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PLANTS, FORESTS AND FOREST OPERATIONS



Электронный архив УГЛТУ

МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ
РОССИЙСКОЙ ФЕДЕРАЦИИ

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(УГЛТУ)

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PLANTS, FORESTS AND FOREST OPERATIONS

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Лексико-грамматические задания пособия нацелены на пополнение лексического запаса обучающихся, на развитие навыков всех видов чтения литературы по лесной тематике. Пособие «*Plants, Forests and Forest operations*» предназначено для второкурсников очной формы обучения в лесотехническом вузе.

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ВВЕДЕНИЕ

Учебное пособие «*Plants, Forests and Forest Operations*» предназначено для обучающихся на втором курсе лесотехнического вуза очной формы обучения.

Основная цель обучения иностранному языку на современном этапе – это практическое овладение языком, поэтому представляется важным формирование умения у будущего специалиста самостоятельно читать литературу по специальности с целью извлечения информации из иноязычных источников для профессионального становления.

Пособие состоит из 12 юнитов (*Plants, Plants and solar energy, Plants and biomes, Plants on the Earth, Forests, Forest layers, Forests and trees, Forest species, Forest products, Forest measurement, Forest operations, Forest machines*), словаря грамматических терминов, лексико-грамматических тестов и тематического визуального словаря.

Каждый юнит имеет следующую структуру:

- основной текст, которому предшествует список активных слов и выражений по теме юнита – *Study Vocabulary*;
- таблица по грамматической теме юнита – *Study Grammar*;
- послетекстовые упражнения, нацеленные на развитие навыков всех видов чтения (изучающее, ознакомительное, поисковое и просмотровое);
- лексико-грамматические упражнения, предназначенные для усвоения лексики и грамматики, необходимой для понимания текстов по специальности.

Задача лексических упражнений – пополнение словарного запаса обучающихся на базе аутентичного материала, который является введением в их будущую специальность. К данным упражнениям относятся задания на словообразование, употребление синонимов, антонимов, омонимов, коллокаций, подбор эквивалентов, выявление определений слов.

Грамматический материал включает в себя такие темы, как пассивный залог (*passive voice*), причастия (*participles*), герундий (*gerund*), инфинитив (*infinitive*), сложное дополнение и подлежащее (*complex object and complex subject*).

Послетекстовые задания, нацеленные на развитие навыков всех видов чтения, включают ответы на вопросы по основному содержанию текста, соответствие утверждений содержанию текста, определение ключевых фактов текста, расположение основных предложений текста в логической последовательности.

В конце пособия размещены словарь грамматических терминов, лексико-грамматические тесты и тематический визуальный словарь. Словарь грамматических терминов включает в себя пояснения терминологии, встречающейся в пособии. Предлагаемые лексико-грамматические тесты являются проверочными и охватывают лексический и грамматический материал каждого пройденного юнита, так как наряду с получаемой информацией и ее отработкой важным элементом учебного процесса является контроль знаний обучающихся.

Тематический словарь, предназначенный для активной работы со словарным запасом, для его пополнения и расширения, а также для систематизации знаний иностранной лексики по специальности, связанной с лесной тематикой, является визуальным, что облегчает процесс запоминания и делает его познавательным и интересным.

Основными ресурсами для эффективной работы с учебным пособием являются словари, справочники, сайты сети Интернет, которые указаны в прилагаемом списке литературы.

Unit 1

<p>Text: PLANTS Grammar: WORD FORMATION</p>
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Study Vocabulary

1	Environment (n) [in'vaiə(ə)nmənt]	(Biology) the surroundings or conditions in which a person, animal, or plant lives or operates	Окружающая среда
2	Habitat (n) ['hæbitæt]	(Biology) the natural home or environment of an animal, plant, or other organism	Место обитания, распространения, ареал (животного, растения)
3	Preserve (v) [prɪ'zɜ:v]	to maintain (something) in its original or existing state	Сохранять, сберегать
4	Reduce (v) [rɪ'dju:s]	to make or become smaller or less in amount, degree, or size	Ослаблять, понижать, сокращать, уменьшать
5	Conserve (v) [kən'sɜ:v]	to protect (something, esp. an environmentally or culturally important place or thing) from harm or destruction	Охранять, беречь; сберегать, сохранять
6	Nutrient (n) ['nju:triənt]	a substance that all organisms need in order to live, grow, and be healthy	Питательное вещество
7	Biofuel (n) [,baɪəu'fju:əl]	a gas, liquid, or solid from natural sources such as plants that is used as a fuel	Биотопливо, биологическое топливо, топливо на биооснове
8	Fossil fuel (n) ['fɒs(ə)l 'fju:əl]	a fuel such as coal or oil that was formed over millions of years from the decayed remains of plants or animal	Ископаемое топливо
9	Derive (v) [dɪ'raɪv]	to obtain (to get) something from (a specified source)	Получать, извлекать
10	Pollen (n) ['pɒlən]	a fine powdery substance, typically yellow, that is formed in flowers, and carried to other flowers of the same kind by the wind, insects, so that they produce seeds	Пыльца
11	Suffer from (v) ['sʌfə]	to be affected by or subject to (an illness or ailment)	Страдать; испытывать, претерпевать
12	Poison (n) ['pɔɪz(ə)n]	a substance that causes death or injury, if it is swallowed or absorbed into the body	Яд, отравя

13	Food intolerance(n) [ɪn'tɒlə(r)əns(t)s]	unable to eat particular foods without adverse effects	Непереносимость, чувствительность
14	Weed (n) [wi:d]	a wild plant that grows in gardens or fields of crops and prevents the plants that you want from growing properly	Сорная трава, сорняк
15	Ecosystem (n) ['i:kəʊsɪstəm]	(Ecology) a system formed by the interaction of a community of organisms with its environment	Экосистема, экологическая система; биогеоценоз
16	Species (n) ['spi:ʃi:z]	a group into which animals, plants, etc that are able to breed with each other are divided, smaller than a genus and denoted by a Latin name	Вид, разновидность

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

PLANTS

1. Plants help the environment and us in many different ways. Plants make oxygen. This oxygen gas, which is an important part of the air, is the gas that all living things must have in order to stay alive. Plants provide habitats for animals. Animals live in, on, or under plants. Plants provide shelter, food and safety for them. Plants help preserve soil. In the forest the roots of plants help hold the soil together. This reduces erosion and helps conserve the soil. Plants also make soil. Soil is made up of lots of particles of rocks which are broken down into very small pieces. When plants die, their decomposed remains are added to the soil. This helps to make the soil rich with nutrients.

2. Plants provide useful products for people. Human food, like cereals, vegetables, spices and certain fruits, nuts and edible flowers, comes from plants. Beverages produced from plants include coffee, tea, wine. Plants are the source of many natural products such as fibers, dyes, pigments, waxes, amber and cork. Plants provide some of our energy needs. Wood is the primary fuel used by people to cook their meals and heat their homes. Renewable fuels from plants include firewood, peat and many other biofuels. Coal and petroleum are fossil fuels derived from plants.

3. Plants may cause harm to people and animals. Plants that produce windblown pollen invoke allergic reactions in people who suffer from hay fever. A wide variety of plants are poisonous to people and animals. Several plants cause skin irritations when touched, such as poison ivy. Some plants cause allergic reactions in people and animals when ingested, while other plants cause food intolerances that negatively affect health. Weeds are plants that grow where people do not want them. They damage existing ecosystems by displacing native species.

Ex. 2. Complete the sentences. Use the noun in capitals on the right to form the adjective on the same line.

Adjective	Noun
1. groups plan to stage public protests during the conference.	ENVIRONMENT
2. This gas is highly	POISON
3. Vitamins are essential for growth.	HEALTH
4. Fruit juices can beto children’s teeth.	HARM
5. He was to the sting of bees.	ALLERGY

Ex. 3. Match the words with the definitions (a-g).

1) beverage (n) [ˈbevərɪdʒ]	a) the upper layer of earth in which plants grow, a black or dark brown material typically consisting of a mixture of organic remains, clay, and rock particles;
2) dye (n) [dai]	b) a colorless, odorless reactive gas, the chemical element of atomic number 8 and the life-supporting component of the air;
3) oxygen (n) [ˈɒksɪdʒən]	c) a natural or synthetic substance used to add a color to or change the color of something;
4) soil (n) [ˈsoɪl]	d) a drink, esp. one other than water;
5) peat (n) [pi:t]	e) an allergy caused by pollen or dust;
6) ivy (n) [ˈaɪvi]	f) brown, soil-like material characteristic of boggy, acid ground, consisting of partly decomposed vegetable matter;
7) hay fever (n) [heɪ ˈfi:və]	g) a woody evergreen Eurasian climbing plant.

Ex. 4. Read the text again. Fill in the table about good and bad effects of plants.

Good effects	Bad effects
● make oxygen	● invoke allergic reactions
●	●
●	●
●	●
●	●
●	●

Study Grammar

WORDS THAT ARE BOTH NOUNS AND VERBS		
Nouns and verbs with the same spelling and pronunciation	Nouns and verbs distinguished by pronunciation	Nouns and verbs distinguished by stress
change (n) – перемена [tʃeɪndʒ] change (v) – менять [tʃeɪndʒ] hope (n) – надежда [həʊp] hope (v) – надеяться [həʊp] offer (n) – предложение [ˈɒfə] offer (v) – предлагать [ˈɒfə]	/s/ and /z/ advice (n) – совет [ədˈvaɪs] /advise (v) – советовать [ədˈvaɪz] /f/ and /v/ belief (n) – вера [brɪˈliːf] /believe (v) – верить [brɪˈliːv]	similar meaning increase (n) – увеличение [ˈɪnkriːs] /increase (v) – увеличивать [ɪnˈkriːs] different meaning object (n) – объект [ˈɒbdʒekt] / object (v) – возражать [ɒbˈdʒekt]

Ex. 5. Translate the sentences below. Define the parts of speech of the underlined words.

Model: Plants help (verb – помогать) the environment.
We need your help (noun – помощь).

1. Water each plant as often as required. He plans to plant fruit trees and vegetables.
2. Pollution can harm marine life. All dogs are capable of doing harm to human beings.
3. She tried to determine the extent of the damage. These activities may damage the environment.
4. The situation remains tense. There are Roman remains all around us.
5. We can't use this tool. We are not sure that this is the most valuable use of our time.
6. The process is circular and tautological. Computers process data.
7. They import fine silk from China. The government has extended the ban on the import of beef.

Ex. 6. There are some underlined words from Ex5. in the text above. Write them out and define the parts of speech.

- | | |
|---------|---------|
| ● | ● |
| ● | ● |
| ● | ● |
| ● | ● |

Unit 2

Text: PLANTS and SOLAR ENERGY
Grammar: COMPLEX SUBJECT (1)

Study Vocabulary

1	Chlorophyll (n) ['klɔ:rəfil]	the green substance in plants that absorbs light from the sun to help them grow	Хлорофилл
2	Artificial (adj) [,ɑ:tɪ'fɪʃ(ə)l]	typically a copy of something natural	Искусственный, ненатуральный, неестественный
3	Carbon dioxide (n) ['kɑ:b(ə)n daɪ'ɒksaɪd]	a colorless, odorless gas breathed out by people and animals from the lungs or produced by burning	Углекислота, углекислый газ
4	Solar energy (n) ['səʊlə 'enədʒɪ]	radiant energy emitted by the sun	Солнечная энергия
5	Photosynthesis (n) [,fəʊtə'sɪnθəsis]	the process by which green plants and some other organisms use sunlight to synthesize foods from carbon dioxide and water	Фотосинтез
6	Occur (v) [ə'kɜ:]	to happen; take place	Происходить, случаться, иметь место
7	Capture (v) ['kæptʃə]	to absorb (an atomic or subatomic particle)	Поглощать, захватывать
8	Convert (v) [kən'veɜ:t]	to change or be able to change from one form to another	Преобразовывать; превращать
9	Respiration (n) [,resp(ə)'reɪʃ(ə)n]	the action of breathing	Дыхание
10	Carbohydrate (n) [,kɑ:bə'hɑɪdrət]	a substance in foods such as sugar, bread and potatoes, that consists of carbon, hydrogen and oxygen and supplies the body with heat and energy	Углевод
11	Protein (n) ['prəʊti:n]	a substance in foods such as milk, meat and eggs; an essential part of all living organisms, esp. as structural components of body tissues such as muscle, hair, collagen	Белок, протеин
12	Fat (n) [fæt]	a [soft white] substance in foods such as oil, butter that people need in order to grow and be healthy	Жир (соединение)
13	Cell (n) [sel]	the smallest unit of living matter that can exist on its own	Клетка

14	Store (v) [stɔ:]	to keep or accumulate (something) for future use	Запасать, откладывать
15	Swamp(n) [swɒmp]	an area of ground that is very wet or covered with water in which plants, trees are growing	Болото, топь
16	Marsh (n) [mɑ:ʃ]	an area of low land that is always soft and wet because there is nowhere for the water to flow away to	Болото; травяное болото, марши (плодородные низменности)
17	Estuary (n) ['estjuəri]	the wide part of a river where it flows into the sea	Эстуарий, дельта; устье реки
18	Algal bed (n) ['ælgəl bed]	a layer of a simple nonflowering plant	Слой макроводорослей

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

PLANTS and SOLAR ENERGY

1. Plants need several things to make their own food. They are considered to need chlorophyll (this pigment is known to be present in all green plants), light (either natural sunlight or artificial light, like from a light bulb), carbon dioxide (CO₂), water, nutrients and minerals. Chlorophyll is responsible for the absorption of light. Plants turn carbon dioxide, water, nutrients into food using energy from sunlight. This process is called photosynthesis.

2. Most solar energy occurs at wavelengths. This energy is believed to be unsuitable for photosynthesis. Between 98 and 99 percent of solar energy reach the Earth but only 1 to 2 percent is available to be captured by plants. The measurement of the rate at which organisms convert light energy (inorganic chemical energy) to the chemical energy of organic compounds is called primary productivity. The total amount of energy assimilated by plants during photosynthesis is called gross primary productivity. Much of this energy is used during cellular respiration. In this process organic compounds such as carbohydrates, proteins, fats are broken down, or oxidised, to provide energy for the cell's metabolic needs.

3. The energy not used in this process is stored in plant tissues for further use and is called net primary productivity. About 40 to 85 percent of gross primary productivity is not used during respiration and becomes net primary productivity (NPP). In terrestrial environments, the highest NPP occurs in swamps, marshes and tropical rainforests; the lowest occurs in deserts. In aquatic environments, the highest NPP occurs in estuaries, algal beds and reefs. Consequently, these environments are considered to be of great importance especially for the maintenance of worldwide biological productivity.

Ex. 2. Complete the sentences. Use the adjective in capitals on the right to form the noun on the same line.

Noun	Adjective
1. This kingdom also includes red, brown, and green(e).	ALGAL
2. Protoplasm is a colourless substance which forms the living part of a plant.....	CELLULAR
3. The most amazing things about is its infinite variety.	NATURAL
4. Constructive is the synthesis of the proteins, carbohydrates, and fats that form tissue and store energy.	METABOLIC
5. Cows are grazing on the.....(es).	MARSHY

Ex. 3. Match the adjectives on the left with the nouns on the right to make phrases.

- | | |
|----------------|-----------------|
| 1) primary | a) light |
| 2) terrestrial | b) compounds |
| 3) cellular | c) productivity |
| 4) artificial | d) respiration |
| 5) chemical | e) needs |
| 6) organic | f) energy |
| 7) metabolic | g) environments |

Ex. 4. Read the text again. Choose the best ending (beginning) for each sentence.

- Plants need several things to make their own food.....
 - carbohydrates, proteins, fats,
 - chlorophyll, light, carbon dioxide, water, nutrients and minerals,
 - sugar, glucose or grape sugar and starch.
- Chlorophyll is known to present in all
 - animals,
 - fruits,
 - green plants.
- is available to be captured by plants.
 - Most solar energy,
 - Between 98 and 99 percent of solar energy,
 - Only 1 to 2 of solar energy.
- The total amount of energy assimilated by plants during photosynthesis is called.....
 - primary productivity,
 - gross primary productivity,
 - net primary productivity.

5. The energy not used during respiration is called.....
 - a) primary productivity,
 - b) gross primary productivity,
 - c) net primary productivity.
6. The lowest net primary productivity occurs in deserts,.....
 - a) in terrestrial environments,
 - b) in aquatic environments,
 - c) in biological productivity.
7. In aquatic environments, the highest NPP occurs.....
 - a) in estuaries, algal beds and reefs,
 - b) in swamps, marshes and tropical rainforests,
 - c) in deserts.

Study Grammar

COMPLEX SUBJECT Сложное подлежащее		
Существительное в общем падеже или личное местоимение в именительном падеже	Сказуемое (глагол) в форме страдательного залога	Инфинитив с частицей to
<p>He is known to work a lot. <i>Известно, что он работает много.</i></p> <p>They were said to have done it on time. <i>Говорили, что они сделали это вовремя.</i></p>		

Ex. 5. Translate the sentences below and underline Complex Subject. There is one sentence without Complex Subject, which one?

Model: Ultraviolet rays are considered to be harmful to the human skin. →
Считается, что ультрафиолетовые лучи вредны для
человеческой кожи.

1. Cotton, linen, hemp and wood are known to consist of pure cellulose or of modified forms of cellulose.
2. Some organisms are said to use sunlight to synthesize foods.
3. Fatty acids are found to be solid at room temperature.
4. Carbohydrates are found in foods such as milk, meat and eggs.
5. For a long time the atom was thought to be indivisible.
6. They were thought to have gone to the UK.
7. The company is believed to have concluded two contracts.

Ex. 6. Write out the sentences with Complex Subject from the text above.

-
-
-
-

Unit 3

Text: PLANTS and BIOMES
Grammar: COMPLEX SUBJECT (2)

Study Vocabulary

1	Biome (n) [ˈbʌɪəʊm]	(Ecology) a large naturally occurring community of flora and fauna occupying a major habitat, e.g., forest or tundra	Биом (совокупность видов растений и животных)
2	Desert (n) [ˈdezət]	a dry, barren area of land, esp. one covered with sand, that is characteristically desolate, waterless, and without vegetation	Пустыня
3	Surface (n) [ˈsɜːfɪs]	1. the outside or top layer of sth; 2. (also surface area) the area of such an outer part or uppermost layer	Поверхность
4	Lure (v) [luə]	to tempt (a person or an animal) to do something or to go somewhere, esp. by offering some form of reward	Завлекать, соблазнять, приманивать
5	Tundra (n) [ˈtʌndrə]	a vast, flat, treeless Arctic region of Europe, Asia, and North America in which the subsoil is permanently frozen	Тундра
6	Sublayer (n) [sʌb ˈleɪə]	below a quantity or thickness of sth that lies over a surface or between surfaces	1) подъярус 2) подстиляющий слой (почвы)
7	Permafrost (n) [ˈpɜːmæfrɒst]	a thick subsurface layer of soil that remains frozen throughout the year, occurring chiefly in polar regions	Вечная мерзлота
8	Precipitation (n) [prɪ ˌsɪpɪˈteɪʃ(ə)n]	rain, snow, sleet, or hail that falls to the ground	Выпадение осадков, осадки
9	Shape (n) [ʃeɪp]	the external form or appearance characteristic of someone or something; the outline of an area or figure	Форма, очертание
10	Clump (n) [klʌmp]	a small group of trees or plants growing closely together	Заросли (деревьев, кустарников)

11	Grassland (n) ['grɑ:slænd]	(also grasslands) a large open area of country covered with grass, esp. one used for grazing	Сенокосное угодье; луг, пастбище
12	Prairie (n) ['pre:ri]	a large open area of grassland, esp. in the Mississippi River valley	Прерия, степь
13	Steppe (n) [step]	(often steppes) a large area of flat unforested grassland in southeastern Europe or Siberia	Степь
14	Pampas (n) ['pæmpəs]	extensive, treeless plains in South America	Пампасы (равнинные травянистые степи Южной Америки)
15	Savanna(h) (n) [sə'vænə]	a grassy plain in tropical and subtropical regions, with few trees	Саванна
16	Veld(t) (n) [velt]	open, uncultivated country or grassland in southern Africa	Вельд, южноафриканская степь
17	Taiga (n) ['taɪgə]	(often the taiga) the sometimes swampy coniferous forest of high northern latitudes, esp. that between the tundra and steppes of Siberia and North America	Тайга
18	Conifer (n) ['kɒnɪfə]	a tree that bears cones and evergreen needlelike or scalelike leaves	Хвойное (дерево)
19	Shed (v) [ʃed]	(of a tree or other plant) allow (leaves or fruit) to fall to the ground	Ронять, терять; сбрасывать
20	Jungle (n) ['dʒʌŋɡl]	an area of tropical forest where trees and plants grow very thickly	Густые заросли; чащоба, джунгли

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

PLANTS and BIOMES

1. The desert is a very dry area of land. There is a lot of direct sunlight shining on the plants. Some plants have leaves that turn throughout the day to expose a minimum surface area to the heat. Flowers that open at night lure pollinators which are more likely to be active during the cooler night. The soil is often sandy or rocky and unable to hold much water. Waxy coating on stems and leaves or the lack of leaves helps reduce water loss during photosynthesis.

2. The tundra is cold year-round. It has a permanently frozen sublayer of soil called permafrost. Drainage is poor due to the permafrost and because of the cold, evaporation is slow. The tundra receives little precipitation, usually in the form of snow or ice. Tundra plants are small and dark in color; this helps them absorb solar heat. Some plants have dish-like flowers; this shape appears to focus more solar heat. Some plants grow in clumps to protect one another from the wind and cold.

3. Temperate grasslands are known as prairies in North USA, steppes in Asia, pampas in South America. (Tropical grasslands are known as savannah in Australia, veldt in Southern Africa). The soil is extremely rich in organic material due to the fact that the above-ground portions of grasses die off annually, enriching the soil. The area is well-suited to agriculture. Prairie grasses have narrow leaves which lose less water than broad leaves.

4. Between the tundra and steppes of Siberia and North America there are large areas of land covered by the sometimes swampy coniferous forest, known as the taiga. The soil is acidic and mineral-poor. It is covered by a deep layer of partially-decomposed conifer needles. Many trees have needle-like leaves which shape loses less water and sheds snow more easily than broad leaves. Jungle is an area of land overgrown with dense forest and tangled vegetation, typically in the tropics.

Ex. 2. Complete the sentences. Use the verb in capitals on the right to form the noun on the same line.

Noun	Verb
1. Insects are of enormous economic importance as pests and carriers of disease, and also as(s).	POLLINATE
2. The B vitamins give against infection.	PROTECT
3. Condensed milk is canned milk that has been thickened by and sweetened.	EVAPORATE
4. The pot must have holes in the base for good	DRAIN
5. Crop can be grown for the protection and of the soil.	ENRICH

Ex. 3. One word is odd (a-d) and can't make phrase with the words on the left.

1) leaves (n) [li:vz]	a) narrow	b) extreme	c) needle-like	d) broad
2) stem (n) [stem]	a) solar	b) long	c) soft	d) hard
3) soil (n) [soil]	a) sandy	b) rocky	c) acidic	d) aquatic
4) forest (n) ['fɔrist]	a) dense	b) evergreen	c) frozen	d) coniferous
5) heat (n) [hi:t]	a) brown	b) great	c) intense	d) extreme

- 6) color (n) a) dark b) light c) brown d) long
 ['kʌlə]
- 7) vegetation (n) a) green b) acidic c) aquatic d) tangled
 [ˌvedʒɪ'teɪʃ(ə)n]

Ex. 4. Read the text again. Decide whether the statements are true (T) or false (F). If the statement is false, correct it.

1. The desert is a very dry area of land.

2. The lack of leaves doesn't help reduce water loss during photosynthesis.

3. The tundra is hot year-round.

4. The tundra receives much precipitation.

5. The area of grasslands is well-suited to agriculture.

6. Prairie grasses have narrow leaves which receive less water than broad leaves.

7. The taiga soil is covered by a deep layer of partially-decomposed conifer needles.

Study Grammar

COMPLEX SUBJECT		
Сложное подлежащее		
Существительное в общем падеже или личное местоимение в именительном падеже	Сказуемое (глагол) в форме действительного залога <i>seem, prove, appear, turn out,</i> <i>happen – казаться, оказываться,</i> <i>случаться;</i> <i>to be likely – вероятно,</i> <i>to be unlikely – маловероятно</i> <i>to be sure, to be certain –</i> <i>несомненно, конечно и т.п.</i>	Инфинитив с частицей to
<p>My prediction turned out to be correct. <i>Оказалось, что моё предположение верное.</i></p> <p>This computer is sure to be very expensive. <i>Несомненно, этот компьютер очень дорогой.</i></p>		

Ex. 5. Translate the sentences below and underline Complex Subject. There is one sentence (Model A) and one sentence (Model B) without Complex Subject, which ones?

Model A: He proved to be a biologist. → *Оказалось, что он биолог.*

1. The percentage of carbon in this steel turned out to be low.
2. The work proved to be useful.
3. The new methods of work appear to be very effective.
4. A bus appeared around the corner.
5. The apparatus seemed to be in excellent condition.
6. They seem to have forgotten their promise.

Model B: He is sure to come. → *Он обязательно придёт.*

1. They are sure to give us some useful information.
2. He is sure of success.
3. She is likely to change her opinion.

Ex. 6. Write out the sentences with Complex Subject from the text above.

-
-
-
-

Unit 4

Text: PLANTS on the EARTH
Grammar: COMPLEX OBJECT (1)

Study Vocabulary

1	Arthropods (n) [ɑ:'θrɒpədz]	animals without a back bone, with six or more jointed legs, a segmented body and a supporting structure on the outside	Членистоногие
2	Occupy (v) ['ɔkjupaɪ]	to fill or take up (a space or time)	Занимать (пространство, время)
3	Horsetail (n) ['hɔ:steɪl]	a nonflowering plant with a hollow jointed stem that bears whorls of narrow leaves, producing spores in cones at the tips of the shoots	Хвощ (лесной)

4	Moss (n) [mɒs]	a small flowerless green plant that lacks true roots, growing in low carpets or rounded cushions in damp habitats and reproducing by means of spores released from stalked capsules	Мох
5	Fern (n) [fɜ:n]	a flowerless plant that has feathery or leafy fronds and reproduces by spores released from the undersides of the fronds, ferns have a vascular system for the transport of water and nutrients	Папоротник
6	Gymnosperm (n) ['dʒɪmnəv,spɜ:m, 'gɪm-]	a plant that has seeds unprotected by an ovary or fruit	Голосеменное (растение)
7	Angiosperm (n) [ˈændʒɪəspɜ:m]	a plant that has flowers and produces seeds enclosed within a carpel	Покрытосеменное (растение)
8	Insect (n) [ˈɪnsekt]	any small creature (arthropod) with six legs and a body divided into three parts; they usually have one or two pairs of wings	Насекомое
9	Mammal (n) [ˈmæm(ə)l]	any animal that gives birth to live babies, not eggs, and feeds its young on milk	Млекопитающее
10	Temperate (adj) [ˈtemp(ə)rət]	having a mild temperature without extremes of heat or cold	Умеренный (о климате и т.п.)
11	Spread (v) [spred]	to extend over a large or increasing area	Разворачиваться; простираться; расстилаться
12	Vascular (adj) [ˈvaskjələ]	containing veins (=tubes that carry liquids around the bodies of animals and plants)	Сосудистый
13	Moist (adj) [mɔɪst]	slightly wet; damp or humid	Сырой; влажный, мокрый
14	Rough (adj) [rʌf]	not soft to the touch	Грубый, шероховатый
15	Extinct (adj) [ɪkˈstɪŋkt]	no longer in existence	Вымерший; пресекшийся (о роде)
16	Seed (n) [si:d]	the small hard part produced by a plant from which a new plant can grow	Семя; семечко

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

PLANTS on the EARTH

1. About 420 million years ago ancient plants and arthropods began to occupy the land. Over the millions of years that followed, these land colonizers developed and adapted to their new habitat. The first forests were dominated by giant horsetails, club mosses, and ferns that stood up to 40 feet tall. Life on the Earth continued to evolve, and in the late **Paleozoic*, the first seed-bearing plants (gymnosperms) appeared. By the **Triassic Period* gymnosperms dominated the Earth's forests. In the **Cretaceous Period* the first flowering plants (angiosperms) appeared. They evolved together with insects, birds, and mammals and radiated rapidly, dominating the landscape by the end of the Period. The landscape changed again during the **Pleistocene Ice Ages* – the surface of the planet that had been dominated by tropical forests for millions of years changed, and temperate forests spread in the Northern Hemisphere.

2. I'd like you to look at these photos. Mosses are waxy little plants with no leaves and no stem that use each other to stay upright. Their inability to stay up makes these plants live in a group. You never see one little moss. Unlike mosses, the ferns and horsetails are the first of the vascular plants that lets them grow larger. Ferns are able to live in a variety of climates as long as it is moist. You will find ferns in Canadian rain forests just as easily near the equator. While ferns are soft, horsetails are rough plants. You can see horsetails grow from very northern and southern latitudes to the equator. But many of them are extinct.

3. So if you have a vascular system to transport nutrients, seeds for reproduction, and no flowers, what are you? Gymnosperms-the first plants with seeds! Flowers are an evolutionary advancement after seeds. The first plants with flowers (angiosperms) not only have seeds, but they also have flowers.

<i>*Paleozoic</i>	[ˌpælɪəˈzəʊɪk]	палеозой, палеозойская эра
<i>*Triassic Period</i>	[traɪˈæsiːk]	триасовый период мезозойской эры
<i>*Cretaceous Period</i>	[kriˈteɪʃəs]	меловой период
<i>*Pleistocene Ice Ages</i>	[ˈplaɪstəsiːn]	плейстоцен

Ex. 2. Complete the table. Add the other forms of the given words.

Verb	Noun	Abstract noun	Adjective
	adapter	adaptation	adaptive
advance	advancer		advanced
colonize		colonization	
		development	developed
evolutive	evolutionist		
reproduce	reproducer		

Ex. 3. Match the words with the definitions (a-g).

- | | |
|-------------------------------------|--|
| 1) earth (n)
[ɜ:θ] | a) a half of the earth; |
| 2) planet (n)
['plænt] | b) very old; having existed for a very long time; |
| 3) hemisphere (n)
['hemɪsfɪə] | c) the planet on which we live; the world; |
| 4) equator (n)
[ɪ'kwetə] | d) usually expressed in degrees and minutes; |
| 5) latitude(n)
['lætɪtju:d] | e) of very great size or force; gigantic; |
| 6) giant (adj)
['dʒaɪənt] | f) a celestial body moving in an elliptical orbit around a star; |
| 7) ancient (adj)
['eɪn(t)j(ə)nt] | g) an imaginary line drawn around the earth equally distant from both poles. |

Ex. 4. Read the text again. Choose the best ending for each sentence.

1. The first forests were dominated by giant
 - a) seed-bearing plants (gymnosperms),
 - b) flowering plants (angiosperms),
 - c) horsetails, club mosses, and ferns.
2. In the late Paleozoic, the first
 - a) seed-bearing plants (gymnosperms) appeared,
 - b) flowering plants (angiosperms) appeared,
 - c)) horsetails, club mosses, and ferns appeared.
3. In the Cretaceous Period the first
 - a) seed-bearing plants (gymnosperms) appeared,
 - b) flowering plants (angiosperms) appeared,
 - c) horsetails, club mosses, and ferns appeared.
4. Temperate forests spread
 - a) in the Northern Hemisphere,
 - b) in the Southern Hemisphere,
 - c) near the South Pole.
5. Unlike mosses, the ferns and horsetails are
 - a) the first trees,
 - b) the first seed-bearing plants,
 - c) the first of the vascular plants.
6. Gymnosperms are the first plants
 - a) with flowers,
 - b) with seeds,
 - c) with leaves.

7. The first plants with flowers are

- a) conifers,
- b) angiosperms,
- c) gymnosperms.

Study Grammar

COMPLEX OBJECT Сложное дополнение			
Тип	После глаголов	Сложное дополнение	
1	<i>want, wish, would like, like, hate, desire, expect, know, believe, consider, get, cause</i>	существительное в общем падеже или личное местоимение	инфинитив с частицей to
2	<i>let – позволять make -заставлять</i>	в объектном падеже (me, him, her, you, us, them)	инфинитив без частицы to
3	<i>see, hear, feel, notice, watch</i>		инфинитив без частицы to
			причастие наст. времени (действие в процессе)

Ex. 5. Translate the sentences below and underline Complex Object. There is one sentence without Complex Object, which one?

Model: I know my teacher to be a just man. → Я знаю, что мой учитель справедливый человек.
 I saw him open the book. → Я видел, как он открыл книгу.
 I saw him opening the book. → Я видел, как он открывал книгу.

1. People expect the 21st century to bring peace on the Earth.
2. The biology teacher wanted us to collect some insects in summer.
3. I like to help my groupmates.
4. She felt somebody touch her arm.
5. Their teacher likes them to answer the questions.
6. He made me rewrite the exercise.
7. We noticed a bird fly on to the bush near the window.

Ex. 6. Complete the sentences using the verbs in the box with to or without to. Decide which paragraph of the text above includes these sentences with Complex Object.

grow, look, grow, live

- I'd like you at these photos.
- Their inability to stay up makes these plants in a group.
- Unlike mosses, the ferns and horsetails are the first of the vascular plants that lets them larger.
- You can see horsetails from very northern and southern latitudes to the equator.

Unit 5

Text: FORESTS
Grammar: COMPLEX OBJECT (2)

Study Vocabulary

1	Community (n) [kə'mju:nəti]	(Ecology) a group of interdependent organisms of different species growing or living together in a specified habitat	Эколог. Система, биотическое сообщество
2	Orchid (n) ['ɔ:kɪd]	a plant with complex flowers that are typically showy or bizarrely shaped, having a large specialized lip (labellum) and frequently a spur	Орхидея
3	Palm (n) [pɑ:m]	an unbranched evergreen tree with a crown of long feathered or fan-shaped leaves, and typically having old leaf scars forming a regular pattern on the trunk	Пальма, пальмовое дерево
4	Liana (n) [li'ɑ:nə]	a woody climbing plant that hangs from trees, esp. in tropical rain forests	Вьющееся растение; лиана
5	Oak (n) [əuk]	a tree that bears acorns as fruit, and typically has lobed deciduous leaves	Дуб
6	Hickory (n) ['hɪk(ə)rɪ]	a chiefly North American tree of the walnut family that yields useful timber and typically bears edible nuts	Гикори (род североамер. орешника)
7	Beech (n) [bi:tʃ]	a large tree with smooth gray bark, glossy leaves, and hard, pale, fine-grained timber	Бук
8	Hemlock (n) ['hemlək]	a highly poisonous European plant of the parsley family, with a purple-spotted stem, fernlike leaves, small white flowers, and an unpleasant smell	Болиголов, тсуга (амер. хвойное дерево)

9	Maple (n) ['meɪpl]	a tree with lobed leaves, winged fruits, and colorful autumn foliage, grown as an ornamental or for its timber or syrupy sap	Клён
10	Elm (n) [elm]	a tall deciduous tree that typically has rough serrated leaves and propagates from root suckers	Вяз, ильм
11	Willow (n) ['wɪləʊ]	a tree or shrub of temperate climates that typically has narrow leaves, bears catkins, and grows near water	Ива
12	Skunk (n) [skʌŋk]	a cat-sized American mammal of the weasel family, with distinctive black-and-white-striped fur; when threatened it stinks	Скунс
13	Pine (n) [paɪn]	an evergreen coniferous tree that has clusters of long needle-shaped leaves; used for furniture and pulp, or for tar and turpentine	Сосна
14	Fir (n) [fɜː]	an evergreen coniferous tree with upright cones and flat needle-shaped leaves, typically arranged in two rows; an important source of timber and resins	Пихта
15	Spruce (n) [spruːs]	a widespread coniferous tree that has a distinctive conical shape and hanging cones, widely grown for timber, pulp, and Christmas trees	Ель
16	Woodpecker (n) ['wʊdˌpeɪkə]	a bird with a strong bill and a stiff tail, that climbs tree trunks to find insects and drums on dead wood to mark territory	Дятел
17	Hawk (n) [hɔːk]	a diurnal bird of prey with broad rounded wings and a long tail, typically taking prey by surprise with a short chase	Ястреб; сокол
18	Weasel (n) ['wiːz(ə)l]	a small, slender, carnivorous mammal related to, but generally smaller than, the stoat	Ласка, горноста́й
19	Lynx (n) [lɪŋks]	a wild cat with yellowish-brown fur (sometimes spotted), a short tail, and tufted ears	Рысь
20	Chipmunk (n) ['tʃɪpmʌŋk]	a burrowing ground squirrel with cheek pouches and light and dark stripes running down the body	Бурундук

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

FORESTS

1. From an ecosystem point of view, a forest is a vegetation type (the most important community of plants on the Earth) and part of a larger system of plants including animals and microorganisms which all interact with each other and the environment. There are three major types of forests, classed according to latitude: tropical, temperate, boreal forest (taiga)

2. Tropical forests occur near the equator. One of the major characteristics of tropical forests is their distinct seasonality: winter is absent, and only two

seasons are present (rainy and dry). Flora is highly diverse: one square kilometer may contain as many as 100 different tree species. Plants such as orchids, lianas, ferns, mosses, and palms are present in tropical forests. Fauna includes numerous birds, bats, small mammals and insects.

3. Temperate forests occur in eastern North America, northeastern Asia, and western and central Europe. There are four distinct seasons in the temperate deciduous forest: spring, summer, autumn, and winter. Flora is characterized by 3-4 tree species per square kilometer such as oak, hickory, beech, hemlock, maple, elm, willow, and spring-flowering herbs. Fauna is represented by squirrels, rabbits, skunks, birds, deer, mountain lions, bobcats, timber wolves, foxes, and black bears.

4. Boreal forests, or taiga can be found in the broad belt of Eurasia and North America: two-thirds in Siberia with the rest in Scandinavia, Alaska, and Canada. Seasons are divided into short, moist, and moderately warm summers and long, cold, and dry winters. Flora consists mostly of cold-tolerant evergreen conifers such as pine, fir, and spruce. Fauna includes woodpeckers, hawks, bears, weasels, lynxes, foxes, wolves, deer, hares, chipmunks, and bats.

Ex. 2. Complete the sentences. Change the words in brackets.

1. These two chemicals (*act*) with each other at a certain temperature to produce a substance which could cause an explosion.
2. The diseases (*occurrence*) chiefly in tropical climates.
3. There was a (*distinctness*) smell of gas.
4. This large and (*diversity*) group is particularly abundant in the large lakes of East Africa.
5. It depends on climatic (*season*).

Ex. 3. Complete the sentences with the words in the box.

flora ['flɔ:rə]
 fauna ['fə:nə]
 temperate ['tɛmp(ə)rət]
 deciduous [dɪ'sɪdʒuəs]
 boreal ['bɔ:riəl]
 insects ['ɪnsekts]
 herbs [hɜ:bz]

1. do not have a woody stem and die down to the ground after flowering.
2. is the plants of a particular region, habitat, or geological period.

3. is the animals of a particular region, habitat, or geological period.
4. A..... tree sheds its leaves annually.
5. forests, or taiga, represent the largest terrestrial biome.
6. forests are found between the tropical and boreal regions, located in the temperate zone.
7. are any small arthropod, such as a spider, tick, or centipede.

Ex. 4. Read the text again. Fill in the table about different types of forests.

	Tropical forests	Temperate forests	Boreal forests
Distribution			
Season			
Flora			
Fauna			

Study Grammar

COMPLEX OBJECT

I. Сложное дополнение и страдательный (пассивный) залог

После глаголов, главным образом, приказания, просьбы, разрешения и др.
 order – приказывать,
 tell – в значении «велеть, говорить, сделать что-то»,
 ask for – просить,
 allow – разрешать, позволять,
 command – командовать, приказывать

Существительное
 в общем падеже
 или личное
 местоимение
 в объектном падеже
 (me, him, her, you,
 us, them)

Инфинитив
 с частицей **to**
в страдательном
залоге

He ordered a telegram to be sent.
 Он приказал, чтобы телеграмму отправили.

II. Сложное дополнение и причастие II (to have something done)

Выражает действие: а) выполняемое не лицом, обозначенным подлежащим, а кем-то другим для него; б) которое совершается над лицом, обозначенным подлежащим.

She has her telephone installed.
 Ей устанавливают телефон.

Ex. 5. Translate the sentences below and underline Complex Object with Passive Infinitive. There is one sentence without Complex Object, which one?

Model: I want the book to be read. →
Я хочу, чтобы книга была прочитана.

1. We expected him to be given catalogues for chemical equipment.
2. We'd like the work to be completed as soon as possible.
3. He didn't want the matter to be discussed today.
4. You didn't expect the goods to be delivered so late.
5. They expected us to be impressed by the exhibits.
6. We want to sign the contract today.
7. The firm wanted this device to have been designed in that laboratory.

Ex. 6. Answer the questions using the structure (have+object+past participle).

Model: 'Did you cut your hair yourself?' - No, I had my hair cut. →
Ты подстриг сам себе волосы? – Нет, меня подстригли.

1. 'Did they paint the house themselves?' – No, they
2. 'Did Jim cut down that tree himself?' – No, he
3. 'Do you clean your office yourself?' – No, I
4. 'Do they repair the roof themselves?' – No, they

Unit 6

Text: FOREST LAYERS
Grammar: PASSIVE VOICE

Study Vocabulary

1	Forest	a large area of land covered with trees and plants, usually larger than a wood	Лес
2	Mature (adj) [mə'tʃʊə]	complete in natural growth or development, as plant and animal forms	Зрелый, развитой, выдержанный, созревший
3	Forest floor (n) ['fɒrɪst flɔː]	(also called detritus, duff) one of the most distinctive features of a forest ecosystem	Лесная подстилка (слой почвы)

4	Decay (v) [di'keɪ]	to become decomposed; rot	Распад, разложение, гниение
5	Fungus (n) ['fʌŋɡəs] fungi (pl) ['fʌŋɡi:]	any member of the group of eukaryotic organisms that includes microorganisms such as yeasts and molds, as well as the more familiar mushrooms	Гриб, плесень, древесная губка, грибок
6	Bacterium (n) [bæk'tɪəriəm] bacteria (pl) [bæk'tɪəriə]	a type of biological cell, they constitute a large domain of prokaryotic microorganisms	Бактерия, микроб
7	Earthworm (n) ['ə:θwɜ:m]	any one of numerous annelid worms that burrow in soil and feed on soil nutrients and decaying organic matter	Дождевой червь, земляной червь,
8	Shrub (n) [ʃrʌb]	a woody plant smaller than a tree, usually having multiple permanent stems branching from or near the ground	Кустарник, куст
9	Bush (n) [bʊʃ]	a small cluster of shrubs appearing as a single plant	Кустарник, куст
10	Bramble (n) ['bramb(ə)l]	any prickly shrub belonging to the genus Rubus, of the rose family	Ежевика
11	Canopy (n) ['kænəpi]	(also called crown canopy, crown cover) the cover formed by the leafy upper branches of the trees in a forest	Навес, полог
12	Understory (n) ['ʌndəsto:ri]	plants growing beneath the main canopy of a forest	Подлесок
13	Immature (adj) [,ɪmə'tjʊə]	not mature, ripe, developed, perfected, etc	Незрелый, молодой, неспелый, несозревший
14	Emerge (v) [ɪ'mə:dʒ]	to come into existence; develop	Появляться, возникать, всплывать
15	Enable (v) [ɪ'neɪb(ə)l]	to make able; give power, means, competence, or ability to	Разрешать, давать возможность, облегчать, делать возможным
16	Overlapping (adj) [,əʊvə'læpɪŋ]	to lap over (something else or each other); extend over and cover a part of	Перекрывающий(ся); частично совпадающий

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

FOREST LAYERS

1. Mature forests often have several distinct vertical layers. These include the forest floor, herb layer, shrub layer, understory, canopy, and emergents.

The forest floor is often blanketed with decaying leaves, twigs, fallen trees, animal scat, moss, and other detritus. The forest floor is where recycling occurs, fungi, insects, bacteria, and earthworms are among the many organisms that break down waste materials and ready them for reuse and recycling throughout the forest system.

2. The herb layer of the forest is dominated by herbaceous (or soft-stemmed) plants such as grasses, ferns, wildflowers, and other ground covers. The shrub layer is characterized by woody vegetation that grows relatively close to the ground. Bushes and brambles grow where enough light passes through the canopy to support shrub growth.

3. The understory of a forest consists of immature trees and small trees that are shorter than the main canopy level of the tree. Understory trees provide shelter for a wide range of animals. When gaps are formed in the canopy, the understory trees take advantage of the opening and grow to fill in the canopy.

The canopy is the layer where the crowns of most of the forest's trees meet and form a thick layer. Emergents are trees whose crowns emerge above the rest of the canopy. They are usually over 50 metres tall.

4. These different layers provide a mosaic of habitats and enable animals and wildlife to settle into various pockets of habitat within the overall structure of a forest. Different species use the various structural aspects of the forest in their own unique ways. Species might occupy overlapping layers within a forest but their use of those layers might occur at different times of the day so that they do not compete with one another.

Ex. 2. Explain the words below in English.

1) detritus (n)	[dɪ'trɪtəs]
2) waste (n)	[weɪst]
3) reuse (n,v)	[ri:'ju:s]
4) recycle (v)	[ri:'saɪk(ə)l]
5) growth (n)	[grəʊθ]
6) woody (adj)	['wʊdi]
7) compete with (v)	[kəm'pi:t]

Ex. 3. Complete the text about tropical rain forests with the words from Vocabulary.

There are three primary layers in the tropical rain f_____. The uppermost layer is called the c_____. Enormous trees form an umbrella canopy in this layer that blocks out most of the sunlight for plants in the lower layers.

The second or middle layer is called the u_____. This level is primarily composed of smaller trees along with ferns and vines.

The lowermost layer is called the forest f_____. It is covered with decomposing leaves and other forest detritus.

Ex. 4. Read the text again. Answer the questions.

1. How many vertical layers do mature forests often have?

2. What is the forest floor?

3. What is the herb layer made up of?

4. What does the understory of a forest consist of?

5. What is the canopy?

6. How tall can emergents be?

7. What do these different layers provide?

Study Grammar

PASSIVE VOICE			
Страдательный (пассивный) залог			
Страдательный залог употребляется, когда действие важнее исполнителя, когда действующее лицо неизвестно или с трудом поддается определению			
	Simple	Continuous	Perfect
Present	am / is / are + Ved/V3	am / is / are + being + Ved/V3	have(has) been + Ved/V3
Past	was / were + Ved/V3	was / were + being + Ved/V3	had been + Ved/V3
Future	will be + Ved/V3	-	will have been + Ved/V3
Future-in-the-Past	would be + Ved/V3	-	would have been + Ved/V3

Ex. 5. Translate the sentences below and underline Passive Voice. There is one sentence without Passive Voice, which one?

Model: The sky wasn't covered with dark clouds. →
Небо не было затянуто тучами.

1. The forest is often covered with decaying leaves.

2. This zone was contaminated by bacteria.

3. We grow many beautiful flowers in our garden.

4. The new laws are being discussed now.

5. The plants will be watered tomorrow.

6. Many beautiful flowers are grown in our garden.

7. The report will have been finished by midday.

Ex. 6. Write out the sentences with Passive Voice from the text above.

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Unit 7

Text: FORESTS and TREES
Grammar: INFINITIVE (1)

Study Vocabulary

1	Trunk (n) [trʌŋk]	the thick main stem of a tree, from which its branches grow	СТВОЛ
2	Bark (n) [bɑ:k]	the hard outer covering of a tree	Кора
3	Branch (n) [brɑ:n(t)ʃ]	one of the parts of a tree that grows out from the main trunk and has leaves, flowers, or fruit on it	ВЕТВЬ

4	Twig (n) [ˈtwɪɡ]	a small, thin branch of a tree or bush, especially one removed from the tree or bush and without any leaves	Веточка, прут, прутик
5	Leaf (n) [li:f]	one of the flat, usually green parts of a plant that are joined at one end to the stem or branch	Лист
6	Root (n) [ru:t]	the part of a plant that grows down into the earth to get water and food and holds the plant firm in the ground	Корень
7	Tissue (n) [ˈtɪʃu:]	a group of connected cells in an animal or plant that are similar to each other, have the same purpose, and form the stated part of the animal or plant	Ткань, слой
8	Cone (n) [kəʊn]	the hard oval-shaped fruit of a type of evergreen tree (= one that never loses its leaves), called a conifer	Шишка
9	Fruit (n) [fru:t]	the soft part containing seeds that is produced by a plant	Плод
10	Bud (n) [bʌd]	a small part of a plant, that develops into a flower or leaf	Почка, бутон
11	Leaf scar (n) [li:f ska:]	a sign of damage	Листовой рубец
12	Bundle (n) [ˈbʌnd(ə)l]	a number of things that have been fastened or are held together	Пучок, пакет, связка, узел
13	Thorn (n) [θɔ:n]	a small, sharp pointed growth on the stem of a plant	Шип, колючка
14	Spine (n) [sprɪn]	one of the thin, pointed objects that are part of the outer surface of some animals and plants	Шип, игла, колючка
15	Shoot (n) [ʃu:t]	the first part of a plant to appear above the ground as it develops from a seed, or any new growth on an already existing plant	Побег, росток

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

FORESTS and TREES

1. Trees come in various shapes and sizes but all have the same basic botanical parts and structure. Each tree has a central column called a trunk. The bark-covered trunk supports a framework of branches and twigs known as the tree's crown. Branches, in turn, are covered in leaves and sometimes flowers.

Each tree is anchored in the ground by a network of roots, which spread and grow thicker in proportion to the growth of the tree above the ground. In a mature tree, most of the cells of the trunk, roots, and branches are dead or inactive. New tissue growth takes place at only a few points on the tree, by the division of specialized cells. These actively growing areas are located at the tips of branches and roots and in a thin layer just inside the bark. Lastly, trees have reproductive structures: either flowers or cones.

2. All of this information can help you find the essential markers needed to identify a tree. Leaves, bark, twigs, and fruit can make quick work of tree identification. Twigs have structures called buds, leaf scars, and bundle scars that vary from species to species. Thorns and spines can occur on twigs and are unique to certain trees. The twig pith sometimes has unique "chambers" and/or a specific shape. Other twig structures used in tree identification include stipule scars, bud scale, and fruit scars, spur shoots, and lenticels. Twigs are a great marker if you know what to look for.

3. However, a young tree may look entirely different from the parent tree. A forest-grown tree may grow tall and slender while his field-grown cousin develops a maximum crown in the open sun. The most common tree shapes include broadly conical, broadly columnar, narrowly conical, narrowly columnar, and broadly spreading. Even with these shapes, though, you will obviously need more information to identify certain trees by species.

Ex. 2. Complete the table. Add the other forms of the given words.

Verb	Noun	Adjective
vary		various
	advantage	
identify		informative
grow		
	division	

Ex. 3. Put the sentences of the text about planting a tree in the right order.

1. Place the tree into the hole gently.
2. Using a shovel, dig the hole in which you'll plant your tree.
3. If your tree is still a sapling, use a stake to help it grow for about the first year of its life.
4. Decide where you want to plant the tree and mark it.
5. Before you start digging the hole, measure the plant's root ball.

Ex. 4. Read the text again. Decide whether the statements are true (T) or false (F). If the statement is false, correct it.

1. The central part of each tree is called a trunk.

2. The bark-covered trunk supports the tree's crown.

3. In a mature tree, most of the cells of the roots are alive.

4. Trees have reproductive structures: only flowers.

5. Thorns and spines are unique to certain trees.

6. A young tree may look different from the parent tree.

7. A forest-grown tree doesn't grow tall and slender.

Study Grammar

INFINITIVE OF PURPOSE Инфинитив цели	
I. Инфинитив с частицей to используется для объяснения причины или цели какого-то действия, переводится сложноподчиненным предложением с союзом для того, чтобы и отвечает на вопросы: <i>зачем? для чего? с какой целью?</i>	
I study Spanish (WHY?) to talk to my friends.	Я изучаю испанский, чтобы разговаривать со своими друзьями.
II. Если лицо или предмет, к которому относится инфинитив, не является подлежащим, то используется конструкция for + somebody + to V , которая переводится сложноподчиненным предложением с союзом чтобы .	
My friend paused (WHY?) for me to continue.	Мой друг замолчал, чтобы я продолжил.

Ex. 5. Translate the sentences below and underline Infinitive for Purpose. There is one sentence without Infinitive for Purpose, which one?

Model: I have come here (*why?*) to help you. →
Я пришёл сюда, *чтобы* помочь тебе.

1. You can go to a local nursery to find a professional arborist.
2. Select the right time of year to plant your tree.
3. Measure the hole to see if it is wide and deep enough.

4. To test if soil is moist you can use your finger.
5. To mark your spot use a special marking paint.
6. Give that tulip to me please.
7. I put the papers on the table for you to sign them.

Ex. 6. Write out the sentences with Infinitive for Purpose from the text above.

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Unit 8

Text: FOREST SPECIES
Grammar: INFINITIVE (2)

Study Vocabulary

1	Wood (n) [wʊd]	a hard substance that forms the branches and trunks of trees and can be used as a building material, for making things, or as a fuel	Дерево, древесина
2	Softwood (n) ['sɒf(t)wʊd]	wood from fast growing evergreen trees (= ones that never lose their leaves) or a tree of this type	Мягкая древесина, дерево с мягкой древесиной
3	Hardwood (n) ['hɑ:dwʊd]	strong, heavy wood or the tree it comes from	Твёрдая древесина, дерево с твёрдой древесиной
4	Pore (n) [pɔ:]	a very small hole on the surface of plants	Пóra
5	Sap (n) [sæp]	the liquid that carries food to all parts of a plant	Заболонь, живица
6	Pest (n) [pest]	an insect or small animal that is harmful or damages crops	Вредитель, паразит
7	Pulpwood (n) ['pʌlpwʊd]	wood that has been changed into a soft mass that can then be used for making paper	Балансовая древесина, балансы, древесное волокно
8	Particleboard (n) ['pɑ:.tɪkəl,bɔ:d]	hard material made from small pieces of wood mixed with glue, often used instead of wood	Древесностружечная плита

9	Plywood (n) [ˈplɪwɒd]	wood that consists of several thin layers of wood stuck together	Фанера (клеёная)
10	Fiberboard (n) [ˈfaɪbə, bɔ:d]	a type of engineered wood product that is made out of wood fibers	Древесно-волокнистая плита
11	Redwood (n) [ˈrɛdwoʊd]	a coniferous tree of California that grows very tall, or the valuable wood of this tree	Красное дерево (древесина), калифорн. мамонтовое дерево
12	Acorn (n) [ˈeɪkɔ:n]	an oval nut that grows on an oak tree and has an outer part shaped like a cup	Желудь, желудевый
13	Sprout (v) [sprəʊt]	to produce leaves, hair, or other new developing parts, or (of leaves, hair, and other developing parts) to begin to grow	Пускать ростки, давать побеги
14	Veneer (n) [viˈniə]	a thin layer of decorative wood or plastic used to cover a cheaper material	Шпон; однослойная фанера
15	Mahogany (n) [məˈhɒɡəni]	a type of tree that grows in hot regions of the earth, or its dark, red-brown wood	Красное дерево (древесина)
16	Balsa (n) [ˈbɔ:lsə]	very light wood that is soft and easily cut	Бальза (бальзовое дерево)

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

FOREST SPECIES

1. Conifers (softwoods) are classed as gymnosperms or plants with naked seeds not enclosed in an ovary. Softwoods do not have pores but instead have linear tubes called tracheids that provide nutrients for growth. These tracheids do the same thing as hardwood pores – they transport water and produce sap that protects from pest invasion and provides the essential elements for tree growth.

Uses: Softwoods are most often used in dimension lumber for construction framing, pulpwood for paper, and sheet goods, including particleboard, plywood, and fiberboard.

Common species examples: cedar, Douglas fir, juniper, pine, redwood, spruce, and yew.

Density: Softwoods are typically lighter in weight and less dense than hardwoods.

2. Hardwood trees usually have broad, flat leaves as opposed to coniferous, needled, or scaled tree foliage. Hardwoods are woody-fleshed plant species that are angiosperms (the seeds are enclosed in ovary structures). This might be a fruit, such as an apple, or a hard shell, such as an acorn or hickory nut. These plants also are not monocots (the seeds have more than one rudimentary leaf as they sprout). The woody stems in hardwoods have vascular tubes that transport water through the wood; these appear as pores when wood is viewed under magnification in cross-section. These same pores create a wood grain pattern, which increases the wood's density and workability.

Uses: Timber from hardwood species is most commonly used in furniture, flooring, wood moldings, and fine veneers.

Common species examples: oak, maple, birch, walnut, beech, hickory, mahogany, balsa, teak, and alder.

Density: Hardwoods are generally denser and heavier than softwoods.

Ex. 2. Match the trees with the definitions (a-g).

- | | |
|---------------------------|--|
| 1) cedar
[si:də] | a) a type of large tropical tree; |
| 2) juniper
['dʒu:nɪpə] | b) a tree of the birch family, that usually grows near water; |
| 3) yew
[ju:] | c) a tall tree on which walnuts grow; |
| 4) birch
[bɜ:tʃ] | d) a tall, wide evergreen tree (= one that never loses its leaves); |
| 5) walnut
['wɔ:lnʌt] | e) an evergreen tree with flat leaves like needles and small red fruits; |
| 6) teak
[ti:k] | f) a tree with smooth, often white bark and thin branches; |
| 7) alder
['ɔ:ldə] | g) a small evergreen bush with sharp leaves and small purple fruits that are used in medicine and in making gin. |

Ex3. Match the adjectives on the left with the nouns on the right to make phrases.

- | | |
|--------------|-------------|
| 1) naked | a) species |
| 2) linear | b) tubes |
| 3) essential | c) seeds |
| 4) woody | d) leaves |
| 5) flat | e) tubes |
| 6) common | f) elements |
| 7) vascular | g) stems |

Ex. 4. Read the text again. Fill in the table about softwoods and hardwoods.

	Softwoods	Hardwoods
Characteristics		
Uses		
Density		
Species examples		

Study Grammar

INFINITIVE Инфинитив		
Инфинитив – неопределенная форма глагола, которая называет действия и может выполнять функции как существительного, так и глагола.		
с частицей <i>to</i> после глаголов, существительных, прилагательных, вопросительных слов	без частицы <i>to</i> после модальных глаголов, после <i>make, let, see, feel</i> + сложное дополнение, после <i>why not, had better,</i> <i>would rather, would sooner</i>	
Форма инфинитива	Active	Passive
Simple	(to) write	(to) be written (to) be worked
Continuous	(to) be writing	–
Perfect	(to) have written (to) have worked	(to) have been witten (to) have been worked
Perfect Continuous	(to) have been writing	–

Ex. 5. Translate the sentences below and underline Infinitive. There is one sentence without Infinitive, which one?

Model: The most important thing is to learn. (Simple Active) →
 Самое важное – это учиться.

1. Knowing these rules is useful.
2. It is useful to know these rules.
3. The fellers were lucky to have been instructed.

4. He was satisfied to have instructed the fellers.
5. Density is another characteristic of a stand to be considered.
6. You had better consult a specialist.
7. She pretended to have been working for six hours.

Ex. 6. Complete the sentences with Infinitive from the box using the information of the text above.

to transport to protect to be used to be sold

- Softwood is a good material for sheet goods
- Mahogany and balsa are common species for furniture
- The task of the linear tubes is water.
- The role of the sap is from pest invasion.

Unit 9

Text: FOREST PRODUCTS
Grammar: PARTICIPLES (1)

Study Vocabulary

1	Forest products(n) [ˈfɒrɪstˈprɒdʌkts]	logs, timber, lumber, turpentine, tar, etc	Лесоматериалы
2	Lumber (n) [ˈlʌmbə]	(AmE) wood used for building	Лесоматериал, пиломатериал, древесина
3	Timber (n) [ˈtɪmbə]	(BrE) wood from trees that is used for building, or trees grown for this use; = lumber	Лесоматериал, пиломатериал, древесина
4	Raw material [rɔː məˈtɪəriəl]	any material, such as oil, cotton, or sugar in its natural condition, before it has been processed for use	Сырьё
5	Wood fuel (n) [ˌwʊdˈfjuːəl]	a solid substance that is used to provide heat or power, usually by being burned	Древесное топливо, топливная древесина
6	Firewood (n) [ˈfɪəwʊd]	wood used as fuel for a fire	Дрова, топливо, растопка
7	C (n) [tʃɑːkəʊl]	a hard, black substance similar to coal that can be used as fuel	Древесный уголь
8	Seedling (n) [ˈsiːdlɪŋ]	a very young plant that has grown from a seed	Сеянец; проросток

9	Site (n) [saɪt]	a place where something is, was, or will be built	Место, участок, местоположение
10	Fertilizer (n) [fɜːtɪlaɪzə]	a natural or chemical substance that is spread on the land or given to plants, to make plants grow well	Минеральное удобрение, оплодотворитель
11	Herbicide (n) [ˈhɜːbɪsaɪd]	a chemical that is used to destroy plants, especially weeds	Гербицид
12	Log (n) [lɒg]	a bulky piece of wood which has not been shaped by hewing or sawing	Бревно
13	Residue (n) [ˈrezɪdjuː]	the part that is left after the main part has gone or been taken away, or a substance that remains after a chemical process such as evaporation	Остаток, осадок
14	Wood chips (n) [wud tʃɪps]	the very small pieces of wood that are left after something wooden has been destroyed	Опилки
15	Renewable (adj) [rɪˈnjuːəbəl]	renewable forms of energy can be produced as quickly as they are used	Возобновляемый
16	Biofuel (n) [ˌbaɪəʊˈfjuːəl]	a gas, liquid, or solid from natural sources such as plants that is used as a fuel	Биотопливо, топливо на биооснове
17	Fossil fuel (n) [ˈfɒs(ə)l ˈfjuːəl]	a fuel such as coal or oil that was formed over millions of years from the decayed remains of plants or animal	Ископаемое топливо
18	Emissions (n) [ɪˈmɪʃənz]	the act of sending out gas, heat, light, etc.; an amount of gas, heat, light, etc. that is sent out	Выбросы

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

FOREST PRODUCTS

1. A forest product is any material derived from forestry for direct consumption or commercial use, such as lumber, paper, or forage for livestock. Wood, by far the dominant product of forests, is used for many purposes, such as wood fuel (e.g. firewood or charcoal) or the finished structural materials used for the construction of buildings, or as a raw material, in the form of wood pulp, that is used in the production of paper. All other non-wood products derived from forest resources, comprising a broad variety of other forest products, are collectively described as non-timber forest products (NTFP). NTFPs are considered to have fewer negative effects on forest ecosystem when providing income sources for local community.

2. Producers of forest products are heavily depending on the forest types and ownership. As wood is the dominant product of the forest product, the

processes of producing wood products are important. The general processes for commercial land can include seedling production, preparation, planting, applying fertilizers and herbicides, and logging. Products category may include logs, lumbers, residues, etc. NTFPs, secondary forest products, are useful substances, materials and/or commodities obtained from forests which do not require harvesting (logging) trees. They include game animals, fur-bearers, nuts, seeds, berries, mushrooms, oils, foliage, pollarding, medicinal plants, peat, mast, fuelwood, fish, species, and forage).

3. Forest products, including wood chips and forest residues, can be converted to biofuel, biogas, and other bioenergy sources. Common conversion technologies can contain fermentation, gasification, and other technologies. These renewable energy sources can be a substitute for traditional fossil fuels. Forest products can help reduce global warming. One core idea is that forest products themselves are storage for carbon dioxide. First, as mentioned above, bioenergy replaces fossil energy and reduces the greenhouse gas emissions. Second, timbers from forest can be sustainable construction materials.

Ex. 2. Complete the text about timber and lumber with the words in italics.

unwanted items felled trees recycled plastic milled boards

In the United States and Canada, (1) _____ are called *lumber*, while *timber* describes standing or (2) _____.

In contrast, in Britain and many other Commonwealth nations, the term *timber* is used for both senses. (The word *lumber* is rarely used in relation to wood and has several other meanings, including unused or (3) _____.

Dimensional *lumber* is *lumber* that is cut to standardized width and depth, specified in inches.

Plastic *lumber* (PL) is a plastic form of *lumber* (*timber*) made of virgin or (4) _____ (in which case it can be called RPL).

Ex. 3. Match the synonyms.

- | | |
|----------------|-----------------|
| 1) produce (v) | a) give smth |
| 2) provide (v) | b) use smth |
| 3) apply (v) | c) contain smth |
| 4) obtain (v) | d) need smth |
| 5) include (v) | e) make smth |
| 6) require (v) | f) get smth |
| 7) convert (v) | g) change smth |

Ex. 4. Read the text again. Answer the questions.

1. Name the forest products.

2. What does the abbreviation NTFP mean?

3. What's the advantage of NTFPs?

4. What's the main product of the forest product?

5. What do general processes of producing wood products include?

6. What do secondary forest products contain?

7. Describe the role of forest products in sustainability.

Study Grammar

Participle I (Present Participle Active) Причастие настоящего времени		
I. Функция – определение, определительный причастный оборот		
We noticed a smoking chimney pipe in one of the houses. Мы заметили дымящуюся трубу в одном из домов.		
II. Функция – обстоятельство (в русском языке это деепричастие: идя, смеясь, зарабатывая, используя и др.)		
<i>Обстоятельство времени</i>	<i>Обстоятельство образа действия /сопутствующего обстоятельства</i>	<i>Обстоятельство причины</i>
(When) going home I met an old friend of mine	He (was reading) read the letter nervously laughing	Earning much money he usually stayed in Hilton
Идя домой (когда я шел домой), я встретил своего старого друга.	Он (про)читал письмо, нервно смеясь .	Зарабатывая много денег, он остановился в Хилтоне.

Ex. 5. Translate the sentences below and underline Present Participle Active. There is one sentence without Present Participle Active, which one?

Model: I picked up the tool lying on the floor. →
 Я поднял инструмент, (какой?) лежащий на полу.
Smiling he entered the room. →
 (что делая?) Улыбаясь, он вошел в комнату.

1. We broke the computer belonging to the firm.
2. He sat in the armchair, looking at the job applications.
3. Everybody looked at the speaking boss.
4. Being very tired, he finished his work.
5. Wanting to speak about the contract, I arranged a meeting.
6. Heavy rain delayed planting in June.
7. When crossing the street, be careful.

Ex. 6. Write out the sentences with Present Participle Active from paragraph one of the text above.

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Unit 10

Text: FOREST MEASUREMENT
Grammar: PARTICIPLES (2)

Study Vocabulary

1	Measurement (n) [ˈmeɪzəmənt]	a value, discovered by measuring, that corresponds to the size, shape, quality, etc. of something	Измерение, обмер, система мер
2	Cruising [ˈkruːzɪŋ]	the process of measuring	От лес. – таксировать
3	Stand (n) [stænd]	a group of trees, especially ones of a similar size, age, or type	Древостой
4	Average (adj) [ˈæv(ə)rɪdʒ]	an average number you get by adding two or more amounts together and dividing the total by the number of amounts	Средний, обычный
5	Volume (n) [ˈvɒljʊm]	the number or amount of something	Объем; величина, размеры, масштабы

6	Quality (n) [kwɒlɪti]	a characteristic or feature of someone or something; a high standard	Качество, высокое качество, сорт
7	Estimation (n) [esti'meɪʃ(ə)n]	a guess or calculation about the cost, size, value, etc. of something	Оценка, расчет, подсчет, вычисление
8	Scale (n) ['skeɪl]	the size or level of something, especially when this is large	Масштаб, шкала, размер, уровень
9	Gross volume (n) [grəʊs 'vɒljʊ:m]	the total amount	Общий объём
10	Net volume (n) [net 'vɒljʊ:m]	the total amount after all subtracting	Объём нетто
11	Length (n) [lɛŋ(k)θ]	the measurement of something from end to end or along its longest side	Длина
12	Width (n) [wɪθ]	the distance across something from one side to the other	Ширина
13	Defect (n) [di'fɛkt]	a fault or problem in smth or smb that spoils the thing or person or causes it, him, or her not to work correctly	Дефект, неисправность, недостаток
14	Value (n) ['vælju:]	the amount of money that can be received for something	Ценность, стоимость
15	Foot (n) [fʊt]	a unit of measurement, equal to twelve inches or 0.3048 metres	Фут
16	Cord (n) [kɔ:d]	a unit used for measuring	Корд (мера дров)
17	Ton (n) [tʌn]	a unit of weight equal to 1,000 kilograms	Тонна
18	Inch (n) [ɪntʃ]	a unit used for measuring length, approximately equal to 2.54 centimetres	Дюйм

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

FOREST MEASUREMENT

1. Cruising is the process of measuring forest stands to determine stand characteristics, such as average tree sizes, volume, and quality. The primary purpose of cruising is to obtain a volume estimation to appraise and prepare timber sales. We provide technical expertise in statistical sampling, measurement protocols, and volume estimation procedures. In addition, we develop and/or maintain cruising software, documents, training, and technical support.

2. Scaling is the determination of the gross and net volume of logs. The primary purpose of scaling is to determine the volume by product or species that will be charged at a predetermined rate, also known as “scaling for payment”. Conventional scaling entails measuring log diameters and lengths, and applying

an approved set of rules to deduct for defects. This process is to determine the gross and net volume of a given number (generally log truck loads) of logs. Every log in every load (1-in-1, or 100%) can be scaled, or any one of a number of approved sampling methods can be used, such as scaling a portion of the loads, 3P scaling, or sample weight scaling. Another method being used more frequently is weight scaling, especially on low value material where there is a single species/product, or where all the products being weighed are close to or of the same value. Scale volume may be expressed in terms of cubic feet, board feet, cords, tons, linear feet, or number of pieces.

3. The Forest Management Service Center provides expertise in estimating volume of logs and standing trees. Our staff provides regional volume estimators for other programs. To promote consistent volume estimation, we maintain the National Volume Estimator Library (NVEL). The NVEL is a collection of the standing tree volume estimators used by the Forest Service. The Service Center also provides support to validate volume estimators, including the current estimators or new estimators. We provide training for designing a validation study, collecting the appropriate measurements.

Ex. 2. Complete the sentences. Use the words in bold.

ton feet inches tall long

1. It says on the packet you should plant the bulbs four deep.
2. The plants were two metres
3. The island is eleven miles and five miles wide.
4. The rock weighed over a and was completely immovable.
5. The cliffs are eroding several a year.

Ex. 3. Match the synonyms.

- | | |
|---------------|----------------|
| 1) purpose | a) instruction |
| 2) rule | b) help |
| 3) load | c) often |
| 4) frequently | d) steady |
| 5) support | e) present |
| 6) current | f) cargo |
| 7) consistent | g) aim |

Ex. 4. Read the text again. Choose the best ending for each sentence.

1. Cruising is the process of measuring
 - a) forest stands,
 - b) plants,
 - c) logs.

2. The primary purpose of cruising is to obtain
 - a) comparative estimation,
 - b) a volume estimation,
 - c)) estimation model.
3. Scaling is the determination of
 - a) the gross and net volume of forests,
 - b) the gross and net volume of stands,
 - c) the gross and net volume of logs.
4. The primary purpose of scaling is to determine the volume
 - a) by product,
 - b) by hand,
 - c) by chance.
5. Another method being used more frequently isscaling.
 - a) growth,
 - b) height,
 - c) weight.
6. Scale volume may be expressed
 - a) in terms of cubic complex,
 - b) in terms of cubic feet,
 - c) in terms of cubic dilation.
7. They provide collecting the appropriate
 - a) volume,
 - b) measurements,
 - c) plants.

Study Grammar

	Participle I (Present Participle) Причастие настоящего времени	Participle II (Past Participle) Причастие прошедшего времени	Perfect Participle Причастие совершенного вида
Active	using (использующий, используя)	—	having used (использовав)
Passive	being used (использующийся= который используют)	used (использованный= который использовали)	having been used (после того как использовали)
	being used (будучи использованным= так как использовали, когда использовали)	when used (когда использовали)	

Ex. 5. Translate the sentences below and underline Present Participle Passive and Past Participle Passive. There is one sentence without Participles, which one?

Model: The letter received greatly surprised us. →
 Полученное письмо (= которое мы получили) очень удивило нас.
 The test being written now is our final paper work. →
 Тест, пишущийся (= который пишут) сейчас, – наша финальная работа.

1. The house being built in that street is very good.
2. Being promised help, he felt calmer.
3. The stands found on boggy areas are defective.
4. The workers found a fine fir tree.
5. We stopped before a shut door.
6. Written in very bad handwriting, the text was difficult to read.
7. When called, they refused to come.

Ex. 6. Write out the sentences with Present Participle Passive and Past Participle Passive from paragraph two of the text above.

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Unit 11

Text: FOREST OPERATIONS
Grammar: GERUND

Study Vocabulary

1	Harvesting ['hɑ:vɪstɪŋ], logging ['lɒɡɪŋ]	Лесозаготовки; сбор, уборка урожая
2	Harvest ['hɑ:vɪst]	Урожай, сбор, жатва, плоды, собирать урожай
3	Treatment (n) ['tri:t(ə)nt]	Обработка, обращение
4	Felling ['felɪŋ]	Валка (леса)
5	Forest extraction ['fɒrɪst ɪk'strækʃ(ə)n]	Лесозаготовки, экстракция, извлечение

6	Processing [prəʊsesɪŋ]	Обработка, переработка, технология
7	Limbing ['lɪmɪŋ]	Обрезка сучьев
8	Skidding ['skɪdɪŋ]	Трелёвка
9	Bucking ['bʌkɪŋ]	Раскряжёвка; распиловка (брёвен на доски)
10	Trucking ['trʌkɪŋ]	Перевозка грузов на грузовых автомобилях
11	Bunch [bʌn(t)ʃ]	Пакет, связка (<i>лесоматериалов</i>)
12	Mill [mɪl]	Лесопильный завод, мельница; дробилка
13	Shipping yard ['ʃɪpɪŋ jɑ:d]	Грузовой (погрузочный) склад; площадка
14	Tree-length [tri: lɛŋθ]	Хлыст (древесный)
15	Short-(cut) wood [ʃɔ:t kʌt wʊd]	Короткомерный сортимент; чураки
16	Cut down [kʌt daʊn]	Рубить, вырубать
17	Load / unload [ləʊd] / [ʌn'ləʊd]	Грузить, грузиться, нагружать / разгружать, разгружаться, выгружать
18	Payload ['peɪləʊd]	Полезная нагрузка, полезный груз

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

FOREST OPERATIONS

1. The Forest Operations Equipment Catalog lists equipment used in forest operations. The equipment is separated into categories based on their function in the harvest or treatment process. The harvest system process is performed by five functions: felling, extraction, processing, loading, and transportation. Some systems may perform felling and processing as a single function, while others may not perform any extraction or transportation. The number of steps in the process will vary by system and the treatment being performed.

2. Felling is the process of cutting down individual trees, an element of the task of logging. The person cutting the trees is a feller. In hand felling, an axe, saw, or chainsaw is used to fell a tree, followed up by limbing and bucking in traditional applications. In the modern commercial logging industry, felling is typically followed by limbing and skidding. A feller-buncher is a motorized vehicle with an attachment which rapidly cuts and gathers several trees in the process of felling them.

3. The final harvesting step is the transportation of the trees or logs to the mill and/or a forwarding location such as the shipping yard for further transportation. There are very few scenarios where the timber harvested is moved off-site by truck. Depending on the distance traveled, trucking can be a very expensive component of the overall harvest. It is therefore very important to optimize the payload, and in most cases this means maximizing the payload. From the public's perspective, the transportation of logs is also the most visible part of a logging operation. The transportation is also affected by a host of regulations.

4. Trucks come in different configurations, and all have certain advantages and disadvantages. The first consideration is what form the product is. This can be tree-length, logs, or short-wood – defined as logs short enough to be stacked across the deck of the truck – or it may be in some processed form such as wood chips. A consideration when selecting a truck is the machinery used to load and unload the trucks.

Ex. 2. Match the words with the definitions (a-e).

- | | |
|----------------------------|---|
| 1) axe
[æks] | a) a large road vehicle that is used for transporting large amounts of goods; |
| 2) saw
[sɔ:] | b) a tool that has a heavy iron or steel blade at the end of a long wooden handle; |
| 3) chainsaw
[tʃeɪnsɔ:] | c) a machine, usually with wheels and an engine, used for transporting people or goods; |
| 4) truck
[trʌk] | d) a tool with a long or round blade and a row of sharp points along one edge; |
| 5) vehicle
[ˈvi:ɪk(ə)l] | e) a large saw with a motor and teeth-like parts fitted onto a continuous chain. |

Ex. 3. Match the antonyms.

- | | |
|--------------|-----------------|
| 1) expensive | a) slowly |
| 2) maximize | b) unload |
| 3) visible | c) disadvantage |
| 4) rapidly | d) invisible |
| 5) load | e) minimize |
| 6) advantage | f) backward |
| 7) forward | g) cheap |

Ex. 4. Read the text again. Decide whether the statements are true (T) or false (F). If the statement is false, correct it.

1. The harvest system process is performed by five functions.

2. The number of steps in the process will vary by people.

3. Felling is cutting down individual trees.

4. The man cutting the trees is a buncher.

5. Felling is in general followed by piling.

6. The last harvesting step is the transportation of the trees.

7. Trucking can be a very cheap component of the overall harvest.

Study Grammar

GERUND Герундий		
Герундий – неличная форма глагола с суффиксом -ing , соединяющая в себе черты существительного (но не имеет артикля и формы мн. числа) и глагола и несущая в себе оттенок значения некоего процесса.		
Герундий переводится на русский язык		
<ul style="list-style-type: none"> ✓ существительным, ✓ инфинитивом, ✓ деепричастием, 	<ul style="list-style-type: none"> ✓ глаголом в личной форме, ✓ придаточным предложением. 	
Употребление герундия		
<i>После глаголов</i>	<i>После глаголов, прилагательных и существительных с предлогами</i>	<i>После устойчивых выражений и предлогов</i>
avoid – избегать, finish – заканчивать, stop, give up – прекращать, keep (on) – продолжать, put off, postpone, delay - откладывать, переносить, need – нуждаться, require – требовать, want – хотеть, enjoy-наслаждаться, получать удовольствие и др.	prevent from – препятствовать, мешать сделать что-то, result in – приводить к чему-либо, accuse of – обвинять в, be disappointed at – быть разочарованным в, be surprised at – удивляться чему-то, be responsible for – быть ответственным за что-то; surprise at – удивление чему-то, apology for – извинение за что-то, reason for – причина для чего-то, experience in – опыт в, interest in – интерес (в чем-то) и др.	can't help – не могу не, нельзя не, can't stand – не могу терпеть, to be worth – стоить чего-либо, it's no use – бесполезно; in, on, before, after, without, by, about, at, to, of, for, through, besides, instead of и др.

Ex. 5. Translate the sentences below and underline Gerund. There is one sentence without Gerund, which one?

Model: My favourite occupation is reading about trees. →
Мое любимое занятие – чтение о деревьях.

1. One of his duties is attending lectures.
2. Harvesting wild mushrooms is no business for amateurs.
3. Air layering is a technique to propagate fruit-bearing plants.
4. They are engaged in removing old trees.
5. The scientists have been recording levels of pollution for the last 15 years.
6. He left without recording the measurement on a piece of paper.
7. Avoid leaving the weed's roots in the soil.

Ex. 6. Write out the sentences with Gerund from paragraph two of the text above.

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-
-

Unit 12

Text: FOREST MACHINES
Grammar: ATTRIBUTIVE NOUNS

Study Vocabulary

1	Harvester ['hɑ:vɪstə]	Лесной комбайн, лесозаготовительная машина (для валки или валки и обработки деревьев)
2	Feller ['fɛlə]	Валочная машина, вальщик (леса)
3	Buncher ['bʌn(t)ʃə]	Пакетирующая машина
4	Feller buncher ['fɛlə 'bʌn(t)ʃə]	Валочно-пакетирующая машина
5	Delimber buncher [de'li:mə 'bʌn(t)ʃə]	Сучкорезно-пакетирующая машина
6	Thinning ['θɪnɪŋ]	Разжижение, разведение, прореживание насаждений
7	Clearcut ['klɪəkʌt]	Сплошная вырубка

8	Tracked [trækt]	На гусеничном ходу
9	Wheeled [wi:ld]	Колёсный; на колёсах
10	Self-propelled [selfprə'pæld]	Самоходный, самодвижущийся
11	Machine [mə'ʃi:n]	Машина, аппарат, станок
12	Equipment [i'kwɪpm(ə)nt]	Оборудование, снаряжение, оснащение
13	Manual ['manjʊ(ə)l]	Руководство, справочник; ручной, мануальный
14	Capable ['keɪpəb(ə)l]	Способный, допускающий, могущий
15	Ability [ə'bɪlɪti]	Способность, возможность, умение, ловкость
16	Appropriate [ə'prəʊpɪət]	Соответствующий, подходящий, присущий

Ex. 1. Read the text. Find out the sentences with the words given in Vocabulary. Translate them.

FOREST MACHINES

1. A feller buncher is a self-propelled machine with a cutting head that is capable of holding more than one stem at a time. The cutting head is used strictly for cutting, holding, and placing the stems on the ground. Feller bunchers do not have processing capabilities. Feller bunchers can be highly productive felling machines. They can work well in both thinnings and clearcuts. Their ability to control the felling of the trees can reduce residual stand damage in comparison with manual felling. Since the feller buncher does not have processing capabilities, the whole tree is usually extracted to the landing. If there is a desire to leave the slash in the woods, then a separate limbing and topping operation must be carried out prior to extraction. Feller bunchers are a good option where removal of biomass is desirable and stems to be removed fall within the suitable range of the bunching head.

2. Harvesters are capable of operating in any type of treatment that permits movement of the machine within the stand. They are not well suited to harvesting hardwood species with multiple merchantable limbs. They operate best in stands consisting of single stem species such as conifers, aspen, and birch. Working in thinnings requires appropriate room to maneuver the machine and trees. Wheeled harvesters generally have a longer boom, which makes them capable of reaching further into a stand of trees. This may make up for some of their larger size. The size of trees being cut and processed must be balanced with the machine required to perform the work to ensure the equipment can work in the stand. Larger tracked machines will have tail swing issues to work with.

Wheeled machines and zero tail swing tracked machines do not have this issue. It is generally true that if they can get between the trees they can operate safely and with little damage to residual trees.

Ex. 2. Complete the text about tractors with the words in italics.

blown out equipped manual interior technician

Some tractors may not be _____ with any lights at all, while others could have an extensive lighting system that includes turn signals and _____ lighting. Check each of the lights after each use of the tractor so you can address any electrical issues as they arise.

If a light fails to work, it may be a _____ bulb or fuse that needs to be replaced. If neither of those can solve the problem, your tractor may need to be serviced by a _____.

Check your owner's _____ to find the correct type of bulb or fuse needed to fix a bad light.

Ex. 3. Match the homophones.

- | | |
|-----------|------------|
| 1) fir | a) had |
| 2) aloud | b) beach |
| 3) head | c) fur |
| 4) flower | d) bare |
| 5) seed | e) allowed |
| 6) beech | f) flour |
| 7) bear | g) cede |

Ex. 4. Read the text again. Answer the questions.

1. Is a feller buncher a self-propelled machine?

2. What is the cutting head used for?

3. What can reduce residual stand damage?

4. Where is the whole tree extracted to?

5. Where are feller bunchers a good option?

6. Where do the harvesters operate best?

7. What do wheeled harvesters generally have?

Study Grammar

ATTRIBUTIVE NOUNS Существительное в роли определения (правило ряда)		
<i>В роли определения существительное может быть прилагательным</i>	<i>В роли определения существительное может быть в род.п. без предлога</i>	<i>В роли определения существительное может быть с предлогом</i>
steam engine паровой двигатель	speed regulation регулировка скорости	steam engine plants станции с паровым двигателем
Если в ряду имеется прилагательное, то оно обычно, но не всегда, относится к последнему определяемому существительному.		
<i>A different product distribution</i> другое распределение <i>продукта</i>		

Ex. 5. Translate the phrases below and underline Attributive Nouns.

Model: a garden flower → садовый цветок
search methods → методы поиска

1. Growth rings _____
2. Cell growth _____
3. Sugar maple _____
4. Forest reproduction _____
5. Wood price decrease _____
6. Chestnut bark disease _____
7. System reaction identification _____
8. Control system design _____
9. New crystal growth methods _____

Ex. 6. Write out the phrases with Attributive Nouns from the text above.

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-
-
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СЛОВАРЬ ГРАММАТИЧЕСКИХ ТЕРМИНОВ

noun	существительное	a word that refers to a person, place, thing, event, substance or quality
adjective	прилагательное	a word or phrase that describes an action, condition or experience
verb	глагол	a word or phrase that describes an action, condition or experience
attributive	определение	of an adjective, noun, pronoun or phrase placed before the noun it describes
object	дополнение	a noun or noun phrase that is affected by the action of a verb or that follows a preposition
subject	подлежащее	the person or thing that performs the action of a verb or is joined to a description by a verb
synonym	синоним	a word or phrase that has the same or nearly the same meaning as another word or phrase in the same language
antonym	антоним	a word that means the opposite of another word
homonym	омоним	a word that sounds the same or is spelled the same as another word but has a different meaning
active voice	действительный залог	the relationship between a subject and a verb in which the subject receives the action of the verb or the verb forms which show this relationship
passive voice	страдательный залог	the relationship between a subject and a verb in which the subject receives the action of the verb or the verb forms which show this relationship
infinitive	инфинитив, неопределённая форма глагола	the basic form of a verb that usually follows «to»
participle	причастие	a form of a verb, often ending in «-ed» or «-ing» and used with auxiliary verbs to make verb tenses, or to form adjectives
gerund	герундий	a word ending in «-ing» that is made from a verb and is used like a noun

ЛЕКСИКО-ГРАММАТИЧЕСКИЕ ТЕСТЫ

ТЕСТ 1

<p>1. We'll meet at this _____.</p> <p>a) point (n) b) point (v)</p>	
<p>2. Long hand of the clock _____s to the hours.</p> <p>a) point (n) b) point (v)</p>	
<p>3. Try to _____ new words in your speech.</p> <p>a) use (n) b) use (v)</p>	
<p>4. What's the _____ of the books without pictures?</p> <p>a) use (n) b) use (v)</p>	
<p>5. The tree _____s us from the sun.</p> <p>a) shade (n) b) shade (v)</p>	
<p>6. I like to sleep in the _____.</p> <p>a) shade (n) b) shade (v)</p>	
<p>7. We agreed a new four-year _____.</p> <p>a) contract (n) b) contract (v)</p>	
<p>8. They are going to _____ to build a house.</p> <p>a) contract (n) b) contract (v)</p>	
<p>9. He hopes shortly to _____ his expenses.</p> <p>a) contract (n) b) contract (v)</p>	
<p>10. Two trips were required to _____ the goods.</p> <p>a) transport (n) b) transport (v)</p>	
<p>11. Improved rail _____ is essential for business.</p> <p>a) transport (n) b) transport (v)</p>	
<p>12. Could you _____me a good journal?</p> <p>a) advice b) advise</p>	
<p>13. I always follow his _____.</p> <p>a) advice b) advise</p>	
<p>14. Will you show me the place you _____?</p> <p>a) life b) live</p>	
<p>15. The standard of _____is very low in our country.</p> <p>a) life b) live</p>	

ТЕСТ 2

<p>1. We _____ books. a) are believed to have lost b) are believed that we lost c) was believed to have lost</p>	
<p>2. The president _____ the countries of Europe. a) was announced that he visited b) was announced to have visited c) announced to have visited</p>	
<p>3. The company _____ profit this year. a) are expected to make b) is expected make c) is expected to make</p>	
<p>4. The students _____ for the lessons in time. a) are supposed to come b) are supposed come c) is supposed to come</p>	
<p>5. She _____ English fluently. a) is said to speaking b) is said to speak c) said to speak</p>	
<p>6. They _____ the contest. a) are known to have won b) are know to have won c) are to have won</p>	
<p>7. Many people _____ homeless. a) were reported became b) were report to have become c) were reported to have become</p>	
<p>8. A great artist _____ this picture. a) considered to have painted b) is considered to have painted c) is considered have painted</p>	
<p>9. He _____ here. a) were thought to study b) was to study thought c) was thought to study</p>	
<p>10. The festivals _____ in May. a) are supposed to take place b) are supposed to take c) supposed to take place</p>	

ТЕСТ 3

<p>1. This project _____ important. a) proved b) prove to be c) proved to be</p>	
<p>2. The second part of the chapter _____ less interesting. a) appeared to be b) appeared to being c) appeared to</p>	
<p>3. They _____ on Monday. a) are unlikely to come b) was unlikely to come c) is unlikely to come</p>	
<p>4. I _____ out of my office. a) happened be b) happened to c) happened to be</p>	
<p>5. She _____ you. a) are sure to punish b) is sure to punish c) is sure punish</p>	
<p>6. They don't _____ their tools. a) turn to have lost b) turn out to have lost c) turn out have lost</p>	
<p>7. Her mood _____ for the worse. a) seems to have changed b) seem to have changed c) seems to had changed</p>	
<p>8. She _____. a) is likely to succeed b) likely to succeed c) is like to succeed</p>	
<p>9. He _____. a) seems to be sleep b) seems to be sleeping c) seems to sleeps</p>	
<p>10. Do you _____ him? a) happens to know b) to know happen c) happen to know</p>	

ТЕСТ 4

<p>1. Why didn't you let _____ his own way? a) him have b) him to have c) him has</p>	
<p>2. Nobody noticed _____ the room. a) Jim leave b) Jim leaves c) Jim to leave</p>	
<p>3. Let _____ whatever they want. a) they do b) their do c) them do</p>	
<p>4. Our teacher said he'd like _____ down everything he said. a) us write b) us writing c) us to write</p>	
<p>5. Do you expect _____ the machine? a) me to repair b) that I repair c) I to repair</p>	
<p>6. Do you feel _____ behind us? a) someone breath b) someone breathing c) someone to breath</p>	
<p>7. Are you sure he made _____ those boxes? a) the workers to open b) the workers open c) open the workers</p>	
<p>8. Have you ever heard _____ in public places? a) he to swear b) him to swearing c) him swearing</p>	
<p>9. I am sorry I didn't hear _____ my name. a) that call b) you call c) you to call</p>	
<p>10. They wanted _____ a few books from the local library. a) her borrow b) her to borrow c) she to borrow</p>	

ТЕСТ 5

<p>1. He ordered the meeting_____.</p> <p>a) to be cancelled b) be cancelled c) cancelled</p>	
<p>2. The teacher expected the tests _____ at once.</p> <p>a) handed in b) be handed in c) to be handed in</p>	
<p>3. They want the tests of the pumps_____.</p> <p>a) to be made b) to be make c) to make</p>	
<p>4. A buyer would like a discount_____.</p> <p>a) given b) to be given c) be given</p>	
<p>5. We knew the model_____.</p> <p>a) to been changed b) to have been changed c) to had been changed</p>	
<p>6. I realize the measures_____.</p> <p>a) to have been taken b) to have been take c) to have been taking</p>	
<p>7. You should have this surface_____.</p> <p>a) clean b) cleaning c) cleaned</p>	
<p>8. He had his eyes _____ last week.</p> <p>a) tested b) testing c) test</p>	
<p>9. How often do you have your car_____?</p> <p>a) to served b) served c) be served</p>	
<p>10. We had the room _____ yesterday.</p> <p>a) paint b) paints c) painted</p>	

ТЕСТ 6

<p>1. The students _____ everything they need for their profession. a) are taught b) taught c) was taught</p>	
<p>2. This marvelous poem _____ by our chief today. a) be written b) was written c) is written</p>	
<p>3. He _____ for by the time I entered my house. a) had been sent b) have been sent c) will been sent</p>	
<p>4. They _____ from 5 to 6 o'clock last week. a) was being looked after b) were being looking after c) were being looked after</p>	
<p>5. My new invention _____ tomorrow. a) will be spoken about b) will speak about c) will being speaked about</p>	
<p>6. At this moment your task _____. a) is done b) are done c) is being done</p>	
<p>7. This person can't be _____. a) relying upon b) relied upon c) to rely upon</p>	
<p>8. This device _____ recently. So you're late. a) have been bought b) were been bought c) has been bought</p>	
<p>9. I _____ to wait! That filled me with indignation. a) were told b) was told c) are told</p>	
<p>10. The Arabic language _____ in German. a) don't spoken b) not spoken c) isn't spoken</p>	

ТЕСТ 7

<p>1. The students opened the books _____.</p> <p>a) read b) for read c) to read</p>	
<p>2. I went there _____ their presentation.</p> <p>a) see b) to see c) to seen</p>	
<p>3. You should do you best _____ your pronunciation.</p> <p>a) to improve b) improving c) improve</p>	
<p>4. _____ money she flew with low-cost airline.</p> <p>a) To save b) Too save c) For save</p>	
<p>5. I wrote down his number in order _____ it.</p> <p>a) do not to forget b) not to forget c) not forget</p>	
<p>6. I called _____ the previous arrangements.</p> <p>a) to confirming b) to confirm c) for confirm</p>	
<p>7. I have come here _____ my new article.</p> <p>a) to see b) for you see c) for you to see</p>	
<p>8. She has enough knowledge _____ the university.</p> <p>a) for you to enter b) for you enter c) to enter</p>	
<p>9. They needed more time _____ think over the proposition.</p> <p>a) - b) to c) for</p>	
<p>10. We stopped _____ Alex to join us.</p> <p>a) – b) to c) for</p>	

ТЕСТ 8

<p>1. We don't want _____ our time. a) lose b) to lose c) to be lost</p>	
<p>2. We must _____ our interests. a) protect b) to protect c) to be protected</p>	
<p>3. The problem was how _____ everything to him. a) explain b) to be explained c) to explain</p>	
<p>4. We decided _____ out a loan. a) do not take b) not take c) not to take</p>	
<p>5. He'd better _____ her what really happened. a) do not tell b) not tell c) not to tell</p>	
<p>6. Would you rather _____ tea or coffee? a) have b) to have c) had</p>	
<p>7. The rule was supposed _____. a) to have been learned b) to have been learn c) to have learned</p>	
<p>8. I know him _____ a new website. a) to have been created b) to have been create c) to have created</p>	
<p>9. That man seems _____ my thoughts. a) be reading b) to be reading c) to be read</p>	
<p>10. To be happy is _____. a) understood b) be understood c) to be understood</p>	

ТЕСТ 9

<p>1. The girl <u>talking</u> to him is my colleague.</p> <p>a) определение b) обстоятельство причины c) обстоятельство образа действия</p>	
<p>2. It wasn't really pleasant to listen to his <u>complaining</u> speech.</p> <p>a) определение b) обстоятельство причины c) обстоятельство образа действия</p>	
<p>3. While <u>writing</u> a letter she remembered him.</p> <p>a) определение b) обстоятельство условия c) обстоятельство времени</p>	
<p>4. <u>Knowing</u> the truth, he would never have done it.</p> <p>a) определение b) обстоятельство условия c) обстоятельство времени</p>	
<p>5. He sat on the bench <u>reading</u> a newspaper.</p> <p>a) определение b) обстоятельство причины c) обстоятельство образа действия</p>	
<p>6. <u>Visiting</u> us, he always tells lots of stories.</p> <p>a) определение b) обстоятельство условия c) обстоятельство времени</p>	
<p>7. That <u>running</u> guy is rather handsome.</p> <p>a) определение b) обстоятельство причины c) обстоятельство образа действия</p>	
<p>8. <u>Reading</u> research, he often makes notes.</p> <p>a) определение b) обстоятельство условия c) обстоятельство времени</p>	
<p>9. The room was full of people, <u>laughing and shouting</u>.</p> <p>a) определение b) обстоятельство причины c) обстоятельство образа действия</p>	
<p>10. The woman <u>sitting</u> by the window stood up and left.</p> <p>a) определение b) обстоятельство причины c) обстоятельство образа действия</p>	

ТЕСТ 10

<p>1. I noticed _____ leaves near my house. a) burnt b) burn c) burning</p>	
<p>2. _____ whether he knew the rule, he said that he didn't. a) Ask b) Asked c) Asking</p>	
<p>3. The text will be hidden until _____. a) approving b) approve c) approved</p>	
<p>4. If _____ every detail, it doesn't look good. a) considering b) consider c) considered</p>	
<p>5. This is a plant _____ now. a) being built b) building c) built</p>	
<p>6. This is a plant _____ a few years ago. a) being built b) building c) built</p>	
<p>7. He told us about the tests _____ on in his laboratory now. a) being carry b) being carried c) is being carried</p>	
<p>8. _____ of reinforced concrete the house will be durable. a) Being to build b) Being build c) Being built</p>	
<p>9. Nobody saw the things _____ in that box. a) kept b) keep c) to keep</p>	
<p>10. A hammer is a tool _____ for driving in nails. a) uses b) used c) using</p>	

ТЕСТ 11

<p>1. _____ is an important sphere of every person's life.</p> <p>a) To work b) Work c) Working</p>	
<p>2. He is tired _____ exercises.</p> <p>a) for doing b) of doing c) doing</p>	
<p>3. 20% of the employees consider _____ the jobs.</p> <p>a) quitting b) of quitting c) quitted</p>	
<p>4. His method _____ people is rather strange.</p> <p>a) to persuade b) to persuading c) of persuading</p>	
<p>5. I think you should _____ on this sphere.</p> <p>a) keep of focusing b) to keep focusing c) keep focusing</p>	
<p>6. I _____ in the corner.</p> <p>a) don't mind sitting b) don't mind to sit c) not mind sitting</p>	
<p>7. The window _____.</p> <p>a) need washing b) needs washing c) needs wash</p>	
<p>8. _____ money, we were able to buy a new car.</p> <p>a) By saving b) Buy saving c) For saving</p>	
<p>9. They are busy _____ the house.</p> <p>a) clean b) cleaned c) cleaning</p>	
<p>10. He apologized _____ so loudly.</p> <p>a) of talking b) for talking c) to talking</p>	

ТЕСТ 12

<p>1. Government efforts a) усилия правительства b) государственные усилия c) оба ответа правильные</p>	
<p>2. Success story a) история успеха b) успех истории c) оба ответа правильные</p>	
<p>3. Market research a) рыночные исследования b) исследования рынка c) оба ответа правильные</p>	
<p>4. Market value a) ценовой рынок b) рыночная стоимость c) оба ответа правильные</p>	
<p>5. Expense report a) отчет о расходах b) расходный отчет c) оба ответа правильные</p>	
<p>6. Water filter a) фильтр для воды b) фильтрованная вода c) оба ответа правильные</p>	
<p>7. Night vision goggles a) ночной видимый прибор b) прибор ночного видения c) оба ответа правильные</p>	
<p>8. Glass water bottle a) стеклянная бутылка воды b) бутылка прозрачной воды c) оба ответа правильные</p>	
<p>9. High alumina cement a) цемент с высоким содержанием алюминия b) высокое содержание алюминия c) оба ответа правильные</p>	
<p>10. Federal forest protection program a) федеральная программа по защите лесов b) программа по федеральной защите лесов c) оба ответа правильные</p>	

ТЕСТ 13

<p>1. appoint- a) ment b) ness c) ant</p>	
<p>2. consult- a) ment b) ness c) ant</p>	
<p>3. kind- a) ment b) ness c) ant</p>	
<p>4. employ- a) or b) ee c) ist</p>	
<p>5. activ(e)- a) ance b) ity c) sion</p>	
<p>6. wid(e)- a) ure b) er c) th</p>	
<p>7. compet(e)- a) (t)ion b) ic c) ist</p>	
<p>8. partner- a) hood b) dom c) ship</p>	
<p>9. neighbor- a) hood b) dom c) tion</p>	
<p>10. -behavior a) in b) mis c) dis</p>	

ТЕСТ 14

<p>1. change-</p> <p>a) al b) eble c) able</p>	
<p>2. doubt-</p> <p>a) ful b) ous c) ness</p>	
<p>3. express-</p> <p>a) ive b) y c) ic</p>	
<p>4. storm-</p> <p>a) ive b) y c) ic</p>	
<p>5. care-</p> <p>a) less b) ous c) ness</p>	
<p>6. fam(e)-</p> <p>a) al b) ous c) able</p>	
<p>7. centr(e)-</p> <p>a) al b) eble c) able</p>	
<p>8. green-</p> <p>a) ic b) ish c) ship</p>	
<p>9. -regular</p> <p>a) im b) il c) ir</p>	
<p>10. -able</p> <p>a) im b) un c) in</p>	

ТЕСТ 15

<p>1. origin-</p> <p>a) ate b) ize c) ify</p>	
<p>2. organ-</p> <p>a) ate b) ize c) ify</p>	
<p>3. sharp-</p> <p>a) ate b) en c) fy</p>	
<p>4. not(e)-</p> <p>a) ive b) ize c) ify</p>	
<p>5. -fill</p> <p>a) en b) re c) ex</p>	
<p>6. -apply</p> <p>a) un b) dis c) mis</p>	
<p>7. -body</p> <p>a) em b) en c) un</p>	
<p>8. -approve</p> <p>a) un b) dis c) mis</p>	
<p>9. -communicate</p> <p>a) ex b) un c) ir</p>	
<p>10. -estimate</p> <p>a) pre b) sub c) under</p>	

ТЕСТ 16

<p>1. _____ one's best a) do b) make c) take</p>	
<p>2. _____ a favour a) do b) make c) take</p>	
<p>3. _____ an effort a) do b) make c) take</p>	
<p>4. _____ for granted a) do b) make c) take</p>	
<p>5. _____ a mess a) do b) make c) take</p>	
<p>6. _____ responsibility a) do b) make c) take</p>	
<p>7. _____ online a) catch b) come c) go</p>	
<p>8. _____ fun a) catch b) have c) take</p>	
<p>9. _____ in touch a) keep b) break c) come</p>	
<p>10. _____ to a decision a) keep b) break c) come</p>	

ТЕСТ 17

<p>1. _____ attention</p> <p>a) take b) pay c) note</p>	
<p>2. _____ no notice of</p> <p>a) take b) pay c) note</p>	
<p>3. _____ smb on one's list</p> <p>a) pay b) note c) take</p>	
<p>4. _____ by rote</p> <p>a) study b) read c) learn</p>	
<p>5. _____ between the lines</p> <p>a) study b) read c) learn</p>	
<p>6. _____ a subject</p> <p>a) study b) read c) learn</p>	
<p>7. _____ with one's work</p> <p>a) go on b) prolongate c) continue</p>	
<p>8. _____ one's work</p> <p>a) go on b) continue c) prolongate</p>	
<p>9. _____ English courses</p> <p>a) rejoin b) join c) attend</p>	
<p>10. _____ a golf club</p> <p>a) rejoin b) join c) attend</p>	

ТЕСТ 18

<p>1. stand _____ a) aside b) side c) both</p>	
<p>2. send by _____ a) mistake b) chance c) both</p>	
<p>3. speak _____ a) fluent b) one's mind c) both</p>	
<p>4. catch _____ a) fire b) blue-handed c) both</p>	
<p>5. have a _____ a) experience b) break c) both</p>	
<p>6. fall _____ a) into decay b) asleep c) both</p>	
<p>7. the _____ est building a) tall b) high c) both</p>	
<p>8. a _____ computer a) powerful b) strong c) both</p>	
<p>9. a _____ of soap a) bath b) bar c) both</p>	
<p>10. _____ fall a) prices b) leaves c) both</p>	

ТЕСТ 19

<p>1. a <u>silly</u> idea</p> <p>a) strange b) clever c) foolish</p>	
<p>2. an <u>ancient</u> story</p> <p>a) new b) old c) lovely</p>	
<p>3. to <u>prohibit</u> entering</p> <p>a) enjoy b) permit c) forbid</p>	
<p>4. agreed <u>previously</u></p> <p>a) earlier b) privately c) obvious</p>	
<p>5. <u>knowledge</u> of agriculture</p> <p>a) finance b) farming c) sewing</p>	
<p>6. to be very <u>grateful</u></p> <p>a) thanks b) thoughtful c) thankful</p>	
<p>7. to move <u>forward</u></p> <p>a) backward b) ahead c) down</p>	
<p>8. to <u>aid</u> the student</p> <p>a) help b) listen to c) rescue</p>	
<p>9. to pay <u>at once</u></p> <p>a) immediately b) slowly c) quietly</p>	
<p>10. not to throw any <u>litter</u></p> <p>a) dust b) rubbish c) letters</p>	

ТЕСТ 20

<p>1. <u>colourless</u> is an antonym of <u>coloured</u> a) true b) false</p>	
<p>2. <u>empty</u> is an antonym of <u>full</u> a) true b) false</p>	
<p>3. <u>different</u> is an antonym of <u>similar</u> a) true b) false</p>	
<p>4. <u>even</u> is an antonym of <u>smooth</u> a) true b) false</p>	
<p>5. <u>hostile</u> is an antonym of <u>unfriendly</u> a) true b) false</p>	
<p>6. <u>hurry</u> is an antonym of <u>delay</u> a) true b) false</p>	
<p>7. <u>huge</u> is an antonym of <u>tiny</u> a) true b) false</p>	
<p>8. <u>decide</u> is an antonym of <u>hesitate</u> a) true b) false</p>	
<p>9. <u>break</u> is an antonym of <u>repair</u> a) true b) false</p>	
<p>10. <u>clarity</u> is an antonym of <u>muddiness</u> a) true b) false</p>	
<p>11. <u>cruelty</u> is an antonym of <u>gentleness</u> a) true b) false</p>	
<p>12. <u>match</u> is an antonym of <u>go with</u> a) true b) false</p>	

ТЕСТ 21

<p>1. a _____ in the fence a) whole b) hole c) home</p>	
<p>2. the _____ day a) whole b) hole c) hall</p>	
<p>3. _____ own plans a) they b) there c) their</p>	
<p>4. the _____ of the damage a) extend b) external c) extent</p>	
<p>5. _____ high time a) its b) it's c) is</p>	
<p>6. the _____ to the throne a) hair b) air c) heir</p>	
<p>7. a _____ market a) flee b) flea c) fleet</p>	
<p>8. a _____ of streets a) maze b) mase c) maize</p>	
<p>9. to _____ for an hour a) wet b) weight c) wait</p>	
<p>10. _____ bag to choose a) with b) which c) witch</p>	

ТЕСТ 22

<p>1. With so many areas of woodland being cut down, a lot of wildlife is losing its natural _____.</p> <p>a) home b) habitat c) house</p>	
<p>2. We won't invest in any company that pollutes the _____.</p> <p>a) conditions b) environment c) emissions</p>	
<p>3. Over a hundred _____ of insects are found in this area.</p> <p>a) species b) animals c) class</p>	
<p>4. Plants absorb _____ dioxide during photosynthesis.</p> <p>a) oxygen b) hydrogen c) carbon</p>	
<p>5. Those oranges have been _____ ly coloured.</p> <p>a) artificial b) synthetic c) imitation</p>	
<p>6. Meat and fish are a vital source of _____.</p> <p>a) fat b) protein c) carbohydrate</p>	
<p>7. When you live in the _____, water is your most vital resource.</p> <p>a) desert b) rocks c) plain</p>	
<p>8. The _____ is an important habitat for many wild flowers.</p> <p>a) grassland b) land c) grass</p>	
<p>9. _____ forests cover the eastern versant.</p> <p>a) Needles b) Acidic c) Conifer</p>	
<p>10. The rocks near the river were covered with _____.</p> <p>a) tree b) moss c) most</p>	
<p>11. Leaves of _____ are green and have feathery structure.</p> <p>a) seeds b) ferns c) moss</p>	
<p>12. Humans, dogs, elephants, and dolphins are all _____.</p> <p>a) mammals b) reptiles c) arthropods</p>	

ТЕСТ 23

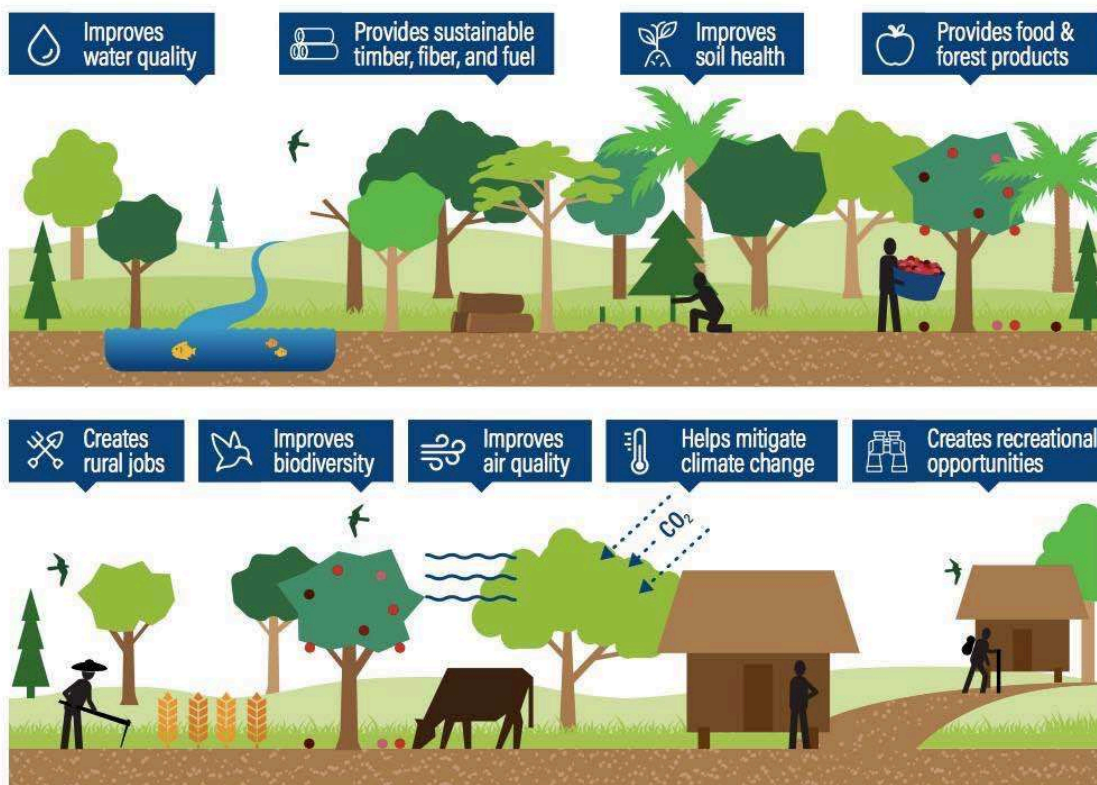
<p>1. The _____ region contains about 13% of Canada's population. a) ecology b) climate c) boreal</p>	
<p>2. They found shelter from the storm under a large _____ tree. a) wood b) oak c) acorn</p>	
<p>3. A _____ leaf is the national symbol of Canada. a) rose b) maple c) catkin</p>	
<p>4. The forest has a lot of _____ trees. a) mature b) usually c) adults</p>	
<p>5. Mushrooms and mould are _____. a) fungi b) bacteria c) lichen</p>	
<p>6. She planted some roses and other flowering _____. a) branches b) bush c) shrubs</p>	
<p>7. He whacked the tree _____ with his stick. a) stumps b) twig c) trunk</p>	
<p>8. They are typically found under the _____ in freshly cut trees. a) bud b) bark c) outer</p>	
<p>9. A _____ is also the hard oval fruit of an evergreen tree. a) cone b) circle c) triangle</p>	
<p>10. The house was built of _____ but faced with brick. a) wood b) sand c) metal</p>	
<p>11. Mahogany is a _____ wood and pine is a _____ wood. a) heavy, soft b) soft, hard c) hard, soft</p>	
<p>12. The aphid is a garden _____. a) cricket b) pest c) snail</p>	

ТЕСТ 24

<p>1. Wood _____ covered the floor of the workshop.</p> <p>a) fibers b) chips c) particles</p>	
<p>2. We can use those old shelves as _____.</p> <p>a) firewood b) driftwood c) wood pulp</p>	
<p>3. The term _____ material denotes materials in unprocessed states.</p> <p>a) raw b) plastic c) composite</p>	
<p>4. In fact these boxes are roughly equal in _____.</p> <p>a) sound b) measure c) volume</p>	
<p>5. The mountains stretch the entire _____ of the country.</p> <p>a) length b) long c) meter</p>	
<p>6. The area of a rectangle is its height times its _____.</p> <p>a) depth b) width c) girth</p>	
<p>7. He decided the diseased trees had to be _____ ed.</p> <p>a) cut b) fall c) fell</p>	
<p>8. Make a mark on the tree _____, then go back and saw it off.</p> <p>a) lime b) limb c) twiggy</p>	
<p>9. It took an hour to _____ the van.</p> <p>a) load b) carry c) unloading</p>	
<p>10. Any _____ conveyances are not allowed in the park.</p> <p>a) front b) wheeled c) tire</p>	
<p>11. A _____ vehicle is a vehicle that runs on continuous tracks instead of wheels.</p> <p>a) tracked b) tractor c) trace</p>	
<p>12. Radar _____ is used to detect enemy aircraft.</p> <p>a) a device b) tools c) equipment</p>	

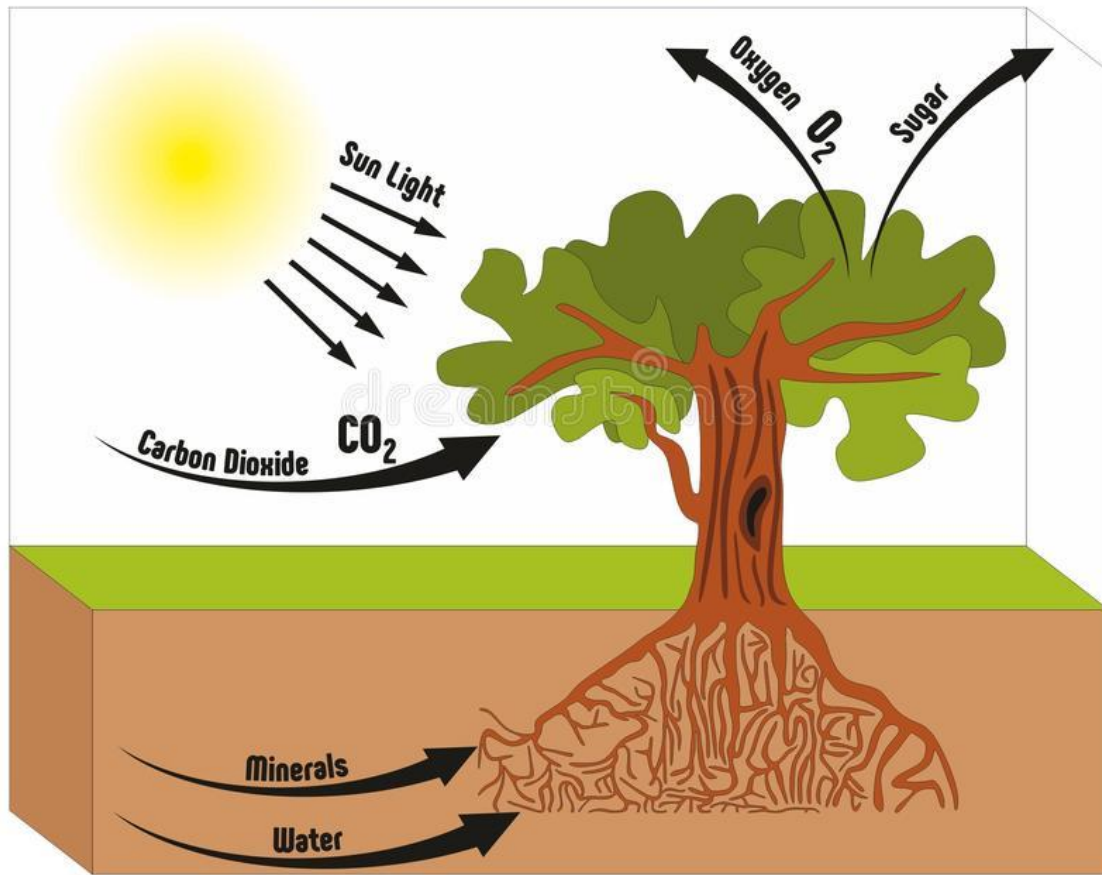
ВИЗУАЛЬНЫЙ ТЕМАТИЧЕСКИЙ СЛОВАРЬ

HOW PLANTS CAN HELP



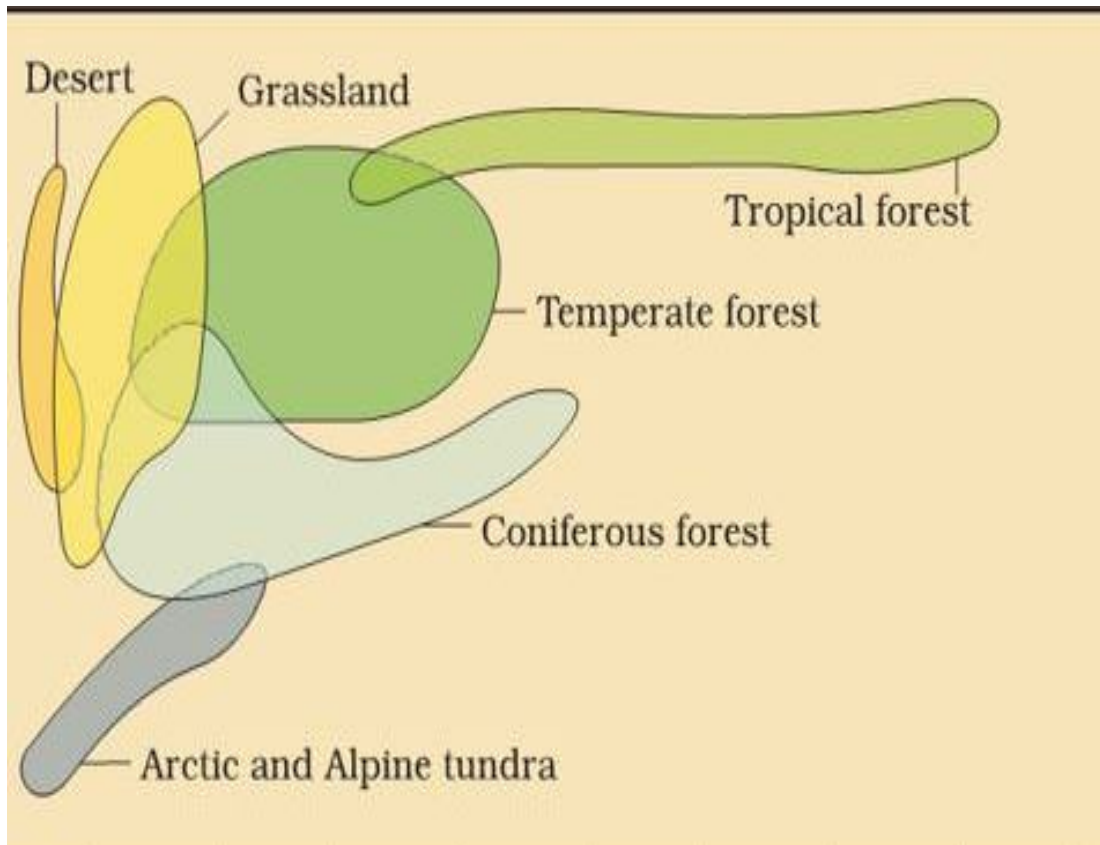
<p>soil acid soil alkaline soil chalky soil clay soil fossil soil ground firm ground flat ground land rich land cultivated land arable land stony land</p>	<p>air oxygen nitrogen hydrogen carbon dioxide water irrigation water land water climate moist climate mild climate humid climate temperate climate climate zone</p>	<p>flowering plants cereal plants native plants indoor plants acid plants aquatic plants perennials annuals trees shrubs bushes herbs grasses flowers</p>
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PHOTOSYNTHESIS



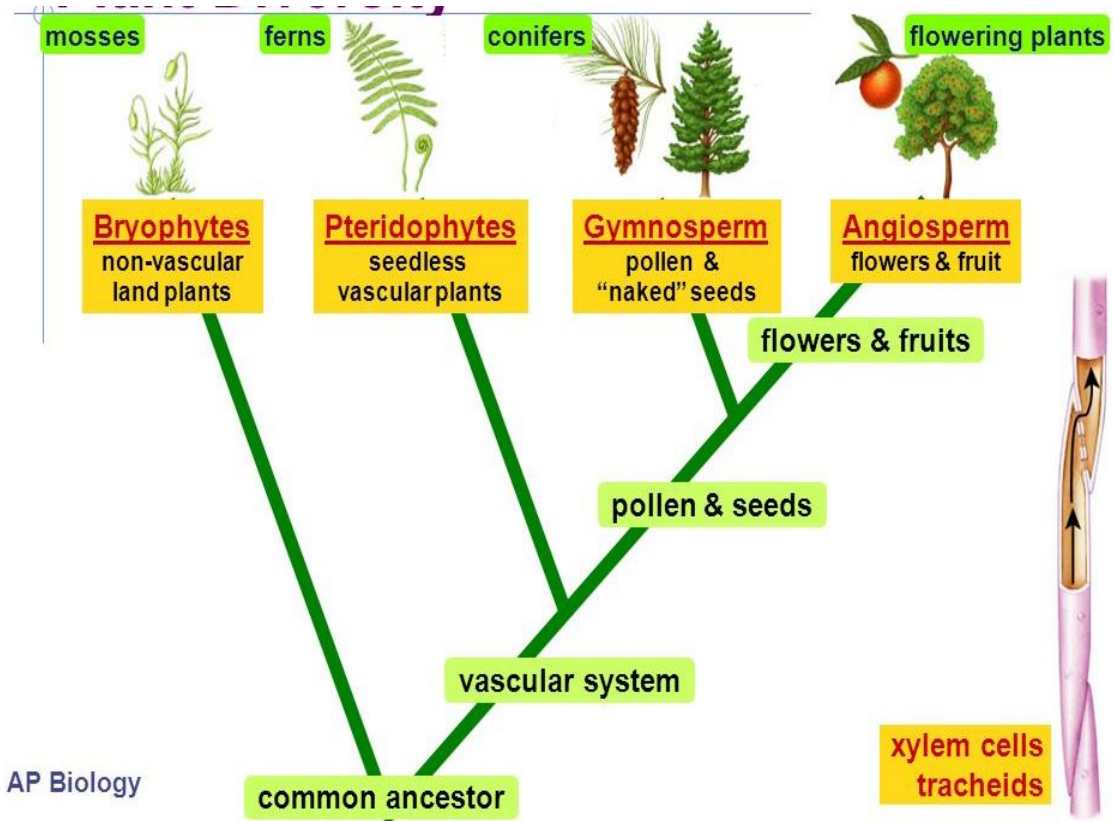
<p>natural artificial chlorophyll grain chlorophyll pigment nutrient needs active nutrient available nutrient mineral raw materials mineral black mineral origin mineral fertilizer cell growth protein carbohydrate</p>	<p>aquatic environment estuary salt marsh coral reef lagoon mangrove swamp pond lake wetland water reservoirs terrestrial ecosystem dryland ecosystem dynamic ecosystem basin ecosystem</p>	<p>to contaminate the environment a healthy environment to clean up environment to preserve / protect the environment to pollute the environment</p>
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BIOMES



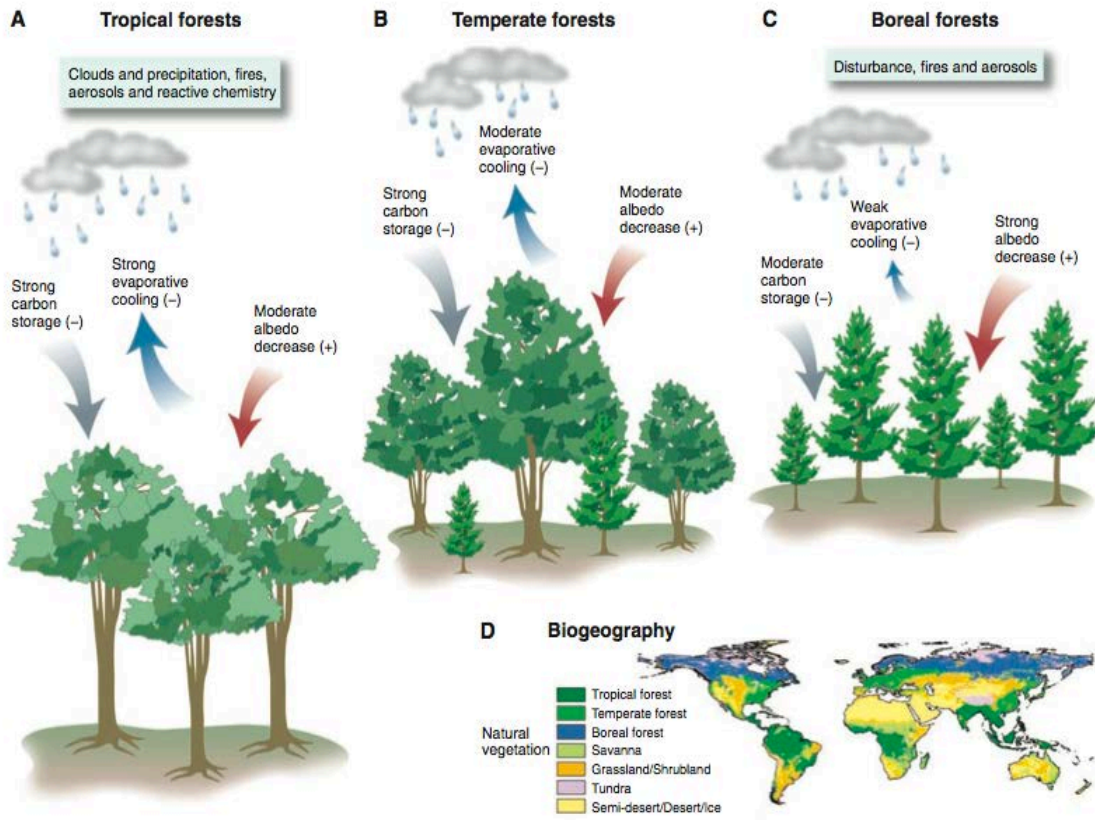
<p>grass tundra hilly tundra hummocky tundra lichen tundra stony tundra barren desert arid / dry desert desert meadow desert island arctic desert coastal desert cold desert extreme desert low-latitude desert</p>	<p>permanent grassland rotational grassland temporary grassland tropical grassland temperate grassland high / tall grass blade of grass tuft of grass to cut / mow (the) grass habitat of biodiversity marine biodiversity biodiversity loss storehouses of biodiversity</p>	<p>temperate forests tropical forests equatorial forests needle-leaved forests evergreen forests deciduous rain forests pine forest oak forest forest bog forest range forest fire forest hygienes to lose oneself in the forest</p>
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PLANT DIVERSITY



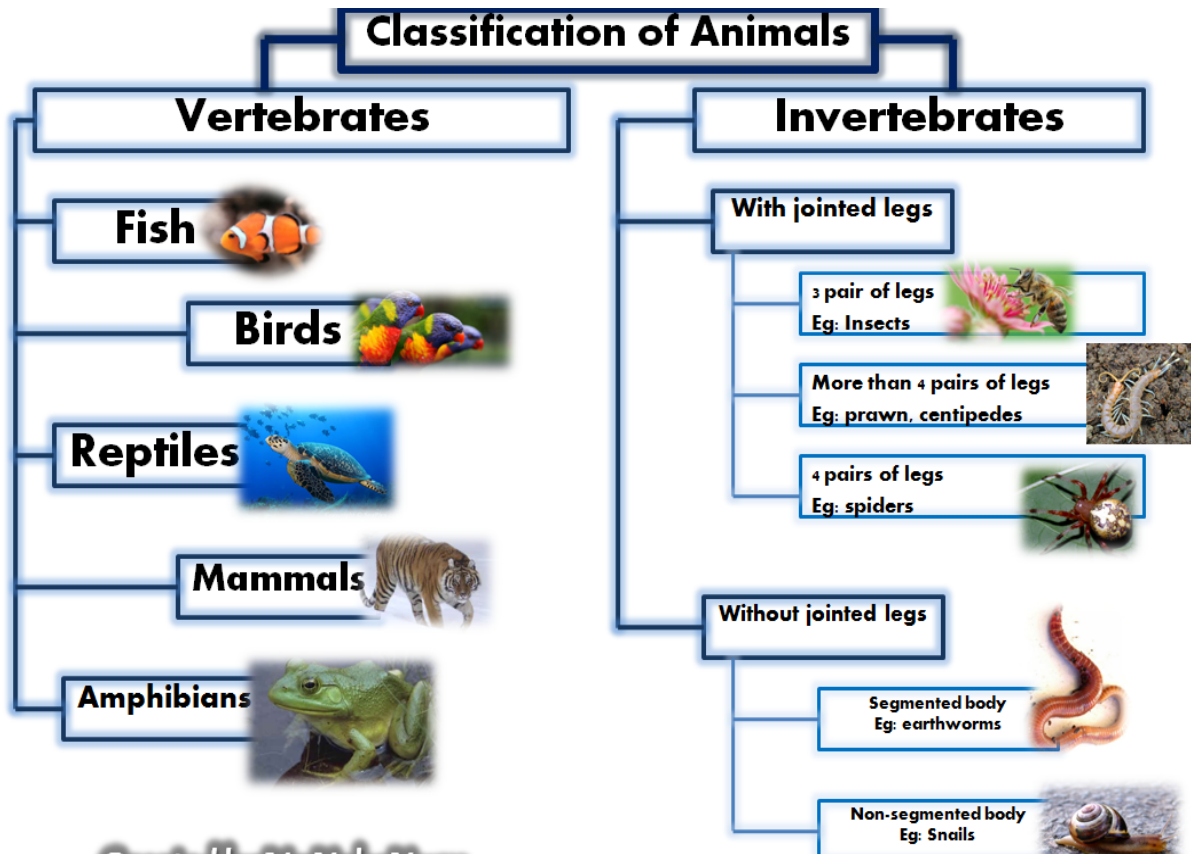
wintering horsetail field horsetail horsetail extract horsetail forest pillowy moss velvet moss bog moss peat moss bog moss moor moss leaf male fern umbrella fern tree fern king fern	seed seed-bearing seed cleaning seedless naked seeds corn seed dark seed dodder seed dormant seed dust seed exalbuminous seed vascular non-vascular non-flowering	xylem tracheid vessel tissue spore spore exine spore formation conifer foliage stripper conifer bath conifer forest conifer oils conifer resin cone-bearing fir cone
---	--	---

FORESTS



<p><i>islands</i> forest angiospermous forest bog forest boreal coniferous forest broad-leaved forest coppice forest deciduous forest deciduous summer forest flood plain forest gorge forest hard-leaved forest herbaceous-spruce forest small forest small-leaved forest</p>	<p>mixed forest moist tropical forest monsoon forest subantarctic forest primeval forest protection forest secondary forest selection forest mature forest subtropical forest tree-young forest dense forest moist semideciduous tropical forest</p>	<p>forest plantation forest stand reforest disforest forester old growth undergrowth layer growth poor growth open woodland remote woodland dead-tree standing tree tree code</p>
---	---	--

FAUNA



lion	ant	hawk
bear	bee	woodpecker
wolf	beetle	heron
bobcat	fly	stork
lynx	dragonfly	crane
weasel	butterfly	bullfinch
hare	grasshopper	siskin
fox	caterpillar	rook
deer	snail	lark
chipmunk	moth	falcon
cougar	ladybird	tit
elk	spider	sparrow
frog	wasp	kite
lizard	mosquito	swallow

FLORA



Alder



Ash



Beech



Sycamore



Field Maple



Oak



Birch



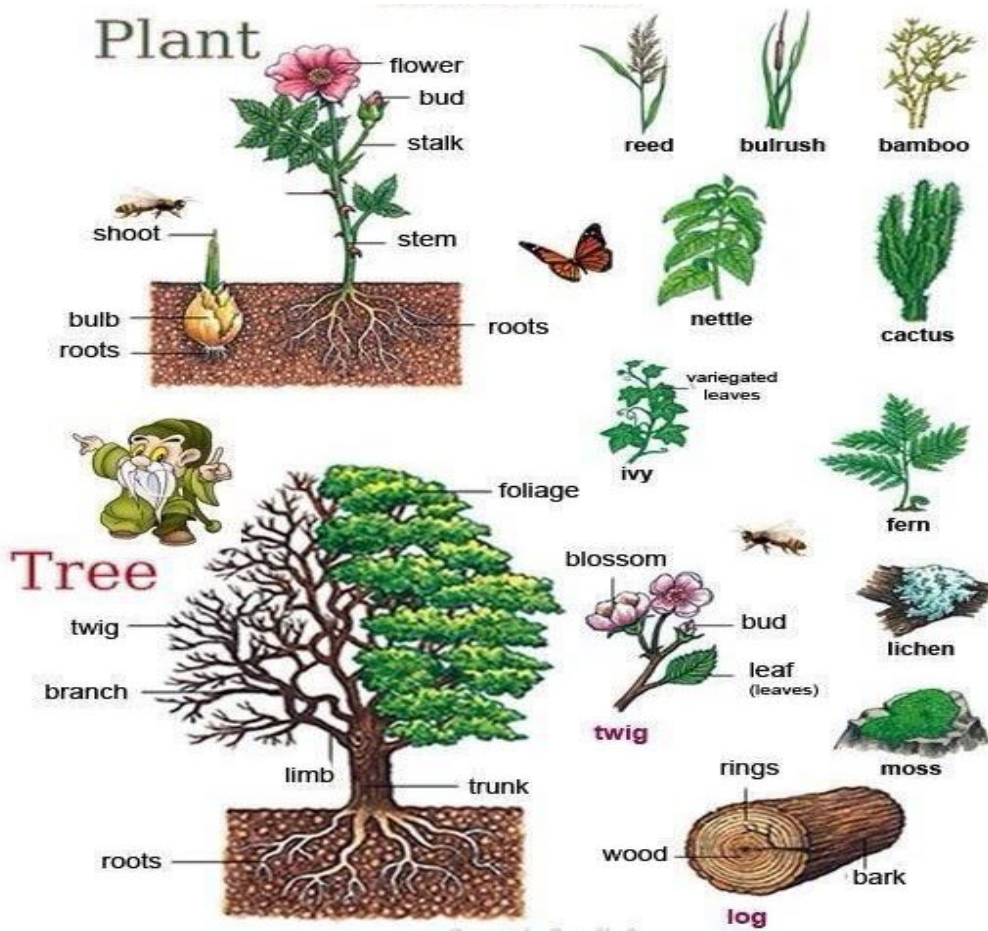
Horse Chestnut



Rowan

birch	eucalyptus	buttercup
beech	chestnut	violet
aspen	cypress	tulip
alder	rowan	camomile
poplar	willow	snowdrop
maple	acacia	poppy
ash	lilac	dandelion
oak	juniper	marigold
sycamore	yew	petunia
palm	dogwood	sunflower
hornbeam	magnolia	cactus
elm	viburnum	lupin
pine	walnut	coltsfoot
fir	sea buckthorn	origanum
spruce	raspberry	clover

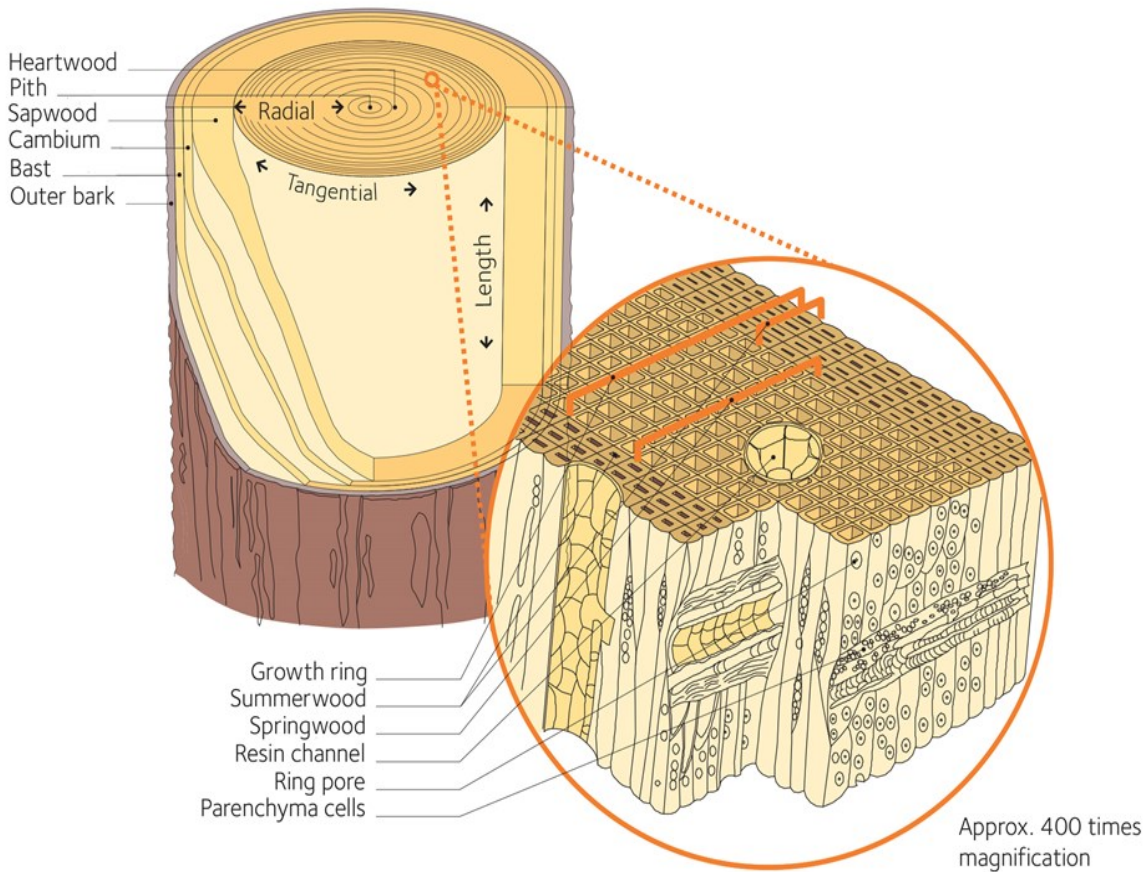
PARTS of PLANTS



<p>seed bulb tuber stamen carpel petal pistil sepal bud flower stalk thorn stem blossom</p>	<p>twig branch limb liana vine trunk leaf root bark fruit hollow shoot sprout sapling</p>	<p>crown foliage bole cone needle acorn catkin nut bract key (helicopter) pollen sap resin</p>
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WOOD

Composition of the tree trunk



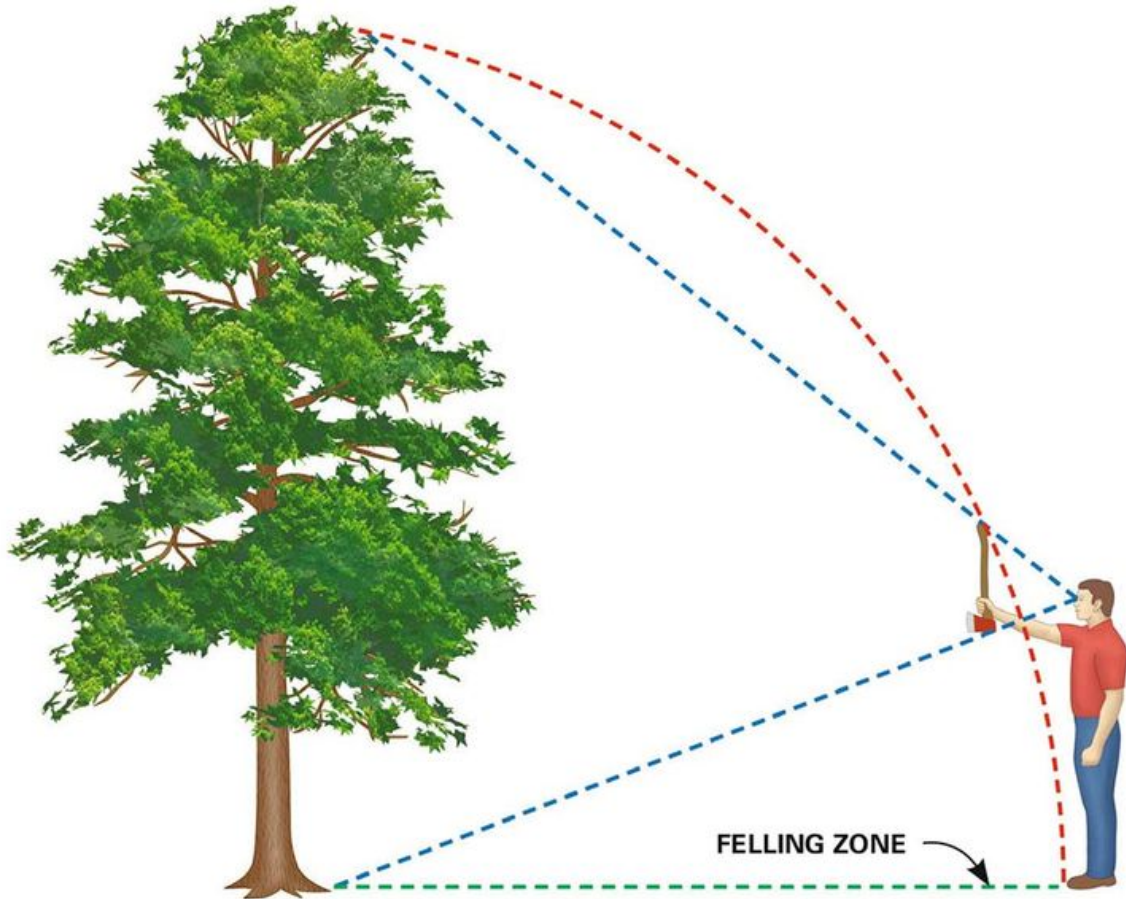
<p>outer bark inner bark sapwood heartwood riewood cambium pith rings cork bast resin oils lignin hemicelluloses</p>	<p>summerwood spring wood latewood early wood deadfallen wood figured wood wide-ringed wood wood properties mechanical strength density resistance against decay processability elasticity low thermal-conductivity</p>	<p>knottiness chemical paints insect damage deformations checking defects of trunk form defect of wood structure wounds undue laying in wood mechanical damages defects of treatment fungi paints and rots</p>
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MATERIALS based on WOOD



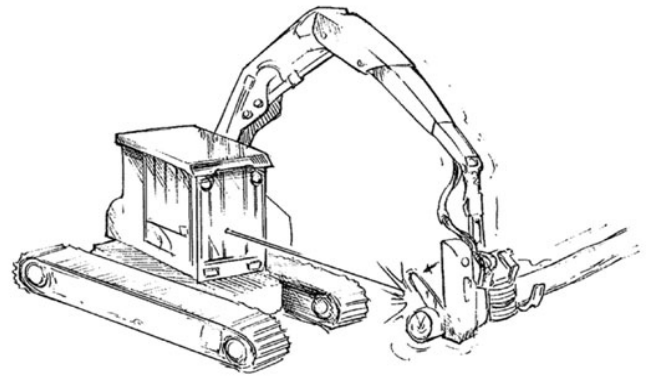
<p>timber round timber log saw-timber rift-sawn timber flat-sawn timber bar board sliced timber shelled timber shredded timber plaster clapboard bundling chipping roof slab</p>	<p>bundling chipping veneer planed veneer cane fiber board plywood slat binder glued wood particle board ground wood sawdust panel block squared beam</p>	<p>longitudinal sawing milling prefabricated articles joinery glued structures carving chopping planning shop peeling milling elements from the wastes of woodworking and sawmilling</p>
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HOW TO FELL TREES



stump bole log top bottom butt knot chump ricker polewood	fall path lean notch escape route at a...angle wedges safety goggles helmet kevlar claps safety gear	cutting down felling trimming pruning removing barking limbing bunching loading unloading
--	---	--

EQUIPMENT



<p>operators cab forklift blade chipping hammer ax (axe) handsaw hacksaw chain saw circular saw bowsaw</p>	<p>file plane wood chisel screwdriver wrench adjustable wrench combination pliers cutting pliers power drill rubber mallet</p>	<p>sandpaper duct tape staple gun tape measure ladder stepladder flashlight</p>
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СПИСОК РЕКОМЕНДУЕМОЙ ЛИТЕРАТУРЫ

1. Англо-русский и русско-английский лесотехнический словарь. – Екатеринбург. У-фактория, 2005.
2. Cambridge Idioms Dictionary. Cambridge University Press, 2006.
3. Douglas Biber Longman Grammar of Spoken and Written English. Longman, 2002.
4. Julie Ashworth Longman Picture Dictionary. Longman, 1993.
5. Macmillan Essential Dictionary British English. Macmillan, 2003.
6. Oxford Advanced Learner's Dictionary. Oxford University Press, 2015.
7. Oxford Collocations Dictionary. Oxford University Press, 2009.
8. Raymond Murphy English Grammar in Use. Cambridge University Press, 2012.

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