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ХИМИЧЕСКИЙ ФАКУЛЬТЕТ



Кафедра английского языка

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**МЕТОДИЧЕСКОЕ
ПОСОБИЕ
ДЛЯ СТУДЕНТОВ I КУРСА**

**ВРЕМЕНА
ЧАСТЬ I**

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ХИМИЧЕСКИЙ ФАКУЛЬТЕТ

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I КУРСА ХИМИЧЕСКОГО ФАКУЛЬТЕТА МГУ

ВРЕМЕНА

Часть I

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Данное пособие является одним из серии пособий для студентов I -го года обучения, изучавших английский язык в школе.

Работа с данным пособием предлагается студентам после прохождения ими вводно-коррективного курса Семёновой Н.П.

Пособие состоит из пяти уроков (10 аудиторных часов). Каждый урок начинается презентацией грамматического материала. (Рекомендуется, чтобы студенты заранее ознакомились с грамматическим комментарием самостоятельно).

Для усвоения понятийного содержания английских видовременных глагольных форм, не имеющих параллели в русском языке и, следовательно, представляющего трудность для русскоязычных студентов, предлагаются упражнения в условном переводе. Первичное закрепление формы осуществляется в диалогах, затем даются упражнения для выработки навыка владения формой, актуализация которого происходит при чтении текстов и говорении на материале этих текстов.

Урок 1 посвящён формированию понятия о видовременной глагольной форме и способах выражения времени и аспекта в английском языке.

В уроках 2 и 3 изучаются формы действительного залога, а в уроках 4 и 5 - формы страдательного залога настоящего времени в разных аспектах.

В пособие включены 7 текстов, которые, помимо иллюстрации грамматического материала по теме и обеспечения словарной базы, имеют целью развитие навыков разных видов чтения и говорения на материале прочитанного, а поэтому снабжены предтекстовыми и послетекстовыми лексическими упражнениями, а также заданиями по чтению и говорению.

В конце каждого урока выделены домашние задания.

Автор выражает благодарность Даминовой С.О. за компьютерное оформление таблицы к первому уроку.



LESSON 1.

GRAMMAR: TENSES Presentation.

Любая глагольная форма одновременно указывает на время (tense), т.е. на то когда происходит действие и на аспект (aspect), т.е. на то как это действие происходит.

Сравните глаголы: "говорил", "сказал", "заговорил", "проговорил", "говаривал", где одно и то же действие - "говорение" в прошедшем времени рассматривается с разных точек зрения /отмечается его начало или конец, однократность или многократность, краткость или длительность/.

В английском языке, как и в других языках, существует 3 времени:

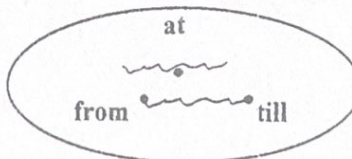
Past	Present	Future
прошедшее	настоящее	будущее

Однако аспект в разных языках представлен по-своему. В английском языке существует 4 видеовременные системы, которые могут четырьмя различными способами представить действие в любом из трёх времён. Это системы: Indefinite (неопределённые времена), Continuons (продолженные, или процессные), Perfect (результативно-предшествующие) и Perfect Continuons (предшествующие продолженные).

Системой Indefinite выражается констатация факта. Это действия, происходящие постоянно, регулярно, иногда, всегда, часто, редко, а также общеизвестные факты. Графически их можно представить точками в любом месте на плоскости времени.



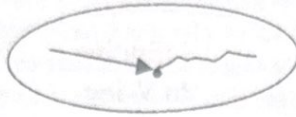
Система Continuons, помимо констатации факта, подчёркивает развитие действия в указанный момент или период времени. Графически такой процесс можно представить волнистой линией, проходящей через указанный момент или отрезок времени



В системе Perfect действие представлено а) как завершившееся к определённому моменту (а его результат очень важен в данный момент), или б) как действие завершённое в период времени, который ещё не истёк:



Система Perfect Continuous показывает, что действие началось до определённого момента и продолжается, захватывая этот момент:



GRAMMAR EXERCISES.

Exercise 1.

Choose the necessary tense as if you were to translate the following sentences into English.

- I. 1. Борис закончил школу два месяца назад. 2. Он уже подал заявление в институт. 3. Теперь он готовится к экзаменам.
- II. 1. Он много читает. 2. Когда ему позвонили, он читал интересную статью. 3. Он читал её уже полчаса и ещё не дочитал до конца.
- III. 1. Не звоните мне завтра в 2 часа, я буду готовиться к экзамену. Экзамен состоится в начале июля, а к концу месяца я уже сдам все экзамены.

Exercise 2.

Study the table below and say:

- 1/ which component of verb-form expresses tense;
2/ how Present, Past and Future are expressed;

ГРАММАТИЧЕСКОЕ ВЫРАЖЕНИЕ ВРЕМЕН

INDEFINITE

Infinitive
to V-ing

Past
V-ed/2ф/

Present
V /V-s

Future
shall/will V

CONTINUOUS

Infinitive
to be V-ing

Past
was/were V-ing

Present
am/is/are V-ing

Future
shall
be V-ing
will

PERFECT

Infinitive
to have V-ed

Past
had V-ed

Present
have/has V-ed

Future
shall
have V-ed
will

PERFECT CONTINUOUS

Infinitive
to have been V-ing

Past
had been V-ing

Present
have
been V-ing
has

Future
shall/will have
been V-ing

Exercise 3.
Practise the dialogue. Explain the use of tenses.

- What do you do?
 -I study at the Chemistry Department of Moscow University. I have been studying there for two months.
 -And what did you do before you entered the University?
 -I went to school. I finished it last June and applied for the University.
 -I hear that you have passed your entrance exams successfully, haven't you?
 -Yes, and I am lucky to be a student now. Look here! What are you reading? I think it is something interesting.
 -You see I am preparing for the seminar that I shall have tomorrow. It is a very interesting journal.
 I was looking it through when you came up to me. I have already read some of the articles and think this material will be useful for me.

Pre-text Exercises.

Exercise 1.

Read the following words and make sure that you remember their meanings.

Fast, broad, furthermore, ability, to belong, to cross, to appear.

Exercise 2.

Read the words which have similar counterparts in Russian and translate them.

Collection, procedure, revision, classification, fundamental.

Exercise 3.

The underlined words in the table below are familiar to you. Guess the meaning of their derivatives. Read and translate both words.

Существительное N	Глагол V	Прилагательное Adj.	Наречие Adv.
1	!	2	!
<u>number</u>		3	4
		numerous / 'nju: mərəs /	
division subdivision /sʌ b d i'v i z n/	<u>to divide</u>		
		<u>whole</u>	wholly /houli/
	to deepen /'di:pən/	<u>deep</u>	
	<u>to create</u>	creative /kri'eitiv/	creatively /kri'eitivli/
applicability application	<u>to apply</u>		

Exercise 4.

Listen and repeat the following words.

Exercise 4.

Listen and repeat the following words.
Observe their meaning in phrases.

1. branch - отрасль
a branch of industry
a branch of science
2. field - поле, область
a field of science
a field of knowledge
3. research - исследование
a field of research
to do research
4. consideration - рассмотрение, соображение
consideration of the law
consideration of the experiment
5. thorough - полный, тщательный
thorough understanding
thorough research
6. to define - определять
to define chemistry
to define matter
7. to develop - развивать
to develop science
to develop industry
8. to involve - вовлекать, включать
to involve the collection of data
to involve the principles
9. to predict - предсказывать
to predict the results
to predict future
10. to require - требовать
to require knowledge
to require research
11. particular - отдельный, конкретный
a particular branch of science
a particular experiment
12. to be concerned with - затрагивать, рассматривать
to be concerned with chemical changes
to be concerned with major principles

Work at the text.

Exercise 1.

Listen to Text № 1 and entitle it. /Keep your book closed./

We may define science as an organized and systematized body of knowledge. It has major subdivisions, such as natural science and social science, and numerous branches, such as biology, chemistry, physics and so on.

Science has been developing at a faster and faster rate and a number of new branches have appeared lately.

Today many fields of research cannot belong only to a particular branch of science such as biology or physics, or chemistry. Rather these fields cross over from one scientific discipline to another.

Thus^{1/}, while we define chemistry as the study of matter and its transformations, and physics as the study of energy and its transformations, chemistry is often concerned with energy and physics with materials. Furthermore, there are studies in "chemical physics", "biochemistry" and "biophysical chemistry" and it is not unusual to find a scientist trained in chemistry doing research in physics, or vice versa^{2/}. Much research which is going on nowadays involves branches of science.

Thus, in our consideration of chemistry we shall be concerned with fundamental principles which have broad applicability.

We shall talk of matter and energy and we shall discuss many things which cannot belong wholly to the field of chemistry.

There are several important types of things to learn when studying science. One of these is the method of developing knowledge. It involves the collection and classification of information and data, the development of a theory to deepen our understanding of the principles underlying the data, the testing of the theory by predicting the result of new experiments, the reclassification of the data, the revision of the theory, new predictions and so on through many cycles. Such a procedure is generally known as a scientific method. It requires not only a thorough understanding of known principles, but also the ability to interpret and classify results with an open mind, free of prejudice^{3/}. In short, it requires the ability to think clearly and creatively.

1/ таким образом

2/ и наоборот

3/ предвзвешенно

Exercise 2.

Read the text and answer the questions.

1. What is science?
2. What are the major subdivisions of science?
3. What branch of science do you know?
4. Are they interconnected?
5. How can you define chemistry?
6. What does a scientific method involve?
7. What abilities does the application of a scientific method require?

Exercise 3.

Divide the text into logical parts and entitle them.

Exercise 4.

Summarise the text according to your plan.

Exercise 5.

Explain the use of tenses presented in the text.

Words to be remembered.

n	subdivision	/sʌbdi'viʒn/	подразделение
	branch	/brɑ:ntʃ/	отрасль
	field	/fi:ld/	область

	research	/ri'sə:tʃ/	исследование
	consideration	/kən,sɪdə'reɪʃn/	рассмотрение
	ability	/ə'bɪləti/	способность
	applicability	/,æplɪkə'bɪləti/	применимость, пригодность
	collection	/kə'leɪʃn/	сбор, собирание
	classification	/klæsɪfɪ'keɪʃn/	классификация
	procedure	/prə'si:dʒə/	процедура, методика
	revision	/ri'vɪʒn/	пересмотр
v	define	/di'faɪn/	определять
	involve	/ɪn'vɔlv/	включать
	belong	/bi'lɔŋ/	принадлежать
	develop	/di'veləp/	развивать(ся)
	deepen	/di:p(ə)n/	углублять
	predict	/pri'dɪkt/	предсказывать
	require	/ri'kwaɪə/	требовать
	appear	/ə'piə/	появляться
	to be concerned with	/kən'sə:nd/	затрагивать, рассматривать
Adj	major	/meɪdʒə/	главный, основной
	numerous	/'nju:mərəs/	многочисленный
	particular	/pɑ:'tɪkjʊlə/	отдельный, особый
	fundamental	/,fʌndə'mentl/	основной
	thorough	/'θɒrə/	тщательный, полный
	fast	/fɑ:st/	быстрый
Adv	rather	/rɑ:ðə/	скорее, а не
	thus	/ðʌs/	таким образом
	furthermore	/'fɜ:ðə'mɔ:/	более того
	vice versa	/'vaɪsɪ'vɜ:sə/	и наоборот
	wholly	/'həʊli/	полностью, целиком

Home exercises.

Exercise 1.

Translate the following and explain the use of tenses.

My friend finished school last year. He wanted to enter the University but failed at his examinations. So he took a preparatory course. He was working hard the whole year and not in vain. This year he has passed his entrance exams successfully. Now he is doing chemistry at the University. He has been studying inorganic chemistry for 3 months.

The complete course of inorganic chemistry takes one academic year. When a second-year student he will listen to the lectures in analytical chemistry. Usually the students combine theoretical studies with practical work. They work in the laboratory twice a week.

-Have you seen him today?

-Yes, he is working in the laboratory. He has been making his experiment since 9 o'clock.

Exercise 2.

Learn the words of this lesson and retell text 1.

LESSON 2.

GRAMMAR: THE PRESENT TENSES /ACTIVE VOICE/

Вы уже знакомы с четырьмя способами выражения действия в английской системе времён. Рассмотрим их более подробно в системе настоящего времени (Present).

Present Indefinite употребляется для выражения обычного повторяющегося или постоянного действия, описания последовательных действий, констатации фактов, общих положений, вечных истин.

Эти характеристики действий могут подчёркиваться обстоятельственными, выражающими неопределённое время: always, often, seldom, usually, sometimes, regularly, every day /week, month, year / etc.

Present Continuous употребляется для выражения незаконченных действий, происходящих в момент речи (могут захватывать и более широкий период в настоящем времени).

Этот незаконченный процесс может определяться либо самой ситуацией, либо уточняться обстоятельственными словами: now, at present, at the moment, still, the whole day / month, etc./

Глаголы со значением физического и умственного восприятия (to see, to know, hear), а также глагол "be", как правило, не употребляются в Continuous т.к. не могут означать процесс.

Present Perfect употребляется для выражения уже свершившегося действия, результат которого говорящий связывает с настоящим моментом для выражения всего жизненного опыта.

Эта актуальность свершившегося действия для настоящего момента может подчёркиваться следующими обстоятельственными словами: just, lately, recently, never, over, since, yet, today, this week /month, etc./

Поскольку Present Perfect выражает уже свершившееся действие, оно переводится на русский язык прошедшим временем. Однако его не следует путать с Past Indefinite, которое соотносит свершившееся действие с определённым моментом или периодом в прошлом, например:

Present Perfect: He has passed his exams. Он сдал экзамены. (т.е. на настоящий момент экзамены сданы)

Past Indefinite: He passed his exams last month. Он сдал экзамены в прошлом месяце (связи с настоящим нет).

Present Perfect Continuous - употребляется для выражения действия, начавшегося раньше и продолжающегося в настоящий момент. Это значение может подчёркиваться обстоятельствами: for an hour, (a week, a month, etc), since morning (5 o'clock, etc). Поскольку это действие продолжается в настоящий момент, оно переводится на русский настоящим временем.

Например: He has been making the experiment for 2 hour.

Он уже проводит эксперимент 2 часа.

Языковое выражение настоящего времени.

действительный залог

Indefinite	Continuous	Perfect	Perfect Continuous
I We You ask They He She asks It	I am We You are asking They He She are It	I We You have They He She has It	I We You have They He She has It
I We You do They He She does It	I am We You are They He She is It	I We You have They He She has It	I We You have They He She has It
I we Do you they ask? he Does she it	Am I we Are you they asking? he Is she it	I we Have you they asked? he Has she it	I we Have you they been asking he Has she it

Окончание "-s", "-es" в третьем лице единственного числа читается как звук /s/ после глухих согласных, как /z/ после звонких согласных и как /ɪz/ - после шипящих и свистящих согласных.

Окончание "-ed" читается как /t/ после глухих согласных, как /d/ после звонких согласных и как /ɪd/ после звуков /t/, /d/.

GRAMMAR EXERCISES.

Exercise 1.

Explain the use of tenses.

- I. 1/ He studies chemistry.
2/ Don't make noise. He is studying.
- II. 1/ Where is Nick? - He is making an experiment in the chemistry laboratory.
2/ He makes experiments every week.
- III. 1/ Do you often read English books?
2/ Yes. And I am just reading one now.
- IV. 1/ I have good friends who always help me.
2/ I can't go with you now. I am helping my friend to get ready for his lesson.
- V. 1/ They speak English well.
2/ They are speaking English now.

Exercise 2.

Read the sentences below and say where underlined verbs denote actions in progress that require the use of Present Continuous.

- 1/ Он обычно идёт на работу пешком, но сегодня поедет на троллейбусе, т.к. идёт дождь.
- 2/ Я думаю, что он серьёзный студент. Он решает сложные задачи. Пока он ещё думает над решением этой задачи.
- 3/ Теперь я вижу, что Вы много работаете и хорошо знаете материал по теме.
- 4/ Я думаю над этой проблемой целый день.
- 5/ Он редко занимается в читальном зале. Но если Вы пойдёте туда сейчас, то увидите, что он действительно занимается.
- 6/ Она хочет стать хорошим специалистом, поэтому хорошо учится.
- 7/ Вы внимательно слушаете моё объяснение? Вам нужно это хорошо понять.
- 8/ Вы внимательно слушаете на занятиях? От этого зависит степень Вашего понимания предмета.
- 9/ Куда Вы смотрите? Что там происходит?
- 10/ Вы слышите, как играет музыка?

Exercise 3.

Practise the dialogue.

- What are you doing?
- I want to obtain a new substance.
- Look at the solution in this bulb / колба /.
It is changing its colour. That means that a reaction is taking place.
- How interesting! I also like to make chemical experiments.
That is why I spend much time in the chemistry laboratory.
- Do you often work here?
- Yes, I come here twice a week.

Exercise 4.

Now let's talk. I know something about you. Say whether the same is true about one of your classmates. For example:

Teacher: I know that you live in Moscow. And what about N?

Student: He lives in Moscow too.

or

He does not live in Moscow.

/Students may do the exercise in pairs./

I know, that you	1. study chemistry 2. read much 3. work in the laboratory twice a week 4. make experiments 5. like chemistry 6. study well 7. have many friends 8. help your friends	and what about your classmate?
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Exercise 5.

Express your opinion of the following.
If you think it is not true, correct it.

1. The students of your group study biochemistry.
2. You do research in the field of analytical chemistry.
3. You want to become a physicist.
4. Your father works at the geology department.
5. Your mother teaches history.
6. Your friend often analyses the results of physical experiments.
7. You regularly discuss physical problems.
8. Research in chemistry involves knowledge in geography.
9. You are discussing historical problems.
10. You are speaking French.
11. Your classmate is working to the chemistry laboratory.
12. He is making an experiment.

Exercise 6.

Restore the questions the answers to which are given below.

1. Yes, I think so. We define chemistry as the study of matter and its transformations.
2. Yes, I think so. Chemistry is one of the major branches of science.
3. No, I don't think so. He is not doing any research now.
4. Yes, I think so. They are discussing scientific problems.
5. Yes, I think so. Chemistry is developing at a faster rate.
6. No, I don't think so. This research does not only belong to chemistry.
7. Yes, I think so. Many branches of science have appeared recently.
8. No, I don't think so. We have not classified the data yet.
9. Yes, I think so. He studies this particular field of chemistry.
10. No, I don't think so. These principles do not require revision.
11. Yes, I think so. The problem requires thorough consideration.
12. Yes, I think so. This information deepens our understanding of the subject.

VOCABULARY EXERCISES.

Exercise 1.

Form derivatives of the given words using the underlined suffixes and translate them:

- | a/ nouns | b/ adverbs | c/ verb |
|----------------------------------|---|---------|
| a/ <u>-tion</u> , <u>-sion</u> : | to subdivide, to consider, to create, to predict, to define, to collect, to classify. | |
| <u>-ment</u> : | to develop, to require, to involve | |
| <u>-ity</u> : | applicable, creative, able. | |
| b/ <u>-ly</u> : | creative, whole, fundamental, particular | |
| c/ <u>-en</u> : | deep, broad, wide | |

Exercise 2.

Choose pairs of synonyms and translate them.

- a/ branch, main, full, so individual, quick, wide.
- b/ Thorough, thus, field, particular, broad, fast, major.

Exercise 3.

Translate the underlined words in the following sentences.

1. Organic and inorganic chemistry are major subdivisions of chemistry.

2. Consideration of this process requires some knowledge of inorganic chemistry.
3. This particular field of research involves experimental work.
4. We shall be concerned with this particular branch of science.
5. Everyone knows about broad applicability of heating in numerous chemical experiments.
6. It is important to predict the result of the research.
7. Nowadays organic chemistry is developing at a faster and faster rate.
8. We may define chemistry as the study of matter and its transformations.

Exercise 4.

Retell text 1 using the following words and word combinations.

1. major subdivisions
2. numerous branches
3. field of research
4. to belong to a particular branch
5. to define
6. to be concerned with
7. fundamental principle
8. broad applicability
9. to develop knowledge
10. to deepen the understanding of
11. to involve classification of data
12. to predict results
13. revision of the theory
14. procedure
15. to require thorough understanding
16. ability to work creatively

TEXT 2.

- I. a/ Before reading text 2 make sure that you know the following words:

- 1/ finding - находка
- 2/ universe - вселенная
- 3/ countless - бесчисленный
- 4/ overlap - перекрываться, частично совпадать:
- 5/ to keep records - вести записи;

b/ Now read text 2 and say what new information it contains compared to text 1.

Science is knowledge of the world around us. This knowledge has been obtained by means of careful tests called experiments. Often the findings of many experiments show a general rule or law of nature.

Scientists of various fields are working to discover the laws of nature.

Biology is the science of living things. So biologists study plants and animals.

Geology is the study of the Earth.

Astronomers want to know more about the universe.

Physicists are concerned with the physical processes taking place in nature.

Chemistry is the science that studies how elements, the simple building blocks of our world, are combined in different ways to make countless substances.

Nowadays sciences overlap. There are geochemists who study the chemistry of the earth, biophysicists, biochemists and many other combinations.

A true science must have many, many studies made and keep careful records of every finding. A special branch of mathematics called statistics is especially useful for this. Statistics studies what has happened many times and on this basis predicts, what may happen in future.

- II. Make up a plan of text 2.
- III. Summarize the text.

Oral practice /work in pairs/.

On the basis of texts 1 and 2 compose dialogues. One of you is a schoolboy /schoolgirl/ who is going to do science and wants to know something about it. The other one is an experienced scientist who is ready to give answers to the questions.

Homework.

Exercise 1.

Put the verbs in brackets in correct forms.

Richard is a scientific worker. He /do/ research in the field of polymers. He /belong/ to the Organic Chemistry department. Polymers are very important for many branches of national economy and much research /go on/ in this particular field nowadays. At present scientists /try/ to create polymers which could substitute /заменить/ for many natural materials.

Richard is also concerned with the problem and he /make/ many experiments to obtain a new polymer. If you come to his laboratory now, you can see him there together with his co-workers. They /analyse/ the properties of a new polymer and /discuss/ the plan of their further work.

Exercise 2.

- a/ Read text 3 /Lesson3/ the text orally.
- b/ Formulate the main idea of the text.
- c/ Translate

LESSON 3.

**GRAMMAR: THE PRESENT TENSES /ACTIVE VOICE/
Reading and Speech Practice.**

Exercise 1.

Before reading text 3 learn the following words.

- 1. application - применение
- 2. account - отчёт
- 3. to originate - возникать
- 4. to cause - вызывать, заставлять
- 5. similar - подобный
- 6. to present - представлять
- 7. to profit - получать выгоду
- 8. apparent - очевидный

Exercise 2.

Read text 3 for the main idea.

TEXT 3.

The Unity of Science.

The theory of relativity holds a central place in the twentieth century science. Although it originated as a mathematical conception, its principles have found application in almost every branch of science. This "reflection" of such a theory in various sciences shows that there is no clear-cut line of demarcation between them.

An example will perhaps make this clearer. You may find an account of the properties of gases in any book of chemistry. There you will find considerations of the laws which determine the proportions in which gases combine and the reasons which cause them to do it.

Now turn to a book on physics and you will find the same subject there, presented in a different form and without chemical nomenclature, but still the same. In a similar way a geology book will contain an account of different chalk deposits which are the remains of living beings and come within the scope of biology. This overlapping of sciences is very important. Each of them to some extent depends on another. On closer examination this relationship becomes apparent. The history of science is full of examples where one branch of science has profited by another one in an unexpected way.

Exercise 3.

Express your opinion. Prove your viewpoint using the following words:

I think that...

I believe that...

as ...

since ...

because ...

so ...

thus ...

Я думаю, /считаю/, полагаю, что

так как

потому, что

таким образом, поэтому

таким образом

1. Why is the text entitled "The Unity of Science"?

2. Do you think that the theory of relativity holds a central place in modern science?
If so, give facts.

3. Do you believe that sciences overlap? Prove it by examples.

4. Why can we find an account of the properties of gases in a book on chemistry?

5. Is there any relationship between chemistry and physics?

6. Do you think that there may be some overlapping of geology and biology?

7. Why is the overlapping of sciences very important? Can you give examples?

Exercise 4.

a/ Express the central idea of the text in one sentence.

b/ Say how you evaluate the answers of your fellow-students, using the phrases:

"I quite agree that..."

or "I'm afraid, I can't agree that..."

or "I don't think that ..."

or "I doubt that..."

/сомневаюсь, что/

or "I doubt whether it is correct to say that..."

/Я сомневаюсь, правильно ли говорить, что/

Exercise 5.

Compose dialogues on the basis of text 3.
/Exchange information proving interrelation of sciences. Your partner thinks that various fields of science develop separately. Try to persuade him that sciences do overlap/.

Exercise 6.

Read text 4 and be ready to translate it orally. Use a dictionary if necessary.

TEXT 4.

The Role of Science.

The foundation of Moscow State University (1755) has been an important scientific and cultural event. Wonderful achievements of our scientists have had a great influence upon the development of the world science and are inseparable from the fast progress in the natural sciences and advanced social and political ideas.

Science has played an outstanding role in turning the country into one of the greatest industrial powers. Since its early days it has been creating and developing the most advanced ideas forming the basis for public economy.

Today it continues to be a vital factor in scientific, technical and social progress making a substantial contribution to civilization in our time and helping to raise the international prestige of Russia.

To science we owe most of our comforts, our health, our ability to influence the environment, to communicate instantly and to move fast over the earth.

GRAMMAR EXERCISES.

Exercise 1.

a/ Find in texts 3 and 4 sentences containing verbs in Present Perfect. Explain the use of these tense-forms. Translate the sentences.

b/ Find and translate sentences with verbs in Present perfect Continuous and explain the use of the tense forms.

Exercise 2.

Say which of the underlined verbs express a completed action connected with the present moment and require the use of Present Perfect.

1. Вы читали эту книгу? Я мог бы дать её Вам.
- Спасибо. Я читал её в прошлом году.
2. Вы когда-нибудь бывали в Лондоне?
- Нет, я никогда не был в этом городе, но очень хочу побывать там.
3. Преподаватель сказал: "Тот, кто закончил собирать прибор, может приступить к эксперименту."
"-Я уже давно закончил эту работу " -отозвался один из студентов.
4. Теперь я вижу, что Вы хорошо изучили материал и могу поставить Вам отличную оценку.
5. Когда Петров хорошо выучил материал, он получил отличную оценку.
6. В прошлом месяце мы провели ряд экспериментов. Но только на этой неделе мы получили ожидаемый результат.
7. Мы только что повторили этот опыт, но данные ещё не обработали.
8. Он уже нагрел раствор и наблюдает за изменением окраски.

Exercise 3.

Say which of the underlined verbs express actions that began in the Past and continue at Present which requires the use of Present Perfect Continuous.

1. Могу ли я поговорить с тов. N?
- Да, он ждёт Вас. Он ждёт Вас уже 10 минут.
2. Ты всё ещё читаешь эту книгу?
- Да, я читаю её уже 3 дня.
3. Не беспокойте их; они обсуждают важную научную проблему. Они обсуждают её с утра.
4. Он уже подготовился к семинару?
- Нет, он всё ещё готовится. Он готовится к семинару со вчерашнего вечера.

Exercise 4.

Practise the dialogue.

- Have you finished the experiment?
- Not yet. I'm still making it.
- Really! But you began making it long ago.
- You see, it's not an easy job. I have been making it for 2 hours and haven't got any result.

Exercise 5.

Read the following answers to questions and restore the questions themselves.

1. Yes, they sure have. The principles of the theory have found broad application.
2. No, we haven't. We have not considered the problem yet.
3. No, I don't think so. She has not found any description of the law in this book.
4. Yes, I think so. He has made a substantial contribution to this field.
5. Yes, I think so. He has been studying the problem for a year.
6. Yes, I think so. This branch of industry has been developing rapidly since 1960-s.
7. Yes, they sure have. The wonderful achievements of our scientists have had a great influence upon the development of world science.
8. Yes, I think so. She has been here since Monday.

Exercise 6.

Correct the following statements if you think they are not true.

1. Philosophy has been developing at a faster rate than chemistry.
2. Achievements in chemistry have made a substantial contribution to the development of philosophy.
3. You have been studying at the Chemistry Faculty for 2 years.
4. Your classmates have been discussing the principles of chemistry since yesterday.
5. Your friend has just made a discovery in chemistry.
6. You have already had 4 classes today.
7. Your classmate has just solved a mathematical problem.
8. He has been writing in his note-book for 10 minutes.

Oral Speech Practice.

To sum up the lesson, prove that

a/ science plays an outstanding role both in the development of public economy and everyday life,

b/ the development of one field of science depends on the progress in other fields because they overlap.

Homework.

Exercise 1.

Using the table below write all possible affirmative, negative and interrogative sentences. Mind that some adverbial modifiers can point out to two aspects.

He	often never /2/ just now for half an hour already always since /2/	discuss problems	with his co-workers
----	---	------------------	---------------------

Exercise 2.

Read the following sentences. Pay attention to the function of "-ing"-forms. Put questions to the "-ing"-forms.

1. He is conducting an experiment.
2. Now he is combining an acid with an alkali.
3. While making this experiment he observed that the combining substances gave rise to a new one.
4. A metal combining with an acid replaces hydrogen of the acid forming a salt.
5. Look here! The colour of the solution is changing because a reaction is going.

Exercise 3.

a/ Read text 5 / Lesson 4/ "The Structure of Chemistry".

b/ Make a plan of the text and retell it briefly using your plan.

LESSON 4.

GRAMMAR: PRESENT TENSES /PASSIVE VOICE/.

Grammar notes.

Значение страдательного залога. Страдательный залог выражает действие, которое совершается кем-то над субъектом предложения.

Сравните:

He makes experiments.

Он проводит опыты - действительный залог

The experiment is made /by him/ - Опыт проделан (им) - страдательный залог.

В английском языке страдательный залог используется шире, чем в русском.

Сравните:

He was given the book.

Ему дали книгу

The book was given to him.

Языковое выражение страдательного залога
в системе настоящего времени.

Indefinite to be V-ed	Continuous to be being V-ed	Perfect to have been V-ed
I am We are You They asked	I am We are You They being asked	I We have You They been asked
He is She is It	He is She is It	He She has It
Am I Are you they asked	Am I Are you they being asked	I we Have you they been asked he Has she it
Is he she it	Is he she it	
I am We are You They not asked	I am We are You They not being asked	I We have You They not been asked He She has It
He is She is It	He is She is It	

GRAMMAR EXERCISES.

Exercise 1.

Read the sentences below and point out the verbs in the Passive Voice. Say which of these verbs express a/ an action in progress, b/ an action finished by the Present moment.

1. Science is generally divided into natural and social.
2. Chemistry is known as a branch of natural science.
3. As it is very important for public economy it is developing at a fast rate.
4. It is being studied by millions of people.
5. The growth of chemical science has been stimulated by the needs of economy.
6. Chemistry has extended to overlap other sciences.
7. A number of new areas of research have appeared.
8. Some of them, molecular biology for example, are defined as interfaces.

Exercise 2.

I know that a chemistry laboratory is such a place where something always happens.
 a/ I'd like to know what is usually done there. Tell me as much as you can. The words below will help you.

n. experiments	v. to create
substances	to analyse
results	to obtain
data	to make
reactions	to get
	to conduct
	to change
	to transform

b/ Now I wonder what is being done in your laboratory now.

An experiment	to make
One substance	to conduct
A reaction	to discuss
Some problems	to change
The results of the experiment	to transform
A new method	to analyse

c/ I know that something has already been done. Tell me what it is.

The problem	to conduct
The reaction	to obtain
The substances	to discuss
The chemical	to analyse
The process	to transform
The properties of the new substance	to change
	to form

Reading Practice.

Exercise 1.

Before reading text 5 learn the following words:

- | | |
|-----------------------------------|--------------------------------|
| 1. sense | - смысл |
| 2. as contrasted to = compared to | - по сравнению |
| 3. rather than | - скорее...чем; а не |
| 4. viewpoint | - точка зрения |
| 5. approach | - подход |
| 6. evidence | - свидетельство |
| 7. scope | - пределы, сфера деятельности |
| 8. exciting | - волнующий |
| 9. to restrict | - ограничивать |
| 10. to avoid | - избегать |
| 11. as a result | - в результате |
| 12. however | - однако |
| 13. since | - так, как |
| 14. interface | - граница, пограничная область |
| 15. vigor /v i g ə / | - сила, мощь |

Exercise 2.

Read text 5 for the main idea.

TEXT 5.

"The Structure of Chemistry."

Chemistry is known as the study of the preparation, properties, structure and reactions of chemical elements and their compounds and of the systems which are formed by them.

If this definition is interpreted in the broadest sense, it may include much of natural science, because chemistry overlaps with other sciences, especially physics and biology.

As contrasted to a physicist, a chemist usually works on molecular rather than atomic systems. He works on molecular transformations and the related molecular structures rather than on phenomena associated with simple substances only.

Thus, chemistry is a unique "molecular science", because the viewpoint of the chemist and his approach to understanding natural phenomena is concerned with molecular models. Of course, there are well known exceptions to the above description of chemistry. Indeed, the ability of chemists to extend their activities into other areas of science is evidence of the vigor of the subject.

Chemical science is dynamic in scope. An important aspect of the overlap with other fields is that many chemists work in areas now described as interfaces, for example molecular biology and solid-state physics.

In fact, some of the most exciting areas of research are at these changing interfaces with other disciplines. However, we know that interfaces are often absorbed and become an integral part of the science. Examples are nuclear physics, quantum mechanics, statistical mechanics and magnetic resonance. As a result, those subjects which have been considered as belonging to chemical science change with time. Thus, we feel, that we should not define the scope of chemistry narrowly, since this can restrict chemical science from developing in important nontraditional areas. The growth of chemical science will best be stimulated by avoiding restrictive definitions both in its relations to other sciences and its own substructure.

Exercise 3.

Make up a plan of the text.

Exercise 4.

Talk in pairs. Answer the questions below. Begin your answer with one of the following phrases:

As far as I know...

As far as I understand ...

As far as I can judge...

According to the text...

1. What is the scope of chemistry?
2. What sciences does chemistry overlap with?
3. Does a chemist usually work on atomic systems?
4. Is a chemist interested in the total operation of a living cell?
5. What is the approach of chemists to understanding natural phenomena?
6. Do chemists restrict their activities only to pure chemistry or extend them to other areas of research?

7. Is such an extension of chemistry the evidence of its vigor? What is your viewpoint?
8. What do we call the areas of research where various sciences overlap?
9. Can interfaces be absorbed and become an integral part of science?
10. Is the scope of chemistry constant or is it changing?
11. Should we restrict chemical research only to the scope of pure chemistry?
12. What may be the result of such restriction?
13. Should we avoid restrictive definitions of the scope of chemistry?
14. In what way is the growth of chemical science stimulated?

Exercise 5.

Find in the text and translate sentences with Passive Voice. Make them interrogative.

Exercise 6.

Translate the part of the text beginning with the words: "However, we know that interfaces..." and up to the end.

Exercise 7.

Summarize the text according to your plan.

Exercise 8.

Before reading text 6 get acquainted with the following words:

- | | |
|------------------------------|--------------------------|
| 1. compound /'kɒmpaʊnd/ | - соединение |
| 2. ratio /'ræɪʃiəʊ/ | - соотношение, пропорция |
| 3. round /raʊnd/ | - круглый |
| 4. to refer to smth /rɪ'fə:/ | - ссылаться на что-либо |
| 5. the same | - тот же самый |
| 6. similarly /sɪmɪləli/ | - подобным образом |
| 7. weight /weɪt/ | - вес |
| 8. state | - состояние |
| 9. develop /dɪ'veləp/ | - разрабатывать |

Exercise 9.

Read the names of chemicals

1. oxygen /'ɒksɪdʒən/
2. hydrogen /'haɪdrədʒən/
3. carbon dioxide /'kɑ:bəndaɪ'ɒksaɪd/
4. methane /'mi:θeɪn/

Exercise 10.

Read the following words and guess their meaning.

- | | |
|-------------------------|-----------------------------|
| analysis /ə'næləsɪz/ | synthesis /'sɪnθɪsɪs/ |
| percentage /pə'sentɪdʒ/ | constant /'kɒnstənt/ |
| combine /kəm'baɪn/ | composition /kɒmpə'zɪʃ(ə)n/ |
| determine /dɪ'teɪn/ | equivalent /ɪk'wɪvələnt/ |

Exercise 11.

Read the first part of text 6 as fast as possible and find the formulation of the law of Definite Composition of Compounds.