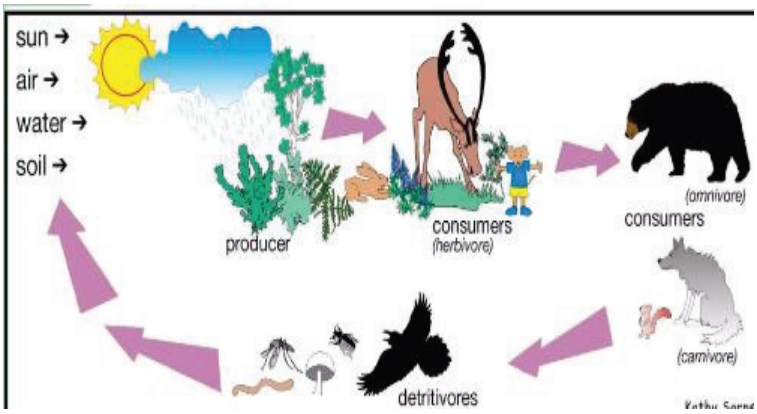
Gallstones may be treated by a diet that restricts the foods that stimulate the gall bladder. For example, foods high in fats are restricted. Treatment may also involve surgery.

4. FOOD AND ENERGY IN THE ENVIRONMENT

Organisms have special roles that they play in an ecosystem. Organisms may be *producers, consumers, or decomposers.* These three terms indicate how an organism obtains energy and how it interacts with the other living things in its community.

Producers. Some organisms, such as green plants and certain microorganisms, have a very special ability that sets them apart from all other living things: They can make their own food. Such organisms are known as producers. Producers are able to use a source of energy (such as sunlight) to turn simple raw materials (such as water and carbon dioxide gas) into food (such as the sugar glucose). Organisms that cannot make their own food may eat the producers directly. Or they may eat other organ- isms that cannot make their own food. However, all organisms that cannot make their own food ultimately depend on producers. *Producers are the source of all the food in an ecosystem.*

Consumers. Organisms that cannot make their own food depend on producers for food and energy. *An organism that feeds directly or indirectly on producers is called a consumer.* There are many kinds of consumers. Some organisms, such as grasshoppers and rabbits, are plant eaters. Plant eaters are known as herbivores. The term herbivore comes from the Latin words *herba*, which means grass or herb, and *vorare*, which means to eat. Spiders, snakes, and wolves, which eat other animals, are known as carnivores. The Latin word *carnis* means flesh.



Organisms that eat both plants and animals are known as omnivores. (The Latin word *omnis* means all.) Crows, bears, and humans are just a few examples of omnivores.

There are many other terms that are used to group consumers according to what they eat. One such term is scavenger. A scavenger is an animal that feeds on the bodies of dead animals. Jackals, hyenas, and vultures are examples of scavengers. So are certain crayfish and crabs, who “clean up" watery environments by eating dead organisms.

Decomposers. After living things die, organisms called decomposers use the dead matter as food. *Decomposers break down dead organisms into simpler substances.* In the process, they return important materials to the soil and water. You may be familiar with the term "decay," which is often used to describe this process. Molds, mushrooms, and many kinds of bacteria are examples of decomposers.

Decomposers are essential to the ecosystem because they rid the environment of the bodies of dead plants and animals. Even more importantly, decomposers return

nutrients (compounds containing chemicals such as nitrogen, carbon, phosphorus, sulfur, and magnesium) to the environment. These nutrients are then used by plants to make food, and the cycle of nutrients through the environment continues. If the nutrients were not returned to the environment, organisms within that ecosystem could not survive for long.

Food Chains and Food Webs

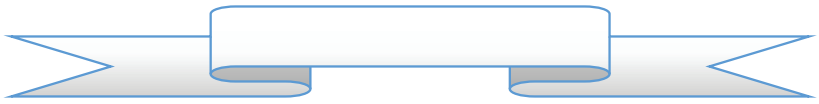
In general, food and energy in an ecosystem flow from the producers to the consumers, and finally to the decomposers. The food and energy links between the producers and consumers in an ecosystem are represented by *food chains and food webs.*

A food chain represents a series of events in which food and energy are transferred from one organism in an ecosystem to another. The first link in a food chain is always a producer. The second link is a herbivore. The third link and all the links after that are almost always carnivores.

Let's take a look at an example of a food chain. In an Antarctic food chain, the producers are one- celled organisms known as diatoms. The diatoms capture energy from the sun and use it to make food. When a diatom is eaten by a shrimplike animal called a krill, the food energy and matter in the diatom are transferred to the krill. In the following links of the food chain, the krill is eaten by a squid, which is eaten by a penguin, which is eaten by a leopard seal, which is eaten by a killer whale. Both among food energy and matter are transferred at each successive link of the food chain.

The "end" of a food chain is connected to the "beginning" by decomposers. In the Antarctic food chain, decomposers break down the body of the killer whale when it dies. This makes matter in the form of nutrients available to the producers.

A food chain gives you a glimpse of the food and energy relationships in an ecosystem. But it does not give you the whole picture. There are many organisms in an ecosystem, and few of them eat only one kind of food. Thus there must be more than one food chain in an ecosystem. A food web consists of many overlapping food chains. One of the food chains in this food web was just described. Another food chain might be: a diatom is eaten by a tiny water animal that is eaten by a fish that is eaten by a penguin. Take a moment now to identify three of the many other food chains in this food web.



I. PRONUNCIATION TASKS

1. Try to pronounce properly the following words:

Consumer, decomposer, microorganisms, glucose, herbivore, carnivore, omnivore, scavenger, hyena, vulture, environment, molds, phosphorus, nutrient, whale, shrimplike, animal, grasshopper, available, diatom, penguin.

Pitcher-care aruncă;
Grasshopper-cosaș lăcustă verde;
Spider- paianjen;
Decay- descompunere, putrezire;
Link- verigă, legătură;
Shrimp-crevetă;
Squid-specie de sepie, calmar;
Seal-focă;
Whale-balenă;
Glimpse-privire;
Thus-astfel, în felul acesta.

Remember!

II. LANGUAGE IN CHUNKS

1. Give the English definitions to the words listed below:

Producer, consumer, decomposer, raw material, glucose, omnivore, herbivore, hyena, phosphorus, sulfur, magnesium, a food chain, diatom, a food web.

2. Find Romanian equivalents to the words and word-combinations. Make up sentences.

-to enjoy doing something;
-to prevent somebody from doing something;
-for an hour or so;
-to turn something into something;
-to depend on;
-to be familiar with;
-to be associated with;
-to clean up;
-to score a basket;
-to came from.

3. Identify synonyms for:

-to break something down
-similarly
-to come from
-glimpse
-whole
-kinds of
-to rid of
-matter
-within
-to interact with
-essential
-overlapping
-link
-to identify

4. ***Look up in the dictionary and give the meanings of the following words:*** *„to set, flesh, dead, mould, light, to come"*. Find some expressions with these words**.**

5. Form derivatives from the words below. Translate them.

-term	-to mean	-own
-consumer	-death	-producer
-to identify	-nutrient	-short
-food	-to represent	-break

6. Identify the false sentences*:*

a) An organism that feeds directly or indirectly on producers is called a consumer.
b) Consumers are the source of all the food in an ecosystem.
c) Plant eaters are known as omnivores.
d) There must be only one food chain in an ecosystem.
e) A scavenger is an animal that feeds on the bodies of live animals.
f) Producers are able to use a source of energy (ex. Sunlight) to turn simple raw materials into food.

7. Find in the text words which refer (directly or indirectly) to the concepts below:

a) Ecosystem
b) Producer
c) Scavenger
d) Organisms
e) Web
f) Chain

III. GRAMMAR FOCUS

1. Fill in the gaps with the words: for, as, since, after, before 1. …. it is commonly started one of the chief distinctions between animals and plants lies in the fact that animals depend upon highly organized foodstuffs …. their source of supply. 2. The protozoa are considered … very primitive organisms, rudimentary ancestors of higher animals …., they are unicellular. 3. ….. the discovery of streptomycin, a great deal of information has been accumulated concerning its use. 4. Rats deprived of vitamin D …. 35 to 40 days become unable to use their hind legs.

2. Fill in the gaps with the words: either... or, neither…nor, not only…but, so…that. 1. The cations K and Ca induce diuresis when administered … together … in succession. 2. The kidney is an organ capable of altering the quantity and quality of the urine secreted …. … the water balance and osmotic relations in the blood and tissues are kept within optimal ranges. 3. The functions of the kidney are … numerous … they require a high degree of correlation as well. 4. … our group … group 5 decided who will be the first to begin the experimental work on glomerular filtration.

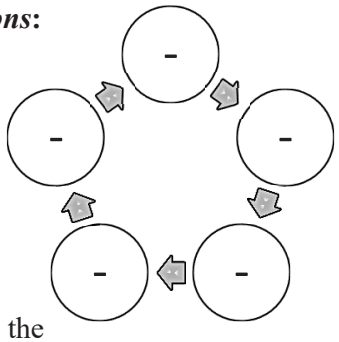
IV. CONVERSATIONAL TASKS

1. ***Determine the differences between*** *a food chain and a food web* ***using the T-chart:***

Food Chain	Food Web

2. All the plants and animals in the world eat or are eaten by each other. Draw a diagram explaining the essence of a food chain. Add some other details.

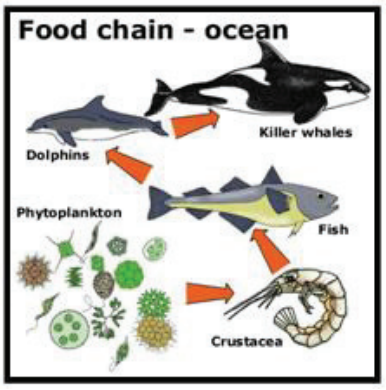
***2 Give judicious answers to the following questions*:**



1. What is a „*food chain*”?
2. What are the different roles of the organisms in an ecosystem?
3. Name some organisms that are herbivores,
4. carnivores and omnivores.
5. What is the role of a scavenger in an ecosystem?
6. What nutrients do the decomposers return to the environement?
7. Explain the meaning of a diatom.
8. How do producers, consumers and decomposers interact?

Think! Explore and Apply!

1. Describe the picture taking into account the theory illustrated in the text.



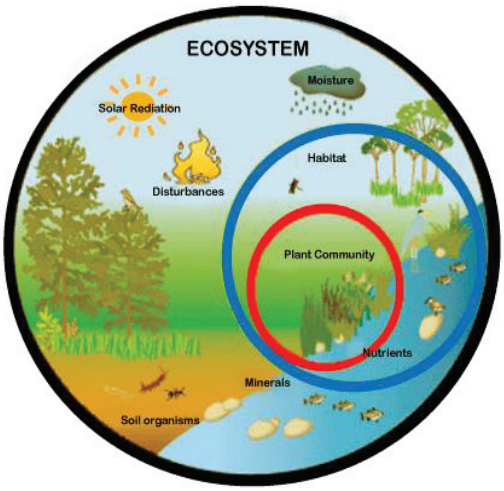
2. Brainstorm ideas with your peers on the following statements:

- A food web consists of many overlapping food chains.
- If the nutrients were not returned to the environment, organisms within that ecosystem could not survive long.
- After living things die, organisms called decomposers use the dead matter as food.

5. THE ECOSYSTEM

To understand the changes that can occur in an environment and how they can affect the environment, you can study the science called *ecology*. Ecology is the study of the relationships and interactions of living things with one another and with their environment. Scientists who study these interactions are called ecologists.

Living things inhabit many environments on Earth. From the polar ice caps to the forests and plains of the equator, living things can be found under ground, in air, in water, and on land. Organisms have been found at the bottom of ocean trenches kilometers deep and floating in the air more than eight kilometers above the Earth's surface.



To make sense of the number and variety of interactions among Earth's living things and their environment, ecologists find it useful to divide the world up into separate units known as *ecosystems.* An ecosystem consists of all the living and nonliving things in a given area that interact with one another. A forest ecosystem, for example, includes birds and squirrels in the trees, foxes and rabbits in the bushes, the trees and bushes themselves, insects and spiders, shade-loving wildflowers, ferns, mushrooms and other fungi, microorganisms (microscopic organisms) such as bacteria, dead leaves, chemical in the soil, rocks, sunlight, rain water, and many other living and nonliving things.

An ecosystem can be as tiny as a drop of pond water or a square meter of a garden. Or it can be as large as an ocean, a forest, or a planet. The size of an ecosystem is defined by the ecologist who is studying it.

It is useful to talk about ecosystems as if they were separate, self-contained units. However, it is important to keep in mind that ecosystems are not isolated. Ecosystems overlap and affect one another. The grizzly bears of a forest ecosystem may feed on the 'salmon of a stream ecosystem. Chemicals from aerosol cans, air conditioners, and refrigerators in the United States and elsewhere are carried great distances by the wind and eventually break down the protective ozone layer in the air above the poles. The "holes" thus created in the ozone layer allow extra radiation from the sun to reach the ecosystems near the poles, damaging them. Damage to these ecosystems may, in turn, result in damage to other ecosystems-including ones in which you live! So it is important that you realize all the living and non- living things on Earth are ultimately connected to one another.

Communities. The living part of any ecosystem-all the different organisms that live together in that area-is called a *community*. The community of a pond, for example, might include fishes, frogs, snails, microorganisms, and water lilies. The members of a

community inter- act with one another in many different ways. Lily pads provide a resting place for frogs. Large fishes eat frogs. Microorganisms break down the bodies of dead organisms, producing products such as nitrogen compounds that can be used by plants.

Population. Each kind of living thing makes up a *population* in the community. A population is a group of the same type, or species, living together in the same area. (A species is a group of similar organisms that can produce offspring. You and all other humans belong to the same species. But cats belong to another species.) For example, all the rainbow trout living in a lake are a population. All the redwood trees in a forest are a population.

Habitats. Where would you go to find a lion? How about a pigeon? Where in a forest would you look for a squirrel? A mushroom? An earthworm? Would you discover all these organisms in the same place? Probably not. Lions live on the grassy plains of Africa. Pigeons live in cities, among other places. In a forest, squirrels live in the trees, mushrooms grow on the forest floor, and earthworms burrow in the soil. Each of these organisms lives in a different place. The place in which an organism lives is called its *habitat*. A habitat provides food, shelter, and the other resources an organism needs to survive. Living things such as lions, pigeons, and mushrooms live in different habitats because they have different requirements for survival. Organisms such as lions, zebras and giraffes also have different requirements for survival. Yet these organisms live in the same habitat. Why? Because their requirements-such as for temperature, water, and open space-overlap in many ways. The size of an organism's habits and needs. The habitat of a humpback whale is the open ocean. The habitat of a certain tiny mite, on the other hand, is the ear of a moth.

I. PRONUNCIATION TASK

1. Get acquainted with the following words. Pronounce them properly:

Environment, equator, bush, fungus, fungi, microorganisms, air conditioners,

Requirements-necesități;
Humpback-cocoșat;
Whale- balenă;
Mite - căpușă
Moth-molie, fluture;
To damage-a pricinui daune;
To inhabit-a popula;
Offspring-pui (de animal).

refrigerator, ozone layer area, community, nitrogen compounds, species, a rainbow trout, pigeon, requirement, burrow, habitat, a humpback whale.

3. *Remember!*

II LANGUAGE IN CHUNKS

1. Look up in the dictionary and give the English definition to the following words:

Ecosystem	Ozone	Area	Spider
environment	nitrogen	requirements	burrow
fern	community	meadow	mite
aerosol	population	snail	moth
rocks	protist	sunlight	bacteria

2. Give synonyms to the following words:

To occur, variety, to interact, bacterium, can, to allow, to damage, ultimately, humpback, separate, to affect

3. Find antonyms for:

Under water, tiny, at the bottom of the ocean, together, to overlap, to divide, to depend on, wild, dead

4. Form derivatives from the words. Translate them.

Shade	Hand	Human
Land	Sun	Wind
Love	Fire	
Force	Rain	

5. Say what can be:

Separate	Full	Watery
Tiny	Wild	Icy
Eventual	Grassy	Floating
Ultimate	Humpback	Square

6. *Look for some adjectives suitable for the nouns:*

Environment, water, world, squirrel, garden, stream, road, bird, tree, people, offspring, lion, soil, forest.

7. *Find some nouns that can be appropriate for the verbs listed below.* *(Ex. To affect- the memory).*

To affect	To carry
To make a sense of	To create

To realize
To connect
To belong to
To provide
To require
To depend on
To divide

8. Say what is the destination of the following words:

Chemicals, sunlight, rain water, dead leaves, ecologists, water, air conditioners, refrigerator, ozone layer, lily pad, microorganisms, meadow, whale, soil

9. Find the Roumanian equivalents to the words or word-combinations listed below. Make up senteces.

To occur
At the bottom of
To make sense of something
To find something useful to
To be connected to
To keep in mind
To break something down
In turn
To look for
To depend on
On the other hand
offspring
to belong to
eventually
To be as tiny as

10. Identify and correct the false sentences:

a) From the polar ice caps to the forests and plains of the equator, living things can be found only under ground.
b) A forest ecosystem includes birds, crocodiles, elephants, foxes, rabbits, cows, etc.
c) An ecosystem can be as tiny as a drop of pond water or a square meter of a garden.
d) The grizzly bears of a forest ecosystem may feed on people.
e) The community of a pond might include fishes, frogs, squirrels, giraffes, pigeon and water lilies.
f) A population is a group of organisms of the same type or species, living together in the same area.
g) Lions live in cities among people but zebras live on the grassy plains of Africa.
h) Organisms haven't any requirements for survival.
i) The size of an organism's habitat doesn't depend on the organism's habits and needs.

11. Give some expressions containing the words:

Full, can, wild, square, way

12. Arrange the words to make sentences:

a) habitant, The, in, lives, place, which, called, is, its, organism, an.

b) sections, of, interactions, specific, next, in, the, you, two, about, learn, that, communities, some, within, place, take, will, the.

c) habits, The, an, habitant, on, the, depends, needs, and, organism's, size, of, organism's.

d) things, many, on, Living, environments, inhabit, Earth.

13. Translate the words below giving all their meanings. Make up sentences.

Use them in different contexts.

-broască (de la ușă);

-fund;

-sălbatic;

14. Fill in with the words from the box bellow:

Isolated, interact, ecosystem, affect, needs, requirements, resources, habits, overlap, divide up, the ecologists.

a) All living things that make up an ecosystem ... with one another.

b) Not all the animals have the same ... for survival. Their ... and ... are different.

c) All of us know that ecosystems can't be ... because they ... and ... one another.

d) In order to study easily the interactions among living things ... consider to ... the world into ... .

e) A habit provides all the ... an organism needs to survive.

15. Complete the sentences:

a) If all the living things of an ecosystem didn't interact with one another ... .

b) Squirrels in a forest ecosystem can't interact with camels because ... .

c) If all the animals had the same requirements for living . . . .

d) If our life were everlasting . . . .

e) People have to support each other because . . . .

f) I don't eat mushrooms because . . . .

16. Act as an interpreter:

1) Pentru a studia mai ușor ființele vii și mediul lor înconjurător ecologii găsesc de cuviință de a împărți lumea în unități separate cunoscute ca ecosisteme.

2) Mărimea unui ecosistem este diferită. Există ecosisteme de mărimea unei picături de apă sau de a unui ocean sau planete. Ea este determinată de ecologiștii care se ocupă cu studierea ecosistemelor.

3) Microorganismele așa ca bacteriile, viermii, frunzele moarte, produsele chimice transformă (putrezesc) organismele moarte producând compuși de azot.

4) Locul de trai aprovizionează organismele cu hrană, adăpost și alte resurse necesare pentru supraviețuire.
5) Locul de trai al balenei cocoșate este oceanul.
6) Este important să reținem că ecosistemele nu sunt izolate. Ele se suprapun și interacționează unele cu altele.
7) Comunitatea unui râu include pești, broaște, moluște, alge, melci, scoici și alte viețuitoare.
8) Un ecosistem forestial cuprinde păsări așa ca bufnița, ciocănitoarea, cucul; veverițe, lupi, bursuci, jderi, elani, cerbi, căprioare, vulpi, iepuri în tufușuri, leoparzi, urși, mistreți, râși; târâietoare-șerpi, șopârlă, rozătoare-șoareci, țistari, șobolani.

III. GRAMMAR FOCUS

I. Change the following sentences appropriately as instructed in the brackets

1. Where does she live? (change to negative)
2. Do you know how to drive? (change to negative)
3. She talks a lot on the phone. (change to negative)
4. Ram does not study at night. (change to affirmative)
5. Students always make noise in class. (change to negative)
6. Do you play cricket? (change to affirmative)
7. When do you go to school? (change to negative)
8. How often do you cook by yourself? (change to negative)
9. My parents don't tell us stories. (change to interrogative)
10. Does she not make noise in class? (change to affirmative)
11. The earth revolves around the Sun. (change to interrogative)
12. Do I make noise in class? (change to affirmative)
13. She does not know him. (change to affirmative)
14. Do they laugh at you? (change to affirmative)
15. Sita loves his parents very much. (change to interrogative)

1. **Put in the right form of the verb. Use either** Present Simple, Present Continuous or Past Simple

a. I _____ (to clean) my car yesterday. b. It _____ (to rain) at the moment. Let's _____ (to stay) inside today. c. Marry_____ (to be) at the zoo last week. She_____ (to see) a monkey there. d. Tom _____ (to be) at the restaurant right now. Let's go and _____ (to meet) him. e. Susan_____ (to come) yesterday, because she _____ (to have) a car accident. f. Look! I _____ (to see) Johnny over there. I _____ (to think) he _____ (to be) ill a few days ago. g. The weather _____ (to look) good today, but remember last week? It _____ (to be) raining the whole time. h. Last

year, Conny _____ (to visit) the United Kingdom. She _____ (to want) to go to France this year.

IV. CONVERSATIONAL TASKS

1. Answer the following questions:

a) Why do the ecologists study both the nonliving and living things in an environment?
b) What is an ecosystem? Give examples of ecosystems.
c) What is the difference between an ecosystem and a community? A community and a population?
d) How do the trees in a forest ecosystem interact with squirrels? With the soil?
e) Think of some ways in which the numbers of a lake community interact.
f) What kinds of organisms are found in your community?
g) What is a population? Name some of them.
h) A group consisting of all the wildflowers in a meadow is not considered to be a population. Can you explain why?
i) What is a habitat? Which is the habitat of bears? Tigers?
j) Name some animals you like most. Why do you like them?

Think! Explore and Apply!

1. Brainstorm the idea: Sometimes a person can be called „zebra". Can you explain why?
2. Explain why an architect designing a new home for the cheetahs in a zoo must know something about the natural habitat of cheetahs?
3. Choose one of the following animals and find out what kind of shelter it builds:
   Beaver, trapdoor, spider, mud dauber wasp, prairie dog, cliff swallow, termite, weaver bird, mole rat, toucan, carrier shelf, coral gall crab.
4. On a sheet of paper draw a picture of an animal's shelter and make a list of the materials needed to build it.
5. Build a model of your animal's shelter using the same materials the animal would use whenever possible.
6. Predict what would happen if the materials that an animal uses to build its shelter were not available.
7. Find some additional information on the text, speak about it with your desk-mate.
8. Retell the text in details.
9. Speak about the relationships or interactions between people. Describe them.

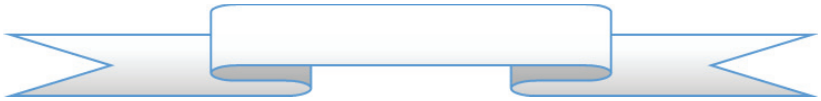
6. PEOPLE'S HEALTH: SERIOUS AND IRREVERSIBLE DISEASES

Scientists make a fundamental discovery about the amino acid valine's role in blood stem cell development. A team of researchers from California and Japan has found that an essential amino acid plays a crucial role in the creation of blood stem cells—a discovery the scientists say could offer a potential alternative to chemotherapy and radiation in treating blood cancer patients. The amino acid valine, which people obtain by eating protein, appears key to the formation of blood stem cells. Mice deprived of the protein building block for two to four weeks stopped making new blood cells altogether, according to the new study, published Thursday in Science. In lab tests the study showed human blood stem cells also appear to be as dependent on valine, the researchers said. If this proves true, depriving patients of the amino acid before a bone marrow transplant might spare them the necessity of chemotherapy or radiation, both of which destroy blood stem cells to make room for new, transplanted ones. But with these procedures one in 20 transplant patients dies, sometimes from complications linked to the toxic treatments.

Additionally, depriving certain leukemia patients of valine might even kill off the cells that are causing their cancers, says HiromitsuNakauchi, a senior author on the new paper. "If such a simple and relatively less harmful therapy could be used to treat leukemias, that would be great," says Nakauchi, a stem cell researcher at both the University of Tokyo and Stanford University. "That's what I'm hoping at the moment." Nakauchi adds that he was surprised to uncover such a basic biological process. "I couldn't believe it myself," he says. Camilla Forsberg, a blood stem cell researcher at the University of California, Santa Cruz, who was not involved in the research, says she was impressed with the results and thrilled there are still such fundamental discoveries to be made. "It's pretty exciting how the basic things we think about are still giving us surprises," she says, adding that it will be crucial to figure out why these blood stem cells—also called hematopoietic cells—are so sensitive to valine. Other cell types might have particular sensitivities to the other 19 amino acids active in the body, nine of which are vital and must be obtained via food, so Forsberg believes these must now be studied as well.

The essential role valine plays in blood should not come as such a surprise, says Linheng Li, a stem cell biologist at the Stowers Institute for Medical Research. Some people who eat a low-protein vegetarian diet are known to develop anemia, a disease characterized by low levels of red blood cells. 42 Li was not involved in the new research, but says he made a similar, unpublished finding in his own lab that makes him confident of Nakauchi's results. He also thinks valine deprivation could work as well in people as it does in mice, although it will take a lot of research to determine how long people can tolerate being deprived of the amino acid. If valine deprivation works in bone marrow transplant patients, it could open the procedure to some people—such as pregnant women—who are usually not considered candidates for chemotherapy or radiation, he says. Li suspects, however, that valine deprivation alone will not be effective for treating cancer directly, although it might work well combined with other therapies.

In the new study Nakauchi and his colleagues say they were able to successfully transplant bone marrow in valine-deprived mice without needing radiation or chemotherapy—but some of the mice died from lack of the nutrient, which is also involved in metabolism and tissue repair. Nakauchi says it should be relatively easy to deprive people of valine by feeding them on specially formulated intravenous diets, although he admits that might be difficult if the depletion needs to last weeks or months. The researchers also found human blood stem cells failed to proliferate when cultured without valine. Nakauchi says the team realized only after their study was completed that it built on research published 70 years ago in Science by the late Nobel laureate Arthur Kornberg. When Nakauchi was a postdoctoral student at Stanford he knew the biochemist, and says it made him proud to renew and extend Kornberg's findings. Now Nakauchi says he hopes the work will lead to new approaches to cancer treatment. "There may be some other, similar amino acid–dependency in other stem cells and also cancer stem cells," he says. "Those are the things I'm very much interested in."



I. LANGUAGE IN CHUNKS

1. ***Find the synonyms among the pool of words***:

1. blood stem cells leukemia hematopoietic cells blood cancer
2. treatment cure open uncover
3. essential deprive abridge necessary
4. repair regenerate determine identify

2. ***Fill in the gaps with the words and expressions from the text:***

1. Depriving patients of the amino acid before a _____ might spare them the necessity of chemotherapy or radiation, both of which destroy _____ to make room for new, transplanted ones. 2. However, _____ alone will not be effective for treating cancer directly, although it might work well combined with _____. 3. It should be relatively easy to deprive people of valine by feeding them on _____, although he admits that might be difficult if the depletion needs to last weeks or months. 4. There may be some other, similar _____ in other stem cells and also _____. 5. If valine deprivation works in bone marrow transplant patients, it could open the procedure to some people—such as _____ — who are usually not considered candidates for _____ or _____. 6. Some people who eat _____ are known to develop anemia, a disease characterized by low levels of _____. 7. They were able to successfully transplant bone marrow in valine deprived mice without needing radiation or chemotherapy—but some of the

mice died from _____, which is also involved in _____ and tissue _____.

3. ***Listen to the podcast*** *Extreme Exercise Can Poison the Blood* ***and complete the given statements with missing words:***

1. If you're serious about fitness, you know the importance of training your_____ and your brain. 2. But it turns out that it may be just as important to train your gut—or suffer _____. 3. During the race, their _____ got leaky — due to a lack of blood flow to the intestines, and the physical trauma from so many jarring miles. 4. Some runners actually had blood profiles identical to those of patients admitted to the hospital with _____ _____. 5. Their bodies launched a counterattack, unleashing _____ _____ tamp down their bodies' immune overreaction. 6. Four hours of activity is extreme enough to kick off this chain of _____.

4. ***Listen again and answer the questions***:

1. Where were the results of the research published?
2. How many runners did researchers examine?
3. Who was able to avoid the problem of blood poisoning?

5. Choose the right answer:

1. *People with binge-eating disorder:*
   a. Focus on eating only healthy foods.
   b. Don't try to compensate by purging food.
   c. Schedule times to overeat.
2. *People with anorexia:*
   a. have an intense fear of being fat
   b. feel better when they've reached their goal weight
   c. eat huge amounts of food, but don't gain weight
3. *People with bulimia:*
   a. don't participate in sports
   b. quickly begin to look very different
   c. may use laxatives or diuretics to lose weight

6. Say if the sentences are true or false:

1. *True or false*: People with eating disorders often hide their extreme eating behaviors from others.
2. *True or false*: Eating disorders are common among teens.
3. *True or false*: Self-esteem is not something a person can improve.
4. *True or false*: There are lots of ways to help a friend who has an eating disorder.

5. *True or false*: You can tell by looking at a person if he or she has an eating disorder.
6. *True or false*: People with eating disorders can become withdrawn and less social.
7. *True or false*: Eating disorders are treated with medication because they're purely physical problems.

7. How would you define a healthy person? Choose at least six statements which you consider that a person needs in order to be healthy.

A healthy person:

¬ Exercises regularly
¬ Lives in a clean environment
¬ Avoids cigarettes, alcohol and drugs
¬ Has a beautiful skin
¬ Avoids food that has too many food additives
¬ Eats regularly; doesn`t eat snacks
¬ Has a beautiful silhouette
¬ Doesn`t need medicine
¬ Can run after the bus without losing his breath
¬ Goes in outdoor trips
¬ Has a comfortable house
¬ Has a good self-image
¬ Esteems hygiene
¬ Avoids eating suits
¬ Has certain beliefs that help her/him in life
¬ Doesn`t eat excessive amounts of food
¬ Goes to the doctor regularly
¬ Never looks depressed
¬ Successfully manages his/her way out of any difficult situation
¬ Makes friends easily

II. GRAMMAR FOCUS

1. ***Put the verb in brackets in the correct form (present simple or present continuous)***. Next week, my friends and I _____ (go) camping in the woods. I _____ (organize) the food, because I _____ (like) cooking. Dave _____ (have) a big car with a trailer, so he _____ (plan) the transportation. Sam _____ (bring) the tent — he _____ (go) camping every year, so he _____ (have) a great tent and lots of other equipment. My wife _____ (think) we're crazy. She (like) _____ holidays in comfortable hotels, so she _____ (take) a trip to Paris instead.

2. ***Present Simple or Continuous? Choose the correct alternative(s) in the sentences 1-8 below***. 1 Today she's spending/spends time with her grandmother. 2 They usually are going/go to the gym on Sundays. 3 We 're having/have a barbecue later on. Do you want to come? 4 No, she can't answer the phone, she has/is having a shower. 5 I always have/am having a coffee before I 'm leaving/leave for work in the morning. 6 They sometimes fly/are flying to Sweden, but usually they are going/go by boat. 7 Where are you? I'm sitting/sit outside in the sunshine! 8 He always brings/is bringing a monolingual dictionary to his English class.

III. *CONVERSATIONAL TASKS*

Answer the questions

1. What kind of serious and irreversible diseases do you know? What diseases are the most common around the world and in our country?
2. What kind of the most effective cancer cures do you know?
3. Which two typical cancer cures are mentioned in the text? What's the alternative to these cures?
4. How do people usually obtain amino acid valine?
5. What's the effect of valine deprivation?
6. Why is it possible to say that valine deprivation can open the bone marrow transplant to some people? What kind of people?
7. What's the side-effect of valine deprivation? How is it possible to avoid this side-effect?

Think! Explore and Apply!

1. In a written report, choose one unhealthy behavior in your life (e.g., not getting enough exercise sleep or the proper nutrition, drinking too much, smoking). Describe the behavior and formulate a realistic plan to try and improve the condition. Finally, assess the potential barriers, both internal and external (social, environmental), that may prevent you from completing this plan.

2. **C**hoose one particular disease or health behavior and research the differential rates among minority groups. Analyze the possible causes of the differences between the groups.
3. Brainstorm the following: why do you think people are obese? have heart attacks? abuse drugs? have diabetes?
4. Which jobs can be related to health and physical education?
5. Why are personal health and well-being important while looking for a job?
6. Which jobs require a high level of fitness?
7. Why is nutrition important to sport people? Who could sport people go to for nutritional advice?

8. What occupations that aren't sport-related require a high level of fitness?
9. Why is a netball coach similar to a doctor? (You can use other occupation combinations.)
10. Here are two people with eating disorders.

Write a paragraph for each that describes possible signs of the disorder that other people might notice. Next, write a paragraph about the health consequences that each person may have.

- ***Sophia is 15***. At 5'5" tall and 115 pounds, she looks in the mirror and sees a fat person. At dinner, she tells her parents, "I'm not hungry – I'll eat later." But Sophia doesn't eat later because she has begun to starve herself in secret. For the past week, she's been eating about 400 calories a day.
- ***Daryl is 16***. He's a wrestler – the best in his weight class. But if he gains 5 pounds, he'll get bumped up a weight class and have to wrestle larger guys and possibly lose. Daryl exercises obsessively. He also takes laxatives to lose weight, and he has thrown up a few times after friends dragged him out for fast food. Daryl even stops drinking water a day before he gets weighed for a match.

Pretend that these two students are your friends. How would you go about helping them? What advice would you give them?

11. Project. Create a poster or infographic called "A Healthy Dose of Reality." Do some research. Search the Internet or magazines for images that you think promote unhealthy eating habits or a starved or unhealthy appearance. Next, find images that represent the opposite: good nutrition and healthy bodies. Then use these images to start a poster or infographic. You can add your own drawings, and text to explain your message.

7. THE EXCRETORY SYSTEM

Organs of excretion

Excretion is the process of ridding the body of chemical wastes and any materials that are in excess supply. A number of organs take part in excretion. These organs include the kidneys, the lungs, the skin, and the digestive organs. Excretion is an important part of maintaining homeostasis. To maintain a stable internal environment the body must remove wastes and surplus substances.

Urea is a nitrogen-containing waste produced as a by-product of protein breakdown. Urea is a poison. Removal of urea is a major function of the excretory system. Balancing the amount of water in the body is another of the excretory system's functions. Water enters the body in foods and drinks. Many foods, such as fruits, contain a great deal of water. Water is produced in the body by cellular respiration. Some of the extra water is released from the lungs. The rest is released by other excretory organs.

The amount of salt and other minerals in the body also is balanced by the organs of excretion. Salt and calcium are taken in with many foods. Small amounts of salt are needed in the blood and in many organs. Salt that is above the amount needed is excreted. Extra calcium builds up in the blood and is excreted.

The skin is one of the organs of excretion. Perspiration, or sweating, is a process that is familiar to all of us. Perspiration is accomplished by sweat glands that lie within the skin. You can see that the *sweat glands* open to the surface of the skin through tiny *pores*. The liquid produced by the sweat glands contains water along with salt and very small amounts of urea.

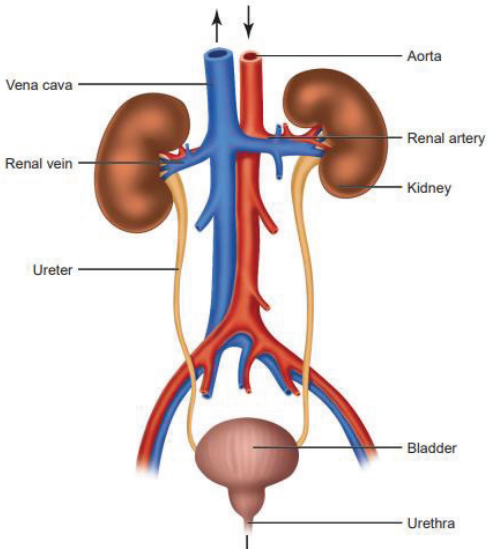
Kidney structure

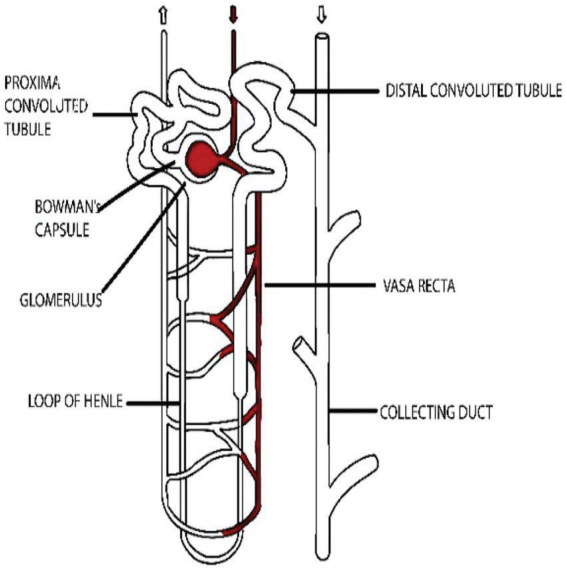
The *kidneys* are the major organs of excretion. One kidney is found on each side of the backbone in the lower back. The kidneys filter the blood and produce *urine*, a liquid waste. Urine is mostly water, with some urea, salts, and other substances in it. Each kidney receives blood through a *renal artery* and returns blood to circulation by a *renal vein*. Urine formed in the kidneys is carried away through tubes called **ureters**. The ureters connect the kidneys to the *urinary bladder***.** The urinary bladder is a saclike organ that stores urine. The walls of the bladder are muscular and help to push urine out of the body. Urine is carried from the bladder to the outside of the body through a tube called the **urethra**.

The job of filtering the blood and forming the urine is done by microscopic units in the kidneys called *nephrons*. There are about a million nephrons in each human kidney. Part of a nephron consists of an arteriole that farms a ball of capillaries. This ball of capillaries is called a *glomerulus*. Surrounding the glomerulus is a double-walled structure called *Bowman's capsule*. The space inside Bowman's capsule connects with a small tube, or *tubule*. The tubule is divided into three sections. The section nearest Bowman's capsule is the proximal convoluted tubule. The next section is called Henle's loop. The third section is the *distal convoluted tubule*. The tubule then connects with a

larger tube called a *collecting tubule*. Several tubules lead into a single collecting tubule. Urine passes from the collecting tubules into a cavity and then into a ureter.

The outer portion of the kidney is called the *cortex*. In the cortex are the convoluted tubules, glomeruli, and Bowman's capsules of the nephrons. The center part of the kidney is the *medulla*. In this region are the Henle's loops and collecting tubules of the nephrons.





How nephrons work

Blood enters the capillaries of the glomerulus under high pressure. In most tissues the pressure of capillary blood is about 20 mm of mercury. In the glomerulus, however, the pressure is about 60 mm. This high pressure forces much plasma out through the porous walls of the glomerular capillaries and into Bowman's capsule. Thus the glomerulus acts as a filter. Much of the plasma and most of the sub- stances dissolved in the plasma pass through this filter. The blood cells and the plasma proteins remain behind in the capillaries. The fluid that accumulates in Bowman's capsule is the *glomerular filtrate*.

Much blood flows through the kidneys and is filtered. Glomerular filtrate is produced in large volumes. The kidneys of an average human produce about 180 L of glomerular filtrate each day. Glomerular filtrate is different from urine. It is similar to the blood plasma from which it is filtered. Glomerular filtrate contains many substances that the body needs. Sugars, amino acids, vitamins, and many other useful materials are found in this liquid. If these substances were not recovered by the kidneys, they would soon be in short supply.

Reabsorption of useful substances is the job of the tubules. As glomerular filtrate passes through the tubules of the kidney, many of the needed substances are reabsorbed. The cells that form the walls of the tubules carry on the reabsorption. The proximal and distal convoluted tubules and the Henle's loop are surrounded by capillaries. The

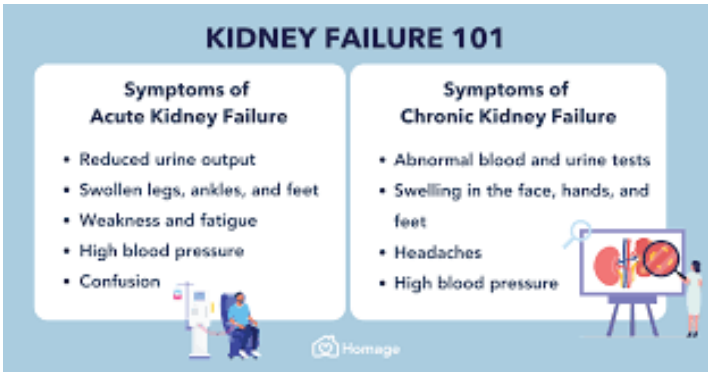
substances reabsorbed by the tubules pass into the blood in these capillaries. Some of the substances in the glomerular filtrate are reabsorbed by diffusion.

Control of water balance

The last step in the formation of urine by the kidneys is the recovery of water. The reabsorption of water occurs mainly in the collecting tubules. This process is under the control of a *hormone*. A hormone is a chemical substance produced in one organ that controls one or more activities in other organs. The hormone that regulates the reabsorption of water is called *antidiuretic hormone* (abbreviated as ADH). ADH is released into the blood by the pituitary gland, which is at the base of the brain.

Diuresis is the production of large volumes of urine. Diuresis would occur if one were to drink several glasses of water in a short time. Such action would create an oversupply of water in the body. The collecting tubules would not reabsorb as much water. The extra water would pass out of the body as dilute urine. ADH causes the walls of the collecting tubules to become *permeable* to water When the walls are permeable, water diffuses out of the collecting duct and into surrounding capillaries. Less water leaves with the urine and more water returns to the blood.

Kidney disease



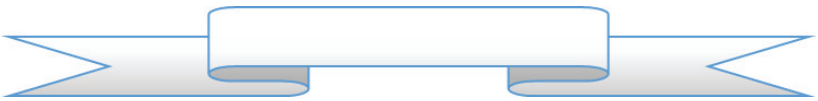
Kidney failure is a condition in which the kidneys do not rid the blood of urea or excess water or salt. This condition is serious because urea is poisonous Excess water or salt may interfere with the functioning of many organs. Causes of kidney failure may be divided into two categories, those that produce low blood pressure in the kidneys and those that produce damaged tubules.

Recall that high blood pressure in the capillaries of the glomerulus forces the glomerular filtrate out into Bowman's capsule. Il the pressure in these capillaries is not high enough, filtration will not occur. As a result, wastes cannot be removed from the blood.

Damage to the nephrons, the second kind of kidney failure, may result from many different factors. Certain drugs and heavy metals such as lead or mercury can damage the kidney tubules. Infections or allergic reactions in the kidneys also may cause such damage. Blockage of the ureters may cause urine to back up into the tubules of the kidney. The backed-up urine causes pressure in the wrong direction inside the nephrons. This reverse pressure can damage the tubules. The kidneys have some ability to repair damaged tubules. If the cause of damage lasts too long, the damage may be permanent.

A human can live with only one kidney. But if both kidneys fail, wastes rapidly build up in the blood. Unless the wastes are removed, death will result. One method of treating kidney failure is by a *kidney transplant*. A kidney transplant involves replacing the defective kidney with a healthy kidney obtained from a donor. The donor may be someone who died recently or a live person willing to donate a kidney. Kidney transplants are the most successful type of transplant surgery. Thousands of such operations have been performed in North America. The fact that a human can survive with only one kidney has led people to donate a kidney to a relative whose kidneys have failed.

Artificial filtering of the blood, or **hemodialysis**, can be used to treat kidney failure. Hemodialysis is performed by machine. Such devices often are referred to as "kidney machines" or "artificial kidneys." The machine is connected to an artery and a vein, usually in the patient's arm or leg. The blood flows through a great length of cellophane tubing. A liquid called *dialysis fluid* flows on the other side of the cellophane. As blood and dialysis fluid flow past each other on opposite sides of the cellophane, urea diffuses from the blood to the dialysis fluid.



I. PRONUNCIATION TASK

Learn the new words and pronounce them correctly.

***Adrenal Gland**:* A gland that sits on top of each kidney and produces hormones.

Bladder: The sack in the lower abdomen that holds urine.

***Bowman's Capsule**:* A small nodule of tissue consisting of an outer wall and a small bunch of capillaries bunched together inside separated by a space; functions as a part of the filtering system, allowing wastes to pass through the walls of the capillaries and into the proximal tubule; named for William Bowman.

***Collecting Duct**:* Tubes inside the kidneys that collect waste products from the rest of the filtering system and move the wastes into the ureter.

***Dialysis**:* The process of separating substances in solution by diffusion through semipermeable membranes; hemodialysis refers specifically to purifying blood by dialysis.

***Excretory System**:* The system made up of bladder, kidneys and connecting tubes that cleans the blood and excretes waste from the body (also called the urinary system).

***Glomerulus**:* Small bunches of blood vessels or capillaries inside each Bowman's capsule that act as waste expulsion stations for salts, minerals and other waste products expelled from the blood stream.

***Henle Loop**:* U-shaped loop in the proximal tubule that slows the passage of waste to allow re-absorption of water.

***Nephron**:* The filtering unit inside the kidney used to filter impurities and waste from the blood.

***Proximal Tubule**:* A tube connecting glomerulus to collecting ducts within the kidney.

***Renal Artery**:* The main artery that brings blood into the kidney to be cleaned.

***Renal Vein**:* The main vein that takes cleaned blood out of the kidney and back to the heart.

***Ureters**:* Tubes connecting the bladder and the kidney.

***Urethra**:* The exit tube from the bladder.

***Urinary System**:* The system made up of bladder, kidneys and connecting tubes that cleans the blood and excretes the waste from the body (also called the excretory system).

***Urine**:* Liquid waste expelled from the body.

II. LANGUAGE IN CHUNKS

1. Identify the false sentences (T or F)

a. *T or F/*Sweating eliminates waste products and decreases body temperature
b. *T or F*/You can survive with only one kidney
c. *T or F/*Sweat is one hundred per cent water
d. *T or F/*Sweat leaves the body through tiny openings in the skin called pores

2. Complete the sentences

a. The process of removing these waste substances is called.....
b. Waste products are carried by....
c.This is where the urine is stored.....
d. Cleaned blood returns to the circulatory system along these.....
e. The ureters, the bladder and the urethra make up the ....

3. Determine the word according to the definition

1. The bladder pushes the urine here before it leaves the body –
2. Urine travels down these into the bladder –
3. Blood is carred along these to the kidneys –
4. These filter the blood and take out the waste products –

III. GRAMMAR FOCUS

1. Open the brackets using the proper tenses:

1) I (to eat) nothing today.
2) Have you ever (to drink) orange juice? I (to drink) just.

3) Yesterday he (to swallow) a big morsel of meat and (to have) a stomachache.
4) She (to have) a morsel of food lately.
5) Next month we (to cure) our teeth.
6) Tomorrow at 8 o'clock I (to clean) between my teeth with a dental floss.
7) I (to have) a rest as soon as I (to finish) to eat.
8) Sports and other kind of exercises (to make) people feel better.
9) If the person (to choke) he couldn't breathe or speak.
10) I wish my daughter's teeth (to be) healthy.

2. Fill in the correct *future tense - will future, going to or present continuous*.

1. They _____ (drive) to New York tomorrow morning. 2. I hope the weather _____ (be) nice. 3. I offered him this job. I think he _____ (take) it. 4. I promise I _____ (not tell) your secret to anyone. 5. Take your umbrella with you. It _____ (rain). 6. They _____ (play) cards this evening. 7. I _____ (go) to the cinema tomorrow. 8. They _____ (fly) to Seattle next summer holidays. 9. I _____ (invite) 50 people to the party, and I hope everyone _____ (come). 10. That exercise looks difficult. I _____ (help) you. 11. _____ he _____ (go) to the football match? 12. Are you sure they _____ (win) the match? 13. She _____ probably _____ (stay) till Thursday. 14. He _____(not leave) tomorrow. 15. We think he _____ (come) home late in the night.

IV. CONVERSATIONAL TASKS

1. Answer the following questions:

1. What is the main function of the excretory system and how is it structured?
2. What system of the body do the kidneys belong to?
3. Who knows where your kidneys are located?
4. What do your kidneys do?
5. How many kidneys do you have?
6. Can you live with only one kidney?

2. Choose a topic, search for some information on it and get ready to present it to your peers.

- William Bowman (1816-1892) – English surgeon who discovered capsules
- Marcello Malpighi (1628-1694) – pioneer microscopist
- Urine composition and health
- Kidney diseases and treatments
- Nutrition and kidney function
- Design of dialysis machines

3. Brainstorm the idea: What might an engineer have to consider about helping astronauts go to the bathroom in space?

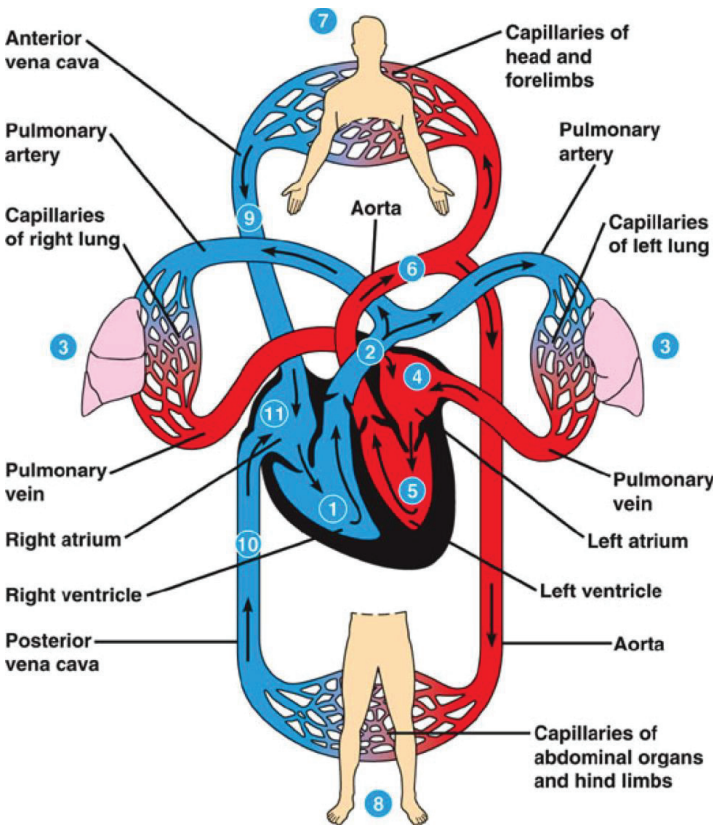
Did You Know?

- Kidney diseases can make our bones weak and brittle. It happens because kidneys play a vital role in activating Vitamin D, essential for strong bones.
- Most people are born with two kidneys. However, one can lead a normal and healthy life with just one kidney.

8. THE CARDIOVASCULAR SYSTEM

The cardiovascular system has a very important function — getting oxygen and nutrients to your entire body and removing waste. Your cells depend on your cardiovascular system to get what they need to keep running smoothly. That's why it's vital to take care of your heart with exercise, a healthy diet and controlled blood pressure and cholesterol.

What is the cardiovascular system?



Your heart and many blood vessels in your body make up your cardiovascular system or circulatory system.

Your heart uses the far-reaching, intricate network of blood vessels to deliver oxygen and other necessary things to your whole body. This network also removes the things your body doesn't need and takes them to organs that can get rid of the waste. Your blood carries the oxygen, nutrients and waste through your entire body.

Thus, the cardiovascular system consists of the heart, blood vessels (arteries, veins, and capillaries), and the approximately 5 liters of blood that the blood vessels transport. This system transports oxygen, nutrients, hormones, and cellular waste products throughout the body. The cardiovascular system is powered by the heart, which is only about the size of a closed fist. Even at rest, the average heart easily pumps over 5 liters of blood throughout the body every minute.

What does the cardiovascular system do?

The function of the cardiovascular system is to make sure your body gets the oxygen, nutrients and other things it needs and gets rid of things it doesn't.

Day and night, even while you're asleep, your heart moves blood through your body. This is why your healthcare provider can hear your heartbeat. It's the sound of your heart doing its job. Your heart circulates about 2,000 gallons of blood every day.

Some blood vessels (veins) bring blood to your heart, while others (arteries) carry blood away from your heart. Your blood vessels also take away waste (like carbon dioxide) from your cells.

What does the structure of the cardiovascular system look like?

Your heart is a very important part of your cardiovascular system because it powers the system that brings your cells what they need and takes away what they don't. Your heart connects to a network of blood vessels all over your body.

If you've ever seen water or sewer pipes under the street, you know they are very large. These pipes lead to smaller and smaller pipes that carry water into your house and sewage out of your house. Similar to the main pipes under the street, the blood vessels going into and out of your heart are the largest in your body. They connect to smaller and smaller blood vessels as they get farther away from your heart to deliver oxygen and remove waste throughout your entire body. Capillaries, the tiniest of blood vessels, transfer oxygen, nutrients and waste between your blood vessels and your tissue cells.

How big is the cardiovascular system?

Your heart is about the size of your fist. Your blood vessels run throughout your body from top to bottom, so the network is as tall and wide as you.

What are the common conditions and disorders that affect the cardiovascular system?

Many of the problems with the components of the cardiovascular system have to do with slowdowns or blockages in the blood vessels. Since your blood vessels supply your entire body with oxygen, a blockage in any of the blood vessels makes it harder to deliver that oxygen.

Common cardiovascular problems include these heart problems:

- Arrhythmia (abnormal heart rhythm).
- Heart attack.
- Heart valves that don't work right.
- Heart failure (weakness in the ability of your heart to pump).

Other cardiovascular problems happen in your blood vessels, such as:

- Aneurysm.
- Stroke.
- Atherosclerosis (plaque buildup in the arteries).
- Vascular diseases (diseases involving blood vessels).

What are some common signs or symptoms of cardiovascular system conditions?

Signs of a heart problem include:

- Chest pain.
- Pain in your upper body.

- Shortness of breath.
- Lightheadedness.

Signs of a stroke include:

- Weakness in your arm.
- Drooping in your face.
- Speech that is hard to understand.

What can I do to help my cardiovascular system function well?

You can help keep your heart and blood vessels healthy in a number of ways, including:

- Exercising regularly.
- Controlling high blood pressure.
- Controlling high cholesterol.
- Quitting smoking and using tobacco products.
- Eating heart-healthy foods.
- Staying at a healthy weight.
- Keeping your blood sugar at a normal level.

I. LANGUAGE IN CHUNKS

1. Complete the description with the words from the box.

vessels, coronary arteries, heart attack, hypertension

The coronary blood _____ surrounding the heart have derived their name from the fact that they encircle the heart like a crown, or corona. These vessels transport almost a half pint of blood every minute over the surface of the heart. Any sudden blockage of one of the ____ _____ deprives that section of the heart of its blood supply. Cardiac cells die, heart contractions may cease, and circulation may come to a standstill. If a coronary artery is completely plugged, the condition is called a coronary occlusion or ___ ____. The vascular pathologic disorder itself has been very variable. If the obstruction is only partial or in one of the smaller coronary tributaries, prompt treatment often leads to the individual's recovery. An occlusion in main coronary arteries is very serious and may cause sudden death. Other causes of the coronary disease include heavy physical exercise, aging, dietary habits, obesity, smoking, or _____.

2. Read the case. Then complete the conversation based on the case history.

A 22-year-old student was admitted to hospital with a long history of heart problems. She had been increasingly tired, with shortness of breath on exertion, orthopnoea, and palpitations. A mitral valve replacement had beencarried out 3 years previously and this had stabilized the symptoms of heart failure but was followed by episodes (attacks) of atrial fibrillation, which had been particularly severe for the 6 months before admission.

Doctor: What seems to be the problem?
Patient: I have been getting (1) _____.
Doctor: How long have you had them?
Patient: For about six months. But I've had heart problems for years, with tiredness and (2) _____ of (3) _____. In the end I couldn't walk more than a hundred metres without having to stop. I had to sleep on three (4) _____. I had a (5) _____ replacement three years ago, and that improved things for a while.

3. Fill in the gaps with the words*: fortunately, approximately, also*

1…. the great majority of coronary disease patients recover and are able to lead active, useful lives if they receive proper treatment under good medical supervision. 2. ... one fourth of all deaths in the world result from coronary artery disease. 3. …it is estimated that more than one out of every ten persons suffers some degree of insufficiency of blood supply to the heart.

4. ***Complete each fact about the cardiovascular system using terms from the box***.

Alveoli, arteries, atria capillaries, chambers, hypertension, pulmonary, circulation, systemic circulation, veins, ventricles

1. The heart has four _____ that are enclosed by thick, muscular walls. 2. The upper part of the heart is made up of two chambers, called the right and left _____, which receive the blood entering the heart. 3. The bottom part of the heart is divided into two chambers, called the right and left _____, which pump blood out of the heart. 4. _____ is a short loop from the heart to the lungs and back again. 5. _____ sends blood from the heart to all the other parts of the body and back again. 6. Blood vessels that carry blood away from the heart are called _____. 7. Blood vessels that carry blood back to the heart are called _____. 8. A network of tiny _____ connects the arteries and veins, delivers nutrients and oxygen to the cells, and removes waste products such as carbon dioxide. 9. In the lungs, gases are exchanged between capillary walls and millions of tiny air sacs called _____. 10. High blood pressure is also called _____.

II. GRAMMAR FOCUS

1. Fill in the correct form of the Present Perfect tense.

1. The earth _____ here for billions of years (be). 2. We _____ cards this week (play). 3. We _____ problems with our new car recently (have) 4. _____ on anything interesting lately (you work)? 5. Cuba _____ a socialist country since 1959 (be) 6. I _____ care of my neighbour's cats while they are away (take) 7. I _____ my car for three years (have). 8. _____ an important fight? (the boxer,

ever, win) 9. John and Mary _____ with each other since the day they got married (quarrel).

2. Complete the sentences with the correct form of the present perfect/continuous tense.

1. I _____ the book you gave me, so you can have it back now. (READ) 2. You look tired. You _____ too hard lately. (PROBABLY WORK) 3. Rachel _____ around Europe for two months now. At the moment, she's in Barcelona. She _____ six countries so far. (TRAVEL, VISIT) 4. Is it still raining? – No, it _____ but the streets are still wet. (ALREADY STOP) 5. I ____ at your report for some time, but I must say I can't agree with you on a few things. (LOOK) 6. James _____ the new Harry Potter novel for hours now. He simply can't let it go. (READ) 7. I _____ this few times, but I'll say it again. (ALREADY SAY) 8. The two brothers _____ films since they left high school. (MAKE) 9. Look! Someone _____ that window! (BREAK) 10. I _____ to him, but he _____ me an answer yet. (ALREADY WRITE, NOT GIVE) 11. You are too late. The patient _____. (JUST DIE) 12.The manager isn't here. He's away on holiday. – Where _____? (HE GO) 13. They _____ from New York. (JUST ARRIVE) 14._____ in the rain the whole time? Why _____ you in? (YOU STAND, ANYONE NOT LET) 15. Mr Benson _____ the whole morning. So far, he _____ three fish. (FISH, CATCH) 16. The company ____ money with this product for ages. It's time to stop producing it. (LOSE) 17. She _____ Charles since she was 17. They ____ in the same town for over 20 years. (KNOW, LIVE) 18. John _____ off his bike again. It's the third time now! (FALL)

III. CONVERSATIONAL TASKS

1. Answer the following questions:

1. What does blood do?
2. How many different parts make up blood?
3. What are the parts of the blood?
4. Which is the most common blood cell of the body?
5. What does it do?
6. What is plasma?
7. Why are white blood cells important?
8. Which part of the blood is made by bone marrow?
9. How much blood is in an average body?
10. How long does it take for blood to travel through your body?
11. What does it mean to say there are four blood types?
12. What is different between the blood types?
13. How is plasma made by the body?
14. Which part of the blood is like a band-aid?

2. **Scan the picture, watch the video and explain *What is the main job of leukocytes*?**

List ways to help prevent high blood pressure and high cholesterol levels. Turn your tips into a reminder sheet for the whole family.

Write an essay explaining how blood travels through the heart and throughout the body. Start in the right atrium where the blood enters the heart and end with the vena cava veins returning blood to the heart – one complete cardiac cycle.

9. RESOURCES FROM THE OCEAN

How are the oceans important to people?

The oceans provide people with many **resources** or useful materials. Some ocean resources are food, minerals, water, and oil and natural gas.

Many kinds of fish are food for people, farm animals, and pets. Besides fish, other ocean animals are used as food. People eat shellfish such as clams, oysters, shrimps, and crabs. People also eat octopuses and squids.

Ocean plants are also used as food. Some people eat fresh or cooked seaweeds. Seaweeds are also used to make jellylike materials. These materials help to make the products thick and creamy.

People also farm the oceans for food. Sea farmers raise ocean plants and animals in shallow water near the shore. In Japan, seaweed is grown like a crop. Shellfish such as clams, shrimps, and lobsters are also grown on sea farms in the United States. Someday large parts of the ocean may be fenced in and used to raise fish and shellfish.

Where are minerals found in the oceans?

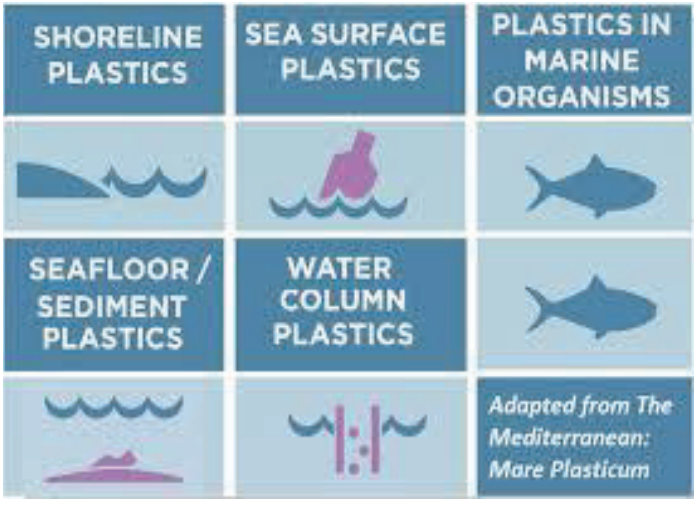
Many minerals are found in the oceans. Minerals are natural solids found in the earth. Some minerals are found in small black lumps called **nodules** on the ocean floor. Nodules are about the size of small potatoes. The nodules contain a metal called manganese. Manganese is used to make steel.

Other minerals are salts dissolved, or mixed, in the water. Salts can be separated from ocean water by a process called desalination. This process is useful for two reasons. First, it removes salts from the water. Then the salts can be used to make table salt, medicines, and other products. Second, it makes fresh drinking water. Factories produce fresh water from ocean water.

Where are oil and natural gas found?

Resources are also found under the oceans. Huge pools of oil and natural gas lie in rock sediments below the ocean floor. Most of this oil and gas is near the shore. It is reached by drilling wells through the rocks.

This offshore well drills deep into the sediments and rock to reach the oil or gas. Then the oil or gas is brought to the surface in pipes. Ships carry the oil and gas to land. Underwater pipes also transport the oil and gas.



What causes ocean pollution?

The oceans also have

unwanted materials. Garbage is dumped into the oceans by barges. Sewage and chemical wastes from factories are also dumped into the oceans.

Dumping wastes into the oceans causes pollution. **Pollution** is the presence of harmful materials in water. Scientists know that even small amounts of pollution can harm the ocean life. Plants do not grow well in polluted water. Animals become sick. People who eat seafood from polluted water can also become sick.

Oil spills are another cause of ocean pollution. Huge ships carry oil across the oceans. Sometimes the tanks in these ships leak oil into the ocean. Offshore wells also cause oil spills. Beaches are damaged by oil spills. Ocean plants and animals are also harmed. Oil- covered seabirds cannot fly or float.

Should ocean dumping be stopped?

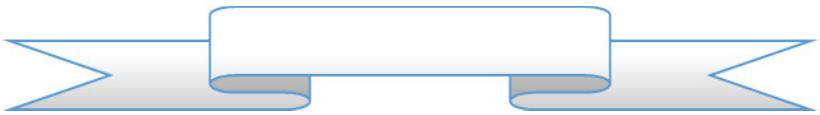
Did you know that each year Americans throw out 220 million tons of garbage? Suppose this garbage was piled on huge barges. Then imagine the barges forming a line. The line of barges would stretch across the ocean from New York to England!

Now think of the millions of tons of garbage other countries throw out. Suppose this garbage was piled on barges. Think how long the line of barges would be then!

Most garbage ends up in dumps called landfills. Food, plastic, metal, glass, and paper are buried in these huge pits. Factories leave chemicals there also. Landfills are filling up all over the world. Many countries have, no space for new landfills.

Many countries with little space dump their wastes in the oceans. Most wastes sink. People do not see them pile up. But wastes are piling up in parts of the oceans. Ocean currents can carry them to other parts of the ocean. Some wastes are starting to wash up on beaches all over the world.

Scientists say we have reason to worry. Some wastes contain poisons or germs. These wastes can harm people who swim in the ocean. They also poison fish and shellfish that live in the oceans. People who eat sick or poisoned fish may get sick, too.



I. PRONUNCIATION TASK

1. Get acquainted with the following words. Pronounce them properly:

Manganese, nodule, desalination, salt, rock sediments, garbage, to dump, barge, sewage, waste, to cause, pollution, beaches, oil spill, to poison, germ, current.

II. LANGUAGE IN CHUNKS

1. Look up in the dictionary and give the English definitions to the following words:

Ocean, crop, fence, manganese, desalination, well, sediments, oil, sewage, dumping, pollution, tank, garbage, landfill, term, waste

2. ***Give Romanian equivalents to the word-combinations. Make up sentences using these words:***

To become sick;
To carry something across the ocean;
To be damaged by;
To throw something out;
To be buried
To have reason to do something;
To harm something;
All over the world;

3. ***Find in the text synonyms for the words listed below.***

Beast, to supply with, except, to grow, to breed, harvest, to dig up, bottom.

4. ***Give antonyms to the words mentioned below***:

Useful, fresh, shallow, offshore, pollution, to grow, to throw, to end up, all over the world, to wash up

5. ***Look for some adjectives suitable for the nouns below:***

Land, water, line, products, fence, table, farm, beach, fish, ocean, factory, material

6. ***Say what can be:***

Creamy	Harmful	Unwanted
Fresh	Huge	Polluted
Shallow	Useful	
Chemical	Natural	

Remember!

Shellfish-1.scoici, 2.moluște și crustacee;
Clam-moluscă comestibilă;
Oyster-stridie;
Shrimp-crevetă;
Octopus-caracatiță;
Squid-*(zool)*-specie de sepie mai ales de calmar;
Seaweed- algă de mare;
Jellyfish- meduză;
Jelly- piftie;
Shallow- neadânc (despre ape);
Crop-recoltă;

7. ***Form derivatives from the following words. Translate them.***
   Fresh, creamy, to use, reason, harm, pollution, farm, arm, product, space

8. ***Name some nouns which are appropriate for these verbs.***

To provide somebody with	To cause
To raise/to grow	To harm
To produce	To be damaged by
To transport/carry	To pile up
To dissolve	To poison

9. ***Give the meanings of the words*** „line", „reason", „to worry". ***Find examples with each meaning. Write expressions with these words.***

10. ***Arrange the words to make sentences.***
    a) The, life, ocean, the, dumped, the, into, harm, wastes.
    b) from, the, eat, water, The, fish, swim, who, poison, wastes, shellfish, harm, in, can, fish, oceans, and, that, lakes, and, ponds, and, polluted, live, people, and.
    c) Salts, can, The, medicines, be, to, used, other, table, make, salts, and, products.
    d) Pollution, living, the, beings, humanity, that's, why, all, destroy, for, is, very, it, water, polluter, and, dangerous, air, and.

11. ***Replace the underlined words in the sentences with the correct ones. (use the text).***
    a) People work the oceans for food.
    b) Geese and ducks are used to make jellylike materials.
    c) My debts are piling on.
    d) Minerals are founded in the earth.
    e) The tanks of some ships let oil into the wells.
    f) Pools of oil and natural gas live in the plains and valleys.
    g) The salts can be used to make cigarettes and drogues.
    h) Salts can be separated from ocean water by a process called dumping.
    i) Underwater pipes are used to drill wells through the rocks.
    j) Huge ships carries oil across the oceans.

12. ***Transform the sentences using the Passive voice:***
    a) People will farm the oceans for food.
    b) Recently people have used manganese to make steel.
    c) Ships were carrying the oil and gas to land.
    d) Even small amounts of pollution can harm the ocean life.
    e) He told me that people had eaten shellfish such as clams, oysters and crabs.

f) She gave me the newspaper where a known scientist wrote that many countries had thrown out millions of tons of garbage.

13. Complete the sentences:

a) It is great to be a farmer because… .
b) If I have the possibility to own a huge barge I ……. .
c) We have reason to worry about our future ……. .
d) Those who destroy and pollute the environment……. .
e) If our country possesses huge pools of oil and natural gas….. .
f) All countries have to unite their forces to……. .

14. Act as an interpreter:

1) Menirea oceanelor este de a aproviziona oamenii cu tot felul de resurse și materiale folositoare.
2) Ați mâncat vreodată așa crustacee ca molusca comestibilă, crevete și stridie?
3) Plantele și animalele sunt folosite ca hrană pentru oameni.
4) Sărurile în cantități mari sunt dăunătoare sănătății.
5) Țevile de scurgere subterane transportă petrolul și gazul spre uscat.
6) Comportamentul neglijent al oamenilor față de mediul înconjurător duce la poluarea aerului și apei, ca urmare, duce la distrugerea omenirii. De aceia trebuie să ne gândim și să contribuim la protejarea mediului.
7) Toate deșeurile depozitate în ape dăunează plantelor și animalelor ce locuiesc în aceste ape poluate ce conțin otravă și bacterii.
8) Poluarea apelor în oceane este de asemenea cauzată de scurgerile de petrol.
9) Mii de tone de gunoi sunt aruncate în oceane cu ajutorul navelor, majoritatea deșeurilor se scufundă, însă o mare parte din ele se acumulează în unele părți din ocean provocând un dezastru viețuitoarelor din ocean și ca rezultat întregii omeniri.
10) Fiecare din noi trebuie să cunoască problema poluării și să contribuie la combaterea acestei urgii.

III. GRAMMAR FOCUS

1. Make either the present perfect simple or present perfect continuous.

1. _____ (you / buy) your train ticket yet? 2. The kitchen is a complete mess! What _____ (the children / do)? 3. Julie _____ (learn) to drive for six years! 4. Amanda _____ (already / have) lunch, so she'll meet us later. 5. How much coffee _____ (she / drink) this morning? 6. Simon _____ (write) three books. 7. I _____ (do) everything I needed to do today! Hurray! 8. It _____ (not / rain) all summer, so the garden is dead. 9. I _____ (read) your book. Here it is, thank you. 10. She _____ (forget) how to get to my house. 11. I _____ (work) in the garden all day and I need a rest. 12. She _____ (make) three

cakes. They look delicious! 13. David feels great these days. He _____ (get) up early lately. 14. We _____ (always / hate) rush hour traffic. 15. Recently, I _____ (study) a lot. My exams are in a few weeks. 16. We _____(write) this book for months and months. 17. I _____ (always / love) chocolate. 18. I _____ (want) to go back to university for a long time. 19. What's that delicious smell? _____ (you / cook)? 20. I _____ (watch) seven films this week!

2. ***Put the verb into the more suitable form, present perfect simple (Ex. I have done) or continuous (Ex. I have been doing).***

1 Where have you been? Have (you/play) tennis? 2 Look! (somebody/break) that window. 3 You look tired. (you/work) hard? 4 ‘ (you/ever/work) in a factory?’ ‘No, never.’ 5 ‘Liz is away on holiday.’ ‘Is she? Where (she/go)?’ 6 My brother is an actor. (he / appear) in several films. 7 ‘Sorry I’m late.’ ‘That’s all right. (I / not / wait) long.’ 8 ‘Is it still raining?’ ‘No, (it / stop).’ 9 (I / lose) my phone. (you / see) it anywhere? 10 (I / read) the book you lent me, but (I / not / finish) it yet. It’s very interesting. 11 (I / read) the book you lent me, so you can have it back now. 12 This is a very old book. (I / have) it since I was a child.

3. ***Make sentences from the words in brackets. Use the present perfect or past simple***.

1. (it / not / rain / this week) It hasn’t rained this week.
2. (the weather / be / cold / recently) The weather.....
3. (it / cold / last week) It.....
4. (I / not / read / a newspaper yesterday).....
5. (I / not / read / a newspaper today).....
6. (Emily / earn / a lot of money / this year).....
7. (she / not / earn / so much / last year).....
8. (you / have / a holiday recently?).....

IV.CONVERSATIONAL TASKS

1. ***Answer the following questions.***

a) Name the resources found in the oceans.
b) What kind of seafood do you eat? Make up a list of seafood you know.
c) How are the oceans formed?
d) What are nodules?
e) What things in your university/school are made of steel?
f) How can fresh water be obtained from the oceans?
g) What are the ways people use oil and gas?
h) Name all kinds of wastes that pollute the oceans.

i) What might happen if people keep dumping wastes in the oceans?
j) Do you think the nations of the world should agree to stop dumping wastes into the oceans? Give reasons for your answer.
k) What are some ways to prevent harmful wastes from piling up in the oceans?
l) Classify the garbage you or your family throw out in one day. Then think of ways to cut down on the amounts of paper, plastics and metal you throw out.

Think! Explore and Apply!

1. Make up a story about a trip/voyage full of adventures across the oc
2. Retell the text using the new vocabulary.
3. Put down some interesting facts about sea/ocean life. Use the construction: „Do you know that…?"
4. Draw up a report on the theme: „Nature Protection"

5. ***Problem Solving. Explore!***

Scientists are always trying to find better ways to clean up an oil spill.

How do scientists try to solve the problem of removing oil from an ocean? First, they test new methods in a laboratory. Think about ways that you might try to solve this problem.

How can oil be removed from the surface of salt water?

Pour 60 ml cooking oil into a pan of salt water. Experiment to find ways to remove the oil from the salt water. Try to leave as much water in the pan as possible. Which method worked fastest? Do you think your methods would work on a large body of water like an ocean? Do you think your methods might harm ocean life? Explain your answers.

10. PRODUCING NEW PLANTS

What are the parts of a flower?

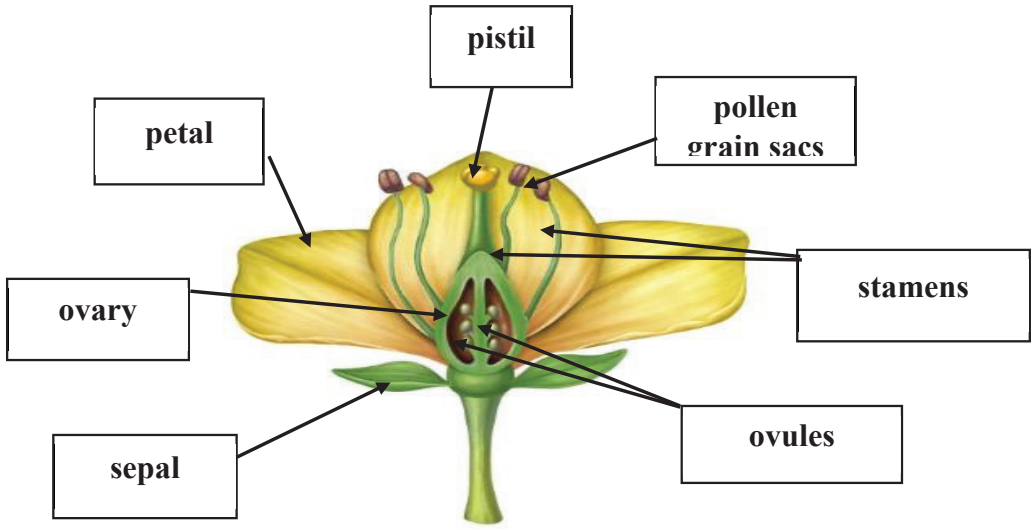
All living things produce new living things of the same kind. New flowering plants grow from seeds. But where do the seeds come from? A flower is the part of flowering plants where seeds are produced.

A flower has four main parts. These parts are the petal, the sepal, the stamen, and the pistil. Look-at the drawing of the flower. Locate each part of the flower as you read about it.

The **petals** surround and protect the other parts of the flower. Petals are usually brightly colored. Around the bottom of the flower are green leaf-like parts called sepals.

The **stamens** are the male parts of the flower. A stamen is a small stalk with a sac on its tip. The sac forms millions of pollen grains. A **pollen grain** is a small object that holds the male cells of the plant. A male cell joins with a female cell to make a seed.

The **pistil** is the female part of the flower. This part is found in the center of the flower. The bottom part of the pistil contains the ovary. The **ovary** contains the ovules.



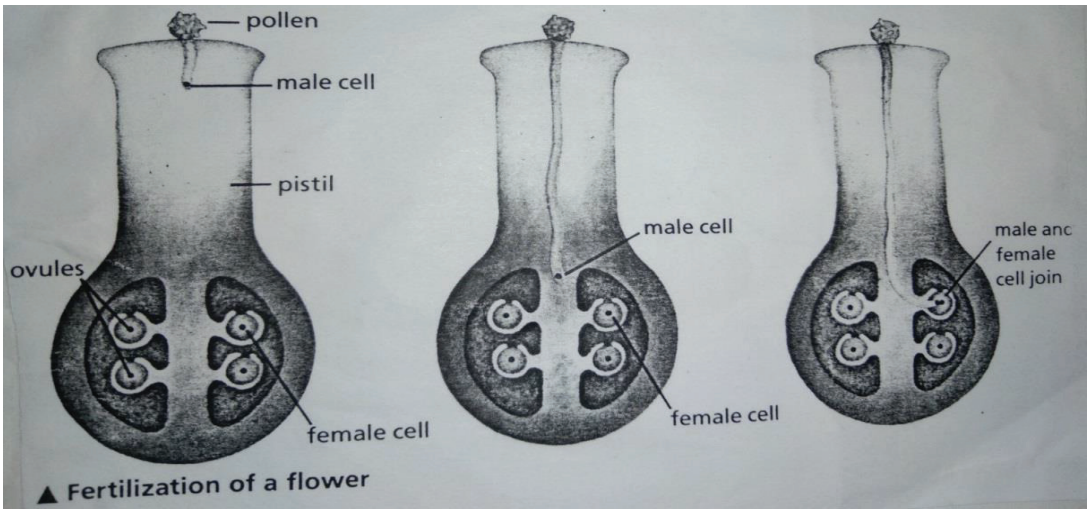
Ovules hold the female cells of the plant.

How does pollen move?

For a flower to make a seed, pollen grains must move from a stamen to a pistil. The process by which pollen grains move from a stamen to a pistil is called **pollination.** How does pollination occur? The colorful petals of flowers attract insects. Some of these flowers have a sweet liquid which the insect drinks. As the insect drinks, it brushes against the pollen grains on the stamen.

Some pollen grains stay on the insect. As the insect moves from flower to flower, these grains stick to the flowers' pistils. Other animals or the wind also carry pollen

grains from flower to flower. For pollination to occur, the pollen grain must stick to the same kind of flower from which it came.



▲ Fertilization of a flower

How does a seed form?

Once a flower is pollinated, seeds may form. Look at the picture of the pistil as you read. First, the pollen grain on the top of the pistil begins to form a tube. This tube down through the pistil to the ovary. A male cell from the pollen grain travels down the tube into the ovary.

Recall that inside the ovary are the grows ovules. Here the male cell enters an ovule. The male cell then joins with a female cell inside the ovule. Fertilization is the joining of the male cell and the female cell.

After fertilization, the joined cells form a seed. One seed or many seeds may be formed in an ovary. As a seed develops, the ovary grows thick. An ovary is a fruit. The fruit surrounds the seeds and protects them.

I. PRONUNCIATION TASK

1. ***Get acquainted with the words below and pronounce them properly***:
   Flowering, petal, sepal, stamen, pistil, stalk, millions of pollen, ovary, ovules, pollination, liquid, fertilization, seed, zygote, micro-pile, mitosis, endosperm, nuclei, tissue, radicle, bud, hypocotyl, cotyledon.

II. LANGUAGE IN CHUNKS

1. Give the English definitions to the following words:

Flower, seed, petal, sepal, pistil, stalk, pollen, grain, ovule, insect, fertilization.

2. ***Make up sentences using the words below. Translate them into Romanian.***

To hold, at the bottom of, to join, to surround, to carry, the same kind of, on the top of.

3. ***Give synonyms to the following words:***

Brightly, to grow, to hold, to develop, to protect, to stick, to carry, to enter, musty, to land, fleshy, to fuse, to enclose, a common usage, to divide, to make up

4. ***Look for some adjectives suitable for the nouns below:***

Plant, sac, fruit, tube, liquid, process, animal, insect, picture, object, leaf, usage, odor, flower, beans

5. ***Name some nouns which are appropriate for these verbs:***

To protect	To touch	To hang down
To join	To form	To enclose
To produce	To attract	To think of
To make	To brush	To thicken

6. ***Make up sentences with the words:***

Male, to touch, bottom, grain

7. ***Give some word-combinations with the prepositions: down, through, inside, on.***

Ex. To look through magazines-a răsfoi, a se uita prin.

8. ***Arrange the words to make sentences.***

a) surrounds, A, and, fruit, ovary, protects, an, seeds, is, which.
b) Ovules, The, contains, ovary, the.
c) the, pollen grains, For, must, pollination, to, occur, to, stick, of, flower, it came, from, which, kind, same, the.
d) If, is, a pollinated, flower, may, form, seeds.
e) The, surrounds, fruit, them, seeds, the, protects, and.
f) transfer, The, can, of, be, pollen, by, living, or, bats, done, wind, insects, other, things, birds, by.

9. ***Ask questions to the underlined words.***

a) All living things produce new <u>living things</u> <u>of the same kind</u>. (2 questions)
b) <u>The petals</u> <u>surround and protect</u> the other parts <u>of the flower</u>. (3 questions)
c) A <u>male</u> cell joins <u>with a female cell</u> <u>to make a seed</u>. (3 questions)
d) <u>The pistil</u> is found <u>in the center of the flower</u>. (2 questions)

10. Compose 10 sentences according to the following model.

Ex. Neither Marry nor Pete wrote a report on the theme „Producing New Plants".

Ex. She knows both Chemistry and Biology.

11. Write the letter of the term that best matches the definition.

1) Green matter in plants that produces food.
2) Process by which the plants make food.
3) Part of the plant that supports the leaves, flowers, or cones.
4) Tubes in the leaf that carry food and water.
5) Plant that produces seeds within cones.
6) Name of the root system with single large root that grows straight down.
7) Part of the plant that anchors it to the ground.
8) Tiny opening on the underside of a leaf.
9) Part of a plant where food is made.
10) Name of the root system with several main roots with many smaller branch roots.
11) Plant that produces seed in a flower.
12) Part of the root that grows into the soil.

a) Chlorophyll
b) Conifer
c) Fibrous root system
d) Flowering part
e) Leaf
f) Photosynthesis
g) Root
h) Root hair
i) Stem
j) Stamens
k) Taproot system
l) Veins

12. ***Write a paragraph that uses each of the science terms listed below.***

Ovary
Petals
Pistil
Pollen grain
Pollination
Stamen

13. Complete the sentences.

a. Something has gone wrong with…… .
b. How clever of you to …….. .
c. I look forward to …….. .
d. He can't manage to ……. .
e. It doesn't take me long to……. .
f. Let me ……. .
g. I think it's high time to…… .
h. I should like to …… .

14. ***Think of stimulating phrases to which those below could be replies. Work in pairs***.

a) No more, thank you.
b) I'm afraid, I can't.
c) Here you are!
d) It is out of the question.
e) It goes without saying.
f) Yes, very likely.
g) By no means.
h) Well, if it isn't old Jack!
i) First-rate!
j) No wonder!
k) What a shame.

III. GRAMMAR FOCUS

1. Complete the sentences with the words in brackets.

He couldn't go skiing, because he..... ill the night before (fall). ..... off the lights before you left home? (you - switch). The plane crashed because the engines ..... fire (catch). After Sam .....the bank, he got into his car (leave). When he arrived at the office, everyone ..... gone (be). ..... anything to eat before you fed him? (the dog - have). By the time Joseph returned home Sarah ..... to get in touch with him several times (try). Why ..... me before you refused their offer? (you - call). I was so sad because Jill ..... somewhere in Spain. (disappear). What ..... with the computer before you called the technician? (you - do).

2. Fill in the correct form using Past Simple or Past Perfect

1. Mary (give) me Tony's address before she left. 2. When the boys arrived at the cinema, the film (already, start). 3. Before we reached the station we saw that we (lose) our way. 4. All the tickets (be) sold before the concert began. 5. They took a shower after they (finish) the game. 6. I asked Mr Green how many books he (read) 7. Mum asked me why I (not tidy) up my room. 8. Bob was sorry that he (told) me the story. 9. Alan watched TV after he (have) lunch. 10. The sun (shine) yesterday after it (be) cold for many weeks. 11. Uncle David (go) to the doctor after he (be) ill for a month. 12. Before the police (catch) the thief, he (steal) two more watches. 13. Mum once (paint) a picture although she (never, learn) it. 14. I (not tell) my teacher that my mum (help) me with my homework. 15. I (be) very angry when I (see) that my brother (eat) my apple. 16. The bike (be) much more expensive than he (think) at first. 17. Dad (drive) me home after I (fall) into the water. 18. Marion (ask) me what (happen) to me last week. 19. We (eat) two Big Macs before we (go) home. 20. Paul (not say) that he (take) Albert's watch.

IV. CONVERSATIONAL TASKS

1. Answer the questions.

a) What part of a flowering plant makes seeds?
b) What is the way that pollen grains move from a stamen to a pistil.
c) How does a seed form?
d) What material will you have on your finger if you touch the tip of a stamen?
e) What is a fruit?

Think! Explore and Apply!

I. Suppose a flower hadn't a stamen. Could the flower be pollinated? Explain your answer.

a) What are the things a plant needs to make food?
b) Briefly describe the process by which a plant makes food.
c) Draw a flower and label its parts.
d) List the main things a stem does.
e) What are the three main functions of a root?
f) Describe the main functions of a leaf.
g) Compare the development of the pollen grain with the development of the ovule.
h) Describe two methods of pollination. Give examples of plants that are adopted to these two methods.
i) How does global warming influence plants? How did they change due to global warming?
j) What is the idea of the artificial selection? Why do people try to enhance plants?

2. Listen to the podcast *Plants Share Light if Neighbor is Related* ***and explain the main idea of the research which is being told about.***

Listen again and choose the correct answer:

1. *Earlier research showed that plants can recognize the ……..of siblings from the same momma plant*:
   a. nutrients systems
   b. root systems
   c. seeds

2. *If the plants shared a pot with seeds from the same parent plant, they shared access to light by growing taller with ……..*

a. more branches and fewer leaves
b. fewer branches and more leaves
c. more branches and more leaves

3. *But when they were planted with not their siblings they put more energy into growing more and larger ……*

a. Roots
b. Branches
c. Leaves

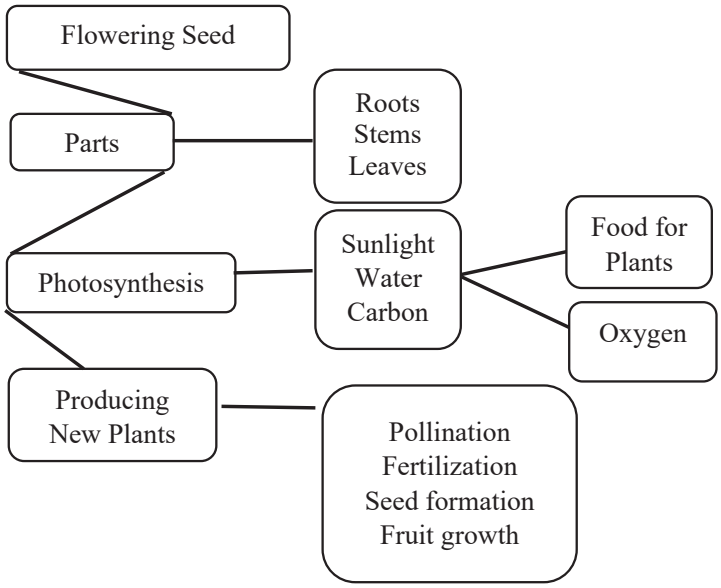
3. Apply Some Science Ideas.

a) Heavy rains in your area have caused a loss of good topsoil. Research to find what kinds of plants would help to stop this loss.

b) Imagine you are a corn farmer in the Midwest. Give your reasons for or against changing your outdoor farm into a factory farm.

c) Suppose homeowners in your town have sprayed their yards to get rid of insects that bother them. The spray may affect the bees. What effect will the killing of bees and other insects have on the pollination of plants? Describe what might happen if people continued to spray. Give your opinion and try to persuade others to agree with you.

4. Write a summary of the main ideas of the text. Use the graphic organizer to help you.



11. LAKES AND PONDS

What are lakes and ponds?

You learned that most of the fresh water on the earth is found on land. Some of this water is found in lakes and ponds.

A **lake** is a large body of water surrounded by land. Most lakes contain fresh water. But some, like the Great Salt Lake, have salty, water. A **pond** is a small, shallow body of water surrounded by land.

How are lakes and ponds important?

Lakes and ponds are important to peo- ple. The water you drink may come from lakes. So may the water used to grow your food.

Lakes and ponds are also the home for many kinds of living things. Fish such as bass and perch live in the water. Ducks and geese build nests nearby.

Many plants grow along the edges of lakes and ponds.

Plants also grow on top of the water. Water lilies are floating plants. Perhaps you have seen their white or pink flowers and round flat leaves on a pond. Simple plants called algae also float on the water. One kind of algae is pond scum. Pond scum plants look like long green threads.

How are lakes and ponds formed?

Lakes and ponds are formed in several ways. Many lakes and ponds were formed by glaciers. A **glacier** is a huge body of slow-moving ice. Thousands of years ago, glaciers covered large parts America. The Great Lakes were formed when glaciers moved back and forth across the land. The glaciers left deep, hollow spaces in the land. When the glaciers melted, water filled the spaces and formed the lakes.

Lakes and ponds also are formed when a river or stream is blocked. Soil on hillsides can loosen and slide into a river. This soil can form a dam across a river. The dam biocks the flow of the river and forms a lake.

Other lakes are made when people build dams across rivers. The lake formed by this dam is called a reservoir. Reservoirs store water for farming and for drinking.

How are lakes and ponds harmed?

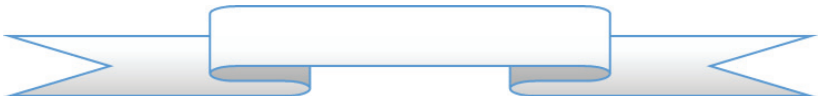
Lakes and ponds can be harmed by pollution. One kind of pollution is caused by certain wastes from cities and farms. The wastes from cities are laundry detergents that wash down drains. The farm wastes are raw materials called fertilizers. When it rains, fertilizers wash from the soil into rivers and streams.

Fertilizers and detergents are carried into lakes by rivers and streams. These wastes contain nutrients. Nutrients are used by algae and other plants in the water.

In this polluted lake, nutrients cause algae to grow very fast. As the algae die, they start to decay. The decay of the dead algae takes oxygen from the water. Oxygen is needed by fish for breathing. As the oxygen is used up, fish start to die.

A second kind of pollution is caused by acid rain. When coal and oil are burned, gases enter the air. These gases mix with rain to form acid rain. Acid rain has harmful

chemicals that wash into lakes. These chemi- cals kill fish and other living things. The water in this lake looks clean and clear. But no fish live there. The water has been polluted by acid rain.



I. PRONUNCIATION TASKS

Try to pronounce (read) properly the following words: thread, glaciers, reservoir, laundry detergent, raw material, fertilizer, nutrient, algae.

Remember!

Scum-spumă;
Hollow-adâncitură, cavitate, gol;
Dam-baraj, dig;
To loosen-a se desface;
Drain-canal de scurgere
Raw material-material brut, neprelucrat.

II. LANGUAGE IN CHUNKS

1. Give synonyms to the words listed below.

To build, huge, to block, hollow, dam, flow, fertilizer, to start, to die, to store, to decay, to cause

2. Look for antonyms:

Land, fresh, shallow, nearby, to melt, to fill, fast, harmful, clean, on the top of, to cover

3. Find the true and false sentences. Corect the false ones:

a) Lakes and ponds can not be harmed by anything.
b) Fertilizers are products that can be used by people as food.
c) Most lakes contain fresh water but some of them have salty water.
d) Pond scum is very useful for fish.
e) A reservoir is a part of the ocean where there are no living things.
f) Ducks and geese are floating birds.
g) Cities and farms can not pollute the lakes at all.
h) Algae grow at the bottom of the ocean

4. Form derivatives from the words below. Translate them.

Fresh, simple, to move, chemical, pollute, fertilizer, wastes, to live, to use, to wash, to drink

5. Say what can be.

Hollow	Slow-moving	Large
Flat	Fertile	Floating
Pink	Certain	Blocked

6. Fill in with the words from the box.

Living, melts, in the future, air, decayed, flat, lakes, a dam, the shores, gases, ponds, oxygen.

a) I am not sure people have enough fresh water to drink..... . b) Acid rain causes pollution of ocean water near..... c) When the snow ..... all the hollow places are filled with water. d) Soil on hillsides can loosen and form..... across a river. e) All the ..... that enter the ..... cause the pollution.
e) ..... and ..... are home for ..... things. g) A ..... tooth must be treated. h) ..... is needed by all living things. i) These shoes do not fit you because your legs are a bit ..... .

7. Find expressions with these words:
To wash; store; fast; to burn; flat.

8. Give some word combinations with the prepositions: *up, out, off.* ***For ex:*** *to loosen up – a se destinde.*

9. Make up a dialogue based on the second part of the text: „How are lakes and ponds important?", and „How are lakes and ponds harmed?"

10. Give Roumanian equivalents to the following words. **Make up sentences.**

to surround;	laundry detergent;
to build nests;	to carry smth into;
floating plants;	to take oxygen;
to move back and forth;	to look clean;
to store,	

11. Translate into English.

1) Fiecare din noi știe că apa pentru băut se găsește atât pe uscat (pământ) cât și în lacuri, iazuri și râuri.
2) Unele lacuri conțin apă dulce, iar altele sărată.
3) Rațele și gâștele revin din țările calde și își construiesc cuiburile prin împrejurimile iazurilor și lacurilor, deoarece ele sunt niște păsări de apă sau plutitoare.
4) Ce plante arată ca niște ațe lungi și verzi? Nu știu. Am să studiez textul și voi obține informația.

5) Când zăpada se topește toate găurile, toate adânciturile sunt umplute cu apă.
6) Iazurile se formează prin mai multe căi, nu știai? Ba da. Tatăl meu mi-a povestit astăzi.
7) Când solul de pe dealuri alunecă și nimerește în râu, se formează baraje ce blochează cursul (fluxul) apei și în felul acesta se formează un lac.
8) Rezervorul păstrează apa pentru prelucrarea pământului și, de asemenea, pentru băut.
9) Îngrășămintele chimice cauzează poluarea apei, deoarece când plouă spală pământul și se scurg toate în râuri și pârâiașe.

III. GRAMMAR FOCUS

1. ***Use the past perfect, or the past perfect continuous***. 1. When we arrived the film (start). 2. She (work) in that company for twenty years when she was made redundant. 3. I felt ill because I (drink) six cups of coffee. 4. I (study) all day, so I was tired. 5. How long (you / live) in London when your daughter was born? 6. When I arrived at the airport, I realised I (forget) my passport. 7. I (break) my ankle, so I couldn't go skiing last year. 8. She (study) English for three years when she took the exam. 9. I (run), so I was hot and tired. 10. I didn't go to the class because I (not /do) my homework.

2. ***Complete the sentences with the correct form of the verbs in brackets. Use the Past Simple, Past Continuous or Past Perfect Simple***. 1. They (get) to the airport as the plane was landing. 2. She wore the shoes she (buy) the previous day. 3. I fell as I (run) for the bus. 4. What she (say) when he asked her to marry him? 5. When I was a student, I (not have) much money. 6. Why she still (work) at one o'clock in the morning? 7. I was happy to see her, because we (not see) each other for years. 8. By the time we got to the shop, a long queue already (form) outside.

IV. CONVERSATIONAL TASKS

1. Answer the following questions.

a) How are lakes and ponds important to people and other living things?
b) List the ways that lakes and ponds are formed.
c) How did glaciers form the Great Lakes?
d) Name the ways that lakes become polluted.
e) Why would it take a shorter time to pollute a pond than to pollute a lake?
f) How is a pond different from a lake?
g) Why do people build dams across rivers?
h) What animals or birds live near a lake?
i) How do nutrients cause pollution of lakes and ponds?
j) Why is it correct to say that the earth has one large ocean?

k) Name one way that people can be harmed by ocean dumping.

Think! Explore and Apply!

a) Think of a plan for making sure people have enough fresh water to drink in the future.
b) Scientists try to predict whether an oil spill will wash up on any beaches before it can be cleaned up. Why do you think they study the path speed and strength of the currents near the spill?
c) Acid rain causes the pollution of ocean water near the shores. How can acid rain pollution harm ocean resources?
d) Imagine that one day there was not enough water to drink. Speak about it.
e) Did you drink from a water fountain in your school/university? Where do you think your drinking water comes from?
f) ***Retell the text.***
g) ***Write about a pond or lake in your area.***

12. SOME ANIMALS/BIRDS LIVE AROUND US

Monarch butterfly. This butterfly is migratory and flies in great swarms every autumn. It has a taste that birds dislike. Thus, birds will not eat it. The monarch butterfly caterpillar is pale green in color with black bands around its body. It is commonly found on milkweed leaves, the caterpillar's principal food.

Garden spider. The beautifully made web of the garden spider is one of nature's most spectacular sights. The silk from which the web is made is also used for other purposes. The spider uses silk to make a dragline to escape from its enemies. It uses silk as a kind of balloon to sail through the air. It also builds a room or den of silk at one side of its web. A strand of silk runs from the web to this room and acts as a telegraph line. Thus, when an insect is caught in the web the spider is instantly aware of it and rushes out of its hiding place to capture its victim.

House Mouse. The house mouse is a destructive rodent which is found almost everywhere- in all kinds of buildings as well as in fields and pastures. It makes its nest of almost any material available-proper, rags, bits of cotton. It puts its nest almost anywhere-in walls of houses, and in wood piles, among old newspapers and magazines, in dresser drawers, in discarded upholstered furniture.

Barn Owl. This owl is also called Monkey-faced Owl because of the distinctive outline of its face. It is one of the greatest enemies of the house mouse. Thus it is one of the most beneficial birds a farmer could happen to have nesting in his barn loft. Even though relatively common it is rarely seen, because most of its hunting for mice and other rodents is done at night.

Grasshopper. Grasshoppers destroy vast areas of crops and grasslands in the country every year. They descend upon grain fields in great swarms, stripping the plants of all their green leaves in what seems to be a matter of minutes. Grasshopper eggs are laid in the ground in autumn and hatch the following spring. The young grasshoppers have enormous appetites and grow rapidly, changing their skins several times before they become adults.

Ladybird. Ladybirds are members of the beetle family and are an invaluable aid to orange gravers. Their food is primarily composed of plant lice and scale insects- the very pests that attack orange trees. In winter you might often see huge masses of ladybirds collecting in dead leaves or under the bark of trees.

Bat. Bats are the only mammals with the ability of true flight. They roost in great colonies in buildings and attics-thus becoming a nuisance rather than a benefit. But they are, on the whole, extremely beneficial eating mosquitoes and many other harmful insects. It is mere superstition that they get into people's hair, suck human blood, or carry diseases harmful to man.

Ant. Ants are social insects. They can be the subject of an interesting study. They gather and store food, care for their young and have well-organized communities. They often make slaves of other ants, and even wage war against other ants colonies. Special

castes of ants serve as food gatherers, nest builders, house cleaners, nurses for the ant larvae and soldiers. Ants build their homes under rocks or logs, in the walls of houses, in hollow trees. They eat many different kinds of food, but they seem especially fond of sweets.

House wren. The house wren always seems to be on the move, scolding and chattering as it dodges in and out of a thicket or fence. It makes its nest of twigs and grass in an old woodpecker hole or in a birdhouse if one is handy. It is a migratory bird.

Earthworm. Earthworms are also called Angleworms, because they are often used for fish bait. Unlike caterpillars, earthworms are true worms. They are a great soil conditioner. Good soil must have air in it and the countless barrowings of earthworms provide the means by which air can get into the soil. An earthworm actually eats dirt. The dirt passes through its body its stomach absorbing any plant or animal material the dirt contains.

Cricket. Crickets are extremely destructive insects. They not only eat many different kinds of plants but they will also eat wool rugs and fabrics and binding of books. They usually hide in crevices or cracks during the day and come out only at night in search of food. They are either black or brown in color, and are able to jump from place to place with great agility.

Snail. Snails are classified as mollusks. They live on land in fresh water or in the sed. Common garden snails which are so destructive to plants usually make their homes in damp placed under rocks or stones. They are most active at night or after a rain. Snails move about by means of a foot-like appendage. A snail is able to protect itself by drawing up its body into its shell, closing the entrance to the shell with its tough foot-like appendage.

Housefly. A carrier of dangerous bacteria the housefly is undoubtedly one of the most harmful insects we have to contend with. Its two compound eyes are made up of thousands of tiny parts enabling it to see in many different directions at the same time. It can walk upside down on a ceiling with ease. It breeds in great numbers wherever dirt accumulate. So the best thing to do when you see a fly is to swat it.

Mosquito. Some mosquitoes are disease carriers, and effective measures should be taken to destroy them. Mosquito eggs are laid in water. When they hatch, the larvae, called wrigglers, live in the water but must come to the surface of the water to breathe. Thus, mosquitoes larvae can be killed by pouring oil over the water or by drain the swamps in which they live.

Black Widow Spider. This spider is one of the world's most dangerous spiders. It is quite common in California and the West. Fortunately, however, it is an easy spider to identify, with its jet-black body and a bright-red spot, shaped like an hourglass, on its underside. It is most frequently found in dark corners of houses and garages, where it spins an irregular untidy web.

I. *LANGUAGE IN CHUNKS*

1. ***Listen to the podcast*** *Bird Feeders Attract Bird Eaters Too* ***and complete the text with missing words.***

More than half of U.S. households provide food for birds. It's a billion dollar industry. Now a study asks whether the same feeders that attract birds also attract predators that eat the eggs and ____ ____ ____ of those birds. There are a couple of different effects on relationships between nest predators and their _____. On the one hand, food might be attracting _____ to certain areas, and that could increase nest predation risk. However, predators may be exploiting these food resources, and if you've got a good, predictable food resource on the landscape that's easy for predators to access, you could imagine that they could switch to those anthropogenic, or those human-provided foods, like bird feeders. Malpass and her team looked at the nests of American robins and Northern Cardinals in seven Ohio neighborhoods. It was shown that the survival of Northern Cardinal nestlings did not seem to be related to the presence of these nest predators or even to _____ _____. Homeowners have been feeding wild birds for a long time, but only now scientists are beginning to understand just how that affects _____ _____.

2. Look at the meaning of some prefixes. Continue the list with your own examples..

Co-	With-or together	Co-operate Co-worker
Out-	Do better than	Outlive Outpace
Over-	Too much	Overflow Overcrowded
Under-	Too little	Underestimate

3. Choose the correct term to complete the sentences

1. They can even *(perform/outperform)* humans in certain types of cognitive tasks.
2. The administration *(estimates /overestimates)* that the social cost of carbon is $37 a ton.
3. Many of the same shale rock formations where companies want to extract gas also happen to sit above optimal sites envisioned for storing carbon dioxide (*ground /underground*) that is captured from power plants and industrial facilities.
4. More than 100 species of coral *(exist/coexist)* in these waters; all spawn simultaneously every summer during the same few full moonlit nights, forming a thin pink slick of intermingled eggs and sperm on the water's surface.

5. Mathematics and computer science do not have a Nobel Prize. Instead, these areas have their own prizes to honor *(standing/outstanding*) achievement.
6. An 80-hour limit for a resident's workweek was introduced in July 2003 in response to concerns about *(work/overwork*).
7. This may be most likely to occur in small children, but infections that spread this way occur most often in *(developed /underdeveloped*) countries where sanitation is poor.

II. GRAMMAR FOCUS

1. **Complete the sentence with a verb in the correct form.**
1. (First conditional) If we (not / work) harder, we (not pass) the exam. 2. (Third conditional) If the students (not be) late for the exam, they (pass). 3. (Third conditional) If the weather (not be) so cold, we (go) to the beach. 4. (Second conditional) If she (have) her laptop with her, she (email) me. 5. (First conditional) If she (not go) to the meeting, I (not go) either. 6. (Third conditional) If the baby (sleep) better last night, I (not be) so tired. 7. (First conditional) If the teacher (give) us lots of homework this weekend, I (not be) happy. 8. (Second conditional) If Lucy (have) enough time, she (travel) more. 9. (First conditional) If the children (not eat) soon, they (be) grumpy. 10. (First conditional) If I (not go) to bed soon, I (be) tired in the morning. 11. (Second conditional) If I (want) a new car, I (buy) one. 12. (Second conditional) If José (not speak) good French, he (not move) to Paris. 13. (First conditional) If John (drink) too much coffee, he (get) ill. 14. (Third conditional) If we (tidy) our flat, we (not lose) our keys. 15. (Third conditional) If Luke (not send) flowers to his mother, she (not be) happy.

2. ***Circle the correct answer***. 1) If she would *live / lived* in London, I wouldn't see her very often. 2) If you *ate / ea*t more vegetables, your skin would look better. 3) *Will / Would* they play with us if we asked them? 4) He *wouldn't read / didn't read* that book if he didn't have to. 5) If they went to the theatre, *will / would* they invite you? 6) If she *knew / knows* how to drive, she would buy a car.

3. ***Complete the sentences***. 1) If I (find) a wallet in the street, I would give it to the police. 2) If you saw him again, you (not / recognise) him. 3) We would go skiing if it (snow). 4) If he didn't feed the cat so much, it (not / be) so fat. 5) Would he do me a favour if I (ask) him? 6) If I (have) a million pounds, I would never work again. 7) If she (not / be) a good player, she wouldn't be in the team. 8) I (invite) all my friends if I lived in a big house. 9) If she (not / like) your present, what would you do?

III. CONVERSATIONAL TASKS

Questions to stimulate discussion:

1. How do bats catch flies?
2. Do spiders catch flies in a different way? How ?
3. Is the mouse careful when it builds its home?
4. What do you think the barn swallow uses to built its nest?
5. Why is the barn owl a useful bird?
6. How does the house wren catch the insects it eats?
7. Have you ever found an earthworm in your garden?
8. How does turning over the soil help plants?
9. What else besides clothes do crickets eat?
10. What will happen to a plant if all its leaves are eaten by insects?
11. How do snails get from one plant to another?
12. How can we protect ourselves against mosquitoes and insects?
13. How can you recognize a black widow spider?
14. Have you ever seen a black widow spider?

Think! Explore and Apply!

1. Make a list of all the different kinds of animals that live around you. Divide the list into two parts to show which animals are useful and which animals are harmful.
2. Make a bulletin-board display, using illustrations clipped from old magazines, showing how different kinds of animals eat the same kinds of food.
3. Identify animals that are careful home builders and some that are not.
4. Draw pictures of different kinds of homes animals use or build. Display these on the bulletin board.
5. Explain why the earthworm is such an excellent soil conditioner.

13. SOME ANIMALS LIVE ON THE SEASHORE

Redhead. With their bright reddish-brown heads, male redhead ducks are easily identified. Redheads make their homes in grassy swamps and lakes. They eat insects, fish and frogs. They are relatively rare birds because so many of them have been killed for their excellent meat.

Avocet. Protected by law, the avocet with its long legs and long curved beak, can be seen on the seashores. It obtains its food by scraping its bill through shallow pools of water along the shore, thus collecting small water animals. It is a migratory bird, spending its winters as far south as Central America.

Sandpiper. Protected from hunters by the federal government, sandpipers are often seen along California beaches and seashores. They are useful birds because of their enormous consumption of harmful insects. They are often seen seemingly chasing after ocean waves in their search for food, which usually consists of water insects, shrimps and small mollusks.

Sea Gull. Sea gulls among the most familiar of shore birds. They are graceful, acrobatic flyers that take advantage of air currents to soar over the water in their search for food. Besides being scavengers, they are also expert catchers of fish. They are often seen far inland, picking over the earth for insects in freshly plowed fields. They build their nests of seaweed and grass.

Pelican. The pelican is an easily recognizable shore bird because of the enormous pouch it has on the underside of its bill. Although it is awkward on land it is an excellent swimmer. It is also a strong, graceful flyer. It fishes by diving into the water with a resounding splash, scooping up fish in its pouch. Then it flies off to a quiet rock or ledge to eat its meal at pleasure. Pelicans are not solitary birds. They usually nest in large colonies.

Tern. Famous for their graceful flight, terns are sometimes called Sea Swallows. They are found nesting in noisy colonies on islands or rocks near the shore. They often build no nest at all, but lay their eggs on bare rocks or sand or on the narrow ledge of a cliff. One species, the Arctic Tern, has the longest migration on record-some 11000 miles from the Arctic Circle, near the North Pole to the Antarctic Circle.

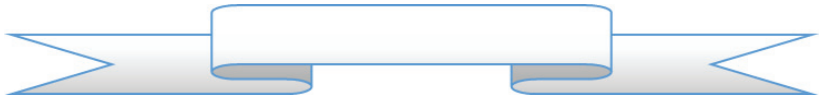
Mallard. Male mallards are among the most beautiful colored of all ducks. Mallards build their nest of grass and weeds on the ground, lining them with feathers. They are migratory and are often seen high overhead, flying south in autumn.

Red-tailed Hawk. This hawk is also called a Chicken Hawk and is a common summers resident in South America. It lives on small rodents and reptiles, silently dropping down on them with no working. It nests in tall cottonwood trees or sometimes in alder or sycamore trees.

Heron. Herons are tall majestic birds. They commonly nest in colonies, building their crude nests high up in trees. The heron is a solitary hunter, lake or may stand in an

open field, searching for food. Once it spies its prey, it makes a lightning like stab with its long, spear-like beak to capture its victim.

Quail. It is only a colorful bird, but it is also an extremely beneficial one. It makes its nest on the ground, usually in a hollow among dense weeds or under thick brush. It lays from ten to lighten eggs, and sometimes more. It is a true friend of the farmer, not only because it eats insect pests, such as grasshoppers and cutworms, but also because it consumes great quantities of weed seeds.



I. GRAMMAR FOCUS

1. ***A) Fill in the blanks using*** *must, mustn't, don't have to, should, shouldn't, might, can, can't !* 1. Rose and Ted ___ be good players. They have won hundreds of cups ! 2. You ___ pay to use the library. It's free. 3. I'm not sure where my wife is at the moment. She _____ be at her dance class. 4. Jerry ____ be working today. He never works on Sundays. 5. You __ be 18 to see that film. 6. You ___ hear this story. It's very funny. 7. Dad ____go and see a doctor. His cough is getting worse all the time. 8. You don't have to shout. I ___ hear you very well. 9. It __ be him. I saw him a week ago, and he didn't look like that. 10. You look pretty tired. I think you __ go to bed early tonight. 11. Let me look. I ___ be able to help you. 12. "Children, you ___ cross the street if the lights are red !" 13. You ____ sit so near the TV. It's bad for your eyes. 14. I'm sorry but I ___ give you a lift because my car is broken. 15. I ___ stop and talk to you now. I have to get to the library.

B) Fill in the blanks with suitable modals (affirmative/negative) from the ones given in the box below. should might can could have to must a) Ritu's flight from Morocco took more than 11 hours. She _____ be exhausted after such a long flight. She _____ prefer to stay in tonight and get some rest. b) If you want to get a better feeling for how Raniganj is laid out, you _____ walk down town and explore the riverside. c) You _____ research the route a little more before you set sail. d) When you have a small child in the house, you _____ leave small objects lying around. e) Anvesha: _____ you hold your breath for more than a minute? Bunty: No, I can't. f) Jasprit's engagement ring is enormous! It _____ have cost a fortune. g) Please make sure to feed the fish while I am gone. If they don't get enough food, they _____ die. h) I _____ speak Assamese fluently when I was a child. i) The teacher said we _____ read the book if we needed extra credit. j) The spatula _____ be in this cupboard but it's not here.

II. CONVERSATIONAL TASKS

1. Why do you think these birds fly to other parts of the earth?
2. Have you ever seen migrating birds fly over your house?
3. Do they have to be good flyers? Why?
4. Who teaches the baby birds how to fly?
5. Why does the avocet have such long legs?
6. Why it its bill long and pointed?
7. What is the pelican carrying in its big bill?
8. How does it use its bill to catch fish?
9. What is the sandpiper's favorite food?
10. Can all birds fly? Can some birds swim?
11. Why do you think the owl's upper beak and the hawk's upper beak are curved?
12. The swallow has a very short beak. Why?
13. Why does the duck need such a flat bill? Why?
14. How do you think the heron catches fish with its pointed beak?
15. Why do you think birds have different kinds of beaks?

Think and Apply!

1. Identify some other seashore birds that are not studied in the unit.
2. Explain the idea that the beaks of birds are useful food-gathering tools.
3. Name some birds that migrate in autumn and in spring. Justify the reason of their migration.
4. Find out to what other countries some birds migrate and how long they stay away.
5. Make a report on: "Tools that Nature Has Given Animals".

14. SOME ANIMALS/BIRDS LIVE IN RIVERS, VALLEYS AND FORESTS

Stripped Skunk. The skunk is widely distributed throughout the west. Because of its unique weapon of defense, it has almost no enemies. This highly effective weapon, however, it uses only as a last resort. It will stamp its forepaws on the ground or even make abortive rushes at its enemy before discharging the pungent, irritating scent that is such a successful defense measure. It is a useful animal because its diet consists of mice and other rodents, as well as harmful insects.

Water scorpion. The water scorpion is an aquatic insect that looks quite unlike the dangerous whip scorpion, to which it is not even related. It catches its food by means of its front legs. It breathes through a long, tail like breathing tube located at the end of its abdomen.

Mud Turtle. Mud turtles like all turtles and tortoises are hatched from eggs. Slow and clumsy on land, they are excellent swimmers. They are the terrors of the ponds in which they reside. They seem to eat anything that moves-fish, frogs and aquatic insects of all kinds.

Garter snake. Garter snakes are familiar sights wherever there is fresh water. They are also frequently seen in back yards and gardens, where, because of the snails and grub-worms they eat, they should be protected. Unlike most snakes, garter snakes bear their young alive, sometimes as many as thirty or forty in a single broad.

Ground Squirrel. Ground Squirrel are exceedingly destructive animals. They not only consume huge quantities of valuable crops, but their burrows are a hazard to the successful operation of irrigation canals. They also destroy large numbers of pheasants, quail and grouse. These squirrels have also been discovered to be the carriers of fleas, which harbor the germs of bubonic plague-a deadly disease. Because of this, children should be cautioned never to touch a handle a ground squirrel-whether dead or alive.

Brush Rabbit. Brush rabbit are found only along the Pacific Coast. They along with numerous other species of rabbits, are one of the most serious pests farmers have to contend with. Prolific breeders they sometimes have as many as four or five liters in a single year.

Tree Hopper. Tree hoppers look so much like the green leaves they live on that it is often quite difficult to see them-even though one might be looking directly of them. They are exceeding injurious to trees, feeding on branches and twigs and sucking the sap.

Gopher Tortoise. The word „tortoise" usually refers to those hard-shelled animals that live on land, the word „turtle" to those who live in fresh or salt water. The gopher tortoise is at home in meadows and foothills as well as in the desert. Its name is derived from the fact that it burrows in the ground like a gopher. When in danger, it can withdraw its head and legs into thick shell. It feeds on many kinds of plants, and can go for long periods without water.

Horned Toad. The horned toad is in reality a lizard, and gets its name from its toad-like appearance. The sharp hornlike spines on its back are its principal protection

against its enemies. But it also resorts to camouflage. In the desert, particularly, it is extremely difficult to spot a horned toad because its coloring so closely matches its surroundings. It is a quite harmless animal and makes an interesting pet.

Porcupine. Porcupines are slow-moving animals. They have sharp quills for protection. When excited, the quills which are barbed like fishhooks, stand up erect on the animal's back. Porcupines, in spite of a superstitious belief to the contrary, cannot throw their quills. The quills, however do come off the animal's back easily. Their young are born with quills already developed. Porcupines live in hollow logs or rock crevices. But they are frequently found in trees feeding on bark, their principal food.

Bumblebee. Bumblebees are longer than honey bees. They live on colonies, manufacture honey, and help plants by spreading pollen from flower to flower. Their colonies, under rock piles or in holes in the ground, are smaller than those of the honey bee-usually numbering no more than a few hundred members. Their honey is more strongly flavored than that of the honey bee and is not used commercially.

Rattlesnake. Are easily identified by their characteristic rattle. The number of rattles a snake has does not despite some beliefs indicate its age. They are exceedingly poisonous. Rattlesnakes feed on rots, mice and other small rodents. They have poor eyesight, but they have ability to strike quickly when in danger.

Caterpillars. Caterpillars built their tent-like webs in branches of trees or shrubs. They are one of our most destructive pests. Groups of these caterpillars live inside the webs and eat the leaves. They can easily destroy whole orchards. They are a month larva and can be destroyed by burning the webs or using insect sprays on them.

Termite. Termites are social insects like ants, but they are far more destructive. They tunnel through the woodwork of houses fence posts and bridges, destroy furniture, and damage trees in their colonies, they have a worker caste as well as soldiers. The sole duty of the soldiers it to defend the colony against attack.

Clothes Moth. Clothes moths lay their eggs in furs, clothing and carpets, when the eggs it is the larvae that feed on the wool and fur fibers and are so destructive. These moths shun light and air. One of the best means of protection against them is to expose wool clothing and carpets, to sunlight and air during the period when the female moth starts laying eggs.

Carpet Beetle. It is the grub of the carpet beetle rather than the beetle itself, which is so destructive. The grubs eat woolen carpets as well as feathers and fur. Moth-proofing to protect clothes and furnishing from the clothes moth larvae will also kill carpet beetle grubs.

Dragonfly. Dragonflies are beautiful winged insects that feed on flies, mosquitoes, and gnats. They lay their eggs in water. The eggs hatch into larvae, called nymphs. The nymphs fierce little creatures, feed on water insects, tadpoles, and even small fish. They live in water, breathing by means of gills, for a considerable period before they crawl up a plant stem and emerge into the air. Them they shed their skins and allow their wings to dry. They are now adult dragonflies.

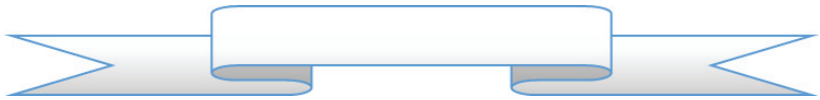
Mule Deer. The mule deer is one of the most admired animals. The fawns, often twins are born in June or July. They are hidden by their mothers in tall grass or beside fallen tree trunks until they are old enough to run rapidly. The mountain lion is next to man, the deer's most dangerous enemy. It has been estimated that an adult mountain lion can kill as many as fifty deer in a single year.

Badger. The badger is a quiet inoffensive animal, and is solitary in its habits. It is an exceedingly useful animal because its principal food is gophers and ground squirrels. With its long claws, it is excellently equipped for digging these rodents out of their holes. When driven to bay the badger is a formidable animal. Only the most powerful dog of mountain lion dares attack it.

Gary fox. The gray fox acts as an excellent control over the harmful rodent population of the area in which it resides. It seems to be particularly fond of gophers and ground squirrels. A shy animal, it displays astonishing badness in the defense of its young. The fox cubs are extremely playful and may be even seen chasing their own tails in front of their burrow.

Mountain Lion. The mountain lion is also called Cougar, Puma or Panther. Resembling big, tawny house cats, mountain lions are magnificent, powerful animals. Their chief food is deer, but they also eat other, smaller animals-including skunks and porcupines. Most of their victims are crippled or diseased animals which should be destroyed anyway. In this manner, an adequate control over an excessive deer population.

Wood Tick. Wood ticks are parasites which live off other animals-including man-by sucking their blood. Ticks also often carry and transmit dangerous diseases. They feed by means of a beak and strong, tiny teeth. Female ticks lay from a thousand to as many as five thousand eggs at one time. They are most frequently met with in woods and forests, on the bark of trees, or in dead leaves.



I. GRAMMAR FOCUS

1. Change the following statements into the reported speech.

a. "I have something to show you", I said to her.

b. "I'm going away tomorrow", he said.

c. "I've been in London for a month but I haven't had time to visit the Tower", said Rupert.

d. "I'll come with you as soon as I'm ready", she replied.

e. "We have a lift but very often it doesn't work", they said.

f. "I must go to the dentist tomorrow", he said.

g. "I found an old Roman coin in the garden yesterday and I am going to take it to the museum this afternoon", he said.

2. Write these sentences in indirect speech.

a. “I’m very tired”, she said.
b. “I’ll see them soon”, he said.
c. “I’m going to the cinema”, she said.
d. “I see the children quite often”, he said.
e. “I’m having a bath”, she said.
f. “I’ve already met their parents”, she said.
g. “I stayed in a hotel for a few weeks”, she said.
h. “I must go home to make dinner”, he said.
i. “I haven’t been waiting long”, she said.
j. “I’m listening to the radio”, he said.
k. “I’ll tell them the news on Saturday”, she said.
l. “I like swimming, dancing and playing tennis”, he said.

II. CONVERSATIONAL TASKS

1. Are the ground squirrel and rabbit harmful animals?
2. How do you know they are harmful?
3. Why do you think farmers don’t like them as visitors in their gardens and fields?
4. Why are valley quail useful birds?
5. Why do farmers like them?
6. Why do you think the heron builds its nest near water?
7. Does the pheasant live near water?
8. Do the pheasant’s babies get a lot of care from their mother?
9. Do baby pheasants have feathers when they are born?
10. Why are tree hoppers usually safe from their enemies?
11. What does the skunk use to scare away its enemies?
12. Why isn’t it easy for other animals to eat turtles and horned toads?
13. Does the wasp make honey?
14. How does the wasp build its nest?
15. Do bees have a queen bee in their hive?
16. How do the quills of a porcupine protect it from its enemies?
17. How is the ladybird helping the orange gravers?
18. How is the rattlesnake our enemy?
19. Should we ever go near a rattlesnake?
20. How do you think the rattlesnake got its name?
21. How do tent caterpillars harm plants?
22. Does the cloths moth eat clothes?
23. What does a carpet beetle do to a carpet or rug?
24. Why are termites so harmful to houses?
25. Have you ever hear a cricket chirp on a summer’s night?
26. How do they make this noise?

27. How does the turtle get its food?
28. What kind of food does the frog like?
29. Are garter snakes harmful snakes?
30. How does the dragonfly get air when it lives in the water?
31. Do all birds eat fish?
32. Are any other animals afraid of the deer?
33. Are any other animals afraid of the mountain lion?
34. Why do baby deer hide from mountain lions?
35. How can a small animal like the wood tick be an enemy of both the deer and the mountain lion?
36. Is the wood tick your enemy too?
37. Does the mountain lion have other enemies besides the wood tick?
38. Do you think the fox eats ground squirrels to help birds?
39. What does the ground squirrel do when it finds a bird's nest?
40. Why does the woodpecker store food in autumn?
41. Do you think squirrels could get the woodpeckers' acorns out of a tree tunk?
42. Why is the badger a useful animal?
43. How do wings help bats?
44. Do bats belong to the bird family?
45. What kind of animal are they?
46. Could the badger dig without its sharp claws?
47. Does the mountain lion dig with its paws? How does it use them?

Think! Explore and Apply!

1. Note the living habits of the hamsters, mice, rabbits and guinea pigs.
2. Prepare a bulletin-board display of the tunnels and underground burrows of such animals as ground squirrels, beavers, rabbits.
3. Make a report about spiders and insects. Summarize the major differences of the two kinds of animals.

15. SOME PLANTS GROW BEST IN HILLS, VALLEYS AND MOUNTAINS

Madrone. The madrone can be readily recognized by the color of its inner bark. The outer bark peels off easily, exposing the tree's orange or red inner bark. Its leaves are evergreen. A madrone often has a strongly twisted trunk.

Wild Grape. Wild grapes, cultivated grapes, grow best in a warm, dry climate. They are found most in our valleys. Wild grapes are not quite so sweet as cultivated grapes, but they can be used in the same variety of ways.

Snowberry. This is one of the few wild flowers that blooms in early winter. Its blossoms are pure white and at the time they are in bloom, the plant itself is almost leafless. The leaves come out in early spring and are delicate green in color.

Big-Cone Pine. The cone of this tree, as the name implies, are exceedingly large. They are often up to twenty inches in length and weight as much as eight pounds. The thick-set trunk of the tree is covered with a rough, broken bark.

Willow. The Yellow Willow is easily identified by its long narrow leaved and its wart-like leaf stalks. Its leaves are generally darker than the leaves of other willow species. Its natural habitat is near water, where it grows in clusters.

Wild Rose. This lovely plant grows everywhere in the state. It flourishes along dusty roadsides as well as in thickets. It blooms all through the summer and autumn. Its flower it of a delicate shape and blooms in all shades of pink.

Cattail. This plant was named after its furry spines. It prefers the moist soil near ponds, rivers and lakes, where it flourishes. The long, flat leaves of the cattail are used in the manufacture of chairs.

Money Flower. This plant is called money flower because of the shape of its flowers. It belongs to the Mimulus family of herbs. It blossoms are of many different colors.

Golden Yarrow. The underside of the leaves of the golden yarrow have a white wooly appearance. This plant favors rocky or sandy hillsides. Its brilliant yellow flowers bloom in early summer.

Lupine. This is a flower of the coastlands and beaches. It is an annual and is bright blue in color. Its seeds have been used as a food since earliest times.

Mustard. The yellow flowers of the mustard plant are like a network of fine lace. Tons of mustard seeds are exported from California each year. They are used to make a pharmaceutical oil. Mustard plants are also widely used in a cover crop.

Baby Blue-Eyes. This plant grows throughout California. Its bright blue flowers, ranging in color from sky blue to navy blue, bloom in great masses in spring.

Scarlet Pimpernel. These brilliantly colored flowers brighten the grasslands during the rainy season. The scarlet pimpernel becomes inactive during periods of drought, as do most of the other grassland plants.

Manzanita. This tree is easily recognized because of its purple bark and twisted braches. It has white or pink flowers. Its leaves are evergreen.

Poison Oak. This is one of the plants that can bring great discomfort to people who brush up against its leaves or bark. It is an attractive plant. Its shiny green leaves turn brilliant red or bright purple in summer. It has a small, greenish-white flower. Some species of bees gather nectar from these flowers and make an excellent honey.

Wind poppy. The wind poppy is also known by the name of Flammy Poppy and Blood-drop. It has a very fragile flower, which usually drops its petals when touched. The flowers come out in spring. The plant prefers hillsides that are well shaded.

Redbud. This tree is also called Judas Tree. The braches of the redbud remain leafless until summer, but the tree blossoms as early as March or April. It received its name, Judas Tree, from a legend which tells that Judas hanged himself from the branches of a redbud. According to this legend, the then white flowers of the tree turned pink in shame.

Hand's-tongue. The leaves of this plant are often a foot long. When the plant first blooms, the flowers are pink. But they soon turn a bright blue. An old superstition relates that if a person puts this plant under his feet, dogs will not bark at him. The finely barbed seeds of the hand's-tongue are among the seeds the easily „catch a ride" in the fur of animals.

Cardinal Flower. This brilliant colored flower prefers the wet slopes of mountains. It needs rich, damp soil in which to flourish. Its blossoms are of such a starling red that, when the plant is in bloom, it transforms mountain slopes into a picture of unforgettable beauty.

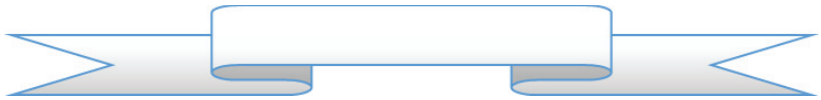
Douglas Fir. One-fourth of all the wood used in this country comes from the Douglas fir. It has tremendous regenerative powers. It carefully cut, it will reseed itself, thus beginning a cycle of balanced cutting and regrowth. Since this tree is so important in our daily lives, it is imperative that, for each Douglas fir cut, a new tree is planted. In the early years of the lumbering industry, lumbermen did not realize this essential conversation measure. Consequently, much lumber was wasted. Today wise lumbering methods provide enough young trees for the mature trees that have been cut down. This careful kind of lumbering is practiced on many tree farms.

Forget-me-not. This flower has as its habitat the open woodlands of the Sierra Nevada. Its blossoms are a lovely azure blue. Its seeds are covered with prickly thorns and are sometimes called „stickseeds".

Ferns. Ferns grow from spores. As soon as a ripe spore falls onto the damp ground, it begins to germinate. Some kinds of ferns grow very large and live for many years. These are called tree ferns. All ferns need damp, rich soil in which to grow. They do not flower, but they do manufacture their own food.

Ivy. Ivy is a kind of creeping on climbing vine that is often used as an ornamental plant to cover buildings and walls. It can cling to smooth surfaces with the fine roots on

its stems. Some kinds of Ivy have dark green leaves with five pints; other have overlapping leaves or kidney-shaped leaves.



I. LANGUAGE IN CHUNKS

1. Find the synonyms among the pool of words

1. rate, accessible, degree, grade, available
2. distinguish, influence, differentiate, affect
3. help, place, assist, situate, arrange
4. underestimate, underrate, gurgle, burble

2. ***Complete the text with the words from the box***:

learning abilities, larvae, nectar,

Even though bees have some pretty impressive _____ _____, nearly all of what we know about this comes from bees' ability to learn in relation to nectar. Now, this makes sense, given that bees collect nectar from a range of flowers. However, while bees need nectar to stay alive from hour to hour while foraging (like hummingbirds), they also need pollen from flowers as their main source of protein. What's more, the _____ bees collect is critical for the survival of their _____, so they pack it on to their legs (in pollen loads) and carry it back to their colony to feed it to developing _____. If bees do learn which flowers have pollen, what might they learn? Since bees collect pollen from the anthers of flowers, anther colour seemed like a likely candidate. However, given that the _____ of a flower are usually pretty obvious and that bees pay attention to them when collecting _____, it also seemed plausible that bees might learn about corolla colour when collecting pollen.

II. GRAMMAR FOCUS

1. *Change these sentences from active to passive.*

1. People speak Portuguese in Brazil. 2. The Government is planning a new road near my house. 3. My grandfather built this house in 1943. 4. Picasso was painting Guernica at that time. 5. The cleaner has cleaned the office. 6. He had written three books before 1867. 7. John will tell you later. 8. By this time tomorrow we will have signed the deal. 9. Somebody should do the work. 10. The traffic might have delayed Jimmy. 11. Everybody loves Mr Brown. 12. They are building a new stadium near the station. 13. The wolf ate the princess. 14. At six o'clock someone was telling a story. May be freely copied for personal or classroom use. 15. Somebody has drunk all the milk! 16. I had cleaned all the windows before the storm. 17. A workman will

repair the computer tomorrow. 18. By next year the students will have studied the passive. 19. James might cook dinner. 20. Somebody must have taken my wallet.

2. ***Change the sentences to passive voice.***

1. The Browns have built the large house. 2. A jellyfish stung her while she was swimming. 3. They gave her a nice present. 4. Jane is singing the new song. 5. The storm destroyed the house. 6. People spent a lot of money on shopping. 7. How do you write that word? 8. She watered the flowers every day. 9. The headmaster called his parents to the office. 10. Ben will direct the show. 11. The dog has broken the window pane. 12. You must pay the bill first. 13. They were interviewing her for the job. 14. The professor told him not to talk in class. 15. You shouldn't speak to your neighbor.

III. CONVERSATIONAL TASKS

I. ***Questions to Stimulate Discussion:***

1. Why do willows grow near water?
2. Would cattails grow as well as in the desert?
3. Do some plants need more water than others?
4. How do you suppose plants get water?
5. Do all plants look alive?
6. What kind of plant will grow from a cattail seed?
7. If you grow a seed between rocks will you get a healthy plant?
8. Why is the soil in the grasslands so dry during the summer?
9. Do the plants growing in the grasslands stay green during the dry months?
10. Do they die? What happens to them?
11. Why do plants need water?
12. Which part of the plant take water from the soil?
13. What else does a plant need from the soil besides water?
14. Where does the water go after it leaves the plant's roots?
15. Which part of the plant besides the leaves helps to make the plant's food?
16. How do sun and air help plants?
17. What happens to a seed of a plant once it is in the ground?
18. What happens when a flower dies?
19. What is needed to grow a new flower?
20. Where does a plant make its seeds?
21. What happens to the bulb when a bulb plant dies?
22. Why should some flowers not be picked?
23. What is inside the seed pod?
24. How many plants can grow from one bulb?
25. Which trees grow best in the foothills?
26. Do you think oak trees would grow well along the seashores? Why not?
27. What is the fruit of the oak tree called?

28. Why should you know what poison oak leaves look like?
29. What might happen if you touch them?
30. Do the leaves of the poison oak look the same in spring and in summer?
31. How do they change?
32. Do all trees keep their leaves all year long?
33. What happens to the trees that lose their leaves?
34. Do evergreens keep the same leaves all their lives?
35. Why do you think they are called „evergreens”?
36. Do all ferns look alive? Do they have flowers?
37. Do ferns grow from seeds? From bulbs? How do they grow?
38. Why can’t trees grow very well in the high mountains?
39. Does a shrub have a trunk?
40. Why does water run down hillsides in spring? Where does it come from?
41. How do plants help save this water?
42. Is saving water and soil helpful to man? Why?
43. What does water do for the soil?
44. How do the roots keep soil from being washed away?
45. What do the roots of plants do to help the plant?
46. What would happen to soil and water if all plants were cut down?
47. Why are plants with roots that spread out quickly best for holding soil?
48. Why do most people like wild flowers?
49. Why are some wild flowers scarce?

Think! Explore and Apply!

- Could a new plant grow from every seed?
- Could plants grow in a dark closet? Why?
- Can a plant make a flower without soil?

GRAMMAR POINTS STUDIED THROUGHOUT THE COURSE

Plurals of nouns

Rules	Examples	Examples
1. + **-s**	a cat – cats/ a table – tables	
2. **-s**, **-ss**, **-sh**, **-ch**, **-tch**, **-x** + **-es**	**a bus** – buses; **a glass**- glasses; **a brush** – brushes; a **torch** – torches	

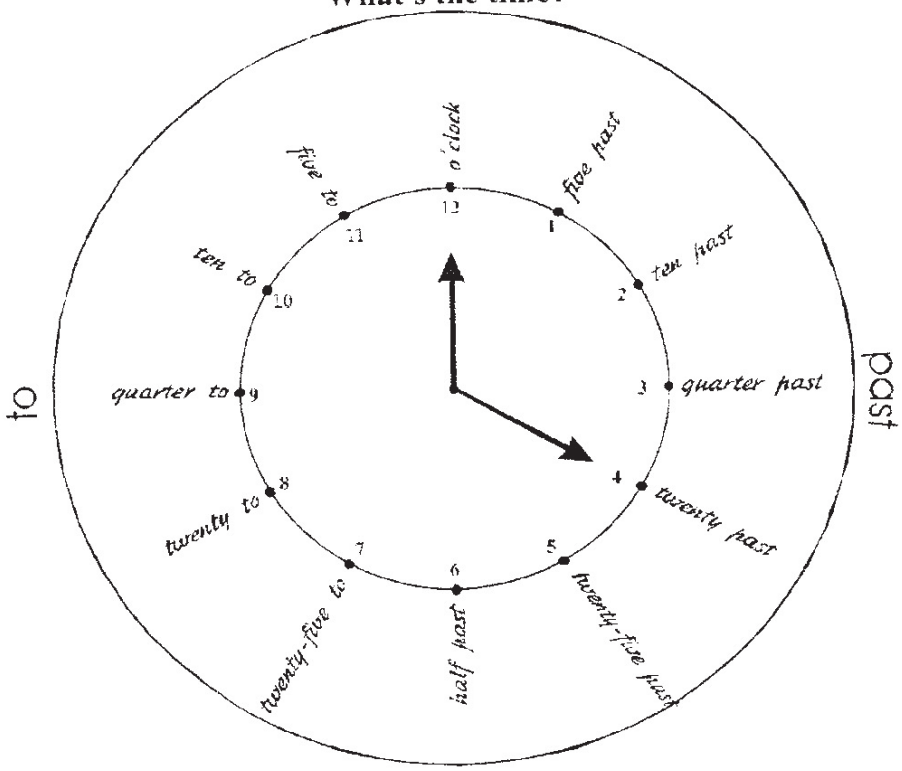
3. **-y** –> **-i** + **-es**	a fly – flies an army – armies a lady – ladies	
4. **-o** + **-es**	a hero – heroes a potato – potatoes a torpedo – torpedoes	a piano – pianos a kilo – kilos a photo – photos a video – videos a flamingo – flamingos (es) a volcano – volcanos (es)
5. **-ay**, **-ey**, **-oy** + **-s**	a day – days	
6. **-f** –> **-v** + **-es**	a wife – wives a knife – knives a life – lives a leaf – leaves	a scarf – scarfs (ves) a wharf – wharfs (ves) a dwarf – dwarfs (ves) a hoof – hoofs (ves) **But:** chiefs, roofs, safes, cliffs, beliefs
7. **Irregular nouns**	a man – men a woman – women a child – children a brother — brethren a foot – feet a tooth – teeth a goose – geese a mouse – mice a louse – lice an ox – oxen	
8. **Nouns with the same form in *sg* – and *pl***	a fish – fish a deer – deer a sheep – sheep a trout – trout a swine – swine an aircraft – aircraft a means – means	a fish – fishes (different types of fish)
9. **Names of Latin Origin**		
a) **-us** –> **-i**	a stimulus – stimuli genius – genii	a bonus – bonuses a virus – viruses a circus – circuses a radius – radiuses (radii) a cactus – cactuses (cacti) a nucleus – nucleuses (nuclei)

b) **-a** –> **-ae**	a larva – larvae an alumna – alumnae	a formula – formulae (formulas) **But:** areas, diplomas, arenas
c) **-um** –> **-a**	a datum – data a curriculum – curricula	a symposium – symposia (simposiums) a memorandum – memoranda (memorandums) a medium – media (mediums) **But:** albums, chrysanthemums
d) **-ex**, **-ix** –> **-ces**	an index – indices (mathematics) an appendix — appendices (in books) a codex – codices	an index – indexes (in books) an appendix – appendixes (in medicine)
10. **Nouns of Greek Origin**		
a) **-is** –> **-es**	a thesis – theses a crisis – crises a analysis – analyses a basis – bases	a metropolis – metropolises
b) **-on** –> **-a**	a criterion – criteria a phenomenon – phenomena	a demon – demons an electron – electrons
11. **Compound names**	a schoolboy – schoolboys a housewife – housewives a postman – postmen	a mother-in-law – mothers-in-law a passer-by – passers by a man-servant – men-servants a woman-doctor – women-doctors: a forget-me-not – forget-me-nots a merry-go-round – merry-go-rounds
12. **Nouns with only singular form**	Advice, education, hair information, knowledge, luck, luggage, money, music, news, progress, seaside, shopping, traffic, trouble, weather, work, etc.	

Degrees of Comparison of Adjectives/Adverbs (Irregular forms)

Positive	Comparative	Superlative
good well	better	the best
bad / badly	worse	the worst
many/much	more	the most
little/few	less	the least
far	farther /further	the farthest / furthest
late - târziu	later latter (ultimul menționat)	the latest/last
old	older elder (family members)	oldest eldest

What's the time?



00:00 – 12:00 → A.M.
12:00 – 00:00 → P.M.

3:40	It's three forty
	It's twenty minutes to four
3:45	It's three forty-five
	It's a quarter to four
3:55	It's three fifty-five
	It's five minutes to four
4:00	It's four o'clock (sharp)
3:05	It's three five
	It's five minutes past three
3:15	It's three fifteen
	It's a quarter past three
3:25	It's three twenty-five
	It's twenty-five minutes past three
3:30	It's three thirty
	It's half past three
Note:	(Br.E) past – (Am.E.) after (five past ten)
	(Br.E.) to – (Am.E.) of (ten of six)

Possessive pronouns

Phone numbers. Addresses. Dates

0712207	(BrE) oh, seven, one, double two, oh, seven (AmE) zero, seven, one, two, two, zero, seven
80 Park Street	eighty…
741 Linden Avenue	seven, forty-one…
1409 Maple Street	fourteen, oh, nine…
6324 Kenwood	sixty-three, twenty-four…
1200 Central Avenue	twelve hundred…
5100 Main Street	fifty-one hundred…
index 48103	our, eight, one, oh, three

(USA) 03.21.80 March twenty-first, nineteen eighty.
(Great Britain) 21.03.80 The twenty-first of March, nineteen eighty.

Reading "0"

1. nought [nɔ:t] 0.7 = nought point seven.
2. zero ['zɪərəʊ] - 15° C = fifteen degrees below zero.
3. oh [əʊ] (telephone numbers) 903 – nine, oh, three
4. nil/nothing 2:0 = the score was two nil/nothing.

1/2 – a half
1/3 – a third
1/4 – a quarter
1/5 – one fifth
3/4 – three quarters
2/3 – two thirds
1 ½ – one and a half
2 ¾ – two and three quarters
1.75 – one point seven five
0.3 – nought point three
26% – twenty-six per cent

Person	Conjoint Form	Absolute Form
	Singular	
1	my	mine
2	your	yours
3	his	his
	her	hers
	its	its
	Plural	
1	our	ours
2	your	yours
3	their	theirs

Demonstrative pronouns

Singular	Plural
this – acest, această	**these** – acești, aceste
that – acel, aceea	**those** – acei, acele

such – așa de, astfel de
(**the**) **same** – același, aceeași

Indefinite pronouns

some / **any** - niște, câțiva, câteva, vreo, vreun, oarecare ***and their derivatives***
somebody / **someone** - cineva **something** - ceva **anybody** / **anyone** - cineva (negative and interrogative sentences) **anything** - ceva (interrogative sentence), - nimic (negative sentences, - orice (declarative sentences)

Modal Verbs

Model Verbs	Meanings/Purposes	Examples
Can/Could	Ability	*Birds can fly. I can swim.*
	Permission	*Yes, you can go to the cinema. She could come if you let me know earlier.*
May/Might	Permission	*You may start your work now.*
	Possibility	*It may rain tomorrow. She might be sick.*
Shall/Should/ Ought to	Future Actions	*We shall come again next time.*
	Responsibility	*They should bring their textbooks to school. You ought to ask for her permission.*
Will/Would	Future Actions	*He will join our team next year.*
	Imagination	*I would call Sue if I remember her number.*
Must/ Have to	Necessity	*Human must eat.*
	Obligation	*We must hand in our homework on time.*

Modal Perfect	Examples
Must Have + Past P.	My mother has arrived late. She **must have been** in a traffic jam.
May Have + Past P.	We **may have passed** the math exam, but it was in French.
Might Have + Past P.	Alex **may have taken** the wrong train.
Could Have + Past P.	I'm sorry but, You **could have played** better.
Couldn't Have + Past P.	She **couldn't have passed** because she hadn't studied enough.
Would Have + Past P.	If I had guessed the future, I **would have taken** some precautions against what would happen.
Should Have + Past P.	You **should have listened** to the teacher.
Shouldn't Have + Past P.	She **shouldn't have told** them.
Needn't Have + Past P.	I **needn't have read** the book.

English Tenses

Tense	Signal words	Use	Form	Examples affirmative	Examples negative	Examples interrogative
Simple Present	every day sometimes always often usually seldom never first ... then	• something happens repeatedly • how often something happens • one action follows another • things in general • with verbs like (***to love, to hate, to think, etc.***) • future meaning: timetables, programmes	infinitive he/she/it: infinitive + s	I work. He works. I go. He goes.	I don't work. He doesn't work. I don't go. He doesn't go.	Do I work? Does he work? Do I go? Does he go?
Present Progressive	now at the moment Look! Listen!	• something is happening at the same time of speaking or around it • future meaning: when you have already **decided and arranged** to do it (a fixed plan, date)	be (am/are/is) + infinitive + ing	I'm working. He's working. I'm going. He's going.	I'm not working. He isn't working. I'm not going. He isn't going.	Am I working? Is he working? Am I going? Is he going?
Simple Past	last ... ... ago in 1990 yesterday	action took place in the past, mostly connected with an expression of time (no connection to the present)	regular: infinitive + ed irregular: (2nd column of table of irregular verbs)	I worked. He worked. I went. He went.	I didn't work. He didn't work. I didn't go. He didn't go.	Did I work? Did he work? Did I go? Did he go?

Past Progressive	while	• an action happened in the middle of another action • someone was doing sth. at a certain time (in the past) - you don't know whether it was finished or not	was/were + infinitive + ing	I was working. He was working. I was going. He was going.	I wasn't working. He wasn't working. I wasn't going. He wasn't going.	Was I working? Was he working? Was I going? Was he going?
Simple Present Perfect	just yet never ever already so far, up to now, since for recently	• you say that sth. has happened or is finished in the past and it has a connection to the present • action started in the past and continues up to the present	have/has + past participle* *(infinitive + ed) or (3rd column of table of irregular verbs)	I have worked. He has worked. I have gone. He has gone.	I haven't worked. He hasn't worked. I haven't gone. He hasn't gone.	Have I worked? Has he worked? Have I gone? Has he gone?
Present Perfect Progressive	all day the whole day how long since for	• action began in the past and has just stopped • how long the action has been happening **emphasis: length of time of an action**	have/has + been + infinitive + ing	I have been working. He has been working. I have been going. He has been going.	I haven't been working. He hasn't been working. I haven't been going. He hasn't been going.	Have I been working? Has he been working? Have I been going? Has he been going?

Simple Past Perfect	already just never	• mostly when two actions in a story are related to each other: the action which had already happened is put into ***Past Perfect***, the other action into ***Simple Past*** • the past of the ***Present Perfect***	had + past participle* *(infinitive + ed) or (3rd column of table of irregular verbs)	I had worked. He had worked. I had gone. He had gone.	I hadn't worked. He hadn't worked. I hadn't gone. He hadn't gone.	Had I worked? Had he worked? Had I gone? Had he gone?
Past Perfect Progressive	how long since for	how long something had been happening before something else happened	had + been + infinitive + ing	I had been working. He had been working. I had been going. He had been going.	I hadn't been working. He hadn't been working. I hadn't been going. He hadn't been going.	Had I been working? Had he been working? Had I been going? Had he been going?
will - future		• predictions about the future (you think that sth will happen) • you decide to do sth. spontaneously at the time of speaking • main clause in type I of the Conditional sentences	will + infinitive	I'll work. He'll work. I'll go. He'll go.	I won't work. He won't work. I won't go. He won't go.	Will I work? Will he work? Will I go? Will he go?
going to - future		• when you have already decided to do sth. in the future • what you think what will happen	be (am/are/is) + ***going to*** + infinitive	I'm ***going to*** work. He's ***going to*** work. I'm ***going to*** go. He's ***going to*** go.	I'm not ***going to*** work. He's not ***going to*** work. I'm not ***going to*** go. He's not ***going to*** go.	Am I ***going to*** work? Is he ***going to*** work? Am I ***going to*** go? Is he ***going to*** go?

Future Progressive		• An action will be in progress at a certain time in the future. This action has begun before the certain time. • Something happens because it normally happens.	will + be + infinitive + ing	I'll be working. He'll be working. I'll be going. He'll be going.	I won't be working. He won't be working. I won't be going. He won't be going.	Will I be working? Will he be working? Will I be going? Will he be going?
Future Perfect Simple		sth. will already have happened before a certain time in the future	will + have + past participle* *(infinitive + ed) or (3rd column of table of irregular verbs)	I'll have worked. He'll have worked. I'll have gone. He'll have gone.	I won't have worked. He won't have worked. I won't have gone. He won't have gone.	Will I have worked? Will he have worked? Will I have gone? Will he have gone?
Future Perfect Progressive		sth. will already have happened before a certain time in the future **emphasis: length of time of an action**	will + have + been + infinitive + ing	I'll have been working. He'll have been working. I'll have been going. He'll have been going.	I won't have been working. He won't have been working. I won't have been going. He won't have been going.	Will I have been working? Will he have been working? Will I have been going? Will he have been going?
Conditional Simple		• sth. that might happen • main clause in type II of the Conditional sentences	would + infinitive	I would work. He would work. I would go. He would go.	I wouldn't work. He wouldn't work. I wouldn't go. He wouldn't go.	Would I work? Would he work? Would I go? Would he go?

Conditional Progressive		sth. that might happen **emphasis: length of time of an action**	would + be + infinitive + ing	I would be working. He would be working. I would be going. He would be going.	I wouldn't be working. He wouldn't be working. I wouldn't be going. He wouldn't be going.	Would I be working? Would he be working? Would I be going? Would he be going?
Conditional Perfect		• sth. that might have happened in the past • main clause in type III of the Conditional sentences	would + have + past participle* *(infinitive + ed) or (3rd column of table of irregular verbs)	I would have worked. He would have worked. I would have gone. He would have gone.	I wouldn't have worked. He wouldn't have worked. I wouldn't have gone. He wouldn't have gone.	Would I have worked? Would he have worked? Would I have gone? Would he have gone?
Conditional Perfect Progressive		sth. that might have happened in the past **emphasis: length of time of an action**	would + have + been + infinitive + ing	I would have been working. He would have been working. I would have been going. He would have been going.	I wouldn't have been working. He wouldn't have been working. I wouldn't have been going. He wouldn't have been going.	Would I have been working? Would he have been working? Would I have been going? Would he have been going?

Reported Speech

Verb tense	Direct speech	Verb tense	Indirect speech
present simple	'I **am** exhausted.'	past simple	He said (that) he **was** exhausted.
present continuous	'I'**m** studying.'	past continuous	She told me (that) she **was studying**.
past simple	'I **loved** the concert.'	past perfect	He told me (that) he **had loved** the concert.
present perfect	'I **have** never **been** to Rome.'	past perfect	She said (that) she'**d** never **been** to Rome.
will	'I **will help** you.'	would	He said (that) he **would help** me.
must	'You **must pay** attention.'	had to	She told me (that) I **had to pay** attention.
can	'You **can** stay with me.'	could	She said (that) I **could** stay with her.
may	'I **may** arrive late.'	might	He told me (that) he **might arrive** late.
could, might, should	'I **should** help Tom.'	could, might, should	She said (that) she **should** help Tom.

PLACE & TIME

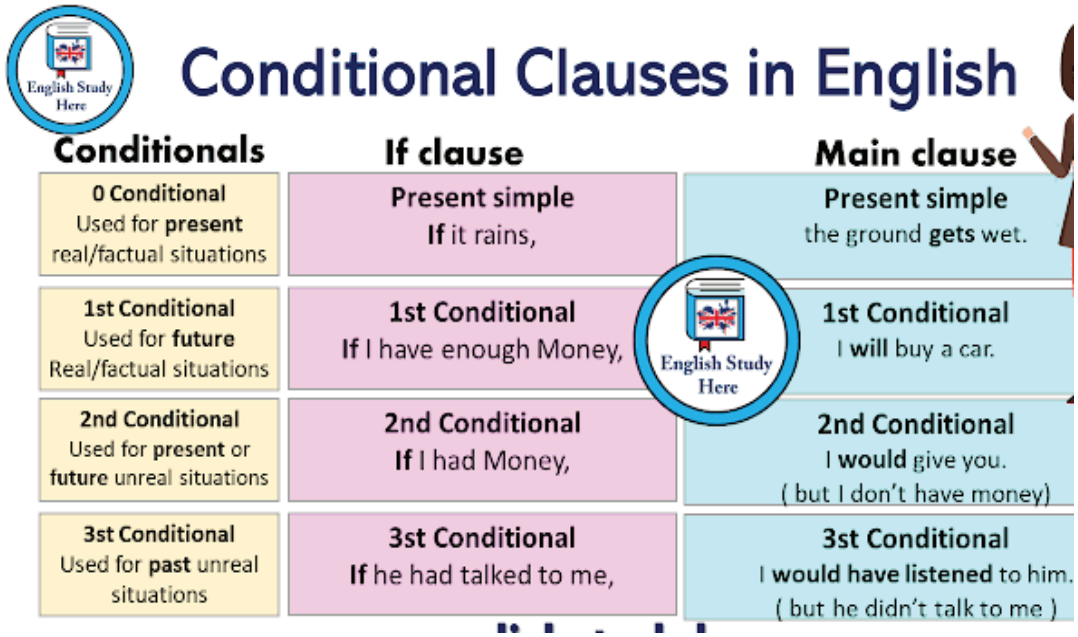
Direct Speech	Reported Speech
today	that day
now	then / at the moment
yesterday	the day before
... days ago	... days before
last week	the week before
next year	the following year
tomorrow	the next day the following day
here	there
this	that
these	those
ago	previously / before
tonight	that night

TENSE CHANGE

Direct Speech	Reported Speech
will	would
can	could
must / have to	must or had to
may / might	might
should	should
ought to	ought to

Passive Voice

Passive Voice Forms		
Verb Tense	**Active Voice**	**Passive Voice**
simple past	Jen wrote the report.	The report was written by Jen.
past progressive	Jen was writing the report.	The report was being written by Jen.
past perfect	Jen had written the report.	The report had been written by Jen.
simple present	Jen writes the reports.	The reports are written by Jen.
present progressive	Jen is writing the report.	The report is being written by Jen.
present perfect	Jen has written the report.	The report has been written by Jen.
simple future	Jen will write the report.	The report will be written by Jen.
future perfect	Jen will have written the report.	The report will have been written by Jen.
modal	Jen should write the report.	The report should be written by Jen.
modal perfect	Jen should have written the report.	The report should have been written by Jen.



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