

Белорусский национальный технический университет

Иностранный язык (английский)

для специальности I степени получения высшего
образования 1-08 01 01-04
Деревообработка

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ПОЯСНИТЕЛЬНАЯ ЗАПИСКА

Данный электронный учебно-методического комплекс (ЭУМК) предназначен для реализации образовательной программы по учебной дисциплине «Иностранный язык (английский)» для специальности 1-08 01 01 Профессиональное обучение (по направлениям): направление специальности 1-08 01 01-04 «Профессиональное обучение (*деревообработка*)» на I ступени обучения.

Целью ЭУМК является формирование иноязычной коммуникативной компетенции будущего специалиста, позволяющей использовать иностранный язык как средство профессионального и межличностного общения в области строительства тепловых и атомных электростанций. В процессе достижения главной цели решаются следующие задачи:

познавательные (знакомство с основными аспектами технической специальности посредством иностранного языка);

развивающие (совершенствование коммуникативных умений, формирование потребности к самостоятельной познавательной деятельности, систематизация знаний и умений); *воспитательные* (осознание важности будущей специальности, формирование ценностного отношения к энергетическим ресурсам и необходимости их бережного использования, глубинное понимание принципов устойчивого развития); *практические*, (овладение иноязычным общением в единстве всех его компетенций, функций и форм, что осуществляется посредством взаимосвязанного обучения всем видам речевой деятельности в рамках определенного программой предметно-тематического содержания, а также овладения технологиями языкового самообразования).

Оформление и использование ЭУМК по учебной дисциплине осуществляется в соответствии с требованиями СПП СМК БНТУ 6.3–02–2014.

Особенностью структурирования и подачи учебного материала является сама структура комплекса, которая позволяет эффективно реализовывать процесс обучения при проведении практических занятий, а также ориентирует обучающегося на использование иностранного языка в качестве инструмента профессиональной деятельности: для перевода и реферирования профессионально-ориентированных и научных текстов, выступления с публичной речью, составления деловой документации.

Рекомендации по организации работы с ЭУМК. Данный электроннометодический комплекс предназначен как для аудиторных занятий, так и для самостоятельной работы студентов, обучающихся по специальности 1-08 01 01 Профессиональное обучение (по направлениям), направление специальности направление специальности 1-08 01 01-04 «Профессиональное обучение (*деревообработка*)».

ПЕРЕЧЕНЬ МАТЕРИАЛОВ

Структура ЭУМК включает следующие разделы: теоретический, практический, контроля знаний и вспомогательный.

Теоретический раздел ЭУМК включает в себя учебно-методическое пособие «Практическая грамматика английского языка» Колосовой Т.В., Крюковой Л.А., которое позволяет студентам технического вуза повторить грамматические явления языка и рассмотреть их на примерах из технической литературы, что повышает мотивацию изучения иностранного языка для специальных целей. Чёткая структура предлагаемого пособия помогает студентам систематизировать знания и, в случае необходимости, воспользоваться им на разных этапах обучения при самостоятельной работе.

Практический раздел ЭУМК включает в себя дидактический материал, представляющий собой разработки с дополнительными заданиями как для работы на практических занятиях при непосредственном контроле преподавателя, так и для самостоятельной работы студентов. Разнообразный характер упражнений позволяет варьировать лексическую и грамматическую наполняемость занятия в соответствии с практическими задачами, а также дает возможность выбора для соответствия определенному уровню владения иностранным языком. Предполагается, что данные наработки лягут в основу учебного пособия по дисциплине для специальности. Кроме того, дополнительно используются такие учебники и учебные пособия, как: «Английский язык для инженеров» (под общ. ред. Т.Ю. Поляковой), «Английский язык для студентов архитектурных и строительных специальностей» (Дж. Камминг), «Engineering Activities and the Environment» (Е.Е. Глуховская, Т.В. Колосова), «English Grammar in Use» (R. Murphy), «Technology 2» (Е.Н. Glendinning, А. Pohl); энциклопедии: «Encyclopædia Britannica», «The World Book Encyclopedia», «McGraw-Hill Encyclopedia of Science and Technology», «Children's Britannica», а также словари: электронные словари ColorDict, Merriam-Webster Dictionary, Oxford Dictionary of English и онлайн-словарь-справочник academic.ru.

В разделе **контроля знаний** ЭУМК представлены образцы лексико-грамматических тестов тематического и итогового контроля, а также предметно-тематическое содержание зачёта и экзамена.

Во **вспомогательный раздел** включены учебная программа БНТУ по дисциплине «Иностранный язык (английский)», включающая учебно-методическую карту дисциплины, и список рекомендуемой литературы.

ТЕОРЕТИЧЕСКИЙ РАЗДЕЛ

Теоретический раздел включает необходимый для изучения грамматический материал, который представлен в учебно-методическом пособии:

Колосова, Т. В. Практическая грамматика английского языка: учебнометодическое пособие для строительных специальностей БНТУ / Т.В. Колосова, Л.А. Крюкова. – Минск: БНТУ, 2005. – 107 с.
<http://rep.bntu.by/handle/data/30611>.

ПРАКТИЧЕСКИЙ РАЗДЕЛ

Практический раздел включает методические разработки и упражнения по разделам грамматики, практики устной и письменной речи и технического перевода.

РАБОЧИЕ МАТЕРИАЛЫ

Составители:

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UNIT I

FROM THE HISTORY OF WOOD

Start here

1. Read the following international words and mind the stressed syllables. Define the part of the speech.

industry ['ɪndəstri]

systematic [sɪstə'mætik]

modern ['mɒdən]

natural ['nætʃrəl]

practice ['præktɪs]

machine [mə'ʃi:n]

limit ['lɪmɪt]

agriculture [ˈægrɪkʌltʃər]

trend [trɛnd]

reflect [rɪ'flekt]

technology [tek'nɒlədʒɪ]

transportation [ˈtrænsɜː'teɪʃən]

2. Match the English and Russian equivalents.

1) the earliest recognition

2) human needs

3) unique nature of wood

4) refined observation

5) a prominent role

6) high quality applications

7) increasing demands for fuel

8) primary energy source

9) development of copper

10) manufacture of tools

а) человеческие потребности

б) выдающаяся роль

в) растущие потребности в топливе

г) первичный источник энергии

д) разработка меди

е) самое раннее признание

ж) производство инструментов

з) внимательное (пристальное) изучение

и) рациональное применение

к) уникальные свойства (характеристики) древесины

3. Match the terms with their definitions.

a) systematic

b) observation

c) engineering

d) woodworking

e) craftsmanship

f) agriculture

g) technology

h) economical

1) the work involved in designing and constructing engines and machinery, or structures such as roads and bridges

2) the action or process of carefully watching someone or something

- 3) refers to methods, systems, and devices which are the result of scientific knowledge being used for practical purpose
- 4) the art or work of making things of wood
- 5) something that does not require a lot of money to operate
- 6) the skill that someone uses when they make beautiful things with their hands
- 7) farming and the methods that are used to raise and look after crops and animals
- 8) something that is done in a way according to a fixed plan, in a thorough and efficient way

Active Vocabulary

4. Give Russian equivalents of the following words and phrases. Try to memorize them.

Nouns and noun phrases

recognition	cost	craftsmanship
array	availability	limitation
experience	scarcity	accessibility
observation	timber	decline
ability	refinement	possession
consideration	application	cart
quality	opportunity	clipper ship

Verbs and verbal phrases

to adapt	to fit
to evolve	to diminish
to contribute	

Adjectives

unique	current	sleek
essential	elaborate	available
prominent	raw	
valuable	primary	

Adverbs

gradually	primarily
recently	formerly

Reading Task: A

5. Answer the following question and read the text below to check your answer.

When was wood used for the first time?

Wood has been used and adapted by humans since the earliest recognition that they could make use of the materials they found around them. As they used it to meet a varying array of human



needs, in peace and in war, in farming and in industry, people gradually came to understand something of the unique nature of wood. Its properties were first understood by experience, more recently by systematic research and refined observation. Wood is still essential to human life, but has evolved over the ages from a simple, readily available natural material to a modern industrial and engineering material, with a unique

ability to contribute to human life both as a material for use and as a key element in the natural world of the forest.

The tree and its wood have played a prominent role in human life throughout history. Wood has been one of our most important building materials from *early Paleolithic times*, both for building and for the manufacture of tools, weapons, and furniture. From the earliest times, the use of wood involved consideration of quality, cost and availability, as well as the intended use of the product. Scarcity of valuable timber led to careful and economic use. Boards were carefully matched and fitted; blemishes were removed and filled. Practices begun many centuries ago are still carried over, with refinement, to the current use of wood for high quality applications. Early humans used wood because it was available and no elaborate tools were needed to work it. In the early days, however, the quality of the products depended more on the quality of the wood and the skill of the workman than on the tools available for woodworking. The development of copper tools by about *5000 BC* opened new opportunities for craftsmanship – opportunities that have been carried forward to this day.

From the tenth to the eighteenth centuries in Europe, wood was the material primarily used for buildings, tools, machines, mills, carts, buckets, shoes, furniture and barrels, to name just a few of the thousands of kinds of wood products of the time. The first printing press was made of wood and such presses continued to be made of wood for a hundred years. Most of the machines and inventions to make possible the machine age were formed of wood during that period. In Europe, wood use reached a peak during *the sixteenth century*, then began to diminish, not due to the limitations of wood, but due to limits on its accessibility as a result of increasing demands for fuel and materials and the expansion of agriculture into formerly forested lands. Wood use in North America continued to expand long after the decline of use in Europe and continues to increase today as part of the general world trend toward increasing wood use. Many of the uses now take different forms, reflecting new product demands and new technology.

Wood has historically played a key role in the transportation of people and their possessions, both as a fuel and as a raw material. Sledges made of wood were used in northern Europe as early as 7000 BC. As wheels were invented in 3-4000 BC, this led to the development of carts. *In the nineteenth century* in North America, railroads used wood for fuel, as well as for sleepers, bridges, trestles, and vehicles. Fuel use on railroads contributed to wood being the primary energy source in North America at the middle of the nineteenth century. Wood for water transport evolved from

the early barges and hollowed out logs of 4500 BC to the sleek sail-powered clipper ships of the mid nineteenth century. Steam for power and steel for ship construction made that uneconomical by the end of the century, however.

Comprehension Check

6. Decide whether the following statements are true or false according to the text.

- 1) From the earliest times the use of wood involved consideration of quantity, cost and durability.
- 2) Early humans used wood because no elaborate tools were needed to work it.
- 3) In the early days the quality of the products depended more on the tools available for woodworking than on the quality of the wood and the skill of the workman.
- 4) The development of copper tools by about 3000 BC opened new opportunities for craftsmanship.
- 5) From the tenth to the eighteenth centuries in Europe, wood was the material primarily used for thousands of kinds of products.
- 6) Wood use in Europe reached a peak during the seventeenth century.
- 7) Wood was the primary energy source in North America at the middle of the nineteenth century.
- 8) Steam for power and steel for ship construction made wood uneconomical.

7. Answer the following questions and give examples.

- 1) How did people use wood during Paleolithic times?
- 2) What properties of wood did they take into consideration?
- 3) What did the quality of the products depend on in the early days?
- 4) What opened new opportunities for craftsmanship by about 5000 BC?
- 5) How was wood used in Europe from the tenth to the eighteenth centuries?
- 6) When did wood use reach a peak in Europe?
- 7) Why did wood use begin to diminish in Europe?
- 8) How did people use wood in the nineteenth century in North America?
- 9) What made wood uneconomical by the end of the nineteenth century?

8. Match the synonyms.

- | | | | |
|----------------|-----------------|---------------|----------------|
| 1) scarcity | 6) cost | a) demand | f) modern |
| 2) need | 7) wood | b) timber | g) shortage |
| 3) unique | 8) century | c) production | h) to decrease |
| 4) manufacture | 9) primarily | d) age | i) price |
| 5) current | 10) to diminish | e) mainly | j) remarkable |

9. Fill in the correct prepositions, then choose any five items and make up sentences of your own.

- 1) used and adapted ... humans, 2) understood ... experience, 3) life ... history, 4) use ... the product, 4) quality ... the products depended ... the quality ... the wood, 5) opportunities ... craftsmanship, 6) ... the sixteenth century, 7) expansion ... agriculture, 8) a key role ... the transportation, 9) fuel use ... railroads, 10) ... the middle of the nineteenth century.

10. Form the nouns from the following verbs.

Verb	Noun
to adapt→	
to need→	
to contribute→	
to depend→	
to press→	
to possess→	
to construct→	

11. Fill in the table using the information from the Text. Find the additional information if needed.

Table. Wood products during historical periods.

Period	Europe	America
Paleolithic times		
Neolithic times (VI-IV c. BC)		
X-XVIII c.		
XIX c.		
XX c.		

It's important to know

A wood calendar indicates the events of the endless story of the uses of wood, which one takes for granted. But which are of great importance.

200,000 years ago Cro-Magnon man developed specialized tools and weapons, which were made of stone, wood, bone and horn.

7000 years ago man knew how to hollow out a tree and use it as a means of transport on water.

In **2000 BC** the first spoked wheels were made in Asia Minor.

Circa **1490 BC** the wooden spoon was known in Israel.

Circa **AD 200** there were already paper handkerchiefs in China.

In **AD 363** the first edition of the Peking newspaper was published.

Between **AD 650 and 683** Emperor Kao Tsung had paper money circulated for the first time.

In **AD 682** one of the first preserved wooden buildings in the world was built in Japan.

In **the 15th century AD** the universal genius Leonardo da Vinci designed diverse machines and apparatus with wooden cogwheels and running wheels.

In **1582** Peter Maurice erected a pump-station on the Thames that was driven by a large water-wheel that was used to supply London with water.

In **1663** the carpenter Friederich Staedtler made the first lead pencil in Nuremburg.

In **1834** Michael Thonet made special seating furniture. The wood was bent through steaming.

The **second half of the 19th century** began with the industrialization of the further development of the wooden clothes pegs. Up to 1900 over 150 models were patented in the United States.

In **1876** the Austrian engineer Siegfried Markus built an automobile with a combustion engine and its bodywork, like coaches, was made of wood.

In **1903** Igo Etrich, an Austrian pilot and aircraft builder, built the first flying-wing aircraft from plywood. The frame was covered in linen.

In **1999** the Millenium Tower was erected on the occasion of the National Garden Show in the Elbauenpark in Magdeburg. At 60 metres, it is the highest wooden building in Europe.

(From Binder, Franz The experience oa wood. Bio-energy in Fugen. Fugen: Stendruck, , 2005. – p. 5-9)

Follow Up

12. Read the Text of Unit I again and make notes under the following headings. Then use your notes to talk about Energy and Energy Engineering.

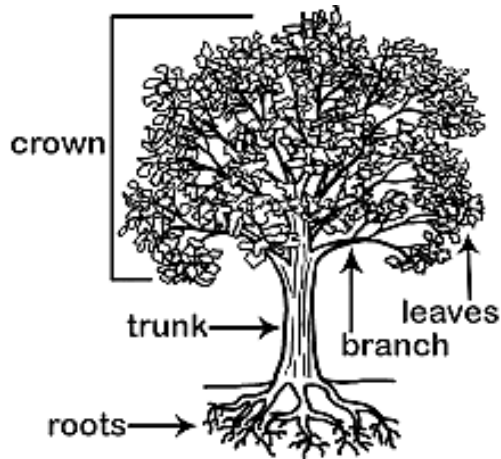
- 1) The spheres of human life where wood is used extensively during all historical periods.
- 2) Wood application during Paleolithic times.
- 3) Wood development in Europe and in North America
- 4) Peculiarities of wood production of XIX-XX c.
- 5) Historical events which led to wood use expansion.

UNIT II

WOOD: GENERAL INFORMATION

Start here

1. These are structural parts of a tree. Try to guess their Russian equivalents.



branch – _____
 crown – _____
 leaves – _____
 roots – _____
 trunk – _____

2. Read the following international words and mind the stressed syllables.

resource [ri'sɔ:s; ri'zɔ:s]

material [mə'tɪəriəl]

cellulose [ˈseljʊləʊz; -s]

cement [ˈsemənt]

metal [ˈmetəl]

plastic [ˈplæstɪk]

texture [ˈtekstʃə]

civilization

[ˌsɪvɪlaɪ'zeɪʃn]

utilization [ˌjʊtɪlaɪ'zeɪʃn]

electricity [ˌeləkt'rɪsɪtɪ]

microscope [ˈmaɪkrəskəʊp]

structure [ˈstrʌktʃə]

characteristic [kærəktə'rɪstɪk]

hygroscopic

[haɪgrəʊ'skɒpɪk]

acoustical [ə'ku:stɪkəl]

biological [baɪəʊ'lɒdʒɪkəl]

botanical [bə'tænɪkəl]

chemical [ˈkemɪkəl]

technical [ˈteknɪkəl]

technological [ˈteknələdʒɪkəl]

botanically [bə'tænɪkəlɪ]

chemically [ˈkemɪkəlɪ]

mechanically [mɪ'kænɪklɪ]

isolated [ˈaɪsəleɪtɪd]

modified [ˈmɒdɪfaɪd]

absorbing [əb'zɔ:bɪŋ; -'sɔ:-]

minimizing [ˈmɪnɪmaɪzɪŋ]

3. Match the English and Russian equivalents.

1) a comprehensive research

2) a subject of study

3) chemical composition

4) chemical derivative of

5) competition from

6) grain pattern

7) natural texture

8) raw material

9) scientific and technological investigation

a) водопроводящая ткань

b) всестороннее исследование

c) давать ощущение «тепла»

d) рисунок древесины

e) конкуренция со стороны

f) постепенно истощаются

g) научно-техническое исследование

h) предмет исследования

i) химический состав

- | | |
|-------------------------------------|------------------------------|
| 10) are gradually exhausted | j) природная текстура |
| 11) to maintain a place in | к) сырьё |
| 12) water-conducting tissue | л) удерживать место среди |
| 13) versatility | м) универсальность |
| 14) to impart a feeling of "warmth" | н) химическое производное от |

4. Match the terms with their definitions.

- | | | | |
|--------------|--------------|---------------|------------|
| a) adhesive | c) grain | e) microscope | g) pulp |
| b) cellulose | d) machinery | f) plant | h) texture |

- 1) an optical instrument that makes very small objects look large enough for you to see them clearly;
- 2) a substance that makes things stick together; glue;
- 3) machines in general;
- 4) a soft substance made from wood that is used for making paper;
- 5) the way that something feels when you touch it;
- 6) the stratification of the wood fibers in a piece of wood;
- 7) a substance that is the main part of cell walls of plants and that is the raw material of many products (as paper, cellophane);
- 8) trees, shrubs, herbs, grasses, ferns and mosses.

Active

5. Give Russian equivalents of the following words and phrases. Try to memorize them.

Nouns and noun phrases

- | | | |
|-----------|------------------|-----------------------|
| wood | wood-based panel | strength |
| trunk | pulp | fuel |
| root | paper | heat |
| stem | cellulose | warmth |
| lumber | property | development |
| furniture | serviceability | technological advance |
| plywood | weight | woodworking machinery |

Verbs and verbal phrases

- | | | |
|--------------------------|------------|-------------------|
| contribute (<i>to</i>) | expand | change dimensions |
| obtain (<i>from</i>) | strengthen | absorb moisture |
| retain | burn | gain moisture |
| undertake | decay | lose moisture |
| vary (<i>in</i>) | | |

Adjectives

- | | | |
|--------------|-------------|----------|
| contemporary | undesirable | improved |
|--------------|-------------|----------|

available (in)
variable (in)
desirable

valuable
renewable
general

detailed
insulating to heat
insulating to electricity

Adverbs

basically
mainly
mostly

gradually
steadily
relatively

mechanically
chemically
botanically

Prepositions and Prepositional Phrases

in spite of
in addition to

due to
in relation to

in contrast to

Reading Task

6. Answer the following question and read the text below to check your answer.

What do we need wood for?

1. _____
2. _____
3. _____

Text

WOOD: GENERAL INFORMATION

Botanically wood is the main strengthening and water-conducting tissue of stems and roots and is produced by many plants, including grasses. But wood valuable as a material derives mainly from the trunks of forest trees. As such, wood has been in service since people appeared on earth, and has contributed to their survival and to the development of civilization. In contemporary times, in spite of technological advance and competition from metals, plastics, cement, and other materials, wood maintains a place in most of its traditional roles, and its serviceability is expanding through new uses with the result that its consumption is steadily increasing. The list of present wood uses is long, and includes products with its natural texture retained, and others in which the wood is mechanically and chemically modified to the extent that its presence cannot be recognized. In addition to well-known products, such as lumber, furniture, and plywood, wood is the raw material for wood-based panels, for pulp and paper, and many other products, especially chemical derivatives of cellulose. Finally, wood is still an important fuel in much of the world.

The versatility of wood is basically due to its structure, chemical composition, and properties. Produced by many botanical species, it is available in various colours and grain patterns. In relation to its weight, wood has high strength. It is insulating to heat and electricity and has desirable acoustical properties. Further, wood imparts a feeling of "warmth" not possessed by competing materials, such as metals, and is relatively easily worked. Cellulose is mostly obtained from wood. Wood is found all over the world and is a renewable resource – in contrast to coal, ores, petroleum, which are gradually exhausted.

Wood has certain undesirable characteristics, however. It may burn and decay. It is hygroscopic (moisture absorbing), and while gaining or losing moisture it changes dimensions. As a biological product, wood varies in quality. Understanding the nature of this material is essential for proper utilization of the many existing species, improvement or minimizing of the inherent undesirable properties, and production of the best possible quality in the forest.

Wood has long been a subject of study. General observations can be found in the works of Aristotle and other ancient writers, but detailed studies of its structure began in the 17th century with invention of the microscope. In the 18th and 19th centuries knowledge was expanded and several isolated contributions were made to an understanding of its properties. Comprehensive research was undertaken only in the 20th century at the same time that technical advances – including developments in woodworking machinery and improved adhesives – were leading to further progress in wood utilization. Wood is now a subject of scientific and technological investigation in universities and research institutes in most countries.

Comprehension

7. Decide whether the following statements are true or false according to the text.

- 1) Wood is the main strengthening and water-conducting tissue of stems and roots.
- 2) Wood as a material derives mainly from the trunks of most plants.
- 3) In contemporary times, wood consumption is steadily decreasing.
- 4) Wood is the raw material for chemical derivatives of cellulose.
- 5) Coal, ores, petroleum are a renewable resource.
- 6) Wood burns and decays.
- 7) Wood is a poor heat and electricity insulator.
- 8) Wood absorbs moisture.
- 9) Aristotle used a microscope to study the structure of wood.
- 10) Wood is a subject of scientific and technological investigation in research institutes in few countries.

8. Complete the following sentences according to the text.

- 1) As a material wood has been in service since
- 2) The list of present wood uses includes
- 3) The versatility of wood is basically due to
- 4) Wood is available in various
- 5) Wood imparts a feeling of
- 6) Understanding the nature of this material is essential for
- 7) Detailed studies of its structure began in
- 8) In the 18th and 19th centuries
- 9) Comprehensive research was undertaken only in
- 10) Wood is now a subject of

9. Answer the following questions and give examples.

- 1) What is wood botanically?
- 2) What is wood as a material?
- 3) What contemporary wood uses do you know?
- 4) What are the reasons for versatility of wood?
- 5) What properties of wood do you know?
- 6) What undesirable characteristics does wood have?
- 7) Why is it essential to understand the nature of wood?
- 8) When did people start to investigate wood?
- 9) How did the microscope help study wood?
- 10) When was comprehensive research of wood undertaken?

10. What parts of the text can you define? Do they correspond to the paragraphs? Name each part.

- | | |
|----------|-----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | ... _____ |

11. Write a summary of Text “Wood: General Information”¹.



12. Match the synonyms.

- | | | | |
|-----------------|-----------------|--------------------------|--------------------|
| 1) adhesive | 6) obtain | <i>a) basically</i> | <i>f) progress</i> |
| 2) advance | 7) property | <i>b) characteristic</i> | <i>g) save</i> |
| 3) contemporary | 8) research | <i>c) get</i> | <i>h) study</i> |
| 4) heat | 9) retain | <i>d) glue</i> | <i>i) use</i> |
| 5) mostly | 10) utilization | <i>e) modern</i> | <i>j) warmth</i> |

13. Match the antonyms.

- | | | | |
|-----------------|----------------|----------------------|-----------------------|
| 1) contemporary | 6) insulating | <i>a) advanced</i> | <i>f) easily</i> |
| 2) desirable | 7) natural | <i>b) ancient</i> | <i>g) exhausted</i> |
| 3) to gain | 8) renewable | <i>c) cheap</i> | <i>h) to lose</i> |
| 4) general | 9) traditional | <i>d) conducting</i> | <i>i) modified</i> |
| 5) hard | 10) valuable | <i>e) detailed</i> | <i>j) undesirable</i> |

¹ **Summary** – a short statement (in 150 words) that gives only the main points of something, not the details.[1]

14. Fill in the correct prepositions, then choose any five items and make up sentences of your own.

1) to derive ...; 2) to be ... service; 3) to contribute ... the survival; 4) to expand ... new uses; 5) ... the result; 6) products ... the natural texture retained; 7) to modify ... the extent that; 8) chemical derivatives ... cellulose; 9) available ... various colours; 10) insulating ... heat and electricity; 11) to impart a feeling ... "warmth" not possessed ... competing materials; 12) to vary ... quality; 13) contributions ... an understanding; 14) developments ... woodworking machinery; 15) to lead ... further progress ... wood utilization.

15. Form the adjectives from the following nouns using suffix *-al*.

acoustics →...

nature →...

botany →...

structure →...

chemistry →...

technique →...

electricity →...

technology →...

mechanics →...

tradition →...

16. Translate the following text into English using the vocabulary of the text.

Древесина служит людям более трёх миллионов лет. Роль дерева в развитии цивилизации огромна. С древних времён одним из главных направлений использования древесины было строительство. Деревянными были не только дома, но и мебель, посуда, игрушки. Из дерева делали скульптуры, иконы, музыкальные инструменты. Первое колесо было деревянным, поэтому дерево сыграло главную роль также в возникновении транспорта.



17. Discuss with your groupmates or in pairs:

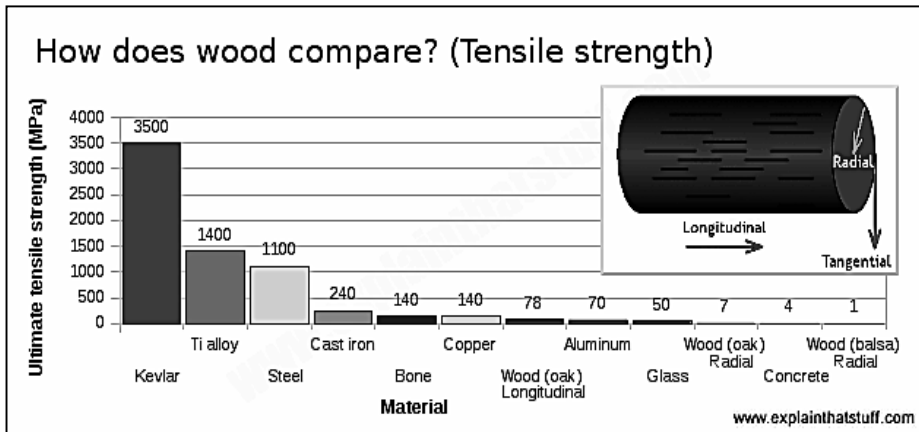
- 1) how wood contributed to people's survival and development of civilization;
- 2) how people's civilization influenced plants.

UNIT III

WOOD PROPERTIES

Start here

1. Analyze the diagram. What can you tell about properties of wood?



2. Read the following international words and mind the stressed syllables. Define the part of the speech.

absorb [əb'sɔ:b]

anisotropic [ˌænaɪsə(ʊ)'trɒpɪk]

article ['ɑ:tɪkl]

atmosphere ['ætməsfiə]

automatically [ˌɔ:tə'mætɪklɪ]

ceramic[sɪ'ræmɪk]

chemical (n) ['kemɪkl]

chlorine ['klɔ:ri:n]

climate ['klaɪmɪt]

harmony ['hɑ:məni]

horizontal [ˌhɒrɪ'zɒntl]

lignin ['lɪgnɪn]

natural material ['nætʃrəl mə'tɪəriəl]

object ['ɒbdʒəkt]

organism ['ɔ:gənɪzəm]

piezoelectric [paɪ,i:zəʊɪ'lektrɪk]

planet ['plænɪt]

plastic ['plæstɪk]

isotropic [ˌaɪsə(ʊ)'trɒpɪk]

potential (n) [pə'tenʃl]

termite ['tɜ:maɪt]

transport (v) [træns'pɔ:t]

3. Match the terms with their definitions.

a) isotropy

d) thermal insulation

g) compressive strength

b) rotting

e) sound insulation

h) tensile strength

c) anisotropy

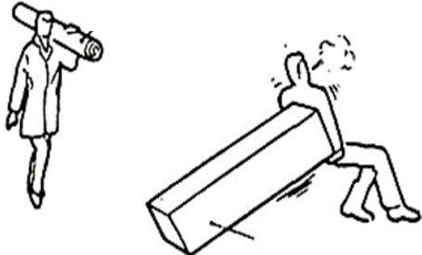


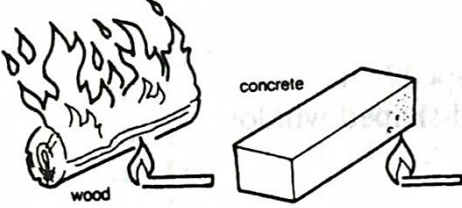
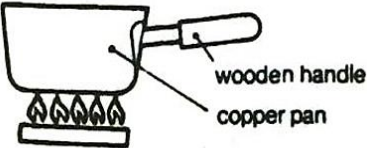
f) ignition temperature

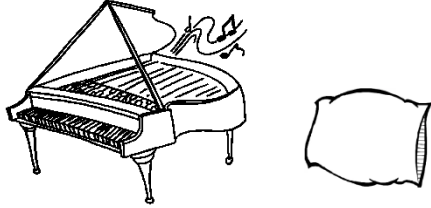
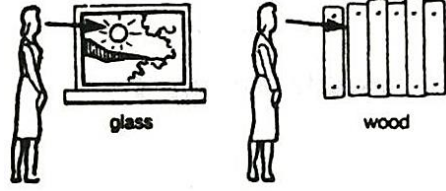
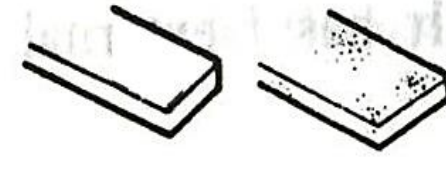
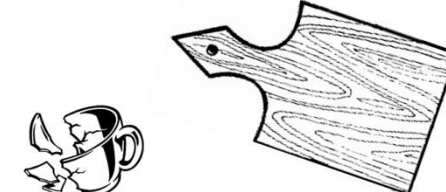
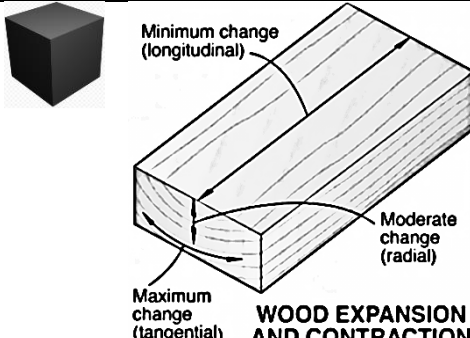
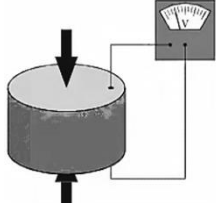
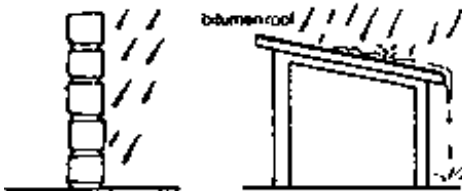
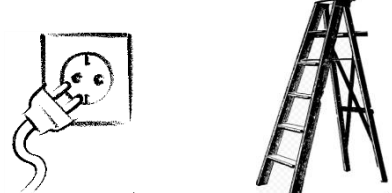
i) piezoelectricity


1. ability to exhibit properties with different values when they are measured in different directions;

2. ability to exhibit properties with the same values when they are measured along axes in directions;
3. electricity or electric polarity due to pressure;
4. sound reduction;
5. the greatest longitudinal stress a substance can bear while being pulled apart without tearing apart;
6. the greatest stress a substance can bear while being pushed together without failing;
7. the point at which a substance catches fire;
8. the reduction of the transfer of thermal energy between objects of different temperature;
9. undergoing decomposition from the action of bacteria or fungi.

4. What properties of wood do you know? Look at these examples of its properties.

	<p>A man can easily lift a wooden pole but not a steel column.</p> <p>Wood is <i>light</i> but steel is <i>heavy</i>.</p>
	<p>A man can bend a wooden twig but not a steel rod.</p> <p>Wood is <i>flexible</i> but steel is <i>stiff</i>.</p>
	<p>A man can easily bend a plastic ruler but not a wooden ruler.</p> <p>Wood is <i>stiffer than</i> plastic.</p>
	<p>Wood can burn but concrete cannot burn.</p> <p>Wood is <i>combustible</i> but concrete is <i>non-combustible</i>.</p>
	<p>Heat can be easily transferred through copper but not through wood.</p> <p>Copper is a <i>good conductor of heat</i> but wood is a <i>poor conductor of heat</i>.</p> <p>Copper is a <i>poor heat insulator</i> but wood is a <i>good heat insulator</i>.</p>

	<p>A wooden grand piano can easily amplify sounds but a foam plastic pillow cannot.</p> <p>Wood is a <i>sound amplifier</i> but foam plastic is a <i>sound absorber</i>.</p>
	<p>You can see through glass but not through wood.</p> <p>Glass is <i>transparent</i> but wood is <i>opaque</i>.</p>
	<p>Protected wood lasts long but unprotected wood rots.</p> <p>Protected wood is <i>durable</i> but unprotected wood is <i>non-durable</i>.</p>
	<p>A man can easily break a ceramic cup but not a wooden cutting board.</p> <p>Ceramic is <i>fragile</i> but wood is <i>strong</i>.</p>
 <p>WOOD EXPANSION AND CONTRACTION</p>	<p>Wood is stronger along the grain than across it. Granite is strong in all directions.</p> <p>Wood is <i>anisotropic</i> but granite is <i>isotropic</i>.</p>
	<p>When compressed, wood can become electrically charged but concrete cannot.</p> <p>Wood is <i>piezoelectric</i> but concrete is <i>non-piezoelectric</i>.</p>
	<p>A wooden wall can absorb water but a bitumen roof cannot.</p> <p>Wood is <i>hygroscopic</i> but bitumen is <i>waterproof</i>.</p>
	<p>Aluminum wire can conduct electricity but wooden ladder cannot.</p> <p>Aluminum is an <i>electrical conductor</i> but wood is an <i>electrical insulator</i>.</p>

	<p>Wood can be used without being completely used up or destroyed but oil cannot.</p> <p>Wood is a <i>sustainable resource</i> but oil is an <i>unsustainable resource</i>.</p>
---	---

5. Match the English and Russian equivalents.

- | | |
|---|--|
| 1) to decay through rotting | a) в теории |
| 2) in theory | b) разбухать в условиях влажности |
| 3) in practice | c) разлагаться гниением |
| 4) on the positive side | d) разрушать |
| 5) to provide habitats for many species | e) отгородиться от соседей |
| 6) to increase biodiversity | f) увеличивать биоразнообразие |
| 7) to replace like with like | g) заменять подобное подобным |
| 8) convert wood to dust | h) делать обобщения о чём-л. |
| 9) to soak up several times one's own weight of water | i) особенно цениться за что-л. |
| 10) to swell up in damp conditions | j) впитывать воды в несколько раз больше собственного веса |
| 11) to nibble away | к) на практике |
| 12) to come in handy in sth. | l) оказываться полезным в чём-л. |
| 13) to shut out one's neighbors | м) обеспечивать место проживания многим видам |
| 14) to be particularly prized for sth. | н) с другой стороны |
| 15) to make generalizations about sth. | о) превращать дерево в труху |

Active

6. Give Russian equivalents of the following words and phrases. Try to memorize them.

Nouns and noun phrases

strength	amplifier	ignition temperature
compressive strength	conductor	forestry
tensile strength	insulator	logging
resistance (to)	insulation	annual ring-and-grain structure
rotting	heat energy	uniform inner structure

Verbs and verbal phrases

to affect	to compress	to rotten
to amplify sounds	to decay	to transport
to behave	to preserve	to transmit
to bend		

Adjectives

anisotropic	hygroscopic	<u>piezoelectric</u>
combustible	isotropic	poor
dense	light	stiff
durable	non-combustible	sustainable
<u>environmentally friendly</u>	non-durable	strong
environmentally damaging	non- sustainable	transparent
flexible	opaque	waterproof

Adverbs and adverbial phrases

physically	along the length
immensely	parallel to the grain

Reading Task**7. Answer the following question and read the text below to check your answer.**

What properties of wood do you know?

Text**Wood properties**

The inner structure of a tree makes wood what it is – what it looks like, how it behaves, and what we can use it for. There are actually hundreds of different species of trees, so making generalizations about something called "wood" isn't always that helpful. Nevertheless, different types of wood have more in common with one another than with, for example, metals, ceramics, and plastics.

Strength

Physically, wood is strong and stiff but, compared to a material like steel, it's also light and flexible. It has another interesting property too. Metals, plastics, and ceramics tend to have a fairly uniform inner structure. That is why they behave exactly the same way in all directions. Wood is different due to its annual ring-and-grain structure. We say wood is anisotropic, which means a lump of wood has different properties in different directions.

This property of wood matters when you're using it in construction. Traditional wooden buildings are supported by huge vertical poles that transmit forces down into the ground along their length, parallel to the grain. That's a good way to use wood because it generally has high compressive strength (resistance to squeezing) when you load it in the same direction as the grain. Wooden poles are much weaker placed horizontally; they need plenty of support to stop them bending. That's because they have lower tensile strength (resistance to bending or pulling forces across the grain). Not all woods are the same, however. Oak has much higher tensile strength than many other woods, which is why it was traditionally used to make the heavy, horizontal beams in old buildings. Other factors such as how well dried a piece of wood is and how dense it is also affect its strength.

Durability

One of the best things about wood is how long it lasts. Archeologists unearth the buried remains of ancient wooden articles that are hundreds or even thousands of years old. If a wooden object is properly preserved, it will easily outlast the person who made it. But just like that person, a wooden object was once a living thing – and it's a natural material. Like other natural materials, it's subject to the natural forces of decay through a process known as rotting, in which organisms such as fungi and insects such as termites and beetles gradually nibble away the cellulose and lignin and convert wood to dust.

Wood and water

Wood has many other interesting characteristics. It's hygroscopic, which means that, just like a sponge, it absorbs water and swells up in damp conditions, giving out the water again when the air dries and the temperature rises. If your home has wooden windows, you'll probably notice that they open much more easily in summer than in winter, when the damp outdoor conditions make them swell into the frames (not necessarily such a bad thing, since it helps to keep out the cold). Why does wood absorb water? Remember that the trunk of a tree is designed to carry water from the roots to the leaves: it's a water highway, so to say. Some kinds of wood can soak up several times their own weight of water, which is absorbed inside the wood by the very same structures that transported water from the roots of the tree to the leaves when the tree was a living, growing plant.

Wood and heat

What other properties does wood have? It's a relatively good heat insulator (which comes in handy in building construction). But dry wood burns quite easily and produces a great deal of heat energy if you heat it up beyond its ignition temperature (anywhere from around 200–400°C, 400–750°F).

Wood and acoustics

Wood can absorb sound very effectively, and it's another useful property in buildings, where people value sound insulation, shutting out their neighbors. Besides, wooden objects can also be designed to transmit and amplify sounds – that's how musical instruments work.

Wood and electricity

Wood is generally a poor conductor of electricity but, interestingly, it's piezoelectric (an electric charge will build up on wood if you squeeze it the right way).

Wood and environment

Wood was one of the first natural materials people learned to use, and it's never lost its popularity. These days, it's particularly prized for being a natural and environmentally friendly product. Forestry is a rare example of something that has the potential to be completely sustainable. In theory, if you plant a new tree for every old tree you cut down, you can go on using wood forever without damaging the planet. But in practice, you need to replace like with like and forestry is not automatically sustainable. A brand new tree has much less ecological value than a mature tree that's hundreds of years old. That's why planting a thousand young trees may not replace felling a few ancient trees. Logging can damage the environment immensely, whether it involves clearcutting or selective felling mature trees. Some of the processes and chemicals used in forestry and woodworking are also environmentally damaging. For example, chlorine, used to bleach wood fibers to make paper, can cause water pollution in rivers.

But on the positive side, growing trees remove carbon dioxide from the atmosphere and planting more of them is one way to reduce the effects of climate change. Trees also provide

important habitats for many other species and help to increase biodiversity (the wide range of living organisms on Earth). Practiced the right way, forestry is a good example of how people can live in perfect harmony with the planet.

(from <http://www.explainthatstuff.com/wood.html>)

Comprehension

8. Decide whether the following statements are true or false according to the text.

- 1) Chlorine is used to bleach wood fibers to make paper.
- 2) Durability is one of the best things about wood.
- 3) Selective felling mature trees cannot damage the environment immensely.
- 4) The outer structure of a tree makes wood what it is.
- 5) Traditionally musical instruments are made of wood because it absorbs sounds.
- 6) Wood burns at 200–400°F.
- 7) Wood has a fairly uniform inner structure.
- 8) Wood has been used since the early days of humankind.
- 9) Wood is a good sound conductor.
- 10) Wood resembles sponges.

9. Complete the following sentences according to the text.

- 1) Chlorine can cause ...
- 2) Different types of wood have more in common with one another than with ...
- 3) Dry wood produces a great deal of heat energy if ...
- 4) Forestry is not automatically sustainable, because you ...
- 5) Growing trees remove ...
- 6) Physically, wood is strong and stiff but, compared to ... , it's also light and flexible.
- 7) Rotting is a process in which ...
- 8) Traditional wooden buildings are supported by huge vertical poles, because wood has high compressive strength when ...
- 9) Wood is anisotropic, which means ...
- 10) Wooden poles are much weaker placed horizontally, because they have ...

10. Answer the following questions and give examples.

- 1) What is a tensile strength?
- 2) What is a compressive strength?
- 3) What factors may affect the strength of wood?
- 4) What does 'anisotropic' mean?
- 5) How high is ignition temperature of wood?
- 6) Why can wood absorb water?
- 7) How does wood decay?

- 8) Why is wood piezoelectric?
- 9) Why are acoustic speakers made of wood?
- 10) Why is wood often called an environmentally friendly product?
- 11) Why cannot wood be called absolutely sustainable?
- 12) How does growing trees affect environment?

11. Find key words and phrases which best express the general meaning of each paragraph.

12. Write a summary of Text “Wood properties”.

Language

13. Combine the words from the column on the left with the suitable nouns from the column on the right. Translate them into Russian.

- | | |
|----------------|----------------------|
| 1) heat | a) <i>insulator</i> |
| 2) sound | b) <i>conductor</i> |
| 3) electricity | c) <i>amplifier</i> |
| 4) thermal | d) <i>conduction</i> |
| | e) <i>insulation</i> |

14. Make sentences about properties of materials from this table.

Wood Steel Stone Brick Glass wool	has the property of	good sound insulation. good thermal insulation. high compressive strength. high tensile strength.
---	------------------------	---

This means	it can resist high compressive forces. it can resist high tensile forces. it does not transmit heat easily. it does not transmit sound easily.
------------	---

15. Match the synonyms.

- | | | | |
|-----------------|-----------------|-----------------------|------------------------------------|
| 1) along | 6) to decay | a) <i>to transfer</i> | f) <i>to influence</i> |
| 2) article | 7) to squeeze | b) <i>different</i> | g) <i>to pull</i> |
| 3) damp | 8) to transmit | c) <i>to carry</i> | h) <i>parallel (to)</i> |
| 4) eco-friendly | 9) to transport | d) <i>wet</i> | i) <i>object</i> |
| 5) to affect | 10) uniform | e) <i>to rotten</i> | j) <i>environmentally friendly</i> |

16. Match the antonyms.

1) amplifier	8) insulator	a) weak	h) transparent
2) anisotropic	9) light	b) heavy	i) non-durable
3) combustible	10) opaque	c) isotropic	j) non-combustible
4) durable	11) poor	d) conductor	k) non-sustainable
5) hygroscopic	12) strong	e) absorber	l) waterproof
6) flexible	13) sustainable	f) stiff	m) environmentally damaging
7) eco-friendly		g) good	

17. Fill in the correct prepositions, translate the phrases, then choose any three items and make up sentences of your own.

1) have more ... common ... each other; 2) compared ... steel; 3) have different properties ... different directions; 4) to use wood ... construction; 5) be supported ... vertical poles; 6) to transmit forces down ... the ground ... one's length; 7) parallel ... the grain; 8) resistance ... squeezing; 9) ... the same direction ... grain; 10) to be subject ... the natural forces; 11) to decay ... rotting; 12) to convert wood ... dust; 13) to swell up ... damp conditions; 14) to soak up several times ... their own weight ... water; 15) to heat it up ... one's ignition temperature; 16) to squeeze smth. ... the right way; 17) to be prized ... smth.; 18) to plant a thousand ... young trees; 19) ... theory; 20) ... practice; 21) ... the positive side; 22) to remove carbon dioxide ... the atmosphere; 23) to provide habitats ... many species; 24) to live ... harmony ... the planet.

18. Complete the table with the missed forms of adjectives, then choose any three adjectives and make up sentences of your own to compare wood with other materials. Use the models:

Copper is hard compared with wood.

Copper is harder than wood.

Wood is more combustible than granite.

Copper is the best electricity conductor I know/of all.

Materials to compare: aluminum, bitumen, cast-iron, coal, concrete, copper, cotton wool, glass, granite, iron, marble, mineral wool, oil, paper, plastic, plywood, rubber, steel, quartz, wood.

<i>Positive degree</i>	<i>Comparative degree</i>	<i>Superlative degree</i>
poor		
light		
soft		
stiff		
strong		
dense		
opaque		
sustainable		
flexible		
hygroscopic		

waterproof		
non-durable		
eco-friendly		
environmentally damaging		
good		

19. Translate the following text into English using the vocabulary of the text.

Плотность древесины – это отношение (ratio) массы древесины к ее объему. Плотность древесины зависит от ее влажности. Все физико-механические свойства древесины определяются при влажности 12%.

Прочностью называется способность древесины сопротивляться разрушению под действием механических нагрузок. Она зависит от направления действующей нагрузки, породы дерева, плотности, влажности, и других факторов. Поскольку древесина имеет анизотропное строение, ее прочность при сжатии поперек волокон примерно в 8 раз ниже, чем вдоль волокно.

Между плотностью и прочностью существует тесная связь. Более тяжелая древесина, как правило, является более прочной.

Твердостью называется способность древесины сопротивляться внедрению (penetration) в нее более твердых тел. На степень твердости оказывает влияние влажность древесины. Твердые породы древесины более износостойки по сравнению с мягкими.



20. Discuss with your groupmates or in pairs examples how properties of wood are used in everyday life.

UNIT IV

WOOD AS ENERGY SOURCE

Start here

1. Read the following international words and underline the stressed syllables. Define the part of the speech.

boiler ['bɔɪlə]	factor ['fæktər]	material [mə'tɪəriəl]
occasionally [ə'keɪzənəli]	energy ['enədʒi]	industrial [ɪn'dʌstriəl]
engine ['endʒɪn]	civilization [sɪvɪlaɪ'zeɪʃən]	revolution [rɛvə'lʊ:ʃən]
<u>turbine</u> ['tɜ:bain]	construct [kən'strʌkt]	distance ['dɪstns]
generate ['dʒenəreɪt]	permanent ['pɜ:mənənt]	effective [ɪ'fektɪv]
popularity [pɒpjʊ'lærɪti]	structure ['strʌktʃər]	compact (adj) [kəm'pækt]; [kɒmpækt]

2. Match the English and Russian equivalents.

1) flammability	a) домашний очаг
2) boiling point	b) бетонная промышленность
3) byproduct	с) сжиженный природный газ
4) <u>hearth</u>	d) точка кипения
5) rural area	e) побочный продукт
6) conveyer belt	f) воспламеняемость
7) concrete industry	g) сельская местность
8) liquefied natural gas	h) транспортерная лента
9) coal reserves	i) теплотворная способность
10) heating value	j) запасы угля

3. Match the terms with their definitions.

a) petroleum	d) natural gas	g) charcoal
b) the draft	e) boiler	h) sustainable
c) barrel	f) mining	i) stove

- 1) the amount of air allowed to reach the fire;
- 2) rock oil or oil from the Earth;
- 3) a household device providing a hot-water supply or serving a central heating system;
- 4) an apparatus for cooking and heating that operates by burning fuel or using electricity;
- 5) a black amorphous form of carbon made by heating wood or other organic matter in the absence of air: used as a fuel, in smelting metal ores, in explosives, and as an absorbent;
- 6) capable of being maintained at a steady level without exhausting natural resources or causing severe ecological damage;
- 7) the act, process, or industry of extracting coal, ores, etc., from the Earth;

- 8) a unit of capacity used in the oil and other industries, normally equal to 42 US gallons or 35 Imperial gallons;
- 9) flammable gas, consisting largely of methane and other hydrocarbons, occurring naturally underground (often in association with petroleum) and used as fuel.

Active

4. Give Russian equivalents of the following words and phrases. Try to memorize them.

Nouns and noun phrases

charcoal	campfire	exhaustion
sawdust	stove	masonry heater
quantity	bonfire	thermal mass
application	convection	draft
furnace	hearth	ash
soapstone	heat exchanger	causticity
combustion	purpose	tile

Verbs and verbal phrases

to disintegrate	to resemble	to escape
-----------------	-------------	-----------

Adjectives

concurrent	portable	refractory
incomplete	freestanding	

Reading Task:

5. Answer the following questions and read the text below to check your answers.

- 1) What do you think was the very first source of energy for people?
- 2) How long have people been using wood as a fuel?

Text

Wood as fuel

Wood fuel is wood used as fuel. The burning of wood is currently the largest use of energy derived from a solid fuel biomass. Wood fuel can be used for cooking and heating, and occasionally for fueling steam engines and steam turbines that generate electricity. Wood fuel may be available as firewood (e.g. logs, blocks), charcoal, chips, sheets, and sawdust. The **particular** form used depends upon factors such as source, quantity, quality and application. Wood may be sent into a furnace to be burned, stove, fireplace, or in a campfire, or used for a bonfire. Wood is the most easily available form of fuel, and it is a renewable source of energy.

The use of wood as a fuel source for heating is as old as civilization itself.

Early **examples** include the use of wood heat in tents. Fires were constructed on the ground, and a smoke hole in the top of the tent allowed the smoke to escape by convection.

In permanent structures and in caves, hearths were constructed —surfaces of stone or another noncombustible material upon which a fire could be built. Smoke escaped through a smoke hole in the roof.

The Greeks, Romans, Celts, Britons, and Gauls all had access to forests suitable for using as fuel.

Total demand for fuel increased considerably with the industrial revolution but most of this increased demand was met by the new fuel source, coal, which was more compact and more suited to the larger scale of the new industries.

The development of the chimney and the fireplace allowed for more effective exhaustion of the smoke. Masonry heaters or stoves went a step further by capturing much of the heat of the fire and exhaust in a large thermal mass, becoming much more efficient than a fireplace alone.

The metal stove was a technological development concurrent with the industrial revolution. Stoves were manufactured or constructed pieces of equipment. Stoves have been made of a variety of materials: cast iron, soapstone, tile, and steel.

The Franklin stove was developed in the United States by Benjamin Franklin. More a manufactured fireplace than a stove, it had an open front and a heat exchanger in the back that was **designed** to draw air from the cellar and heat it before releasing it out the sides. So-called "Franklin" stoves today are made in a great variety of styles, though none resembles the original design.



The 1800s became the high point of the cast iron stove. Each local foundry would make their own design, and stoves were built for myriads of purposes - parlour stoves, camp stoves, railroad stoves, portable stoves, cooking stoves and so on. Wood or coal could be burnt in the stoves and thus they were popular for over one hundred years. The

maintenance of stoves and the need to split wood meant that oil or electric heat changed stoves design over time.

In the 19th century the airtight stove, originally made of steel, became common. They allowed greater control of combustion, being more tightly fitted than other stoves of the day.

Use of wood heat declined in popularity with the growing availability of other, less labor-intensive fuels. Wood heat was gradually replaced by coal and later by fuel oil, natural gas and propane heating except in rural areas with available forests.

Today in rural, forested parts of the U.S., freestanding boilers are increasingly common. They are installed outdoors, some distance from the house, and connected to a heat exchanger in the house using underground piping. The mess of wood, bark, smoke, and ashes is kept outside and the risk of fire is reduced. The boilers are large enough to hold a fire all night, and can burn larger pieces of wood, so that less cutting and splitting is required. However, outdoor wood boilers emit more wood smoke and associated pollutants than other wood-burning appliances. This is due to design **characteristics**, which lead to incomplete



combustion. An alternative that is increasing in popularity are wood gasification boilers, which burn wood at very high efficiencies (85-91%) and can be placed indoors or in an outbuilding.

As a sustainable energy source, wood fuel is still used today for cooking in many places, either in a stove or an open fire, in many industrial processes, including smoking meat and making maple syrup, it also remains viable for generating electricity in areas with easy access to forest products and by-products.

Comprehension

6. Decide whether the following statements are true or false according to the text.

- 1) Wood fuel can be used for cooking and heating, but can not be used for fueling steam engines.
- 2) Early examples include the use of wood heat near tents.
- 3) Total demand for fuel increased considerably with the industrial revolution.
- 4) This increased demand was met by the new fuel source, Oil.
- 5) Stoves have been made of metal materials only.
- 6) "Franklin" stoves aren't made today.
- 7) Wood gasification boilers can be placed indoors or in an outbuilding.
- 8) Wood fuel remains viable in areas with easy access to forest.

7. Put the following sentences in the correct order according to the text.

- 1) ___ The Greeks, Romans, Celts, Britons, and Gauls all had access to forests suitable for using as fuel.
- 2) ___ Today in rural, forested parts of the U.S., freestanding boilers are increasingly common.
- 3) ___ So-called "Franklin" stoves today are made in a great variety of styles.
- 4) ___ Masonry heaters or stoves went a step further becoming much more efficient than a fireplace alone.
- 5) ___ The 1800s became the high point of the cast iron stove.
- 6) ___ The metal stove was a technological development concurrent with the industrial revolution.
- 7) ___ In the 19th century the airtight stove, originally made of steel, became common.
- 8) ___ Most of total demand for fuel was met by the new fuel source, coal.

8. Answer the following questions.

- 1) What is wood fuel?
- 2) What can wood fuel be used for?
- 3) What does the particular form of wood fuel used depend upon?
- 4) Is wood a renewable or non-renewable source of energy?
- 5) What is the earliest example of the use of wood as a fuel source?
- 6) What allowed more effective exhaustion of the smoke?
- 7) What materials have stoves been made of?
- 8) Where was the Franklin stove developed? What is its characteristic?

- 9) What were stoves built in the 1800s for?
 10) What type of stoves became popular in the 19th century?
 11) Why did the use of wood heat decline in popularity?
 12) Is it still used today? Where?

Language

9. Choose the contextual meanings of the words written in bold in Text A.

1. **particular**

- | | |
|-----------|------------|
| a) редкий | c) особый |
| b) личный | d) частный |

2. **example**

- | | |
|----------------|--------------|
| a) пример | c) образец |
| b) иллюстрация | d) экземпляр |

3. **to design**

- | | |
|------------------|-------------------|
| a) планировать | c) конструировать |
| b) предназначать | d) проектировать |

4. **maintenance**

- | | |
|---------------|-----------------|
| a) содержание | c) поддержка |
| b) сохранение | d) эксплуатация |

5. **characteristic**

- | | |
|----------------|-------------|
| a) особенность | c) признак |
| b) качество | d) свойство |

10. Match the opposites.

- | | |
|-----------------|----------------|
| 1) permanent | a) unusual |
| 2) to construct | b) to separate |
| 3) to increase | c) to raise |
| 4) to release | d) to draw in |
| 5) popular | f) urban |
| 6) to combine | g) to destroy |
| 7) common | h) temporary |
| 8) rural | i) unknown |
| 9) to reduce | j) to decrease |

11. Form the verbs from the following nouns.

- | | | |
|-------------------|------------------|------------------|
| application →... | development →... | equipment →... |
| construction →... | exhaustion →... | variety →... |
| convection →... | heater →... | maintenance →... |

12. Unjumble the words.*Model: veots → stove*

- | | | |
|---------------------|----------------------|------------------|
| 1) sabsmoi →... | 4) noitailizciv →... | 7) yrstduni →... |
| 2) ebnirtu →... | 5) traehh →... | 8) eboril →... |
| 3) yticirtleec →... | 6) ecplaerif →... | 9) eyihcnm →... |

13. Translate the following words and phrases into English using the vocabulary of the text.

Вырабатывать электричество, капитальные сооружения, общий объем спроса, негорючий материал, промышленная революция, эффективная тяга, кирпичная печь, техническое развитие, промышленная топка, разнообразные цели, герметичная печь, трудоемкое топливо, автономный котел (бойлер), теплообменник, экологически устойчивый источник энергии.

It's important to

14. Read the text translating the words in brackets and answer the questions below the text.

Energy content

A common (*древесина твердых пород*), red oak, has an energy content of 14.89 megajoules per kilogram (6,388 BTU per pound), and 10.423 megajoules recoverable if burned at 70% (*эффективность*).

The Sustainable Energy Development Office (SEDO), part of the Government of Western Australia (*утверждает*) that the energy content of wood is 16.2 megajoules per kilogram (4.5 kWh/kg).

According to *The Bioenergy Knowledge Centre*, the energy content of wood is much more dependent on the moisture (*содержание*) than the species. The (*энергетический*) content (number of joules of (*тепло*) produced) improves towards the total number of joules stored in the wood as it dries.

- What is the energy content of a common hardwood?
- What is the energy content of wood according to SEDO?
- What is the energy content of wood dependent on according to The Bioenergy Knowledge Centre?

Over to you

15 a). What parts of the text can you define? Do they correspond to the paragraphs? Name each part.

1. _____

4. _____

2. _____

5. _____

3. _____

... _____

15 b). Find key words and phrases which best express the general meaning of each part.

16. Discuss with your groupmates or in pairs what wood fuel is, where it is used and why wood is considered to be traditional sources of energy.

UNIT V

HARVESTING

Start here

1. Read the following international words and mind the stressed syllables. Define the part of the speech.

theoretically [θɪə' rɛtɪkli}

statistical [stə' tɪstɪk(ə)l]

conservation [kɒnsə' veɪʃ(ə)n]

agricultural [agrɪ' kʌltʃərəl]

personnel pə: sə' nɛl]

Processing [prə' sɛs ɪŋ]

helicopter 'hɛlɪkɒptə]

mechanization [mɛk(ə)nɪ' zeɪʃ(ə)n]

operation ɒpə' reɪʃ(ə)n]

topography [tə' pɒgrəfi]

potential [pə(ʊ)' tɛnʃ(ə)l]

combination [kɒmbɪ' neɪʃ(ə)n]

2. Match the English and Russian equivalents.

1) harvesting machinery

2) the decisive factor in

3) agricultural crops

4) an angular undercut

5) logging residues

6) the "sustained yield" principle

7) conservation of forests

8) vulnerable to attack by fungi

9) unfavourable topography

10) movable mechanical debarkers

a) сельскохозяйственные растения

b) угловой подпил

c) сохранение лесов

d) неблагоприятный ландшафт

e) уязвимы для поражения грибом

f) подвижные механические окорочные станки

g) решающий фактор в

h) уборочная техника

i) остатки от вырубки

j) принцип устойчивой продуктивности

3. Match the terms with their definitions.

a) clearcutting

c) chisel

e) pipeline

g) residue

b) harvest

d) fungi

f) cordwood

h) axe

- 1) a long-bladed hand tool with a bevelled cutting edge and a handle which is struck with a hammer or mallet, used to cut or shape wood, stone, or metal
- 2) a channel or system, typically underground, for conveying oil, gas, etc. over long distances
- 3) amount of something that remains after the main part has gone or been taken or used
- 4) (of an area) from which every tree has been cut down and removed
- 5) a tool used for chopping wood, typically of iron with a steel edge and wooden handle
- 6) wood that has been cut into uniform lengths, used especially as firewood or for building
- 7) any of a group of spore-producing organisms feeding on organic matter, including moulds, yeast, mushrooms, and toadstools
- 8) a result of collecting or obtaining (a resource) for future use

Active Vocabulary

4. Give Russian equivalents of the following words and phrases. Try to memorize them.

Nouns and noun phrases

harvesting	bucking	chisel
sampling	limbing	delimber
prerequisite	debarking	climbing logger
removal	skidding	mast
sustained yield	chain saw	spar trees
ripening	back cut	pipeline
consideration	wedge	cordwood
fungi	axe	stacked wood
insect	spud	stump
felling	spade	residue

Verbs and verbal phrases

to detach	to accomplish	to skid
to equal	to shear	to attach chip
to estimate	to strip off	to restrict
to necessitate	to buck	to chip

Adjectives

artificial	favourable
decisive	giant
vulnerable	

Adverbs

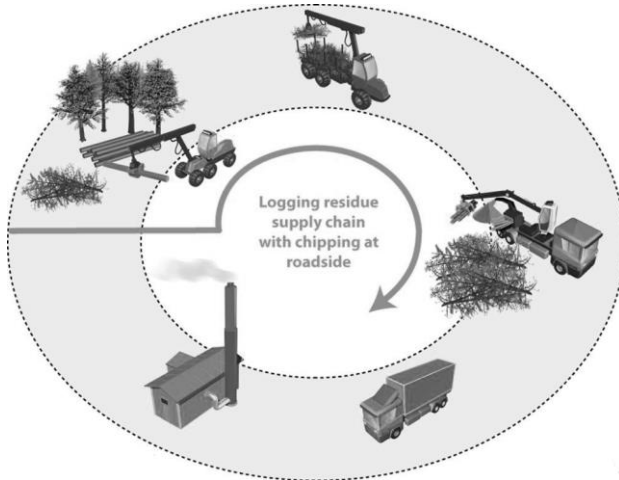
radically	partially
inseparably	wholly

Reading Task: A

5. Answer the following question and read the text below to check your answer.

What can be the stages of wood harvesting?

1. _____
2. _____
3. _____
4. _____
5. _____

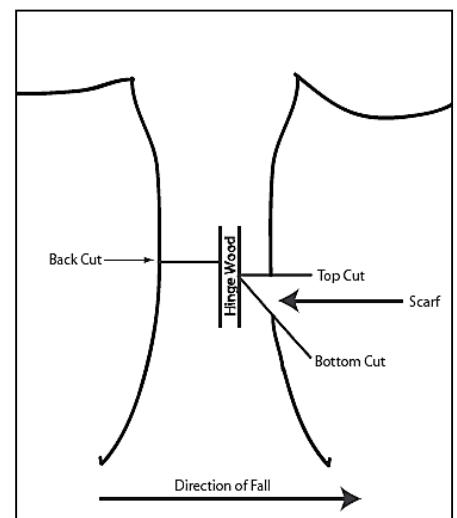


Text _____ **Harvesting**

Harvesting of wood differs radically from harvesting of other crops. The yearly growth of each individual tree cannot be **detached**; new wood is added inseparably to pre-existing growth until the entire tree is harvested, after a waiting period of up to 100 years or more. In a forest, however, yearly **harvest** is accomplished by cutting a number of trees, the volume of which theoretically equals the total growth of all trees as estimated by statistical sampling. This approach, the "sustained yield" principle, employed in combination with natural or artificial seeding and planting, secures continuous production of wood and conservation of forests.

A prerequisite to harvest is a management plan, which determines the yearly yield and the mode of removal, whether clearcutting large areas, or selective cutting of trees or groups. Prior planning also necessitates construction of access roads, railroads, or waterways, and providing for the availability of tractors, other harvesting machinery, and labour. The decisive factor in setting the season of harvest is not time of ripening, as with agricultural crops, but considerations such as the conditions of work for personnel, machines and animals, danger of damage to the remaining forest and to harvested wood. Because felled trees are vulnerable to attack by fungi and insects, the harvest is timed to avoid conditions favourable for such attack.

The next step is marking the trees to be removed (unless clearcutting of large areas is practiced), and then actual harvesting starts. This includes 1) felling, 2) bucking (crosscutting into logs), 3) limbing, 4) debarking, and 5) skidding to roadside or concentration yard, whence the logs are transported to industries. Felling is commonly accomplished by chain saw; axe and hand saw are little used today. The common **technique** is to make an angular undercut in the direction chosen to fell the tree, then sawing a back cut so that a narrow strip of wood left between undercut used back cut breaks when the tree falls; wedges are often used to assist the fall. The chain saw is also used for bucking, and in most cases for limbing.



Debarking is sometimes done in the forest by axe or spud (a combination spade and chisel), or by portable or movable mechanical debarkers, and sometimes in factories by stationary mechanical debarkers or water jets. Special equipment has been developed for harvesting pulpwood. An example is a combine harvester equipped with giant scissors, which shear the tree at the base and bring it to fall onto a steel arm; it is then lifted to a carriage, and drawn through a delimeter, which strips off the benches; another **blade** bucks the trunk into logs, which fall in an attached cradle.

Bucking is not always done at the felling **site**. Sometimes whole trees are skidded to a concentration yard for further processing; sometimes only the crown is removed and the trunk is skidded.

Skidding is done by tractors or by animals; in various forests of the world horses, mules, oxen, and elephants are employed. Tractors are usually employed in combination with steel cables, and the logs are skidded on the ground, or while lifted partially or wholly off the ground. In the northwest United States tall trees, 80–100 metres high, their tops (a length of 10–20 m) cut off by a climbing logger, are employed as masts, or spar trees, to attach cables for skidding. In some cases, helicopters or giant balloons are used. Pipelines transport chips from the forest to pulp mills. In general, mechanization of harvestion operations is the trend, but regions of small annual yield and unfavourable topography restrict the potential of expensive machines, and in many countries human and animal labour is still cheap.

The main source of usable wood is the tree trunk. Tree tops and heavy branches are cut into short lengths for cordwood and stacked wood, or chipped. Stumps, which should be as low as possible, roots, logging residues, and bark, if logs are debarked, remain in the forest.

Comprehension Check

6. Decide whether the following statements are true or false according to the text.

- 1) Harvesting of wood doesn't differ from harvesting of other crops.
- 2) Yearly harvest is accomplished by cutting a number of trees, the volume of which theoretically equals the total growth of all trees.
- 3) The decisive factor in setting the season of harvest is time of ripening.
- 4) Felling is commonly accomplished by chain saw; axe and hand saw.
- 5) The chain saw is used for felling, bucking, and in most cases for limbing.
- 6) Debarking is always done at the felling site.
- 7) In various forests of the world animals are employed for skidding.
- 8) The main source of usable wood is the tree bark.

7. Answer the following questions and give examples.

- 1) Does harvesting of wood differ radically from harvesting of other crops?
- 2) What does a management plan determine?
- 3) What is the decisive factor in setting the season of harvest?
- 4) What follows prior planning to harvest?
- 5) What stages does harvesting include?
- 6) What is the common technique for felling?

- 7) Skidding is done by tractors or by animals, isn't it?
8) What is the main source of usable wood?

8. What parts of the text can you define? Do they correspond to the paragraphs? Name each part.

1. _____ 4. _____
2. _____ 5. _____
3. _____ ... _____

9. Find key words and phrases which best express the general meaning of each stage of harvesting.

Stage	Key-words
1) felling	
2) bucking	
3) limbing	
4) debarking	
5) skidding	

10. Use your notes from exercises № 8, 9 to talk about harvesting process.

Language Focus

11. Choose the contextual meanings of the words written in bold in the Text.

1. detach

- а)отделять* *б)отсоединять*
с)отрывать *д)обвязывать*

2. harvest

- а)урожай* *б)жатва*
с)заготовка *д)страда*

3. technique

- а)способ* *б)технология*
с)процедура *д)прием*

4. blade

- а)лезвие* *б)меч*
с)лопасть *д)нож*

5. site

- а)объект* *б)площадка*
с)участок *д)местоположение*

12. Fill in the table with appropriate derivatives.

Growth, individual, inseparably, entire, harvest, accomplish, volume, theoretically, estimate, continuous, determine, selective, waterway, availability, personnel, danger, commonly, angular, axe, equipment, remove, direction, restrict.

noun	verb	adjective	adverb
...

13. Read the following text about harvesting and fill in the words listed below.

processing construction sawmills activities
transportation cutting environmental region

Forest harvesting involves 1) ___ trees and delivering them to 2) ___, pulp mills and other wood-3) ___ plants. Its practical components include road 4) ___, logging and log 5) ___. Years of planning go into deciding when and which parts of the forest will be harvested and how this will occur, all to ensure that these 6) ___ are carried out in a manner consistent with protecting social and 7) ___ values. The specifics of forest harvesting depend on the 8) ___ and type of forest.

14. Translate the following text into English using the active vocabulary.

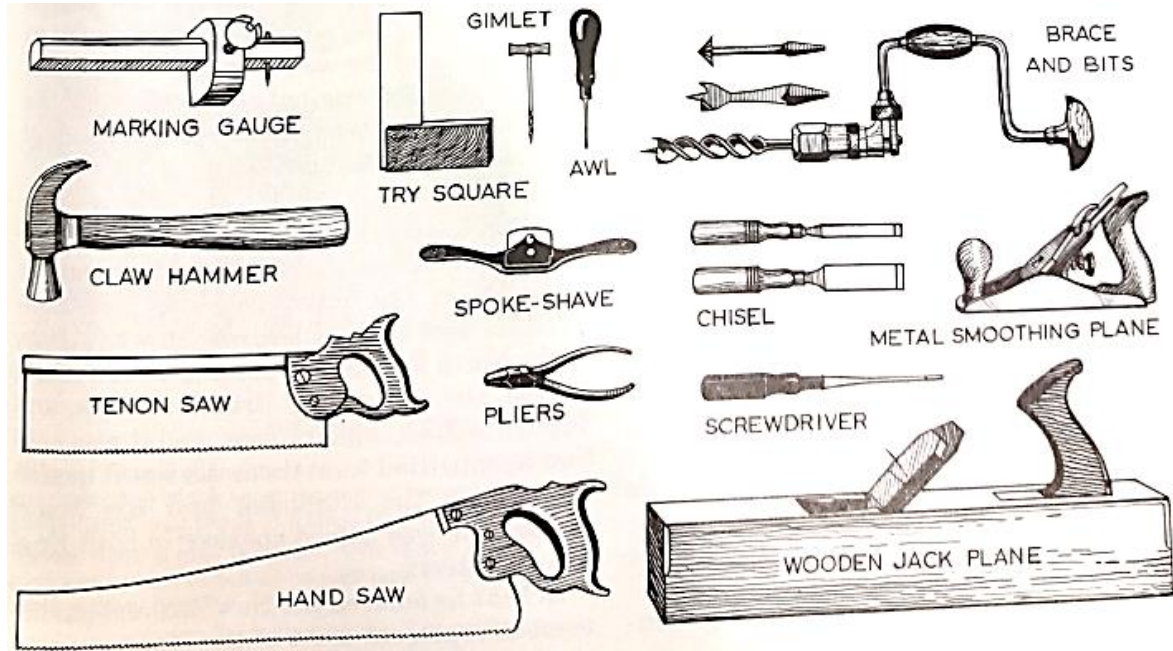
Валка деревьев производится с учётом ряда правил, которые предполагает технология. Она включает методы, и способы валки, безопасные для окружающей среды и работников. Что касается промышленной валки леса, то она производится в соответствии с регламентирующими документами.

В бытовых условиях в рамках конкретного участка нет ограничений, но при этом должны соблюдаться техника безопасности и правила пользования инструментом, которые в большинстве случаев аналогичны.

Валка деревьев производится при использовании различных инструментов и техники. Они могут быть ручными, и автоматизированными. При этом двигатели у автоматизированного оборудования могут быть как электрическими, так бензиновыми и пневматическими. При необходимости используются краны, лебёдки и другая подъёмная техника, чтобы обеспечить сохранность окружающих объектов или безопасность персонала, проводящего валку.

Start here

1. These are carpenter tools². Try to guess their Russian equivalents.



marking gauge – _____
 try square – _____
 claw hammer – _____
 tenon saw – _____
 hand saw – _____
 gimlet – _____
 awl – _____

spoke-shave – _____
 pliers – _____
 brace and bits – _____
 chisel – _____
 screwdriver – _____
 smoothing plane – _____
 jack plane – _____

2. Read the following international words and underline the stressed syllables. Define the part of the speech.

accurately ['ækjʊrɪtli]
 cabinet ['kæbɪnɪt]
 enthusiast [ɪn'θu:zɪæst]
 finished ['fɪnɪʃt]
 foundation [faʊn'deɪʃən]
 furniture ['fɜ:nɪʃər]

geometry [dʒɪ'ɒmətɪ]
 hobby ['hɒbi]
 installing [ɪn'stɔ:lɪŋ]
 machine [mə'ʃi:n]
 marking ['mɑ:kɪŋ]
 mechanics [mɪ'kænɪks]

method ['mɛθəd]
 normally ['nɔ:məlɪ]
 plastic ['plæstɪk]
 school [sku:l]
 square ['skwɛər]

² Children Encyclopedia

3. Read and translate words with the same root. Define a part of speech and fill in the table below.

1) availability – available
2) carpenter – carpentry
3) connector – connection – connect – connecting
4) cut – cutting
5) deep – deepen – depth
6) draw – drawing
7) drill – drilling
8) finish -- finished
9) join – joint
10) machine – machinery – machinist
11) sand – sander
12) smooth – smoothen – smoothening
13) strong – strength – strengthen – strengthening
14) wide – widen – width
15) work – worker – working

Noun	Verb	Adjective

4. Match the English and Russian equivalents.

- | | |
|---|---|
| 1) worker in wood | a) вырезать отверстия и сложные формы |
| 2) to make furniture from simple kits | b) заливаются бетонные фундаменты |
| 3) the concrete foundations are cast | c) по профессии |
| 4) to cut out holes and intricate shapes | d) рабочий по дереву |
| 5) smoothing | e) рифлёные и заострённые формы |
| 6) grooved and ridged shapes | f) соединение расходится |
| 7) the joint comes apart | g) создавать мебель из несложных наборов |
| 8) “do-it-yourself” carpentry | h) удаление неровностей |
| 9) by trade | i) чтобы дома братья за плотничные работы |
| 10) ability to understand and work from drawings | j) выполнение плотничных работ собственными силами |
| 11) for tackling carpentry jobs in the home | k) искусство придания формы и соединения деревянных деталей |
| 12) specially shaped pieces of metal called timber connectors | l) металлические детали особой формы, называемые шпонками |
| 13) craft of shaping and putting together pieces of wood | m) умение понимать чертежи и работать по ним |

Active

5. Give Russian equivalents of the following words and phrases. Try to memorize them.

Nouns and noun phrases

woodwork	glued joint	gouge
carpentry	marking gauge	sander
carpenter	try square	power tool
cabinet-worker	hammer	electric power drill
wood-carver	screwdriver	hand drill
woodcutting-machinist	saw	brace and bit
piece	plane	nail
finished shape	jack plane	screw
close fit	smoothing plane	on site
joint	chisel	

Verbs and verbal phrases

to work in plastics/wood	to install (<i>smth</i>)	to be skilled (in)
to work a machine	to fit (<i>smth</i>) ... in position	to drill holes
to shape (<i>smth</i>)	to fit (<i>smth</i>) into the building	to fix (<i>smth</i>)
to smoothen (<i>smth</i>)	to fit handles and locks	to do by hand
to put (<i>smth</i>) together	to fit into one another	to do by machine

Adjectives

machine-made	factory-made	decorative
--------------	--------------	------------

Adverbs

accurately

Reading Task

6. Answer the following question and read the text below to check your answer.

- 1) What workers in wood do you know?
- 2) What tools do carpenters use in their job?
- 3) What products can carpenters make?

Text**Carpentry**

Carpentry is a craft of shaping and putting together pieces of wood, and the word normally refers to the wood construction work in houses and other buildings. It may also include working in plastics and other materials for such things as kitchen cabinets.

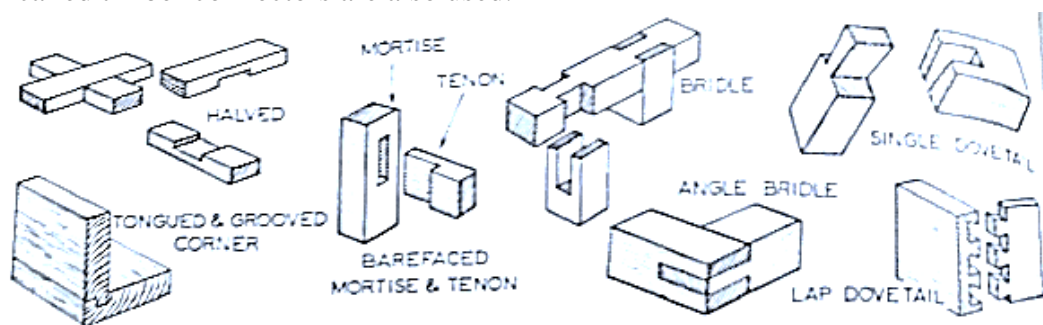
The carpenter is not the only worker in wood. There are also the cabinet-worker who makes furniture, the wood-carver who does special decorative work, and the woodcutting-machinist who works machines which cut and shape wood as the carpenter does by hand.

On a building site, as well as installing the structural and other timber in the building, such as the floors, roof, door and window frames, and skirting boards, the carpenter is responsible also for building “formwork” in which the concrete foundations are cast. Some constructions, such as staircases, may be machine-made in a factory, so the carpenter has only to fit them in position in the house instead of building them on site. Doors, windows and cupboards, too, are now usually factory-made and the carpenter then fits them into the building and fits handles and locks.

Although a good deal of certain types of woodwork is now done by machine, the carpenter must still be skilled in the use of many different tools. Before cutting and shaping the wood must be accurately marked to indicate the finished shape, the marking gauge and the try square are used to obtain straight and parallel edges and right-angle corners. The hammer, the screwdriver, and the saw are well known. There are several types of saw, varying in width of blade according to the depth of cut required, some with very narrow blades being used for cutting out holes and intricate shapes. Planes are also very important tools for smoothing and shaping the surface of the wood. The jack plane and smoothing plane used to produce smooth, flat surfaces are the best known, but there are also planes for cutting grooved and ridged shapes of all kinds.

The electric power drill makes it a simple matter to drill holes. But the older hand drill or brace and bit are still useful tools. Chisels and gouges are used for cutting that cannot be done by sawing and, again, there are many types of chisels of different sizes and shapes which the carpenter can use.

Among the first things a carpenter learns are different joints used for connecting pieces of wood. Nails and screws by themselves will not make very strong connections and, particularly at the corners of wooden articles, it is necessary to shape the two things so that they fit into one another. If the two pieces are both accurately shaped so that a close fit is obtained, a glued joint may also be so strong that the wood itself will break before the joint comes apart. Nails and screws are sometimes used to give additional strength to a joint of this sort and specially shaped pieces of metal called timber connectors are also used.



Joints used in carpentry

The carpenter must also know about the properties of different kinds of wood and other materials so that he can use the most suitable one for each job. He must know where and how to fix the parts of wooden formwork so that the greatest strength and stiffness is obtained. For this he should have some understanding of geometry and mechanics as well as skill in using the tools and an ability to understand and work from drawings.

Many people who are not carpenters by trade gain considerable skill and also much pleasure from making woodwork their hobby. Many children have the opportunity of doing

woodwork at school and this provides them with an excellent opportunity of learning the use of the chief tools and the methods used for making articles in wood. This is a useful experience for tackling carpentry jobs in the home. The popularity of “do-it-yourself” carpentry has been increased by the availability of power tools, such as drills, saws, and sanders, which reduce the time and effort needed. Enthusiasts can even make their own furniture from simple kits.

Comprehension

7. Decide whether the following statements are true or false according to the text.

- 1) Brace and bit is an electric powered tool.
- 2) Hand tools reduce the time and effort needed.
- 3) Nails, screws and timber connectors are used to give additional strength to a joint.
- 4) On a building site the carpenter is responsible for building “formwork” for concrete.
- 5) The carpenter must be skilled in using many different tools.
- 6) The carpenter, the cabinet-worker, the wood-carver and the woodcutting-machinist are workers in wood.
- 7) The electric power drill makes it easy to drill holes.
- 8) There are chisels for cutting grooved and ridged shapes of all kinds.
- 9) The try gauge and the marking square are used to obtain straight and parallel edges and right-angle corners.
- 10) Very small saw blades are used for cutting out holes and intricate shapes.

8. Complete the following sentences according to the text.

- 1) Among the first things a carpenter learns are
- 2) Before cutting and shaping the wood
- 3) Chisels and gouges are used for
- 4) If the two pieces are both accurately shaped so that a close fit is obtained,
- 5) Nails and screws by themselves make very strong connections.
- 6) Planes are very important tools for
- 7) The carpenter must know about the properties of
- 8) The opportunity of doing woodwork at school provides children with
- 9) The popularity of “do-it-yourself” carpentry has been increased by
- 10) To fix the parts of wooden formwork the carpenter should have some understanding of

9. Answer the following questions and give examples.

- 11) What is the meaning of the word ‘carpentry’?
- 12) What jobs is the carpenter to do?
- 13) What jobs do other workers in wood do?
- 14) What tools are used by carpenters? For what operations?
- 15) How can strong joints be made?
- 16) What must a skilled carpenter know and be able to do?

- 17) Can people who are not carpenters by trade make their own furniture from simple kits? Why?
 18) Why is “do-it-yourself” carpentry very popular nowadays?

Language

10. Find in the text (ex. 6) the synonyms to the following words and word combinations.

by profession		main	
cabinet		object	
complex		operation	
hand-made		to install	
instrument		to put together	
machine-made		working in wood	

11. Find in the text (ex. 6) the antonyms to the following words and word combinations.

by machine		inexperienced	
complex		initial	
curved		in the home	
electric power drill		on site	
hand-made		to reduce	
inexact		wide	

12. Fill in the correct prepositions, then choose any five items and make up sentences of your own.

1) ... the corners; 2) a carpenter ... trade; 3) a useful experience ...; 4) skill ... using the tools; 5) to be machine-made ... a factory; 6) to be responsible ...; 7) to build *smth.* ... site; 8) to do ... hand; 9) to fit ... one another; 10) to fit *smth.* ... position; 11) to gain skill and pleasure ... the hobby; 12) to install *smth.* ... the building; 13) to make furniture ... simple kits; 14) to provide *smb.* ... an opportunity ... learning; 15) to refer ... *smth.*; 17) worker ... wood.

13. Translate the following text³ into English using the vocabulary of the text.

Профессия плотника – одна из строительных профессий. В современном обществе плотники не изготавливают изделия, а пользуются производственными изделиями. Еще в прошлом веке этого не было, многие изделия плотники делали собственноручно.

Инструментами плотника являются топор, скобель, молоток, пила, гвоздодёр, пассатижи, угольник, набор отвёрток, дрель, шуруповёрт, рубанок.

14. Fill in the gaps with the omitted words.

³ Википедия

- | | | |
|----------------------|----------------------|-------------------------|
| a) <i>craft</i> | d) <i>shaping</i> | g) <i>machine tools</i> |
| b) <i>decorative</i> | e) <i>tool</i> | h) <i>power tools</i> |
| c) <i>hobby</i> | f) <i>hand tools</i> | i) <i>woodworking</i> |

Woodworking is the forming and (1) ... of wood to make useful and (2) ... objects. This ancient (3) ... has become a popular (4) ... and an important industry in most parts of the world.

The history of woodworking goes back to about 8,000 B.C., when people first used an axe as a woodworking (5) In the Middle Ages, woodworkers and other craft-workers formed organizations called guilds (гильдии). The guilds were similar in some way to today's trade unions.

In 1873, electric power was used to drive (6) ... for the first time. Through the years came the development of the power tools commonly used for (7) ... today. The first practical hand drill was patented in 1917. By 1925, woodworkers could buy electric portable saws for their home workshop. Today, (8) ... can be used in most woodworking operations, but many people shape wood with (9)

(from The World Book Encyclopedia)



15. Discuss with your groupmates or in pairs:

- 1) how the Industrial Revolution made carpentry a simpler matter;
- 2) why many people choose carpentry their hobby.

16. What parts of the text can you define? Do they correspond to the paragraphs? Name each part.

- | | |
|----------|-----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | ... _____ |

17. Find key words and phrases which best express the general meaning of each part.

18. Read the Text “Carpentry” again and make notes under the following headings. Then use your notes to talk about Carpentry.

- 1) What the word ‘carpentry’ refers to.
- 2) Workers in wood and their functions.
- 3) Carpenter’s functions.
- 4) Carpenter’s tools.
- 5) ‘Do-it-yourself’ carpentry.

19. Write an informative abstract of the Text “Carpentry”.

UNIT VII WOOD PRODUCTS

WOOD UTILIZATION: PRIMARY PROCESSED

Start here

1. Read the following international words and underline the stressed syllables. Define the part of the speech.

centimetre [səntɪ'mi:tə]

circular ['sə:kjʊlə]

combination [kəmbrɪ'neɪʃən]

conversion [kən'veɪʃən]

conveyor [kən'veɪə]

defect ['di:fekt]

depression [di'preʃən]

diameter [daɪ'æmɪtə]

foundation [faʊn'deɪʃən]

machine [mə'ʃi:n]

percent [pə:r'sent]

preservative [pri'zə:rvətɪv]

principle ['prɪnsɪpl]

stationary ['steɪʃnəri]

telecommunication ['telɪkəmju:nɪ'keɪʃən]

transport (n) ['træns'pɔ:t] (v) [t'ræns'pɔ:t]

type ['taɪp]

utilize ['ju:tlaɪz]

2. Match the English and Russian equivalents.

1) are further processed

2) boring holes

3) heavy construction

4) enters the sawmill

5) is introduced into the second saw

6) to turn 90°

7) to be dipped into a preservative chemical

8) circular saw blade

9) is accomplished in one or more operations

10) mounted on a shaft

11) breakdown into boards

12) passing the board through a machine

13) supported on a carriage

14) are crosscut to length

15) to facilitate the entrance of preservative chemicals

a) выполняется за одну или более операций

b) пилятся поперёк на отрезки

c) поворачивать на 90 градусов

d) погружаться в химический консервант

e) подаётся на вторую пилу

f) подвергаются дальнейшей обработке

g) полотно циркулярной пилы

h) поступает на лесопильный завод

i) пропуская доски через машину

j) разделение на доски

k) опирающийся на тележку

l) сверлит отверстия

m) тяжёлая конструкция

n) установленный на валу

o) способствовать проникновению химических консервантов

3. Match the terms with their definitions.

a) band saw

e) lumber

h) post

b) *circular saw*
 c) *gang saw*
 d) *head saw*

f) *mine timber*
 g) *pole*

i) *railroad tie*
 j) *timber*

- 1) a beam holding a pair of rails together, forming a railway track;
- 2) a long, slender, rounded piece of wood or metal, typically used with one end placed in the ground as a support;
- 3) a long, sturdy piece of timber or metal set upright in the ground and used as a support or marker;
- 4) a piece of timber used in a mine to support the roof and walls;
- 5) a saw consisting of an endless moving steel belt with a serrated edge running over pulleys;
- 6) a saw having several parallel blades for making simultaneous cuts;
- 7) a saw making the initial cuts in a log at a sawmill, turning a log into boards of wood;
- 8) a saw with a rapidly rotating toothed disc;
- 9) trees that are grown in order to produce wood; a large piece of wood suitable for building or carpentry;
- 10) wooden boards or logs that have been sawn and cut for use.

Active

4. Give Russian equivalents of the following words and phrases. Try to memorize them.

Nouns and noun phrases

forest stand	slab	re-sawing
roundwood	edging	ripping
sawnwood	sawdust	sawing
pole	head saw	shaving
post	band saw	preservative chemical
mine timber	gang saw	sawmill
timber	circular saw	ground storage yard
lumber	endless-chain conveyor	surface irregularity
railroad tie	breakdown (<i>into</i>)	wane
crosscut piece	crosscutting	waste
board	incising	crosscut pieces

Verbs and verbal phrases

to crosscut to length	to measure	to saw (sawed, sawn)
to convert to boards	to pile	to set the width
to dip into a preservative chemical	to pass (<i>through</i>)	to store
to grade		to square ends

Adjectives

similar in principle to	primary processed	further processed
-------------------------	-------------------	-------------------

Adverbs and prepositional phrases

in length
in thickness

in width
sidewise

Reading Task

5. Answer the following questions and read the text below to check your answers.

- 1) What wood products do you know?
- 2) Can you guess what round wood products are? Sawn wood products?

Text

Primary processed wood products

Roundwood products. Poles, posts, and certain mine timbers are products in round form. Poles are used in telecommunication lines or foundations for wharves or buildings. Posts are used in fences, highway guards and various supports. The bark is removed in the forest or factory, and poles are further processed by shaving to remove surface irregularities, boring holes and making necessary cuts, and incising (punching slit-like depressions to facilitate the entrance of preservative chemicals).

Sawnwood products. Lumber is the main sawn wood product. Lumber of large dimensions (more than about 10 cm in width and thickness), suitable for heavy constructions is called timber. The term 'timber' is also applied to wood of a forest stand and to products of round form. Another important product made by sawing is railroad ties.

Lumber is the product of the sawmill: it is manufactured by sawing. Lumber is produced in many sizes (usual, approximate dimensions: thickness two to ten centimetres, width eight centimetres and over, length two to six metres). Conversion of logs to lumber involves breakdown into boards of various thickness, re-sawing, ripping, and crosscutting. The organization of production varies in different manufacturing plants but in general is as follows. Logs, transported from the forest, are stored in water, usually a pond or river, or a ground storage yard. Each log enters the sawmill on the endless-chain conveyor. In large operations it is mechanically debarked, and in some is crosscut to length. Supported on a carriage, it is brought to a head saw, which may be of three types: band saw, gang saw, or circular saw.

Breakdown is carried out in one or more operations. For example, a combination of circular or gang saw, or two gang saws are used. The first saw removes slabs (the outside pieces cut from a log) and some boards in certain cases. The piece produced is then turned 90° and introduced into the second saw, which converts it to boards. The second operation may be considered re-sawing. In general, re-sawing consists of either dividing thick boards into thinner ones, or producing boards from slabs. Ripping is the removal of wane or bark from the sides of boards, frequently done by passing the board through a machine that has two small circular saw blades mounted on a shaft. One saw is stationary and the other may move sidewise, thus setting board width. Finally, certain boards are crosscut to square their ends and remove defects.

Waste in lumber production is high – in order of 30-50 percent, depending on the type of machines used, the diameter of the logs (the larger the diameter the smaller the waste), and the quality of wood. Waste occurs in the form of sawdust, slabs, edgings, and crosscut pieces. This

material is burned, in many cases to produce steam, but is also utilized in pulp, paper, fiberboard, and particle board.

After production the lumber may be dipped into a preservative chemical (to prevent attack by fungi, bacteria, or insects) and is measured, graded, and piled to dry.

Production of all sawn products is similar in principle to that of lumber.

Comprehension

6. Finish the following sentences according to the text.

- 1) Roundwood products include
- 2) Posts are used in
- 3) Poles are used in
- 4) The main sawnwood product is
- 5) Lumber is manufactured by
- 6) Conversion of logs to lumber involves
- 7) A head saw may be of three types:
- 8) A combination of circular or gang saw, or two gang saws are used for
- 9) Ripping is
- 10) Re-sawing consists of
- 11) Waste in lumber production depends on
- 12) After production the lumber may

7. Answer the following questions and give examples.

- 1) Why are roundwood and sawnwood products called so? What kinds of them do you know?
- 2) Where are roundwood products used? Sawnwood products?
- 3) What dimensions can lumber have?
- 4) What manufacturing operations are needed to convert logs into lumber? What does each involve?
- 5) What types of saws may be used at a sawmill to produce lumber?
- 6) What does the amount of waste in lumber production depend on?
- 7) Why is lumber dipped into a preservative chemical after production?
- 8) How are other sawnproducts manufactured?

Language

8. Fill in the table with appropriate derivatives.

Approximate, boring, chemical, crosscut, cut, finally, form, frequently, further, grade, length, mechanically, outside, plant, primary, removal, saw, sidewise, stand, slit-like, stationary, square, support, thickness, thinner, transport, width.

noun	verb	adjective	adverb
...

9. Find in the text (ex. 5) the synonyms to the following words and word combinations.

circular		timber	
defect		to produce	
disc saw		to bring to a saw	
factory		to carry	
fence		to help	
forest stand		to include	
manufacturing		to turn (into)	
often		to use	

10. Find in the text (ex. 5) the antonyms to the following words and word combinations.

accurate		insignificant	
centre		limited	
different		movable	
exclude		neither ... nor	
initially		to join	
in particular		to let	
inside		uniform	

It's interesting to

11. Read the following text [4] and decide whether the following wood products are round- or sawnwood.

Bar, beam, board, boxboard, branch, burl, joist, lath, lumber, rafter, root, scantling, stump.

Roundwood is all roundwood harvested and removed. It comprises all wood removed from forests and from trees outside the forest, including wood recovered from natural, felling and logging losses. It includes all wood removed with or without bark, including wood removed in its round form, or split, roughly squared or in other form. It is an aggregate comprising industrial roundwood and fuelwood, including wood for charcoal.

⁴Forestry in the EU and the world – A statistical portrait. Luxembourg: Publications Office of the European Union, 2011. – 107 p.

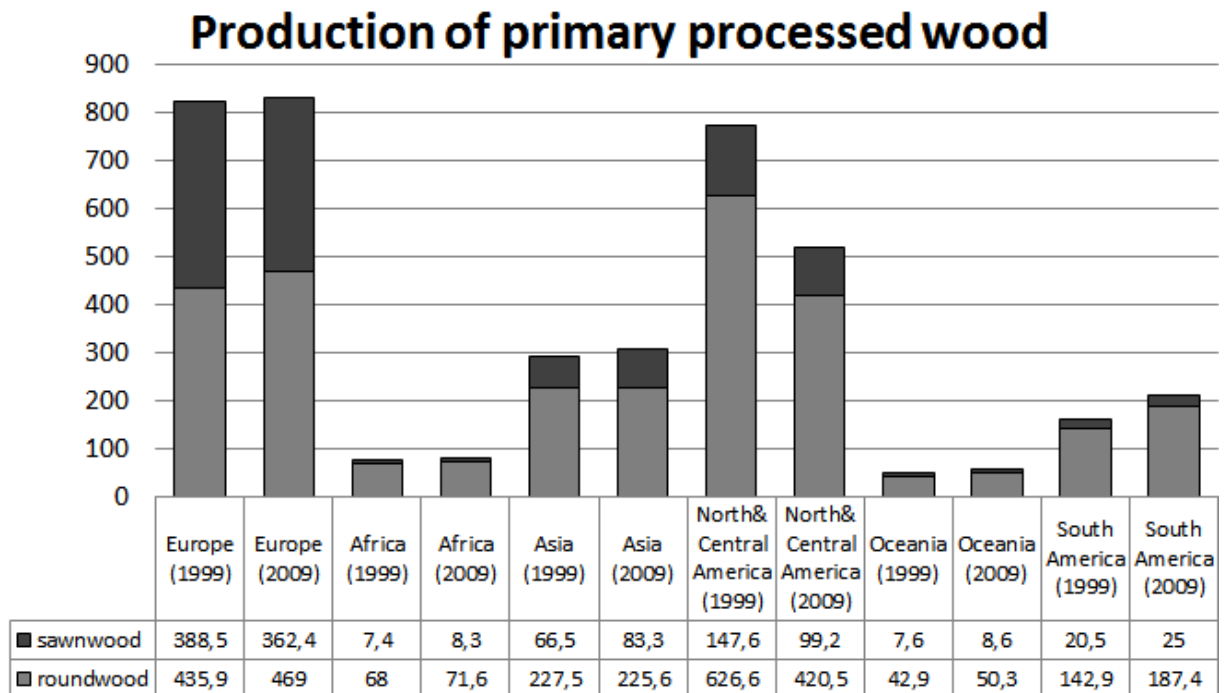
Sawnwood is wood that has been produced from both domestic and imported roundwood, either by sawing lengthways or by a profile-chipping process and that exceeds 6 mm in thickness. Sawnwood includes products in the following forms: unplanned, planed, end-jointed etc.

roundwood	sawnwood
...	...

Language

12. Analyze the graph given below¹ and make generalizations about the data. Use the following plan:

1. What the graph shows.
2. What the numbers represent.
3. Make a thesis (a statement or an opinion that is presented with evidence in order to prove that it is true).
4. Support your thesis.
5. Make an appropriate conclusion.



Use the phrases:

The graph/diagram shows...

According to the data...

A wide range in the percentage...

If to compare...

A number of...

We can sum up...

13. Translate the following texts ⁵ into English using the active vocabulary.

- 1) Первичной переработкой древесины называется механическая переработка отдельных её видов, включающая распиловку, раскалывание и измельчение.
- 2) Круглые лесоматериалы — это лесоматериалы, получаемые путём поперечного деления. Пилёные лесоматериалы получают путём продольного распиливания круглых лесоматериалов и продольного и поперечного деления полученных частей.
- 3) На сегодняшний день существует огромное количество различных видов пиломатериалов. Их получают путем распила, производимого вдоль волокон. Правильной обработки требуют все пиломатериалы. Особыми свойствами обладает каждый пиломатериал. Порода древесины имеет большое значение. Применяются как хвойные, так и лиственные разновидности. Их стоимость зависит от присущих материалу характеристик. Перед распилом древесину подвергают дополнительной подготовке. Ее сушат до определенного уровня. От этого зависит область ее применения.
- 4) По форме, которую приобретает изделие после обработки, различают несколько видов пиломатериалов. От их габаритов зависит область применения. Особенности формы обладают как пиломатериалы хвойных пород, так и лиственной древесиной. Первым в представленной классификации идет брус. Его толщина превышает 100 мм. Это один из самых востребованных пиломатериалов. Доски же, наоборот, ограничены по толщине. Их толщина не превышает 100 мм. Брусок обладает толщиной не выше 100 мм. Но для этого изделия важен еще один параметр. Его ширина должна быть меньше двойной толщины. Также в последнее время в декоративных целях начали применять такой тип пиломатериала, как горбыль. Он имеет только одну ровную плоскость. С другой стороны его поверхность не обработана и имеет правильную (regular) полукруглую форму (shape).

Over to

14. Discuss with your groupmates or in pairs the advantages and disadvantages of various round wood and sawn wood products.

Follow Up

15. Read the texts of Unit V again and complete the table. Then use your notes to talk about primary processed wood products.

⁵ From <http://fb.ru/article/270801/chto-takoe-pilomaterialyi-vidyi-i-naznachenie>; ru.wikipedia.org

WOOD PRODUCTS			
MANUFACTURED WOOD PRODUCTS	PRIMARY PROCESSED WOOD PRODUCTS		
	<i>ROUNDWOOD PRODUCTS</i>		<i>... PRODUCTS</i>
	<i>fuelwood</i>
		<ul style="list-style-type: none"> • <i>pole</i> • <i>post</i> • ... 	<ul style="list-style-type: none"> • ... • ... • <i>board</i> • <i>slab</i>
	<u>Processing:</u>		
	<ol style="list-style-type: none"> 1) <i>debarking</i> 2) ... 3) <i>boring ...</i> 4) <i>making cuts</i> 5) ... 	<ol style="list-style-type: none"> 1) <i>breakdown ...</i> 2) ... 3) <i>ripping</i> 4) ... 	
	<u>After production:</u>		
	<ol style="list-style-type: none"> 1) <i>dipping into ...</i> 2) ... 3) ... 4) ... 5) <i>drying</i> 		

UNIT VIII WOOD UTILIZATION: SECONDARY PROCESSED WOOD PRODUCTS

Start here

1. Read the following international words and mind the stressed syllables. Define the part of the speech.

uniform ['ju:nɪfɔ:m]

method ['meθəd]

production [prə'dʌkʃn]

section ['sekʃn]

percent [pə'sent]

synthetic [sɪn'tetɪk]

parallel ['pærəlel]

decorative ['dekərətɪv]

operation [,ɒpə'reɪʃn]

mechanical [mə'kænikəl]

defect ['dɪ:fekt]

microorganism [,maɪkrəu'ɔ:ɡənɪzəm]

formaldehyde [fɔ:'mældɪhaɪd]

cellulose ['sel.jʊləʊs]

2. Read and translate words with the same root. Define a part of speech and fill in the table below.

- 1) thick – to thicken – thickness
- 2) product – to produce – production
- 3) to rotate – rotation – rotary
- 4) possible – possibility
- 5) percent – percentage
- 6) waste – wasteful
- 7) to mechanize – mechanical
- 8) to improve – improvement
- 9) to develop – development
- 10) to add – additive – addition
- 11) to soften – soft
- 12) service – servant – to serve

Noun	Verb	Adjective

3. Combine the words from the column on the left with the suitable nouns from the column on the right. Translate them into Russian.

- 1) method of
- 2) wasteful
- 3) removal of
- 4) since ancient

- a) operation
- b) angles
- c) lumber
- d) resin

- | | |
|---------------------------|---------------------------|
| 5) at right | <i>e) development</i> |
| 6) to be built of | <i>f) defects</i> |
| 7) industrial | <i>g) board</i> |
| 8) synthetic | <i>h) production</i> |
| 9) particle | <i>i) following types</i> |
| 10) to be classified into | <i>j) times</i> |

4. Before you begin reading look at the meaning of the following terms:

- 1) *Veneer* is a thin layer or sheet of wood uniform in thickness.
- 2) *Plywood and laminated constructions* are glued-wood products.
- 3) *Particle board* is a panel product manufactured of particles of wood glued together.
- 4) *Fibreboard* is a panel product made of fibres of wood.
- 5) *Pulp* is a raw material for paper manufacture that contains vegetable, mineral, or man-made fibres.

Active Vocabulary

6. Give Russian equivalents of the following words and phrases. Try to memorize them.

Nouns and noun phrases

tapered saw	phenol-formaldehyde	pulp
veneer	joint	treatment
submersion	curved form	yield
glue	particle board	additive
synthetic resin	residue	refining
adhesive	overlay	derivative
core	fibreboard	
solid-wood-core plywood	hardboard	

Verbs and verbal phrases

to sand	to dry
to glue	to cover
to soften	to assemble

Adjectives

respective	preliminary
alternate	simultaneous
odd	

Reading Task: A

6. Answer the following questions and read the text below to check your answers.

- 1) What do you think are further processed wood products?
- 2) What further processed wood products in everyday life can you name?

Text

Further (Secondary) Processed Wood Products

Veneer. Veneer is a thin layer or sheet of wood uniform in thickness – commonly about 0.6–8 mm. According to the method of production, it is classified into rotary cut (cut in a lathe by rotating a log against a knife – like peeling it), sliced (cut sheet by sheet from a log section), and sawn (produced by sawing – with a special tapered saw). More than 90 percent of all veneer is rotary cut, but figured woods producing veneer for furniture and other decorative purposes are slice; sawn veneer is seldom produced because it is a wasteful operation.

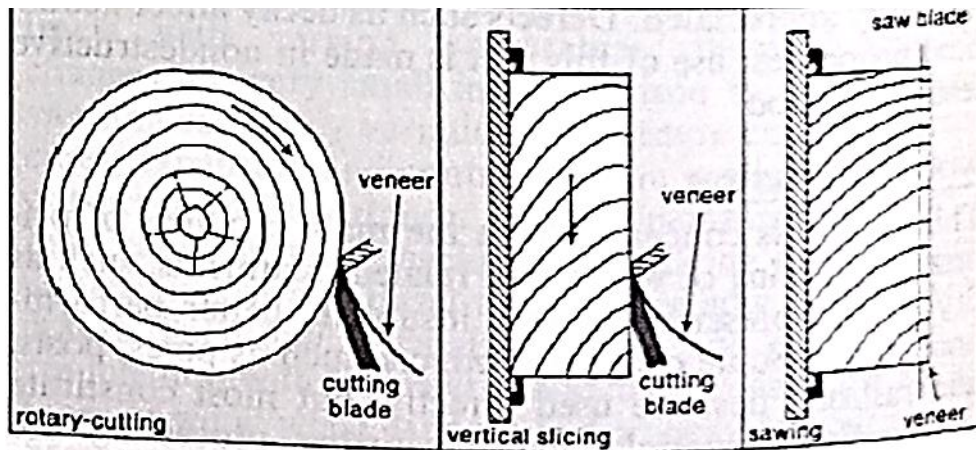


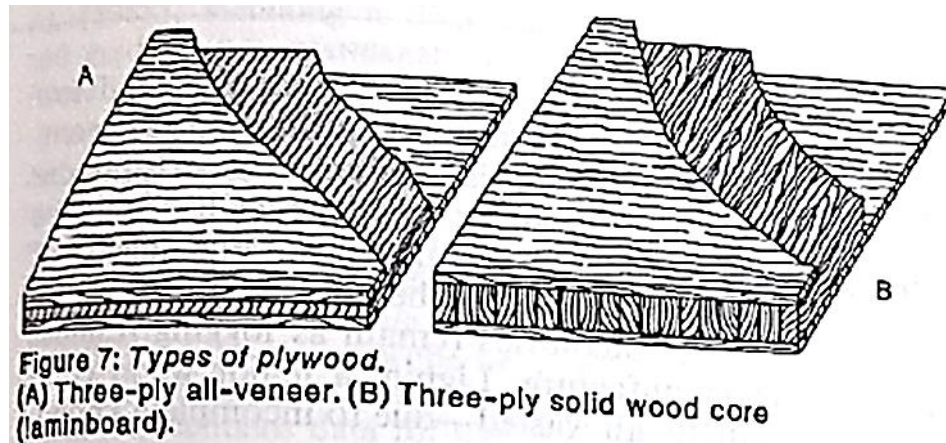
Figure 6: Methods of veneer production.

Logs of hard woods, intended for rotary cut or sliced veneer, are softened by submersion in hot water or steam. After production, veneer is dried, as a rule in mechanical driers. Clipping and removal of defects is accomplished before or sometimes after drying. Waste in veneer production is similar to that of lumber.

Veneers are used primarily for plywood and furniture, but also in toys, containers of various kinds, matches, and other products.

Plywood and laminated constructions. Plywood and laminated constructions are glued-wood products. Although gluing is very old, practiced since ancient times, the modern development of various products was made possible by the improvement of glues – especially by the production of synthetic resin adhesives.

Plywood is a panel product manufactured by gluing together one or more veneers to both sides of a veneer solid wood core. Respective products are all-veneer plywood and solid-wood-core plywood.



In plywood the grain of the alternate layers is crossed, in general at right angles. Species, thickness, and grain direction of each layer are matched with those of their opposite number on the other side of the core. Usually the total number of layers is odd (three, five or more). Thus assembled, the layers are brought to presses. Certain synthetic resins, such as phenol-formaldehyde, properly used, may produce joints more durable than the natural material itself – highly resistant to weather, microorganisms, cold, hot and boiling water, steam and dry heat. Such plywood is known as exterior plywood (in contrast to interior).

In addition to flat panels, plywood is manufactured in curved form (molded plywood). This type is used for boats, furniture, and many other products.

In general, and because of its construction, plywood has many advantages over natural wood, mainly greater dimensional stability.

Another important glued product is laminated wood. This is built mainly of lumber. The product is finding uses in beams, columns, and arches for buildings, aircraft carrier decking and helicopter propellers. In curved products, production involves simultaneous bending and gluing. Laminated wood possesses several advantages over solid wood. Large members of various sizes and shapes impossible to make from solid wood.

Particle board. This panel product is manufactured of particles of wood glued together. Particles are flakes, shavings, or splinters produced by cutting or breaking.

Particle board production is a relatively new industrial development, started in the early 1940s and rapidly expanding ever since in all countries. It was made possible by the development of synthetic resins and has greatly contributed to better wood utilization by permitting the use of residues of other wood-using industries and of harvesting operations in forests. Debarking is not always necessary.

Particle boards are manufactured in various thicknesses (usually 6–25 mm) and are classified into low density, used for insulation, medium density, and high density. The end product is simply sanded, or covered by overlays of finishes.

Fibreboard. This panel product is made of fibres of wood. As in the case of particle board, wood of low quality and unbarked may be used for fibreboards.

According to pressure applied and resulting density, fibreboards are classified into following types: semirigid insulation, rigid insulation, medium density, hardboard, and special densified hardboard.

In general, panel products (plywood, particle, and fibreboard) serve a wide range of uses: building construction, including walls, floors, roofs, and doors: exterior siding and interior

finishing (e.g. wall panelling); shipbuilding; automobile manufacture; toys; concrete formwork, and many others. Special types combine decorative value with thermal- and sound-conditioning properties.

Pulp and paper. Wood is the main source of pulp and paper. Preliminary production steps are debarking and chipping. Pulping processes are of three types: mechanical, chemical and semichemical, a combination of heat or chemical treatment with mechanical processing. The yield of pulp ranges from 40 to 95 percent. Paper manufacture involves beating the pulp, introducing additives, refining and running the pulp into the paper machine.

Other products. The total number of products made of wood and its derivatives (e.g. cellulose) is enormous, according to some estimates as high as 10,000.

Mechanically derived products. In addition to those already mentioned, some of the principal applications of wood include: agricultural tools, aircraft, artificial limbs, barrels, baskets, blackboards, fishing rods, gun stocks, handles, ice-cream spoons, pencils, picture frames, rules, scaffolding, scientific instruments, smoking pipes, spools, toothpicks and many others.

Chemically derived products. These include: acetic acid, acetone, cellophane, cellulose acetate, charcoal, ethyl alcohol, explosives, methanol, oils, paper products, plastics, synthetic sponges, turpentine, vanillin and many other.

Wood is also used as fuel. Such consumption is diminishing due to the increased use of petroleum, gas and electricity.

In addition to wood, increased attention is being focused on bark, which constitutes 10–15 percent of a tree volume. Bark is used in charcoal, as cork, fibreboard (in mixture with wood), for soil improvement, and as a source of tannins and other chemicals. But further possibilities are recognized, particularly with respect to its chemical utilization.

Comprehension Check

7. Answer the following questions.

- 1) What is veneer?
- 2) How can veneer be classified?
- 3) What are veneers usually used for?
- 4) Plywood is a panel product manufactured by gluing together one or more veneers, isn't it?
- 5) How is exterior plywood assembled? Describe the technology.
- 6) Is plywood manufactured in curved form?
- 7) When did particle board production start?
- 8) What is the classification of particle boards?
- 9) Where can panel products be used? (give examples of products)
- 10) What are three types of pulping processes?
- 11) What do the principal applications of wood include?
- 12) What chemically derived products do you know?

8. Decide whether the following statements are true or false according to the text.

- 1) Veneer is commonly about 0.6–8 mm. according to the method of production

- 2) Sawn veneer is never produced because it is a wasteful operation.
- 3) Clipping and removal of veneer defects is accomplished after drying.
- 4) Usually the total number of layers in plywood is odd.
- 5) Plywood has many advantages over natural wood.
- 6) Particle board is very old, practiced since ancient times
- 7) Fibreboards are classified into five types.
- 8) Pulping processes are of three types.
- 9) The total number of products made of wood and its derivatives is modest.
- 10) Bark constitutes 10–15 percent of a tree volume.

Language Focus

9. Fill in the correct prepositions, translate the phrases, then choose any three items and make up sentences of your own.

1) to be uniform ... thickness; 2) the method ... production; 3) removal ... defects; 4) ... right angles; 5) ... contrast ... smth.; 6) ... addition ... smth.; 7) to have many advantages ... smth.; 8) to be manufactured ... various thicknesses; 9) to be classified ... following types; 10) a wide range ... uses; 11) according ... some estimates; 12) ... respect ... smth.

10. Translate the following words and phrases into English using the vocabulary of the text.

Продукция вторичной обработки, декоративные цели, расточительная операция, смягчать погружением в горячую воду, устранение дефектов, современное развитие, соответствующие продукты, нечетное количество слоев, высокоустойчивый к погодным условиям, ДСП для внешней отделки, высокая плотность, свойства звукоизоляции, предварительная стадия производства, механическая обработка, производство бумаги.

11. Fill in the gaps with the omitted words.

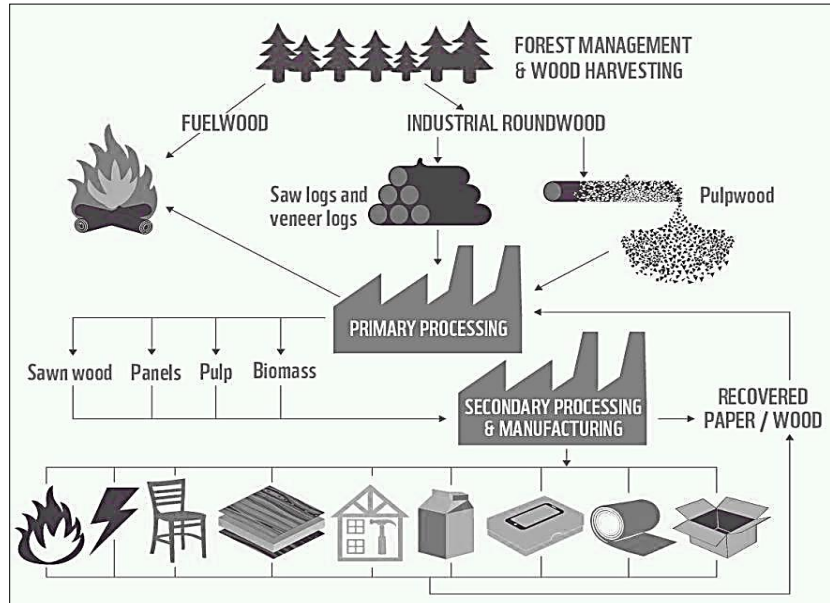
- | | | |
|--------------|---------------|---------------|
| a) price | d) constant | g) producer |
| b) density | e) technology | h) market |
| c) furniture | f) emission | i) generation |

Particleboard (PB) kept its significant market share for decades with its popularity worldwide. The demand for particleboard is **1)** ... due to the cheap raw materials, derived from recycled wood and its very low **2)** ... compared to MDF (50 mil.m³) is still the leading **3)** ... of the world (>50%). The main producers in 2012 were China, Russia, Germany, USA and Canada.

Italy, Austria and Spain are important producers in Europe. The main use of particleboard in Europe is for the **4)** ... industry (>50%) because of the existing processing **5)** ..., its low weight and price compared to other panels. A new **6)** ... of light particleboard with a **7)** ... of less than 500kg/m³ is now available on the **8)** New tougher regulations for formaldehyde **9)** ... for particleboard were implemented after 2009 in North and South America, Europe and Asia.

Over to you

12. Describe the process of Wood Management using the picture below in Essay (written form).



(From http://wwf.panda.org/wwf_news/?207365/Industry-key-to-conserving-forests-as-demand-for-wood-projected-to-triple-by-2050)

13. What parts of the text can you define? Do they correspond to the paragraphs? Name each part.

- | | |
|----------|-----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | ... _____ |

14. Find key words and phrases which best express the general meaning of each part.

15. Read the Text again and make notes under the following headings. Then use your notes to talk about Further (Secondary) Processed Wood Products.

- 1) Veneer and its classification.
- 2) What plywood and laminated constructions are, production technology and respective products.
- 3) What particle board is, production technology and respective products.
- 4) What fibreboards are, production technology and respective products.
- 5) Mechanically and chemically derived products of wood:

**СЛОВАРЬ ПРОФЕССИОНАЛЬНОЙ ЛЕКСИКИ ПО
СПЕЦИАЛЬНОСТИ
VOCABULARY**

Aa

- ability** [ə'bilɪtɪ] (n) способность
absorb [əb'sɔ:b] (v) поглощать
accessibility [ək,sesɪ'bilɪtɪ] (n)
accomplish [ə'kʌmplɪʃ] (v) выполнять, достигать, завершать
accurately ['ækjʊrɪtli] (adv) точно
adapt [ə'dæpt] (v) приспособлять, адаптировать
additive ['ædɪtɪv] (n) добавка
adhesive [əd'hi:zɪv] (n) клей
advance [ədʌv a:ns] (n) прогресс; достижения
affect [ə'fekt] (v) воздействовать, оказывать влияние
agricultural [agrɪ'kʌltʃərəl] (adj) сельскохозяйственный
along the length [ə'lnŋ ðə 'leŋθ] по длине
alternate [ɔl'tɜ:nɪt] (adj) чередующийся, поочередный
amplifier ['æmplɪfaɪə] (n) усилитель
amplify sounds ['æmplɪfaɪ 'saʊndz] усиливать звуки
anisotropic [,ænəɪsə(ʊ)'trɒpɪk] (adj) анизотропный
annual ring-and-grain structure ['ænjʊəl 'rɪŋ ən 'greɪn 'strʌktʃə] структура годичных колец и волокон
application [æplɪ'keɪʃən] (n) применение; нанесение; заявление
array [ə'reɪ] (n) массив; масса, множество
article ['ɑ:tɪkl] (n) предмет
artificial [ɑ:'ti'fɪʃ(ə)l] (adj) искусственный
ash [æʃ] (n) зола, пепел, пепел; ясень
atmosphere ['ætməsfiə] (n) атмосфера
attach [ə'taʃ] (v) прикреплять, присоединять, связывать
automatically [ˌɔ:tə'mætɪklɪ] (adv) автоматически
availability [ə'veɪlə'bɪlɪtɪ] (n) наличие
available [ə'veɪləbl] (adj) доступный
available [ə'veɪləbl] (adj) имеющийся в наличии, доступный
awl [ɔ:l] (n) шило
axe [æks] (n) топор

Bb

- back cut** (n) задний надрез
band saw ленточная пила
bar (n) брусок
basically [beɪsɪklɪ] (adv) в основном
be skilled (*in*) быть искусным в чём-л.

beam [bi:m] (n) брус
behave [bi'heiv] (v) вести себя
bend (v) [bend] сгибаться
board [bɔ:d] (n) доска
bonfire ['bɒnfaiə] (n) костёр
botanically [bɒtənikli] (adv) с точки зрения ботаники
brace and bit (n) коловорот
branch [brɑ:ntʃ] (n) 1. ветка, ветвь; 2. отрасль
breakdown (n) (*into*) разделение на
buck [bʌk] (v) толкать
bucking (n) раскряжёвка (*поперечное деление стволов деревьев, очищенных от сучьев, на бревна, кряжи и др.; осуществляется непосредственно вслед за валкой леса и очисткой стволов от сучьев на лесосеках*)
burn [bɜ:n] (v) гореть

Сс

cabinet-worker (n) столяр-краснодеревщик
campfire ['kæmp'faɪə] (n) костер
carpenter ['kɑ:pɪntər] (n) плотник; столяр
carpentry ['kɑ:pɪntri] (n) плотничное дело; столярное дело
cart [kɑ:t] (n) телега; повозка
causticity [kɔ:s'tisiti] (n) едкость
cellulose [seljʊləʊz; -s] (n) целлюлоза
centimeter ['sentimi:tər] (n) сантиметр
ceramic [sɪ'ræmɪk] (n) керамика (материал)
chain saw (n) цепная пила, бензопила
change dimensions [tʃeɪndʒ dɪmɛnʃənz; daɪ-] менять размеры
charcoal ['tʃɑ:kəʊl] (n) древесный уголь
chemical ['kemɪkl] (n) химикат
chemically [kemɪkl] (adv) химически
chip ['tʃɪp] (n) щепка, скол
chisel ['tʃɪz(ə)l] (n) долото, стамеска
chlorine ['klɔ:ri:n] (n) хлор
circular (adj) 1. круглый; 2. циркулярный
circular saw (n) дисковая пилорама
claw hammer молоток-гвоздодёр
climate ['klaɪmɪt] (n) климат
climbing logger (n) подъемная лесопильная машина
clipper ship клипер, трехмачтовый парусник
close fit неподвижная посадка
combination [kɒmbɪ'neɪʃən] (n) комбинация, сочетание
combustible [kəm'bʌstɪb(ə)l] (adj) горючий
combustion [kəm'bʌstʃən] (n) сгорание(*действие*); горение (*процесс*)
compress [kəm'pres] (v) сжимать

compressive strength [kəm'presɪv'streŋθ] прочность на сжатие
concurrent [kən'kʌrənt] (adj) совпадающий; действующий одновременно, согласованный
conductor [kən'dʌktə] (n) проводник
conservation [kɒnsə'veɪʃ(ə)n] (n) сохранение
consideration [kənsɪdə'reɪʃ(ə)n] (n) анализ, изучение, рассмотрение
contemporary [kən'tempərəri] (adj) современный
contribute [kən'trɪbjʊ:t] (v) делать вклад, жертвовать, участвовать
convection [kən'vekʃən] (n) конвекция, теплообмен
conversion [kən'veɪʃən] (n) превращение
convert (v) (*to*) превращать в
conveyor [kən'veɪə] (n) конвейер
cordwood ['kɔ:dwʊd] (n) топливная древесина
core ['kɔ:] (n) ядро
cost [kɒst] (n) стоимость; цена
craftsmanship ['krɑ:ftsmənʃɪp] (n) выделка; мастерство
crosscut ['krɒs,kʌt] (v) пилить поперёк (волокон)
crosscut pieces обломки поперечного распила
crosscutting (n) поперечная резка
current ['kʌrnt] (adj) текущий, современный, общепринятый
curved form изогнутая форма

Dd

debarking [di:'bɑ:kɪŋ] (n) окорка (*очистка дерева (от коры)*)
decay [di'keɪ] (v) разлагаться, гнить
decisive [di'sɪsɪv] (adj) решающий
decline [di'klaɪn] (n) падение; уменьшение; упадок
decorative [ˈdekəreɪtɪv] (adj) декоративный
defect ['di:fekt] (n) дефект
delimber [(n) сучкорезная установка
dense [dens] (adj) плотный
depression [di'preʃən] (n) углубление
derivative [di'rɪvətɪv] (adj) производное
desirable [dɪzəɪəɪəbl] (adj) желательный
detach [di'tætʃ] (v) отсоединять
detailed [ˈdeɪtɪld] (adj) детальный
development [dɪ'veləpmənt] (n) 1. развитие; 2. разработка
diameter [daɪ'æmɪtər] (n) диаметр
dimension [daɪ'menʃən] (n) размер
dimensions (n) (pl.) габариты
diminish [dɪ'mɪnɪʃ] (v) уменьшать
disintegrate [dɪs'ɪntɪɡreɪt] (v) распадаться на части, разлагаться
do by hand делать вручную
do by machine делать на станке
draft ['drɑ:ft] (n) сквозняк; тяга

drill holes сверлить отверстия
due to [dju: tə] (prep) благодаря
durable ['djʊərəb(ə)] (adj) долговечный

Ee

edging ['edʒɪŋ] (n) отходы лесопиления
elaborate [ɪ'læbəreɪt] (adj) сложный, усовершенствованный
electric power drill электрическая дрель
endless-chain conveyor подъёмник непрерывного действия
environmentally damaging [envaɪrən'ment(ə)lɪ 'dæmɪdʒɪŋ] вредный с точки зрения экологии
environmentally friendly [envaɪrən'ment(ə)lɪ 'frendli] экологически безопасный
equal ['i:kw(ə)] (v) уравнивать
escape [ɪs'keɪp] (v) убежать, утекать, давать утечку, исчезать
essential [ɪ'senʃl] (adj) необходимый, основной
estimate ['estɪmeɪt] (v) оценивать
evolve [ɪ'vɒlv] (v) развиваться (развить)
exhaust [ɪgzɔ:st; eg-] (v) истощать
exhaustion [ɪgzɔ:stʃən] (n) истощение, исчерпание, высасывание
expand [ɪk'spænd; ek-] (v) расширяться(ся)
experience [ɪks'pɪəriəns] (n) опыт

Ff

factory-made промышленный, заводского изготовления
favourable ['feɪv(ə)rəb(ə)] (adj) благоприятный
felling [felɪŋ] (n) валка, вырубка
fibreboard ['faɪbəbɔ:d] древесно-волоконная плита (ДВП)
finished shape окончательная форма
fit (smth) in position устанавливать в нужное положение
fit (smth) into the building встраивать в здание
fit [fɪt] (v) подходить, подгонять, соответствовать, устанавливать
fit handles and locks прикреплять ручки и замки
fit into one another подходить друг другу
fix [fɪks] (v) (smth) закреплять
flexible ['fleksɪb(ə)] (adj) гибкий
forest stand лесонасаждение
forestry ['fɒrɪstri] (n) лесоводство
foundation [faʊn'deɪʃən] (n) фундамент
freestanding [ˌfri:'stændɪŋ] (adj) передвижной, автономный
fuel [fjuəl] (n) топливо
fungi ['fʌŋɡi:] (n) (мн.ч. от **fungus**) грибок
furnace ['fə:nɪs] (n) печь
furniture [fɜ:nɪtʃə] (n) мебель

further processed подвергшийся дальнейшей обработке

Gg

gain moisture приращивать влажность

gang saw многодисковая пилорама

general [dʒenərəl] (adj) общий

giant ['dʒaɪənt] (adj) гигантский, огромный

gimlet ['gɪmlɪt] (n) бурав, буравчик

glue [glu:] (v) клей

glued joint клеевое соединение

gouge [gaʊdʒ; gu:dʒ] полукруглое долото, полукруглая стамеска

grade [greɪd] (v) сортировать

gradually ['grædʒuəli] (adv) постепенно

grain [greɪn] (n) волокно (древесины)

ground storage yard площадка для хранения

Hh

hammer ['hæməɹ] (n) молоток

hand drill ручная дрель

hand saw ручная пила

hardboard ['hɑ:dbɔ:d] (n) твердый картон

harmony ['hɑ:məni] (n) гармония

harvesting ['hɑ:vɪstɪŋ] (n) лесозаготовка

head saw головная лесопильная рама

hearth [hɑ:θ] (n) очаг

heat [hi:t] (n) 1. тепло, теплота; 2. нагрев

heat energy ['hi:t 'enədʒi] тепловая энергия

heat exchanger [hi:t ɪks'tʃeɪndʒə] теплообменник

helicopter ['helɪkɔ:pʰtə] (n) вертолет

horizontal [ˌhɔ:rɪ'zɔ:ntl] (adj) горизонтальный

hygroscopic (adj) [haɪgrə(ʊ)'skɔ:pɪk] гигроскопичный

Ii

ignition temperature [ɪg'nɪʃ(ə)n 'temprətʃə] температура воспламенения

immensely(adv) [ɪ'mensli] (adv) чрезвычайно

improved [ɪm'pru:v] (part I) улучшенный

in addition to (prep) вдобавок к, кроме

in contrast to (prep) в отличие от

in length в длину

in relation to (prep) относительно

in spite of (prep) несмотря на

in thickness в толщину

in width в ширину

incising (n) накалывание

incomplete [ɪnkəm'pli:t] (adj) незаконченный, неполный

insect ['ɪnsɛkt] (n) насекомое

inseparably [ɪn'sep(ə)rəbli] (adv) неразрывно

install [ɪn'stɔ:l] (v) устанавливать

insulating [ɪnsjʊleɪtɪŋ] (adj) heat ~ [hi:t ~] теплоизоляционный

electricity ~ [ɪlek'trɪsɪtɪ; ,el-; ,i:- ~] электроизоляционный

insulation [ɪnsjʊleɪʃ(ə)n] (n) изоляция

insulator [ɪnsjʊleɪtə] (n) изолятор

isotropic [aɪsə(ʊ)'trɒpɪk] (adj) изотропный

Jj

jack plane рубанок

joint [dʒɔɪnt] (n) соединение, стык, шов

Ll

light [laɪt] (adj) легкий

lignin ['lɪgnɪn] (n) лигнин (*составное вещество стенок древесных клеток*)

limbing [lɪmɪŋ] (n) обрезка (сучьев)

limitation [lɪmɪ'teɪʃən] (n) ограничение

logging ['lɒɡɪŋ] (n) лесозаготовки

lose moisture [lʊz 'mɔɪstʃə] терять влажность

lumber [lʌmbə] (n) пиломатериал

Mm

machine [mə'ʃi:n] (n) машина

machine-made изготовленный на станке, машинного производства

machinery [mə'ʃi:nəri] (n) механизм, машина

woodworking ~ [wʊdwɜ:kɪŋ ~] деревообрабатывающие станки

mainly [meɪnli] (adv) в основном, главным образом, преимущественно

marking gauge ['mɑ:kɪŋ 'geɪdʒ] рейсмус

masonry heater ['meɪsnrɪ 'hi:tər] печь из каменной кладки

mast [mɑ:st] (n) вышка, мачта

measure ['meʒər] (v) измерять

mechanically [mɪkænikli] (adv) механически

mine timber крепёжный лес

mostly ['mɔ:stli] (adv) в основном, в большинстве случаев

Nn

nail [neɪl] (n) гвоздь

natural material [ˈnætʃrəl məˈtɪəriəl] природный материал
necessitate [nɪˈsesɪteɪt] (v) требовать, вынуждать
non-combustible [nɒnkəmˈbʌstɪb(ə)l] (adj) негорючий
non-durable [nɒnˈdʒʊərəb(ə)l] (adj) недолговечный
non-sustainable [nɒn səˈsteɪnəb(ə)l] (adj) (экологически) неустойчивый (*наносящий ущерб окружающей среде*)

Oo

object [ˈɒbdʒəkt] (n) предмет
observation [əbzəˈveɪʃən] (n) наблюдение
obtain [əbteɪn] (v) *from* добывать (из)
odd [ɒd] (adj) нечетный
on site на месте
opaque [ə(ʊ)ˈpeɪk] (adj) непрозрачный
opportunity [ɒpəˈtjuːnɪti] (n) возможность
organism [ˈɔːɡənɪzəm] (n) организм
overlay [əʊvəˈleɪ] (n) покрытие

Pp

panel [pænl] (n) панель
wood-based ~ древесная плита
paper [peɪpə] (n) бумага
parallel to the grain [ˈpærəlel tə ðə ˈɡreɪn] параллельно волокнам
partially [ˈpɑːʃ(ə)li] (adv) частично
particle board древесно-стружечная плита (ДСП)
percent [pəːrˈsent] (n) процент
phenol-formaldehyde [ˌfiːnɒlˈfɔːˈmældɪhaɪd] фенол-формальдегид
physically [ˈfɪzɪklɪ] (adv) с точки зрения физики; физически
piece [piːs] (n) деталь
piezoelectric [paɪˌiːzəʊˈlektɪk] (adj) пьезоэлектрический
pile [paɪl] (v) складывать в штабель
pipeline [ˈpaɪpalaɪn] (n) трубопровод
plane [pleɪn] (n) рубанок
planet [ˈplænɪt] (n) планета
plastic [ˈplæstɪk] (n) пластмасса, пластик
pliers [plaɪəz] (n) плоскогубцы, пассатижи
plywood [ˈplaɪwʊd] (n) фанера
pole [pəʊl] (n) столб
poor [pʊə] (adj) плохой
portable [ˈpɔːtəbl] (adj) переносной, портативный
possession [pəˈzefən] (n) владение
post [pɔːst] (n) стойка
potential [pəˈtenʃl] (n) потенциал

power tool электрический инструмент
preliminary [pri'liminəri] (adj) предварительный
prerequisite [pri:'rekwizit] (n) предварительное условие
preservative (adj) консервирующий
preservative chemical (n) химический консервант
preserve [pri'z:v] (v) сохранять
primarily ['praɪməri] (adv) в первую очередь
primary ['praɪməri] (adj) первоочередной; начальный
primary processed подвергшийся первичной переработке
principle ['prɪnsɪpl] (n) принцип
processing [prə'sesɪŋ] (n) обработка
prominent ['prɒmɪnənt] (adj) выдающийся
property [prəpəti] (n) свойство
pulp [pʌlp] (n) древесная масса, целлюлоза
purpose ['pʊ:pəs] (n) цель
put (v) (*smth*) *together* соединять

Qq

quality ['kwɒlɪti] (n) качество; свойство
quantity ['kwɒntɪti] (n) количество

Rr

radically ['radɪkli] (adv) в корне, совершенно
railroad tie железнодорожная шпала
raw [rɔ:] (adj) сырой; необработанный
raw material [rɔ: mə'tɪəriəl] сырьё
recently ['ri:sntli] (adv) недавно
recognition [rekəg'nɪʃən] (n) признание
refinement [ri'faɪnmənt] (n) усовершенствование
refining [ri'faɪnɪŋ] (n) очистка
refractory [ri'fræktəri] (adj) огнеупорный, тугоплавкий
relatively [relətɪvli] (adv) относительно
removal [ri'mu:v(ə)l] (n) удаление, устранение
re-sawing (n) распил на заготовки определённого размера
resemble [ri'zembəl] (v) походить (на)
residue ['rezɪdju:] (n) остаток
resistance (to) (n) ['rɪzɪst(ə)ns] сопротивление (чему-л.)
respective [ri'spektɪv] (adj) соответствующий
restrict [ri'strɪkt] (v) ограничивать
retain [ri'teɪn] (v) сохранять
ripening ['raɪp(ə)nɪŋ] (n) вызревание
ripping (n) продольная распиловка
root [ru:t] (n) корень

rotten (v) ['rɒtn] гнить

rotting (n) ['rɒtɪŋ] гниение

roundwood (n) круглые лесоматериалы (*древесина с корой или без коры, не распиленная продольно и сохраняющая естественную круглую поверхность*)

Ss

sampling ['sæ:mpliŋ] (n) выборка

sand [sænd] (v) шлифовать

sander ['sændə] (n) шлифовальный инструмент

saw [sɔ:] (n) пила

saw [sɔ:] (v) (**sawed, sawn**) пилить

sawdust ['sɔ:dʌst] (n) опилки

sawing (n) пиление, распилка, распиловка

sawmill [sɔ:mi:l] (n) лесопильный завод

sawn veneer пиленный шпон, фанера

sawnwood (n) пиломатериалы (*продукция из древесины, полученная в результате продольного деления брёвен и продольного и поперечного деления полученных частей*)

scarcity ['skeəsiti] (n) нехватка; недостаток

screw [skru:] (n) винт; болт; шуруп

screwdriver (n) отвёртка

serviceability [ˌsɜ:vɪsəbɪlɪti] (n) удобство эксплуатации и технического обслуживания

set the width установить ширину

shape (v) (*smth*) придавать форму

shaving (n) 1. выравнивание поверхности; 2. стружка

shear [ʃiə] (v) сдвигать

sidewise (adv) в сторону

similar in principle (*to*) в принципе аналогичный *чему-л.*

simultaneous [sɪməl'teɪniəs] (adj) одновременный

skid [skɪd] (v) отбуксовывать

skidding [skɪdɪŋ] (n) трелевка (*транспортировка срубленных деревьев, а также хлыстов и бревен от места заготовки (лесосеки) к лесопогрузочным пунктам*)

slab (n) горбыль

sleek [sli:k] (adj) блестящий, гладкий

smoothen (v) придавать гладкость

smoothing plane фуганок

soapstone ['səʊp, stəʊn] (n) тальк

solid-wood-core plywood фанера из массива

spade [speɪd] (n) лопата

spar tree (n) лонжерон (*основной силовой элемент конструкции многих инженерных сооружений, располагающийся по длине конструкции*)

spoke-shave (n) скобель

spud [sprʌd] (n) прижимная планка

square ends придавать торцам прямоугольную форму

stationary ['steɪʃnəri] (adj) стационарный

steadily [ˈstedɪli] (adv) 1) неуклонно; 2) постоянно

stem [stem] (n) стебель

stiff [stɪf] жёсткий

store [stɔː] (v) хранить

stove [stəʊv] (n) плита, печь

strength [streŋθ; streŋkθ] (n) прочность

strengthen [ˈstreŋθən; ˈstreŋkθən] (v) укреплять

strip off (v) снимать

strong [strɒŋ] (adj) прочный

stump [stʌmp] (n) пень

submersion (n) погружение

surface irregularity неровность поверхности

sustainable [səˈsteɪnəb(ə)l] (adj) (экологически) устойчивый (*не наносящий ущерба окружающей среде*)

sustained yield [səˈsteɪnd jɪːld] (n) устойчивая продуктивность

synthetic resin (n) синтетическая смола

Tt

telecommunication |,telɪkəmjuːnɪˈkeɪʃ(ə)n] (n) телекоммуникация

tenon saw ножовка

tensile strength [ˈtensəl ˈstreŋθ] прочность на разрыв

termite [ˈtɜːmaɪt] (n) термит

thermal mass [ˈθɜːml mæs] (n) термальная масса

tile [taɪl] (n) черепица; плитка

timber [ˈtɪmbə] (n) древесина; лес; строительный пиломатериал

transmit (v) [trænzˈmɪt] передавать

transparent (adj) [trænsˈspær(ə)nt] прозрачный

transport [trænsˈpɔːt] (v) переносить, транспортировать, доставлять

treatment [ˈtriːtmənt] (n) обработка

trunk [trʌŋk] (n) ствол

try square (разметочный) угольник

type (n) тип

Uu

undertake [ʌndəˈteɪk] (v) (**undertook, undertaken**) предпринимать

uniform inner structure [ˈjuːnɪfɔːm ˈɪnə ˈstrʌktʃə] однородная внутренняя структура

unique [juːˈniːk] (adj) уникальный

utilize (v) использовать

Vv

valuable [ˈvæljʊəbəl] (adj) ценный

vary [ˈveəri] (v) (in) варьироваться (по)

veneer (n) шпон

vulnerable [ˈvʌln(ə)rəb(ə)l] (adj) уязвимый

Ww

wane (n) обзол (*часть боковой поверхности бревна, сохранившаяся на пиломатериале после распиловки бревна*)

warmth [wɔ:mθ] (n) тепло, теплота

waterproof (adj) [ˈwɔ:təpru:f] водонепроницаемый

wedge [wedʒ] (n) клин

weight [weɪt] (n) вес

wholly [ˈhəʊli] (adv) полностью

wood [wʊd] (n) дерево (материал); древесина

wood-carver (n) резчик по дереву

woodcutting-machinist (n) станочник-гравёр

wooden [ˈwʊdən] (adj) деревянный, сделанный из дерева

woodwork (n) столярная работа

work a machine управлять механизмом, машиной, станком

work in plastics/wood работать с пластмассой/деревом

Yy

yield (n) выход, выработка, урожай

ПРЕЗЕНТАЦИЯ

СОСТАВЛЕНИЕ ПЛАНА ПРЕЗЕНТАЦИИ

Первый шаг в подготовке любого задания – записать всё то, о чём вы хотите сказать, и на основе этого составить план своего выступления, то есть определить, с чего лучше всего начать, а чем – закончить, что обязательно упомянуть, а что можно не затрагивать. Вот несколько советов:

1. Запишите, что вашей аудитории нужно или интересно будет узнать по теме вашего выступления
2. Может помочь составление списка вопросов, ответы на которые вы намерены дать. Эти ответы и лягут в основу выступления.
3. Располагайте части выступления в таком логическом порядке, который будет понятен аудитории. Ей будет легче следить за вашей мыслью. Не перескакивайте постоянно с одного на другое.
4. Приводите примеры. Они помогут понять вашу точку зрения.

КАК НАЧАТЬ ПРЕЗЕНТАЦИЮ?

Безусловно, публичное выступление заставляет нервничать, но если вы хорошо подготовлены, то будете чувствовать себе более уверенно. Для этого, приступая к работе над презентацией и публичным выступлением, следует сразу задать себе следующие вопросы. Прежде всего, это «С кем я собираюсь говорить?» и «Что они уже знают?». Во-вторых, «Где я выступаю?», «Какие там возможности для этого?». Вам приходится брать в расчёт наличие аппаратуры и оборудования, например, экран, если хотите использовать PowerPoint. В-третьих, «Какова цель моей презентации?», то есть «Я хочу дать информацию, произвести впечатление, убедить или продать товар?» И последнее – «Сколько времени мне для этого надо?»

Ответы на эти вопросы оказывают огромное влияние на то, что вы включите в свою презентацию и как вы это сделаете. Некоторые для этого сначала записывают свои мысли, а затем пробуют расположить их по смысловым группам, таким образом, создавая основу своей речи. Короткие шпаргалки на небольших карточках, которые удобно держать в руке во время выступления, также помогают чувствовать себя уверенно. Если вы выступаете с электронной презентацией, вы должны подготовить слайды. Для этого надо собрать все изображения, диаграммы и т.п. и расположить их в нужном порядке. Как только вы почувствуете, что всё организовано правильно, можно начать готовить начало выступления – вступление.

Даже если аудитория знакома с вами, рекомендуется представиться и назвать свою должность. Затем объяснить, о чём вы планируете говорить и в какой последовательности. Упомяните, какой тип будете презентации вы использовать – например, электронную или в виде постера. Следует уточнить, когда слушатели могут задать интересующие вопросы – во время выступления

или в конце. На первом слайде разместите основные пункты плана вашей речи. Также будет нелишним сообщить слушателям о том, что вы предоставите им раздаточный информационный материал; это поможет им слушать вас более внимательно.

USEFULL PHRASES FOR THE INTRODUCTION	ПОЛЕЗНЫЕ ФРАЗЫ ДЛЯ ВВЕДЕНИЯ
Good morning, afternoon, etc.	Доброе утро, день и т.п.
Hello. It's nice to see you (all).	Привет. Приятно (всех) вас видеть.
I'm ... from ... and it's a pleasure to be with you today	Я ..., и мне приятно сегодня быть с вами.
My name's ... and I'm a ... -year student of ... (name of the department).	Меня зовут ..., и я студент ... курса ... факультета.
I'm ... and I study at the ... course of ... (name of the department).	Я ..., и я учусь на ... курсе ... факультета.
I'd like to explain how ... works.	Я хотел бы объяснить, как работает ...
I'd like to give you some information about ...	Я хотел бы дать информацию о ...
I'm going to talk about/tell about ...	Я собираюсь поговорить/рассказать о ...
The purpose of my talk is ...	Цель моего выступления – ...
First of all, we'll look at ..., and then ...	Прежде всего, мы рассмотрим ..., затем ...
Finally, ...	В конце, ...
If you want to ask me any questions, please interrupt.	Если хотите задать вопрос, не стесняйтесь перебивать.
I'll explain first of all and then you can ask me any questions at the end.	Сначала я всё разъясню, а затем в конце вы сможете задать вопросы.
I want to turn now to ...	Я хочу перейти к ...

КАК ИСПОЛЬЗОВАТЬ НАГЛЯДНЫЙ МАТЕРИАЛ (ГРАФИКИ, ДИАГРАММЫ И Т.П.)?

USEFULL PHRASES FOR REFERRING TO VISUAL AIDS	ПОЛЕЗНЫЕ ФРАЗЫ ДЛЯ ИСПОЛЬЗОВАНИЯ ДИАГРАММ И ГРАФИКОВ
I'd like to show you a chart/graph which represents ...	Я бы хотел показать вам диаграмму/график, которая отражает ...
This chart/graph represents ...	Эта диаграмма/график отражает ...
If we take a look we can see ...	Если мы взглянем, мы увидим ...
I'd like to draw your attention to ...	Я бы хотел привлечь ваше внимание к ...
Take a look at ...	Взгляните на ...
Let's look now at ...	Давайте посмотрим на ...
As you can see, ...	Как вы видите, ...
You will see ...	Вы увидите ...
You will notice ...	Вы заметите ...
You can see that ...	Вы видите, что ...

УБЕЖДЕНИЕ

Вот несколько советов, чтобы ваша презентация была убедительной:

1. Хорошо подготовьтесь. У вас должны быть все необходимые факты и данные, и они должны быть точными.
2. Дайте достаточно сведений справочного характера, но не перегружайте ими аудиторию.
3. Будьте готовы подкрепить каждое своё заявление доказательствами.
4. Очень полезным будет подготовить для аудитории распечатки с детальной технической или финансовой информацией. Слушатели смогут знакомиться с данными в привычном для себя темпе и обращаться к ним по мере необходимости.
5. Вы должны говорить с энтузиазмом. Улыбайтесь и не забывайте про зрительный контакт со слушателями.
6. Не бойтесь тишины.
7. Не торопитесь! Не спешите и говорите внятно.
8. Будьте готовы к вопросам!

ЗАКЛЮЧИТЕЛЬНАЯ ЧАСТЬ ПРЕЗЕНТАЦИИ

В заключении следует:

1. Ещё раз напомнить аудитории основные положения вашего выступления
2. Подвести итоги
3. Поблагодарить слушателей
4. Предложить задавать вопросы.

USEFULL PHRASES FOR ENDING YOUR PRESENTATION	ПОЛЕЗНЫЕ ФРАЗЫ ДЛЯ ЗАКЛЮЧЕНИЯ
We've looked at ..., ... and ...	Мы рассмотрели ..., ... и ...
I've discussed ..., ... and ...	Мы обсудили ..., ... и ...
It seems clear that ...	Очевидно, что ...
It's my view that ...	На мой взгляд, ...
Thank you for your attention.	Спасибо за внимание.
I'll be happy to answer any questions you may have.	Я буду счастлив ответить на любые ваши вопросы.

ПОСТЕРНАЯ ПРЕЗЕНТАЦИЯ

Постерная презентация, или постерный доклад, представляет собой подготовленное устное выступление по выбранной теме со зрительной опорой в виде плаката.

Составив план презентации, напишите короткий (!) текст под каждым пунктом плана. По возможности, используйте иллюстрации. Определитесь с

компоновкой материала. Распечатайте плакат, прикрепите его на стену. После выступления будьте готовы ответить на вопросы.

Требования к оформлению постера:

1. Плакат должен быть формата А2 или А1 в горизонтальном или вертикальном расположении. Заглавие, информация об авторе должны располагаться сверху. Буквы заглавия должны быть не менее 2,5 см в высоту. Остальной текст должен легко читаться с расстояния в 1,5 м.
2. Сформулируйте заглавие так, чтобы оно отражало суть вашей презентации
3. Обязательно давайте пояснение графической информации.
4. Используйте на плакате цифры, буквы, стрелки, чтобы показать нужный порядок следования частей вашей презентации.
5. Нет необходимости заполнять каждый квадратный сантиметр. Оставляя пустое пространство, вы выделяете смысловые блоки.
6. Используйте цвета и графику, чтобы привлечь внимание

КРИТЕРИИ ОЦЕНКИ ПРЕЗЕНТАЦИИ

Оценивание презентации представляет собой выставление баллов (минимум 1 балл, максимум 5 баллов) за выполнение требований, предъявляемых к презентации. К таким требованиям относятся:

1. Содержание
Хорошо ли подготовился оратор? Разбирается ли он в теме?
2. Организация
Есть ли введение? заключение?
Грамотно ли выстроена структура выступления?
3. Голос
Выступал ли оратор убедительно и с воодушевлением?
Достаточно ли внятно говорил?
Сумел ли заинтересовать?
Произносил или читал своё выступление?
Была ли скорость речи нормальной для слушателей?
4. Манера выступления
Был ли выступающий «зажат»?
Использовал ли подходящие жесты?
Был ли зрительный контакт с аудиторией? Вовлекал ли её в беседу?
5. Наглядные пособия
Использовались ли наглядные пособия?
Легко ли их было разглядеть?
Помогли ли они?

Полученные баллы затем суммируются и переводятся в отметку.

РАЗДЕЛ КОНТРОЛЯ ЗНАНИЙ

ОБРАЗЦЫ ТЕМАТИЧЕСКИХ ТЕСТОВ

Unit I

Variant 1

1. Complete the missing forms:

	Verb	Noun
1	to insulate	
2	to contribute	
3	to absorb	
4	to mechanize	
5	to strengthen	

2. Match the synonyms:

- | | | | |
|-------------|---------------|-------------------|------------------|
| 1) wood | 6) to expand | a) characteristic | f) adhesive |
| 2) glue | 7) to improve | b) to save | g) to extend |
| 3) property | 8) to advance | c) to enhance | h) to incinerate |
| 4) strong | 9) to retain | d) hard | i) timber |
| 5) heat | 10) to burn | e) to promote | j) warmth |

3. Fill in the right prepositions:

- The risk clearly still continues, in spite ___ national protection measures.
- These were in addition ___ changes necessary to meet the requirements.
- Our achievements are largely due ___ this pursuit.
- This underlines the importance of bio-gasification ___ contrast to incineration.

4. Choose the right variant:

- Nowadays wood consumption is steadily
a) *increasing* b) *popular* c) *decreasing*
- Coal and petroleum are ... resources.
a) *renewable* b) *non-renewable* c) *alternative*
- Wood is a ... heat insulator.
a) *good* b) *poor* c) *strong*
- Comprehensive research of wood was undertaken only in ... century.
a) *17th* b) *19th* c) *20th*

Variant 2

1. Complete the missing forms:

	Noun	Adjective
1	strength	
2		variable
3	development	
4		undesirable
5		additional

2. Match the antonyms:

- | | | | |
|---------------|-------------------|----------------------|-------------------------|
| 1) natural | 6) to gain | a) <i>soft</i> | f) <i>to emit</i> |
| 2) renewable | 7) to absorb | b) <i>outdated</i> | g) <i>detailed</i> |
| 3) general | 8) to heat | c) <i>to weaken</i> | h) <i>man-made</i> |
| 4) hard | 9) advanced | d) <i>to degrade</i> | i) <i>to cool</i> |
| 5) to improve | 10) to strengthen | e) <i>to lose</i> | j) <i>non-renewable</i> |

3. Fill in the right prepositions:

- Articles 55 establishes legal obligations ___ relation to cooperation
- Chinese has been introduced as a subject ___ of study at primary schools.
- The main problem facing this sector is competition ___ synthetic fibres.
- The success of art exhibitions and concerts has proved that Monaco maintains its place ___ the art world.

4. Choose the right variant:

- Wood is the raw material for chemical derivatives of
a) *lactose* b) *cellulose* c) *glucose*
- Wood burns and
a) *exhausts* b) *decays* c) *shrinks*
- Wood ... moisture.
a) *absorbs* b) *emits* c) *evaporates*
- Detailed studies of wood structure began in
a) *17th* b) *19th* c) *20th*

ТУТ МЫ ВСТАВИМ СВОИ ТЕСТЫ

ОБРАЗЦЫ ТЕСТОВ ДЛЯ ИТОГОВОГО КОНТРОЛЯ

TEST
WOOD PROCESSING

VARIANT 1

Part 1

I. Skim the text.

Wooden bridges

Various bridges of many different sizes can be built out of wood, even for carrying road transport. Prefabricated wooden bridges can be assembled quickly, something which reduces the deleterious effects of construction on traffic flow. Wooden bridges have been shown to have long-term durability and low maintenance and repair costs.



The prime advantage of wood in bridge building is its **lightness** and strength. The change from using solid wood to using laminated wood has made it possible to manufacture large beams in wood.

Because of the lightness and strength of wood, wooden bridges can be prefabricated, transported and **fixed** in the form of finished elements. Simple jointing technology speeds up assembly of the parts which, on completion, are ready for waterproofing and finishing prior to use.

Assembly overcomes perhaps the most difficult phase, as it may be possible to lay the bridge deck as a single unit. A high degree of prefabrication and dry jointing technology also help to make winter building easier.

According to research and experience in different countries, wooden bridges are very **competitive** in terms of both construction and life-cycle costs. Furthermore, wood is a renewable resource and in some countries a home-grown material. While growing, wood sequesters the carbon dioxide in air and acts as a carbon sink.

For example, between 2010 and 2014, a total of 584 bridges were constructed in Finland, but only 17 of them were in wood. Of all road bridges, wooden bridges represent a **figure** of 4%. All in all, Finland has around 900 wooden bridges out of a total of 20,000. In Sweden and Norway, wooden bridges are much more common than in Finland, with Norway building some 10% and Sweden around 20% of all new bridges in wood.

II. Decide whether the following sentences are true or false according to the text.

1. Bridges for carrying road transport can be built out of wood.
2. Wooden bridges don't have high repair costs.

3. Laminated wood made possible large wood beams in bridge construction.
4. Wooden bridges can't be prefabricated.
5. Prefabrication and dry joining technology makes winter bridge building simpler.
6. Wood is a non-renewable resource.
7. 4% of road bridges in Finland are built of wood.
8. About 10% of new bridges in Sweden are built of wood.

III. Choose the contextual meaning.

1. lightness

- | | |
|-----------------|----------------|
| a) легкость | c) воздушность |
| b) освещенность | d) яркость |

2. fixed

- | | |
|-----------------|---------------|
| a) исправлен | c) установлен |
| b) зафиксирован | d) закреплен |

3. assembly

- | | |
|-----------|--------------|
| a) сбор | c) собрание |
| b) монтаж | d) ассамблея |

4. competitive

- | | |
|-----------------|---------------------|
| a) конкурентный | c) состязательный |
| b) конкурсный | d) соревновательный |

5. figure

- | | |
|-----------|----------------|
| a) данные | c) иллюстрация |
| b) схема | d) фигура |

IV. Which sentence means exactly the same?

1. Wooden bridges have been shown to have long-term durability and low maintenance and repair costs.

- a) Показано, что деревянные мосты обладают долговечностью и низкими эксплуатационными и ремонтными расходами.
- b) Доказано, что деревянные мосты обладают долговечностью и низкими эксплуатационными и ремонтными расходами.
- c) Указано, что деревянные мосты обладают долговечностью и низкими эксплуатационными и ремонтными расходами.

2. According to research and experience in different countries, wooden bridges are very competitive in terms of both construction and life-cycle costs.

- a) Согласно исследованиям и опыту в разных странах, деревянные мосты очень конкурентоспособны по стоимости строительства и по сроку службы.

- b) Согласно исследованиям и опыту в разных странах, деревянные мосты очень конкурентоспособны как по стоимости строительства, так и по сроку службы.
- c) Согласно исследованиям и опыту в разных странах, деревянные мосты были очень конкурентоспособны как по стоимости строительства, так и по стоимости жизненного цикла.

3. All in all, Finland has around 900 wooden bridges out of a total of 20,000.

- a) Всего в Финляндии насчитывалось около 900 деревянных мостов из 20 000.
- b) Всего в Финляндии насчитывается около 900 деревянных мостов из 20 000.
- c) Всего Финляндия насчитывает около 900 деревянных мостов из 20 000.

Part 2

V. Grammar recognition: Choose the correct variant.

Forests are among the most beautiful, revered, inspiring, and productive ecosystems on earth. Trees are some of (-1-) organisms on the planet. Trees inspire feelings of peace and tranquility—they even (-2-) to speed healing from surgery.

Nearly all of us rely on forests for the quality and abundance of our region's outstanding drinking water. Forests cool and clean our air, support 30,000 jobs in the forest products industry, and provide heat to homes.

Take a look (-3-) you. How many of the products in your view are made of wood? How many from fossil fuels extracted from deep within the earth at great cost to our environment and the climate that our civilization depends (-4-)?

With more emphasis on local wood, we could be more certain that our wood is harvested sustainably and (-5-) to environmental degradation.

- | | | | |
|----|---------------------------|-------------------------|-------------------------|
| 1. | a) the largest and oldest | b) large and old | c) larger and older |
| 2. | a) has been documented | b) have been documented | c) are documented |
| 3. | a) around | b) at | c) behind |
| 4. | a) in | b) for | c) on |
| 5. | a) is not contribute | b) is not contributing | c) are not contributing |

VI. Match the terms with their definitions.

- | | |
|-------------------|---|
| 1. durability | a) the ability to withstand wear, pressure, or damage |
| 2. maintenance | b) manufacturing sections (a building or piece of furniture) to enable quick assembly on site |
| 3. prefabrication | c) the action of fitting together the component parts of a machine or other object |
| 4. deck | d) a flat area for walking on built across the space between the sides of smth. |
| 5. assembly | e) the process of keeping something in good condition |

VII. Fill in the blanks using the words from the list below.

- | | | | |
|-------------------|---------------------|------------------------|------------------|
| <i>a) climate</i> | <i>b) trends</i> | <i>c) temperatures</i> | <i>d) absorb</i> |
| <i>e) forests</i> | <i>f) radiation</i> | <i>g) erosion</i> | <i>h) gases</i> |

Weather and climate records show that New England has already experienced increased (-1-) , intensification of extreme precipitation and hurricanes—(-2-) that are likely to continue. New England’s extensive forest cover can play an important role in our response to (-3-) change. We have identified 26 ways (-4-) can reduce future climate change, including absorbing harmful (-5-), shading buildings and rivers, and reflecting solar (-6-). Trees and forests cool the air by providing shade and by evaporating water through their leaves. This makes living in New England more comfortable. Trees, their roots, and forest litter protect soils. Forest soils (-7-) heavy rainfalls and release the water slowly. This prevents (-8-), cools streams in hot weather, and guides rainfall to settle in lakes, rivers, and reservoirs for future use or enjoyment.

VIII. Read the text and choose the best title.

Systematic management of forests for a sustainable yield of timber began in Portugal in the 13th century when Alfonso III of Portugal planted the Pinhal do Rei to prevent coastal erosion and soil degradation, and as a sustainable source for timber use in naval construction. His successor Dom Dinis continued the practice and the forest exists still today.

Forest management also flourished in the German states in the 14th century, e.g. in Nuremberg, and in 16th-century Japan. Typically, a forest was divided into specific sections and mapped; the harvest of timber was planned with an eye to regeneration. As timber rafting allowed for connecting large continental forests, early modern forestry and remote trading were closely connected. Large firs in the black forest were called „Holländer“, as they were traded to the Dutch ship yards. Large timber rafts on the Rhine were 200 to 400m in length, 40m in width and consisted of several thousand logs. Timber rafting infrastructure allowed for large interconnected networks all over continental Europe and is still of importance in Finland.

- a) Early forestry development
- b) Naval construction development
- c) Sustainable yield development

IX. Put the jumbled sentences in the right order.

- a) This goal is rather easy to achieve in operations that harvest thick wood assortments because the figures of cost effectiveness, of wood prices and that of final results are more or less positive.
- b) Since we live in a very competitive market economy with various options and social needs, it is not possible to function with subsidies for wood production for long.
- c) This fact has a major universal application in all harvesting systems and working methods (manual, motor-manual, animal power, tractors, skidders, chipping and cable systems).
- d) This means that apart from very few special cases, we are obliged to structure all the wood harvesting and utilization systems with high productivity and economic efficiency.
- e) But the harvesting and utilization of small-sized assortments represent in practice a real problem.

**ПРЕДМЕТНО-ТЕМАТИЧЕСКОЕ СОДЕРЖАНИЕ
ЗАЧЁТА И ЭКЗАМЕНА**

Темы к зачёту

1. From the history of wood
2. Wood: general information
3. Wood properties
4. Wood as energy source

Темы к экзамену

1. From the history of wood
2. Wood: general information
3. Wood properties
4. Harvesting
5. Carpentry
6. Wood utilization: primary processed wood products
7. Wood utilization: secondary processed wood products

ВСПОМОГАТЕЛЬНЫЙ РАЗДЕЛ

УЧЕБНАЯ ПРОГРАММА БНТУ ПО УЧЕБНОЙ ДИСЦИПЛИНЕ «ИНОСТРАННЫЙ ЯЗЫК (АНГЛИЙСКИЙ)»

В ЭУМК представлены выдержки из учебной программы по учебной дисциплине «Иностранный язык (английский)» для специальности 1-08 01 01 Профессиональное обучение (по направлениям), касающиеся направления специальности 1-08 01 01-04 «Профессиональное обучение (деревообработка)».

УТВЕРЖДАЮ

Проректор по учебной работе
Белорусского национального
технического университета

_____ А.Г. Баханович

_____ 22.06.2017 _____

Регистрационный № УД-ФЭС 102-11/уч.

ИНОСТРАННЫЙ ЯЗЫК (английский)

**Учебная программа учреждения высшего образования
по учебной дисциплине для специальностей**

1-08 01 01 Профессиональное обучение (по направлениям):

**направление специальности 1-08 01 01-01 «Профессиональное обучение
(машиностроение)»;**

**направление специальности 1-08 01 01-04 «Профессиональное обучение
(деревообработка)»;**

**направление специальности 1-08 01 01-05 «Профессиональное обучение
(строительство)»;**

**направление специальности 1-08 01 01-07 «Профессиональное обучение
(информатика)»;**

**направление специальности 1-08 01 01-09 «Профессиональное обучение
(автомобильный транспорт)»;**

для специальности 1-36 20 04 «Вакуумная и компрессорная техника»

Учебная программа составлена на основе типовой учебной программы «Иностранный язык», утв. 15.04.2008, рег. № ТД-СГ.013/тип.

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РЕКОМЕНДОВАНА К УТВЕРЖДЕНИЮ:

Кафедрой английского языка №2 Белорусского национального технического университета

(протокол № 9 от 26 апреля 2017 г.)

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(протокол №8 от 07 июня 2017 г.)

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С.С. Данильчик

Научно-методическим советом Белорусского национального технического университета (протокол №5 секции №1 от 29 мая 2017 г.)

ПОЯСНИТЕЛЬНАЯ ЗАПИСКА

Учебная программа по учебной дисциплине «Иностранный язык (английский)» разработана для специальностей **1-08 01 01 Профессиональное обучение (по направлениям)**: направление специальности 1-08 01 01-01 «Профессиональное обучение (машиностроение)»; направление специальности **1-08 01 01-04 «Профессиональное обучение (деревообработка)»**; направление специальности 1-08 01 01-05 «Профессиональное обучение (строительство)»; направление специальности 1-08 01 01-07 «Профессиональное обучение (информатика)»; направление специальности 1-08 01 01-09 «Профессиональное обучение (автомобильный транспорт)»; для специальности 1-36 20 04 «Вакуумная и компрессорная техника».

Целью изучения учебной дисциплины является формирование иноязычной коммуникативной компетенции будущего специалиста, позволяющей использовать иностранный язык как средство профессионального и межличностного общения.

В процессе достижения главной цели решаются следующие **задачи**:

- *познавательные*, позволяющие сформировать представление об образе мира как целостной многоуровневой системе (этнической, языковой, социокультурной и т.п.); об уровне материальной и духовной культуры; системе ценностей (религиозно-философских, эстетических и нравственных); особенностях профессиональной деятельности в изучаемых странах;

- *развивающие*, позволяющие совершенствовать речемыслительные и коммуникативные способности, память, внимание, воображение, формирование потребности к самостоятельной познавательной деятельности и т. д.;

- *воспитательные*, связанные с формированием общечеловеческих, общенациональных и личностных ценностей, таких как: гуманистическое мировоззрение, уважение к другим культурам, патриотизм, нравственность, культура общения;

- *практические*, предполагающие овладение иноязычным общением в единстве всех его компетенций (языковой, речевой, социокультурной, компенсаторной, учебно-познавательной), функций (этикетной, познавательной, регулятивной, ценностно-ориентационной) и форм (устной и письменной), что осуществляется посредством взаимосвязанного обучения всем видам речевой деятельности в рамках определенного программой предметно-тематического содержания, а также овладения технологиями языкового самообразования.

Учебная дисциплина базируется на знаниях курса средней общеобразовательной школы и связана с «Обзорными лекциями по специальности». Знания и умения, полученные студентами при изучении данной дисциплины, позволяют осуществлять коммуникацию на английском языке в различных ситуациях профессиональных и деловых

взаимоотношений, а также выполнять реферирование, аннотирование и перевод профессионально значимых англоязычных текстов и научных работ.

В результате изучения учебной дисциплины «Иностранный язык (английский)» студент должен

знать:

- систему иностранного языка в его фонетическом, лексическом и грамматическом аспектах;
- социокультурные нормы бытового и делового общения в современном поликультурном мире;
- историю и культуру страны изучаемого языка;
- основные формы культурной коммуникации;

уметь:

- вести общение профессионального и социокультурного характера на иностранном языке, сочетая диалогические и монологические формы речи;
- читать литературу на иностранном языке по профилю обучения (изучающее, ознакомительное, просмотровое и поисковое чтение);
- использовать иностранный язык в качестве инструмента профессиональной деятельности: перевод, реферирование и аннотирование профессионально ориентированных и научных текстов, выступление с публичной речью, составление деловой документации;
- использовать стилистические нормы иностранного языка в соответствии с ситуацией профессиональных или деловых взаимоотношений;

владеть:

- системой иностранного языка в его фонетическом, лексическом и грамматическом аспектах;
- правилами речевого этикета;
- рациональным и эффективным поведением в ситуациях межкультурной коммуникации.

Освоение данной учебной дисциплины для специальностей 1-08 01 01 Профессиональное обучение (по направлениям): направление специальности 1-08 01 01-01 «Профессиональное обучение (*машиностроение*)»; направление специальности 1-08 01 01-04 «Профессиональное обучение (*деревообработка*)»; направление специальности 1-08 01 01-05 «Профессиональное обучение (*строительство*)»; направление специальности 1-08 01 01-07 «Профессиональное обучение (*информатика*)»; направление специальности 1-08 01 01-09 «Профессиональное обучение (*автомобильный транспорт*)» обеспечивает формирование следующих компетенций:

АК-1. Уметь применять базовые научно-теоретические знания для решения теоретических и практических задач.

АК-2. Владеть системным и сравнительным анализом.

АК-3. Владеть исследовательскими навыками.

АК-4. Уметь работать самостоятельно.

АК-5. Быть способным порождать новые идеи (обладать креативностью).

АК-6. Владеть междисциплинарным подходом при решении проблем.

АК-7. Иметь навыки, связанные с использованием технических устройств, управлением информацией и работой с компьютером.

АК-8. Обладать навыками устной и письменной коммуникации.

АК-9. Уметь учиться, повышать свою квалификацию в течение всей жизни.

СЛК-1. Обладать качествами гражданственности.

СЛК-2. Быть способным к социальному взаимодействию.

СЛК-3. Обладать способностью к межличностным коммуникациям.

СЛК-5. Быть способным к критике и самокритике.

СЛК-6. Уметь работать в команде.

Освоение данной учебной дисциплины для специальности 1-36 20 04 «Вакуумная и компрессорная техника» обеспечивает формирование следующих компетенций:

АК-1. Уметь применять базовые научно-теоретические знания для решения теоретических и практических задач.

АК-8. Обладать навыками устной и письменной коммуникации.

СЛК-3. Обладать способностью к межличностным коммуникациям.

СЛК-6. Уметь работать в команде.

ПК-30. Владеть методологией подготовки научных статей, сообщений, рефератов и презентаций.

ПК-35. Вести переговоры с другими заинтересованными участниками.

ПК-36. Готовить доклады, материалы к презентациям.

ПК-37. Пользоваться информационными ресурсами.

<...>

Согласно учебному плану для направления специальности **1-08 01 01-04 «Профессиональное обучение (деревообработка)»** на изучение учебной дисциплины отведено для очной формы получения высшего образования всего 294 часа, из них аудиторных – 140 часов.

Распределение аудиторных часов по курсам, семестрам и видам занятий приведено в Таблице 3.

Таблица 3

Очная форма получения высшего образования			
Курс	Семестр	Практические занятия, ч.	Форма текущей аттестации
1	1	72	зачет
1	2	68	экзамен

<...>

СОДЕРЖАНИЕ УЧЕБНОГО МАТЕРИАЛА

РАЗДЕЛ I. МОДУЛЬ СОЦИАЛЬНОГО ОБЩЕНИЯ

Тема 1.1. Социально-бытовое общение

Личностные характеристики (биографические сведения, работа, хобби т.д.).

Тема 1.2. Роль иностранного языка в профессиональном общении

Роль иностранного языка в профессиональной деятельности инженера. Роль международного сотрудничества в профессиональной деятельности.

Тема 1.3. Современные технологии и окружающая среда

Экологическая культура. Технический прогресс и глобальные проблемы человечества. Пути решения проблем защиты окружающей среды с точки зрения инженера. Экологические проблемы Беларуси, Великобритании и США в сопоставлении.

Раздел II. МОДУЛЬ ПРОФЕССИОНАЛЬНОГО ОБЩЕНИЯ

Тема 2.1. Учебно-профессиональное общение

Вклад белорусов в мировую науку и технику. Организация инженерного образования в Республике Беларусь и странах изучаемого языка: США и Великобритании. Обучение в университете. БНТУ.

Тема 2.2. Профессиональное общение

Предмет и содержание специальности. Общее представление о структуре и характере профессиональной деятельности. Избранная специальность как отрасль инженерии.

Тема 2.3. Обмен научно-технической информацией

Обмен-научно-технической информацией (на выставке, конференции). Электронная и постерная презентации.

Тема 2.4. Аннотирование статьи по специальности

Составные части аннотации на иностранном языке. Клишированные фразы для написания аннотации.

Тема 2.5. Реферирование статьи по специальности

Основные части реферата на иностранном языке. Клишированные фразы для написания реферата.

Тема 2.6. Производственное общение

Типичные ситуации производственного общения. Социокультурные нормы делового общения. Профессиональная этика.

Раздел III. ЯЗЫКОВОЙ МАТЕРИАЛ

Тема 3.1. Фонетика

Звуковой строй иноязычной речи в сопоставлении с фонетической системой родного языка: особенности произнесения отдельных звуков (гласных, согласных), звукосочетаний, слов и фраз; расхождение между произношением и написанием; фонетическая транскрипция. Интонационное оформление фраз различного коммуникативного типа: повествования, вопроса, просьбы, приказа, восклицания. Фразовое и логическое ударение в сложном предложении.

Тема 3.2. Имя существительное

Категории числа, падежа, определённости.

Тема 3.3. Имя прилагательное

Категория степеней сравнения. Сравнительные конструкции.

Тема 3.4. Местоимение

Типы местоимений (личные, притяжательные, указательные, вопросительные, неопределённые, возвратные).

Тема 3.5. Числительное

Типы числительных (простые, производные, сложные; количественные порядковые; дробные).

Тема 3.6. Наречие

Типы наречий. Категория степеней сравнения.

Тема 3.7. Глагол

Видо-временная система (действительный, страдательный залог). Модальные глаголы и их эквиваленты. Согласование времён.

Тема 3.8. Неличные формы глагола

Инфинитив. Причастие. Герундий. Конструкции с неличными формами глагола.

Тема 3.9. Словообразование

Словообразовательные модели (существительное, прилагательное, наречие, глагол).

Тема 3.10. Служебные слова

Предлоги. Союзы. Союзные слова.

Тема 3.11. Простое предложение

Типы простых предложений; порядок слов. Члены предложения: способы выражения, правила согласования подлежащего и сказуемого. Специфические конструкции и обороты.

Тема 3.12. Сложное предложение

Типы сложного предложения (сложносочинённое и сложноподчинённое). Типы придаточных предложений. Условные предложения. Бессоюзное подчинение.

Тема 3.13. Прямая и косвенная речь

Правила перевода в косвенную речь предложений разных типов.

Тема 3.14. Профессиональная лексика

Наиболее употребительные слова и словосочетания по предметно-тематическому содержанию курса. Сочетаемость слов; свободные и устойчивые словосочетания. Общенаучная лексика и терминология.

Тема 3.15. Разговорные клише

Знакомство. Установление, поддержание контакта. Выражение просьбы. Выражение согласия, несогласия с мнением автора (собеседника). Начало, продолжение, завершение беседы. Выражение собственного мнения. Запрос о мнении собеседника. Уверенность, неуверенность.

<...>

УЧЕБНО-МЕТОДИЧЕСКАЯ КАРТА УЧЕБНОЙ ДИСЦИПЛИНЫ
очная форма получения высшего образования
для направлений специальности

1-08 01 01-04 «Профессиональное обучение (деревообработка)», <...>

Номер раздела, темы	Название раздела, темы	Количество аудиторных часов	Форма контроля знаний
		Практические занятия	
1.	2	3	4
	1 семестр		
1.	Модуль социального общения		
1.1.	Социально-бытовое общение	4	
1.2.	Роль иностранного языка в профессиональном общении	4	
1.3.	Современные технологии и окружающая среда	6	
2.	Модуль профессионального общения		
2.1.	Учебно-профессиональное общение	4	
2.2.	Профессиональное общение	4	
2.6.	Производственное общение	4	
3.	Языковой материал		
3.1.	Фонетика	4	
3.2.	Имя существительное	4	
3.3.	Имя прилагательное	4	
3.4.	Местоимение	4	
3.5.	Числительное	4	
3.6.	Наречие	4	
3.10.	Служебные слова	4	
3.11.	Простое предложение	4	
3.12.	Сложное предложение	6	
3.14.	Профессиональная лексика	4	
3.15.	Разговорные клише	4	
	Итого за семестр	72	Зачет
	2 семестр		

2.	Модуль профессионального общения		
2.3.	Обмен научно-технической информацией	6	
2.4.	Аннотирование статьи по специальности	8	
2.5.	Реферирование статьи по специальности	8	
2.6.	Производственное общение	6	
3.	Языковой материал		
3.7.	Глагол	8	
3.8.	Неличные формы глагола	8	
3.9.	Словообразование	6	
3.12.	Сложное предложение	8	
3.13.	Прямая и косвенная речь	4	
3.14.	Профессиональная лексика	6	
	Итого за семестр	68	Экзамен
	Всего аудиторных часов	140	

<...>

СРЕДСТВА ДИАГНОСТИКИ РЕЗУЛЬТАТОВ УЧЕБНОЙ ДЕЯТЕЛЬНОСТИ (МОДУЛЬ КОНТРОЛЯ)

Для оценки достижений студента рекомендуется использовать следующий диагностический инструментарий:

- устный и письменный опрос во время практических занятий;
- проведение текущих контрольных работ (заданий) по отдельным темам;
- защита выполненных в рамках управляемой самостоятельной работы индивидуальных заданий;
- зачёт;
- экзамен.

ТРЕБОВАНИЯ К РАЗЛИЧНЫМ ЭТАПАМ ДИАГНОСТИКИ КОМПЕТЕНЦИЙ СТУДЕНТОВ

Проверка знаний и умений осуществляется в форме текущего, промежуточного и итогового контроля. *Текущий контроль* предусмотрен программой и осуществляется на аудиторных занятиях с целью проверки уровня владения пройденной частью языкового и речевого материала и степени сформированности коммуникативных навыков и умений. Текущий контроль осуществляется в форме комплексных заданий, лексикограмматических тестов, коллоквиумов, собеседований.

Промежуточный контроль проводится в конце прохождения каждой темы в виде лексико-грамматических тестов и самостоятельной работы по текстам по специальности.

Итоговый контроль носит комплексный характер и проводится в двух формах: зачета и экзамена.

Оценка учебных достижений студентов на экзаменах по дисциплине «Иностранный язык (английский)» производится по десятибалльной шкале. Для оценки учебных достижений студентов используются критерии, утвержденные Министерством образования Республики Беларусь.

ЗАЧЁТ по дисциплине «Иностранный язык (английский)» основывается на результатах текущего и промежуточного контроля и направлен, с одной стороны, на проверку умения работы с текстом, а с другой стороны, – на проверку коммуникативных навыков и умений, приобретенных студентами на соответствующем этапе обучения. Требования к зачету:

Письменная часть

1. Лексико-грамматический тест.
2. Чтение и письменный перевод оригинального общенаучного или общетехнического текста с иностранного языка на родной со словарем. Объем – 1000 печатных знаков. Время выполнения – 45 мин.

Устная часть

1. Подготовленное высказывание по заданной ситуации (10-12 предложений) и неподготовленная беседа с преподавателем в рамках данной ситуации (6-7 реплик).
2. Реферирование оригинального или частично адаптированного культурологического или научно-популярного текста на иностранном языке; беседа на иностранном языке по содержанию текста. Объём текста – 700 печатных знаков. Время выполнения – 10 мин.

ЭКЗАМЕН включает следующие задания:

Письменная часть

1. Лексико-грамматический тест.
2. Чтение и письменный перевод оригинального профессионально ориентированного текста с иностранного языка на родной со словарем. Объём – 1300-1500 печатных знаков. Время – 45 мин.

Устная часть

1. Подготовленное высказывание по заданной ситуации и неподготовленная беседа с преподавателем в рамках данной ситуации (по предметно-тематическому содержанию дисциплины).
2. Реферирование аутентичного или частично адаптированного общественно-политического, культурологического, научно-популярного текста; беседа на иностранном языке по содержанию текста. Объём текста – 900 печатных знаков. Время – 5-7 мин.

МЕТОДИЧЕСКИЕ РЕКОМЕНДАЦИИ ПО ОРГАНИЗАЦИИ И ВЫПОЛНЕНИЮ САМОСТОЯТЕЛЬНОЙ РАБОТЫ СТУДЕНТОВ

При изучении дисциплины рекомендуется использовать следующие формы самостоятельной работы:

- подготовка сообщений, тематических докладов, презентаций по заданным темам;
- проработка тем (вопросов), вынесенных на самостоятельное изучение.

МЕТОДЫ (ТЕХНОЛОГИИ) ОБУЧЕНИЯ

Основными методами (технологиями) обучения, отвечающими целям изучения дисциплины, являются:

- *проектная технология*, представляющая самостоятельную, долгосрочную групповую работу по теме-проблеме, выбранную самими студентами, включающую поиск, отбор и организацию информации. В процессе работы над проектом речевое иноязычное общение «вплетено в интеллектуально-эмоциональный контекст другой деятельности»;
- *кейс-технология*, основу которой составляют осмысление, критический анализ и решение конкретных социальных проблем. Кейс-

технология ориентирована на развитие способности студентов решать определенные жизненные ситуации, важные повседневные проблемы, с которыми они непосредственно сталкиваются в жизни;

– *симуляция*, которая применительно к иностранному языку представляет собой подражательное, разыгранное воспроизведение межличностных контактов, организованных вокруг проблемной ситуации, максимально приближенной к реальной;

– *технология обучения в сотрудничестве*, предполагающая создание условий для активной совместной учебной деятельности студентов в разных учебных ситуациях. Это обучение в процессе общения студентов друг с другом и с преподавателем при наличии общей цели и индивидуальной ответственности каждого члена группы за собственный вклад в общее дело, за выполнение общего задания;

– *технология дебатов*, представляющая собой полемический диалог, проходящий по определенному сценарию и имеющий целью убеждение третьей стороны – судей или аудитории.

– *компьютерные технологии*, предполагающие широкое использование Интернет-ресурсов и мультимедийных обучающих программ. Компьютерные технологии позволяют интенсифицировать и активизировать учебно-познавательную деятельность студентов, эффективно организовать и спланировать самостоятельную работу, совершенствовать контрольно-оценочные функции (компьютерное тестирование).

<...>

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