

АНГЛИЙСКИЙ ЯЗЫК БАЗОВЫЙ КУРС

PRE-INTERMEDIATE

ЧАСТЬ 1

Методические указания для студентов первого курса
всех технических специальностей

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Данные методические указания предназначены для студентов первого курса всех технических специальностей, овладевших лексико-грамматическим материалом в объеме школьной программы и прошедших тестирование в НГТУ. Уровень владения иностранным языком – A2 (Pre-Intermediate). Цель пособия – закрепить сформированные в школе основные навыки коммуникативной деятельности в области говорения, чтения, письма и аудирования.

Предтекстовые задания направлены на моделирование фоновых знаний и одновременно на формирование навыков и умений вероятного прогнозирования.

Послетекстовые задания направлены на выявление основных элементов содержания текста, выработку умений структурирования высказываний, коммуникативная цель которых может выглядеть как описание, повествование, рассуждение и доказательство.

Указания могут быть использованы для аудиторной и внеаудиторной работы, в зависимости от целей, поставленных преподавателем.

Составители выражают благодарность старшему преподавателю Калинкиной О.А. за большой объем проделанной работы.

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MODULE 1 EDUCATION

Introduction

Focus: Personal Profile

1.

CONGRATULATIONS ON BEING A FIRST-YEAR STUDENT AT NSTU!

We will be glad to get acquainted with you, and to know how special you are. Are you the same as your group-mates?

Write notes about yourself in English in your notebook, then complete this questionnaire.

QUESTIONNAIRE

1. Where are you from? _____
2. What's your age? _____
3. For how many years have you studied English? _____
4. Do you need to brush up your English? _____
5. Can anyone in your home speak English? _____
6. Have you any family or friends in an English speaking country? _____
7. Have you ever studied abroad? _____
8. Have ever been abroad? _____
9. What's your favourite book? _____
10. What's your favourite film? _____
11. What's your favourite TV programme? _____
12. Who is your favourite singer or musician? _____
13. What's your favourite character in films, books or history? _____
14. What are two things you like doing? _____
15. What are two things you hate doing? _____
16. What are two things you are good at? _____
17. What are two things you are bad at? _____
18. What's your favourite subject? _____
17. What do you know about NSTU? _____
18. Why did you enter NSTU? _____
19. What faculty do you study at? _____
20. What will your future job be? _____

2. Write three questions more you'd like to ask your group-mates.

UNIT 1 HIGHER EDUCATION IN BRITAIN

- **Focus:** Education (general notion); basic vocabulary
- **Higher Education in Britain** (general overview)
- **Grammar focus:** *Present/Past Simple Active*
- **Skills focus:** *Reading for specific information to know about the systems of higher education in the UK; learning basic vocabulary and developing speaking skills*

Education is the process by which a person's mind and character are developed through teaching various subjects at school, colleges, institutes and universities.

University is an institution where students study for degrees and where academic research is done.

1. Look at these expressions useful for university students, then fill the gaps with one of these words in the box. Look up unknown words in the dictionary and in the vocabulary below (Text A):

place revise exercise heart classes diploma year private grades

VERB	EXPRESSIONS
do	do (= study for) a degree in Management; do (= take) an exam/an (1).....; do (= carry out) an experiment; do (= carry out) research; do (= study) maths, history
gain	gain a good degree / education; gain experience
get	get a good education; get information/ advice; get a (2)..... at university; get into university; get a grant; get good / bad marks / (3).....; get a good report; get a degree / certificate / (4).....
have	have good knowledge of marketing strategies; have (5)..... lessons
go	go to university / college / evening (6).....
make	make progress; make a mistake
study	study Mathematics / notes / a diagram; study for a test/ an exam / a degree
take	take a course/an exam; take notes (while listening or reading); take a break from studying; take a (7) off to travel
teach	teach a lesson/ a class; teach English / media studies; teach at a school /college / university

Others	<i>attend classes</i> /a private language school / university <i>carry out research into...</i> , <i>cheat in</i> an exam <i>copy from</i> someone else, <i>give a lecture/</i> a talk <i>learn a poem by</i> (8)..... ; <i>memorize the facts, pay attention</i> (in class) <i>prepare</i> / (9) ...for an exam
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2. Underline the correct word in each of the following sentences using the chart above to help you.

- 1 She got / took a good report from her teachers.
- 2 They said she had done / made progress in all subjects.
- 3 She had done / made very few mistakes in her tests.
- 4 She is well-behaved and pays / gives attention in class.
- 5 She always takes / does notes when the teacher talks.
- 6 She likes physics and enjoys doing/ making experiments.
- 7 She hates being disturbed when she is revising/ reading for an exam.
- 8 She feels a bit nervous when she has to sit / revise an exam.
- 9 She wants to get/ go into university.
- 10 When she gets/ takes her degree, she wants to go abroad.

3. Try to memorize the verb expressions in task 1 and compare with their phrasal verb equivalents.

Phrasal Verbs

to get down to smth	to start work on smth that needs a lot of time and energy
to get on with	to make progress
to brush up on smth	to study or practice to get back the skill that has been lost
to fall behind smb	to fail to keep level with others
to catch up with smb	to reach the same standard
to drop out	to leave, withdraw from a course of instruction
to look through	to read, examine quickly
to go through	to examine in detail

4. Replace the underlined words with phrasal verbs.

1. She is making good progress with her studies.
2. Many students find it difficult to start doing their work.
3. I feel that I fail to keep level with others with my studies but I don't know how to reach the same standard as other students.
4. If you want to go to Britain, you should practice your language –you haven't used it for seven years.
5. As I left university without any degree, I thought I was a failure.
6. John quickly examined the lines in search of familiar questions. Not

having found a single one that he knew anything about, he examined the first question in detail.

5. When studying at a university, you should know people you'll deal with or titles of teaching staff members and positions they occupy.

Match the definitions below with one of the words given in the box. Find the words in the vocabulary (Text A).

**graduate rector director of studies dean undergraduate
group-mate tutor professor lecturer**

1. Someone who is still at a university studying for their first degree.
2. Someone who has successfully completed their first degree.
3. Someone in the same group as you at a university.
4. Someone who teaches at a college or university.
5. Someone responsible for teaching a small group of students.
6. Someone in charge of a university.
7. Someone in charge of a faculty.
8. Someone with the highest academic position in a university.

6. Work in pairs. Discuss these questions:

1. How long is the academic year?
2. Did you take entrance examination?
3. What grades did you get at the entrance exams?
4. What faculty do you study at?
5. Who is in charge of your faculty?
6. How many lectures do you have a week?
7. Do you think higher education should be free of charge? Why?

Who do you think should pay?

8. Do you think everyone should get higher education?
9. Would you like to get higher education abroad?
10. What do you know about higher education in Britain?

Grammar Focus:

	+	-	?
Present simple is used with the following time expressions: usually, often, always, every day/week/month /year, sometimes, at the weekend, in the morning/afternoon/evening, never	I, you, we, they + V Students do experiments. he, she, it + + V +S (es) He does research.	don't + V I don't know French. doesn't + V He doesn't attend lectures.	Do you work? Yes, I do./ No, I don't. <small>Qu. word + do + subj. + infinitive?</small> <small>does</small>
			Where does he study? Why do you carry out research?
			Who attends classes?

Past simple Time expressions: Yesterday, last month/ year/week, ago, then, when, in 1977 (stated time) 1. The action is finished. 2. One action happened one after another in the past: <i>He stood up and went out.</i>	V+ ED (worked, translated) 2nd form of the verb (took, went)	 didn't + V He didn't pass exams last year.	Did you take notes? Yes, I did./ No, I didn't. Why did you make many mistakes? When did you finish school? <hr/> Who did research last year? Who finished school last year?
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7. Put the verb in brackets into the past simple or present simple.

1. Last year my friend _____ (enroll) in full time course.
- 2 When _____ «glass-plate» universities (appear)?
3. Anna never _____ (make) mistakes.
4. Three weeks ago John seriously _____ (be ill) and _____ (fall behind) his group-mates.
5. What faculty _____ (do research) in applied mathematics?
6. In the 1960s the government _____ (set up) «glass-plate» university and _____ (meet) demand for designers and researchers.

II. TEXT A

Vocabulary

academic year – учебный год

semester/term – семестр

director of studies – руководитель научно-исследовательских работ

rector – ректор университета

dean – декан факультета

to be in charge of – ответственный за

to be released by employers – уволен работодателем

unemployed – безработный

massive expansion – сильный рост; значительное увеличение

vocational courses – курсы профессиональной подготовки

vocational training – профессиональное обучение;

professionally-technical education

part-time courses – заочно вечернее обучение

full-time education – очное обучение

a university undergraduate – студент университета

undergraduate courses – базовый университетский курс (амер.);

курс обучения на степень бакалавра
to enroll in – записываться, зачислять
to enlarge intake – увеличить набор, прием
authorize – уполномочивать, разрешать, санкционировать
to award degree to smb – присвоить (ученую) степень
medieval – средневековый
to meet demand for – удовлетворять потребность в чем-либо
plate-glass – зеркальные стекла
Open University – Открытый университет
rather than – скорее чем, лучше чем
local study center – местный образовательный центр
Bachelor of Arts (BA) – бакалавр гуманитарных наук
Bachelor of Science (BS) degree – диплом/степень бакалавра естественных наук
Master of Arts (MA) degree – диплом/степень магистра гуманитарных наук
Master of Science (MS) degree – диплом/степень магистра естественных наук
fee – плата
poorer backgrounds – бедного происхождения/из малообеспеченных семей
prosperous social categories – состоятельные/зажиточные слои населения
ethnic minorities – этнические меньшинства
funding body – орган финансирования
to assess smth – оценивать, аттестовать
funding gap – недостаточное финансирование
maintenance grants – безвозмездная субсидия/ссуда, выделяемая на содержание
loan – ссуда, заем, кредит
scientific and technological community – научно технические кадры
to force smb to do smth – заставлять, принуждать кого-нибудь делать что-либо

1. Do you know that.....

Ox-bridge – the British universities of Oxford and Cambridge

«redbrick» universities – any of the British universities started in the late 19th century in cities outside London: *Manchester and Leeds are redbricks or redbrick universities.*

«plate-glass» universities – 7 universities established on the government initiative due to the growing demand for scientific and technological community in the 1960s. The universities are authorized to award degrees. The buildings are quite modern with plate-glass windows.

Higher education is education at a college or university where subjects are studied in great detail and at an advanced level.

Further education is below degree level for people who are older than school age.

Vocational education is education that teaches you to do a particular job.

1. Read the text and give *the heading* to each part of the text.

FURTHER AND HIGHER EDUCATION

I Further education traditionally includes part-time vocational courses for those who leave school at the age of 16 but need a skill in the manual or technical field.

About three million students are enrolled each year in part-time courses at further education (FE) colleges, some released by their employers and a greater number unemployed. In addition there have always been a much smaller proportion in full-time training. In 2000 this figure was 400.000, but by 2005 this had doubled. Vocational training, mostly conducted at the country's 550 further education colleges, is an important component.

II. Higher education has also undergone a massive expansion. In 1994 only 573.000, 16 % of young people were enrolled in full-time higher education. Ten years later the number was 1.150.000, no less than 30 % of their age group.

The massive expansion was achieved by greatly enlarging access to undergraduate courses, but also by authorizing the old polytechnics to grant their own degree awards, and also to rename themselves as universities. Thus there are today 90 universities compared with 47 in 2000, and only seventeen in 1945. They fall into five broad categories: the medieval English foundations, the medieval Scottish ones, the nineteenth century «red-brick» ones, the twentieth-century «plate-glass» ones, and finally the previous polytechnics. They are all private institutions, receiving direct grants from the central government.

III. Oxford and Cambridge, founded in the twelfth and thirteenth centuries respectively, are the most famous of Britain's universities. Today «Ox-bridge», as the two together are known, educate less than one-twentieth of Britain's total university student population. But they continue to attract many of the best brains. Both universities grew gradually, as federations of independent colleges (38 in Oxford, 31 colleges in Cambridge), most of which were founded in the fourteenth, fifteenth and sixteenth centuries. In both universities, however, new colleges are periodically established, for example Green College, Oxford (1999) and Robinson College, Cambridge (1999).

Scotland is proud of ancient universities: Glasgow, Edinburgh, St Andrews and Aberdeen, all founded in the fifteenth and in the sixteenth centuries. These universities had strong links with the ancient universities of continental Europe, and provided their longer and broader course of studies. Even today Scottish universities provide four-year undergraduate courses, compared with the usual three-year courses in England and Wales.

IV. In the nineteenth century more universities appeared to meet greatly increased demand for educated people as a result of the Industrial Revolution and the expansion of Britain's overseas empire. Many of these were located in the industrial centers, for example Birmingham, Manchester, Nottingham, Newcastle, Liverpool and Bristol.

With the expansion of higher education in the 1960s «plate-glass» were established, some named after countries or regions rather than old cities, for example Sussex, Kent, East Anglia and Strathclyde. Over 50 polytechnics and similar higher education institutes got university status in 2001. There is also a highly successful Open University, which provides every person in Britain with the opportunity to study for a degree, without leaving their home. It is particularly designed for adults who missed the opportunity for higher education earlier in life. It conducts learning through correspondence, radio and television, and through local study centers.

V. University examinations are for Bachelor of Arts or of Science (BA or BSc) on completion of the undergraduate course, and Master of Arts or of Science (MA or MSc) on completion of postgraduate work, usually a one- or two-year course involving some original research. Some students continue to complete a three-year period of original research for the degree of Doctor of Philosophy (PhD).

VI. In spite of the high fees, Britain's universities, FE colleges and English language schools host a large number of foreign students, in 2001 there were about 158.000.

Female undergraduates have greatly increased proportionally in recent 10 years. In the mid-1960s there were only 51 per cent by 1966. There is still separation of the sexes in the fields of chosen study. Caring for others is a still «proper» career for women; building bridges is not. Students from poorer backgrounds are seriously underrepresented in higher education. Although more of them are now enrolled, more prosperous social categories have benefited from university expansion. Ethnic minorities representation is growing: 13 per cent in 1966 compared with only 10.7 per cent in 2001.

VII. In 1999 a new funding body, the University Funding Council (UFC), was established with power to require universities to produce a certain number of qualified people in specific fields. The UFC has forced the

universities to double their students' intake, and each university department is assessed on its performance and quality. However, the greatly increased quantity of university students might lead to a loss of academic quality.

The expansion has led to a growing funding gap. Universities have been forced to seek sponsorship from the commercial world and wealthy patrons. The government decided to reduce maintenance grants but to offer students loans in order to finance their studies. However, the funding gap has continued to grow, more students are living at home to continue their studies: about 50 per cent at the ex-polytechnics, but only 15 per cent at older universities.

2. *Read the text again and decide whether these statements are true or false.*

1. a) The best way to get further education is to be unemployed.
b) Further education gives additional knowledge but no practical skills.
2. a) Massive expansion was achieved by creating new educational institutions.
b) The proportion of young people enrolled in full time higher education in 2000 was twice as large as in 2005.
3. a) Oxford and Cambridge grew as federation of independent colleges.
b) Ancient universities in Scotland had more links with continental Europe than with England and Wales.
4. a) In the XIX century more universities appeared because of economic problems in the country.
b) Open university provides its students with vocational training and conducts learning through the internet.
5. a) University examinations for BA or BSc involve some original research.
b) The highest degree is Doctor of Philosophy.
6. a) Foreign students are underrepresented because of high fees.
b) There are still some more prejudices about proper careers for men and women.
7. a) The UFC assesses the universities on their students' intake.
b) The intake growth has led to financing the programme by the government.

Vocabulary

3. *Form word partners.*

- | | |
|----------------|-------------|
| 1. maintenance | a. empire |
| 2. poorer | b. research |
| 3. original | c. quality |

- 4. university
- 5 overseas
- 6. academic
- d. backgrounds
- e. departments
- f. grants

4. *Fill in the gaps with the word partners in the task above.*

1. Some students continue to complete a three-year period of for the degree of Doctor of Philosophy.

2. The greatly increased demand for educated people was a result of the international revolution and the expansion of Britain's

3. Each university consists of

4. The government decides to reduce but to offer students loans in order to finance their studies.

5. Students from are seriously underrepresented in higher education.

6. The greatly increased quantity of students of that universities might lead to lower

5. *Put these under the proper heading.*

- a. educated people
- b. enlarge access to
- c. sponsorship
- d. adults
- f. loan
- g. female undergraduates
- h. ethnic minorities
- i. students' intake
- j. full-time training
- k. grant
- l. unemployed
- m. ancient universities
- n. original research
- o. fee
- p. «redbrick» foundations
- q. student population
- t. grant degree awards
- u. medieval foundations
- v. part-time courses
- w. finance
- y. examination
- x. «plate-glass» universities
- z. enroll in a course

people	places	activities	money

6. *Fill in the gaps with the prepositions.*

1. It is the more prosperous people who have benefited most university expansion.

2. Open university provides every person in Britain the opportunity to study a degree.

3. The massive expansion of higher education was achieved greatly enlarging access ... undergraduate courses.

4. Part-time vocational courses give those who leave school ... the age ... 16 an opportunity to get a skillthe manual, technical and clerical field.

5. The UFC assesses university departments their performance and quality.

6. The greatly increased demand educated people led ... foundation of more universities.

7. Open University conducts learning correspondence, radio and television, and also local study centers.

8. About three million students enroll each year ... part-time courses ... further education colleges.

9. They named « plate-glass» universities countries or regions rather than old universities.

10. Ethnic minorities representation is growing: 13 ... cent in 1996 compared only 10.7 ... cent in 1990.

Speaking

7. *Look through the text again. Why are these numbers and dates important?*

90, 47, 1988, 1992, 28%.

8. *Discuss in pairs the answer to following questions:*

1. What courses does further higher education provide?

2. How many categories of further and higher education universities are there in Great Britain?

3. What was the reason for massive expansion of higher education in the UK?

9. *Make up 3 more questions to the text and ask your partner.*

10. *Make the list of actions taken by the British government to increase the number of universities.*

11. *Make the list of advantages and disadvantages of further higher education in the UK.*

Advantages	Disadvantages
The intake has sharply increased.	The fee is very high.

UNIT 2 STUDENTS' LIFE IN THE UK (GREAT BRITAIN)

- **Focus:** Students' Life in the UK
- **Grammar focus:** *Wh-questions; Yes/No questions*
- **Skills focus:** *Reading for specific information and comparing the systems of higher education in the UK, the USA and Russia; sharing opinions; completing the request form*

TEXT B

Vocabulary

celebrated – известный, знаменитый

power – власть, право

to grant smth. – предоставлять что-либо

condition – состояние

intelligence – ум, интеллект

require smth. – требовать

term – семестр

thesis (*pl.* theses) – диссертация

to make a contribution – вносить вклад

postgraduate student – аспирант

conduct an examination (lesson, seminar, ...) — проводить экзамен

scatter smth. – разбрасывать что-либо

govern – управлять

to be responsible for smth., doing smth. – быть ответственным за

public school – (англ.) закрытое частное среднее учреждение,
(амер.) бесплатная государственная школа

applicant – претендент, кандидат, абитуриент

available – имеющийся в наличии

to take smth. into consideration – принимать что-либо во внимание

attendance – посещение

compulsory – обязательный

apart from – кроме

to practice smth. (AE) (BE to practise) – 1) применять что-либо, 2) практиковать что-либо

to encourage smb., smth. to do – ободрять, поощрять что-либо

opportunity – возможность

to deny smth. – отрицать что-либо

this is not the case – это не так

per cent – процент

beyond the age of 15 – старше пятнадцати лет

syllabus – программа (курса, лекций)

fellow – член совета колледжа; стипендиат и исследователь

tutorial – университетская система обучения путем прикрепления студентов к отдельным консультантам

essay – очерк, этюд, эссе, рассказ, реферат

scholarship – стипендия

to perpetuate – увековечивать

to allocate scholarships – назначать стипендии

1. The text you'll read is about students' life in Britain. Before you read work in pairs and discuss these questions:

1. *Would you like to study in Great Britain? Why/Why not?*

2. *What are the cultural differences in the life of Russian and British students?*

3. Read the text and check your suppositions.

STUDENTS' LIFE IN THE UK (GREAT BRITAIN)

The oldest and the most celebrated Universities of Great Britain are those in Oxford and Cambridge. There are also universities in London, Manchester, Liverpool, Birmingham and other cities.

There are no state universities in Britain; each of the universities has its own government. It is the state however that defines their status and gives them the power to grant degrees to students. Each university itself decides in what condition it will grant degrees, but the form of examination and the standards of knowledge and intelligence required for the first degree (Bachelor of Arts, or Bachelor of Science) are about the same at all the universities.

Students still have to pay fees. Most students now do some paid work during their vacations, such as helping at the post office at Christmas and doing some seasonal jobs in summer, but practically none does paid work during the term-time.

The first postgraduate degree is normally that of Master, given for a thesis based on at least one year's full-time work.

The degree of Doctor of Philosophy is given for a thesis which is an original contribution to knowledge. In a few of the biggest universities there are some seminars for postgraduate students, but usually there are no regular courses for them.

The university is a sort of federation of colleges. The university prescribes syllabuses, arranges lectures, conducts examinations and awards de-

grees, but there is no single building which can be called the university. The colleges and university buildings are scattered about the town.

Each college is governed by its fellows and they are also responsible for teaching their own students through the tutorial system.

It is more expensive to study at Oxford or Cambridge than at any other university and it is not easy to find a place to study at Oxford or Cambridge.

About half of the students at these two leading universities are former pupils of prominent public schools. The number of applicants is usually several times as great as the number of places available. Colleges tend to admit young men who are good at football or some other sport, sons of former students, or sons of respectable citizens or millionaires, one of the main points taken into consideration that is they might support the university financially.

Special tests are used for allocating scholarships by which some students get a reduction of their fees.

Part of the teaching at all faculties is by means of lectures arranged by the university, and any student may attend any university lecture. At the beginning of each term a list is published showing all the lectures being given during the term within each faculty, and every student can choose which lectures he will attend, though his own college tutor advises him which lectures seem likely to be most useful. Attendance at university lectures is not compulsory.

Apart from lectures teaching is done by means of the «tutorial system». This is a system of individual consultations.

Each fellow in a college is a tutor in his own subject to the undergraduates who are studying it. Once every week each student has a tutorial, that is he reads out an essay which he has written and for an hour he and the tutor discuss the essay. Before writing an essay the student may consult his tutor.

Though the system of teaching practiced at Oxford, with its tendency to avoid set courses, is supposed to encourage independent thought and judgment, opinions differ, and at some universities regular courses of lectures for each of the subjects studied are preferred.

British education is supposed to provide equality of opportunity for all, but it is not to be denied that this is not the case.

Education in Great Britain is class-divided and selective. The number of young people who can enter the university is limited not so much by the capacity of the universities as by class considerations. The educational system tends to perpetuate social and economic power and privilege from one generation to the next.

2 Read the text again and find the answer to the following questions:

1. What are the oldest and the most celebrated universities of Great Britain?

2. Are there any state universities in Great Britain?

3. How are the universities governed? Who defines their status?

4. Is the form of examination different or the same at all the universities?

5. Do students have to pay fees for the tuition at the university?

6. Why do most students have to work while studying at the university?

7. What is the first postgraduate degree? What is it given for?

8. Who is awarded the degree of Doctor of Philosophy?

9. What does the university arrange?

10. Whom is each college governed by?

11. What are the Fellows responsible for?

12. Who do these colleges usually admit?

13. Who applies for the place at Oxford or Cambridge?

14. How are the fees reduced?

15. Is the attendance of lectures compulsory or not?

16. What system of teaching is available at British universities?

17. What is the way of conducting tutorials?

3. Ask questions to the following statements:

1. The Master's degree is given for a thesis based on one year's full-time work. (What for...)

2. The university arranges lectures, conducts examinations and awards degrees. (What...)

3. Each college is governed by its fellows. (By who...)

4. Colleges admit young men who are good at sport. (Who...)

5. Part of the teaching at all faculties is done by lectures. (How...)

6. Once every week each student has a tutorial. (How often...)

4. Ask questions to which the following may serve as the answers:

1. Only 1% of children of unskilled workers receive full-time education beyond the age of 18.

2. Many students do some paid work during their vacations.

3. It is the tutorial system that is believed to encourage independent thought and judgment.

4. Yes, students still have to pay fees.

5. The Fellows are responsible for teaching their students.

6. Teaching is mostly done by means of the tutorial system.

5. Finish the sentences by choosing a word or phrases from the brackets:

1 British education ... (doesn't provide equal opportunities for all; fails to develop potential talent and ability; is cheap; is expensive; gives little opportunity to workers' children).

2 Most universities in Great Britain... (are state universities; are independent; have their own government; aren't financially supported by rich people).

3 Each university has the right... (to give degrees; to conduct meetings; to arrange lectures).

4 The first university degree is... (Doctor of Philosophy; Master of Arts; Bachelor of Arts).

5 University students have to work... (during the term; during their vacation; all the year round).

6 If a postgraduate student has defended a thesis, he gets a degree of... (Bachelor of Science; Master; Doctor of Philosophy).

7 At British universities teaching is done mostly by means of... (lectures; seminars; the tutorial system).

8 Universities mostly admit... (former pupils of prominent public schools; workers' children; sons of millionaires).

9 British universities are supported financially by... (the state; rich private persons; public institutions).

10 Attendance at university lectures is... (compulsory; not compulsory).

6. Skim through the text again and finish the sentences:

1 British education is supposed to provide...

2 Only one per cent of children of unskilled workers receive...

3 The British educational system fails to develop...

4 All universities have the right to grant...

5 University students have to pay...

6 The degree of Doctor of Philosophy is given for a thesis which is....

7 The university conducts...

8 The fellows who govern the university are responsible for...

9 The students are taught through...

10 Universities are financially supported by...

11 Colleges admit mostly sons of...

12 Some students get a reduction of their fees through...

13 Attendance at university lectures is...

14 The tutorial system is a system of...

15 The tutorial system is supposed to...

Speaking

7. 1. Work in three groups. Each group reads a different text given by the teacher and concerning social students' life. Read the texts and make notes on the key points. (p. 89 Supplementary materials to Module 1)

2 Form new groups of three people, each of whom has read a different text. Inform your partners about main points of the text you've read.

3 Work in the same groups and discuss the similarities and differences in students' life in the USA and in Russia.

4. Choose a spokesperson in the group to make a presentation to the whole class, summarizing the opinions in the group.

Writing

8. This form may be completed on line at:
www.intstudy.com/f_application.htm

International Student Further Information Form

Please take a few moments to complete this Request Form accurately in order to receive FREE comprehensive further information on any course(s) or college(s) worldwide. Relevant institutions will mail you a prospectus and application form within a few days.

Please note: We undertake that this information will be used solely for the purposes of helping you find the right combination of Country, Course and College. We guarantee that this form will only be forwarded to those colleges that meet your unique criteria.

Please supply your details

Full Name _____

E-mail address _____

Nationality _____ **Date of Birth (MM-DD-YY)** _____

Gender * Male * Female

Are you married No Yes

1. Where do you reside?

Address _____

Town/City _____

State/Country _____ **Zip/Post Code** _____ **Country** _____

Telephone _____

2. What do you want to study?

What level of study are you interested in: (Must be selected)

BA/BSc MA/MSc/PHD* MBA* Community College * Pre-university
Course* Diploma

Which country(s) you are interested in studying in: (select all that apply)

*United States of America * United Kingdom * Europe

* Australia * Canada * New Zealand

Financial Status

Fully Funded* Partially Funded* Scholarship Required

Intended Enrolment Time (select term and year)

Term: Spring Summer Autumn Winter **Year:** 2007 2008 2009 2010

3. School/College background

Institution Name _____ Address _____

Current Education Level

High School Certificate * A-levels

Baccalaureate * Bachelors * Masters * Doctorate

Are you aged 11-16 years? No Yes

UNIT 3 HIGHER EDUCATION IN RUSSIA

- **Focus: Higher Education in Russia (general overview)**
- **Curricula and Degrees Awarded**
- **Grammar focus: Wh-questions; Prepositions**
- **Skills focus: Reading for specific information and comparing the systems of higher education in the USSR, the UK and Russia; making dialogues**

TEXT C (1)

Vocabulary

academic year – учебный год

curriculum (curricula, curriculums) – курс обучения, учебный план, программа

entrance exams – вступительные экзамены

to be entitled to award state-recognized degrees – иметь право на выдачу дипломов государственного образца

to evolve – разворачивать, эволюционировать, развиваться

institution – организация, учреждение

to major in (v) – специализироваться по какому-то предмету, области

major (n) – профилирующая дисциплина

major (a) – главный, более важный

tuition (tuition fee) – обучение, плата за обучение

private individuals - частные лица

probation – испытание, стажировка; to be on probation – находиться на стажировке

1. Political and educational systems were subjected to drastic alterations in Russia.

Complete the table and list the advantages and disadvantages of these changes in higher education.

<i>Advantages(+)</i>	<i>Disadvantages(-)</i>
<i>The academic course can last from 4 to 6 years.</i>	<i>The abundance of accountants and lawyers.</i>

2. Read the text and check your answers to the questions below.

HIGHER EDUCATION IN RUSSIA

Higher education plays a very important part in the life of any state as it provides the country with highly-qualified specialists for future development and progress.

Today, higher educational institutions of Russia include over 700 universities, academies, institutes and colleges. The non-state sector with more than 330 higher educational institutions has evolved in recent years. 8 of these have received state attestation and are entitled to award state-recognized degrees.

Training is offered on a full-time and part-time basis. Tuition is free only for Russian citizens who fully meet the admission requirements and successfully pass entrance exams as the most curricula are funded from the limited Federal Government budget. Otherwise tuition is sponsored either by students themselves, their parents and other private individuals or industrial organizations on a contract basis.

The academic year usually lasts 9 months and is divided into two terms (semesters). Students take exams at the end of each semester. If the results of the examinations are good, students will get state grants. Twice a year students are one vacation – two weeks in winter and two months in summer.

The first- and second-year students at technical universities do courses in fundamental sciences such as: mathematics, physics, chemistry, drawing, computer engineering, information technologies (IT) and others. The curricula are enriched and broadened by instructions in such subjects as foreign languages, history and economics.

At the third year students get more advanced knowledge and begin to concentrate on their special interests or to take many courses in the subjects they major in. Specialized study and courses will allow students to become specialists prepared for the future job.

After four years students will get the Bachelor's degree. Then students may go on with their studies and in a year or two of further training and re-

search they are awarded the Master of Science degree. After graduating from the university they may keep on with their studies and research and obtain the Candidate of Science degree.

A very good tradition is that the theory is accompanied by practical training. Students begin to work at the universities well-equipped laboratories and in senior years they have to complete a probation period at various plants, design offices and research institutes of the country.

Most universities have their own students' hostels and large sport centers.

1. Is higher education important in our country? Why?
2. How many new higher educational institutions can award state-recognized degrees?
3. What kinds of training do the higher educational institutions offer?
4. How is tuition at state and non-state higher educational institutions financed?
5. What is necessary for a student to get a state grant?
6. How long are students' vacations?
7. What subjects do students study for the first two years?
8. When do students begin to concentrate on their special interests?
9. What is a major subject?
10. What academic degrees may students get at the higher educational institutions of Russia?
11. What tradition exists at the higher educational institutions in Russia?
12. Where do students who come from other places stay?

3. Complete the sentences: .

1. Today, higher educational institutions of Russia include....
2. Training is offered....
3. Tuition is free only for....
4. Tuition may be sponsored
5. The academic year usually lasts....
6. At the end of each semester....
7. Students get state grants if....
8. The first – and second – year students at technical universities obtain....
9. At the third year students....
10. After four years students....
12. After graduating from the university students may....
13. A very good tradition is that....
14. Universities have their own

4. Choose the word to match with the translation into Russian:

1. более высокого уровня a) advanced b) excellent c) fundamental d) highly-qualified
2. включать a) to evolve b) to include c) to obtain d) to receive
3. иначе a) as b) either c) if d) otherwise
4. снабжать a) to award b) to entitle c) to provide d) to recognize
5. недавний a) each b) further c) future d) recent
6. конструкторское бюро a) design office b) laboratory c) plant d) research institute
7. признавать a) to enrich b) to meet c) to prepare d) to recognize
8. дальнейший a) further b) future c) successful d) thorough
9. предлагать a) to entitle b) to offer c) to provide d) to sponsor
10. старший a) advanced b) important c) senior d) thorough
11. расширять a) to broaden b) to include c) to obtain d) to offer

5. Match the words and phrases in A with their opposites in B:

A	B
1) to enter a university	a) native
2) future	b) to fail an examination
3) theory	c) full-time
4) to receive	d) to graduate from a university
5) part-time	e) to give
6) to pass an examination	f) to get
7) foreign	g) practice
8) to award	h) past

6. Replace the underlined words with the words used in the text:

1. Higher education plays a very important role in the life of any country.
2. In the early 1990s the private sector began to develop.
3. Some private higher educational institutions have the right to award state-recognized degrees.
4. Training may be provided free or on a contract basis.
5. Twice a year students have holidays.
6. After graduating from the university students may continue their studies and get a higher degree.

7. Match a verb and a noun to make phrases (with some words more than one combination is possible)

- 1) to award a) a course
- 2) to enter b) a grant
- 3) to get c) an examination

- | | |
|-------------|---------------------|
| 4) to meet | d) a part |
| 5) to offer | e) a degree |
| 6) to pass | f) the requirements |
| 7) to play | g) training |
| 8) to take | h) a university |

8. Fill in the gaps with *the prepositions* where necessary:

My sister studies ... NSTU. She entered ... the university two years ago. Her major subject is economics, so she takes many courses ... this subject. She studies free ... a full-time basis. Some students from her group didn't meet the admission requirements completely, so they are sponsored ... their parents or industrial organizations on condition they work ... those enterprises after graduating ... the university.

My sister is a good student, she attends all the lectures and seminars, so she didn't fail ... her examinations and now she gets a state grant once ... a month. She hasn't known yet what kind of diploma she will try to get. If she gets the Bachelor's degree and decides to go on ... her studies she may get the Master's degree. I believe she will become a good specialist.

9. Complete the dialogue using the words and phrases from the box (change the form of the words where necessary):

Bachelor, degree, Diploma in Engineering, free, further study and research, to go on with, grant, hostel, Master, to meet the admission requirements, to offer training, to pass entrance examinations, to provide accommodation, results of the examinations, to take exams, tuition, a contract basis.

A: Good morning. Can I help you?

B: Good morning. Could you tell me about studying at this university?

A: First of all, our university ... on a full-time and part-time basis.

B: Should students pay for their tuition?

A: Well, tuition is ... for Russian citizens who fully ... and successfully The most programs are funded from the limited Federal Government budget.

B: And what about students who are not allowed to study free?

A: They may be sponsored either by students themselves, their parents, private individuals or industrial organizations on

B: Can students get ... ?

A: Students ... at the end of each semester, you know. If the ... are good, students get state grants.

B: What ... are awarded at this university?

A: After four years of study students will get the ... degree. Then the students may ... their studies and in a year or two of... get the ... degree. They may also ... a five-year program and get a

B: And the last question. Does the university ... for the students?

A: Our university has its own students' ... , so students who arrive from other cities can stay there.

B: Thank you very much for the information.

A: You are welcome.

Grammar Focus: Wh-questions

Wh-questions start with *What...?, When...?, Where...?, Which...?, Who...?, Whose...?, Why...?, How...?*

Wh-questions pattern: Wh word + auxiliary + subject + infinitive + (direct object)

for e. g.: Why don't you pay for tuition? What curriculum does the university provide?

If the Wh-word is **the subject** of the question we **don't use an auxiliary verb** and the word order is different:

Wh-word + verb + object

for e.g.: Who pays for tuition? Who majors in IT? Who failed the exams?

10. Complete the following questions to the group-mates?

1. What --- --- surname?
2. ----- --- you come from?
3. What school ----- from?
4. How many ----- speak?
5. Which university --- --- at?
6. What faculty ----- at?
7. What year -----?
8. -----entrance examination?
9. ----- your major?
10. ----- course start?
11. What----- after the course?

11. The academic year has already started and you are first-year students. Work in groups of three. Write six Wh-questions asking for information concerning your major and the university you'll study at.

12. Translate from Russian into English and reproduce:

A: Привет! Как дела? **Hello! How are you?**

B: Fine. How are you? I haven't seen you for ages. What are you doing now?

A: Видишь ли, я поступил в университет, и теперь у меня не так уж много свободного времени. **You see, I have entered the university and now I don't have much free time.**

B: Is it difficult to study at a university?

A: Математика и физика были моими любимыми предметами в школе. Так что здесь у меня нет никаких проблем. Информатика очень интересный предмет. А вот черчение... **Mathematics and Physics were my favorite subjects at school. So, I don't have any problems here. Computer Science is a very interesting subject. But Drawing ...**

B: Everything will be OK. I'm sure. Do you study only mathematics, physics and drawing?

A: Конечно нет. В учебный план входят иностранный язык и история.

Certainly not, the curriculum includes also foreign language and History.

B: Will you study the same subjects all five years?

A: Нет первые два года я буду изучать базовые предметы. На третьем курсе я буду изучать профилирующие предметы.

No, I won't. During two first years I will be studying my basic subjects. At the third year of study I will be studying my majors.

B: What about physical training? You were a good athlete at school.

A: В университете есть большой спорткомплекс. Я играю в баскетбол два раза в неделю. Сегодня вечером наша команда играет против команды педагогического университета. Приходи посмотреть игру.

There is a big sport centre at the university. I play basketball twice a week. Tonight our team plays against the team of Pedagogical University. Come to see the game.

B: I'm sorry, but I can't. I am going to the library. I must make a report tomorrow.

A: В таком случае желаю тебе удачи. **Then, I wish you a good luck with your report.**

B: Good luck. Buy.

A: Увидимся. **See you😊**

TEXT C (2)

Before reading the text translate the following words and word combinations:

1. to earn a degree -

2. field of specialization --
3. related area of study -
4. to select –
5. to undertake a program of study –
6. theoretical and applied research –
7. to submit a thesis -
8. high proficiency -
9. independent and creative thought -
10. assessment –
11. the Board of Examiners -
12. elective courses –

I. Read the text. Make sentences of your own with the words in bold type.

The first four years of study are **spent** on earning the Bachelor of Science (B.Sc.) degree. Study towards the B.Sc. is **referred** to as being at the undergraduate level. The program required for the B.Sc. degree includes general education in engineering disciplines and a field of specialization usually called a **major** or a core subject. Along with the major there may be a number of related areas of study referred to as minor subjects. Those areas in which students are allowed to select subjects or interests are referred to as elective courses.

Research-oriented students holding the B.Sc. degree may undertake a two-year **program with emphasis on** theoretical and applied research leading to the Master of Science (M.Sc.) degree. The degree is awarded to candidates who successfully complete the program and pass examinations followed by the submission of a project report or **thesis** acceptable to the Board of Examiners.

Graduates holding the Master of Science degree or the Diploma in Engineering and intending to pursue scholarly research may prefer to undertake a three-year Candidate of Sciences /Doctoral/ Postgraduate program of study. The candidate is required to **attain** high proficiency in a strongly research-oriented course and to write a dissertation that is a **significant contribution to** the subject under study. The student has to pass examination in order to reveal satisfactory preparation in related courses. The final **assessment** is the defense of the dissertation.

II. Answer the following questions:

1. What levels correspond to studying for the degrees of a Bachelor, a Master, a Doctor?
2. What is the difference between major, minor and elective subjects/courses?

3. How long does the course of study towards the Master's degree last?
4. What are graduate students usually interested in?
5. What is necessary to provide for being awarded a Doctor's /Candidate of Science degree?
6. What qualities should a person possess to become a Doctor of Science?

III. Work in groups of four. Student A is a school-leaver intending to go to a university. Student B is an undergraduate. Student C is a graduate. Student D is a postgraduate student. Speak about the opportunities of getting higher education at different levels using the information from the Text A and Text B.

IV. Memory game. The rules are the following:

- one of the students begins with the words «When I finished school I decided to go to university»;
- the next student repeats this sentence and adds what he/she did then:
- the game continues until someone says: «And now I am a Doctor of Science» The student who says these words loses;
- those who forget words or sentences said by the previous players are out of the game.

V. Tell about the system of higher education in Russia.

UNIT 4 NOVOSIBIRSK STATE TECHNICAL UNIVERSITY (NSTU)

- **Focus:** Novosibirsk State Technical University (NSTU)
- **Asking the Way**
- **Effective Presentation Techniques**
- **Grammar focus:** Present/past simple passive
- **Skills focus:** Reading for specific information; learn to ask for directions; learn to make an effective presentation of the university where you study at.

TEXT D

I. Vocabulary

automation and computer engineering	автоматика и вычислительная техника
radio engineering	радиотехника, радиотехнический
physical engineering	физико-технический
applied mathematics and informatics / information science / computer science	прикладная математика и информатика

electro-mechanics	электромеханика
aircraft	летательный аппарат
power engineering	энергетика
humanities	гуманитарные науки
Engineer's degree	степень дипломированного специалиста-инженера, присваиваемая после пяти / пяти с половиной лет обучения в университете
Candidate of Science (Cand.Sc.)	кандидат наук
Doctor of Science (D.Sc.)	доктор наук
teaching block, building	учебный корпус
campus	студенческий городок
ski lodge	лыжная база
recreation center	центр культуры и спорт центр
lecture theatre	лекционная аудитория амфитеатром
lounge	холл, комната для отдыха
automatic control	автоматическое управление
teaching manual	методическое пособие
to meet standards/ demands	соответствовать стандартам/ удовлетворять требованиям
large-scale power systems	- крупногабаритные энергосистемы

1. *Before reading the text work in pairs and add to the following chart.*

What I know about NSTU	What I would like to know about NSTU
<i>NSTU has 12 faculties</i>	When was NSTU founded ?

2. *Read the text to see if the questions written by you in Exercise 1 are answered.*

NOVOSIBIRSK STATE TECHNICAL UNIVERSITY (NSTU)

MISSION STATEMENTS

- To become a University of general academic excellence, meeting worldwide standards of training for engineers, managers and scientists. To develop academic programs leading to the award of bachelor, master and doctoral degrees in engineering, science and business administration.
- To develop the University by expanding into other areas of study and research.
- To contribute to the accelerated development of the country by offering quality services which meet the demand for the transfer and adaptation of suitable rational technologies in all areas of the national economy.

Founded in 1953, NSTU gained its status of a technical university in 1992. It is one of the top ten technical universities in Russia and a large scientific and educational centre of Siberia and the Far East.

NSTU trains specialists and offers additional training in 35 areas at 10 faculties: Automation and Computer Engineering, Radio Engineering, Electronics and Physics, Physical Engineering, Applied Mathematics and Informatics, Electro-mechanics, Mechanics and Technology, Aircraft, Business, Power Engineering and Humanities.

The period of study is 4 - 6 years, depending on the qualification as follows: Bachelor of Science 4 years, Engineer 5 years, Master of Science 6 years. M.Sc. students are awarded M.Sc. degree in Engineering after defending their Master's theses in the corresponding fields of study. Postgraduate students are offered a 3-year programme of study and research leading to the Candidate of Science degree in Engineering.

The number of students at NSTU is more than 16000 (including foreign students), 140 postgraduates and doctoral candidates. The number of academic staff is 1080, of which 697 hold Cand.Sc. or D.Sc. qualifications. They work and study in 61 departments.

The direction of scientific research corresponds to the individual areas of specialization of the faculties. The university has its own schools of thought. The most famous of these deal with fundamental research in the following directions: automatic control; creating a new class of measuring facilities; software and data for expert systems; increase in stability; economy and quality of large-scale power systems; new types of electronic and radio engineering devices; hybrid methods and program complexes aimed at the strength of the design and reliability of the calculations and so on.

The students actively participate in all types of scientific research. The university publishes a journal «NSTU Bulletin», scientific works, textbooks, monographs, and teaching manuals. Candidates and Doctors of Science are conferred by 11 specialist councils.

A French center has recently been opened at the university. Students studying French here receive a certificate and an opportunity to continue their studies in French universities.

A branch of the Goethe Institute has also been opened at NSTU. Students studying German are awarded a certificate and gain an opportunity to study in German universities.

The university participates in the following international programs: TACIS, TEMPUS, INTAS, etc. It has established relations with 12 universities in Europe, Asia, and America. Authorized training centres of leading

firms from the USA and Germany, e.g. Sun, DEC, Autodesk, Motorola, and AEG have been opened.

The university has 8 teachings blocks. Its research laboratories are equipped with modern facilities. The campus includes 7 student hostels (dormitories), polyclinics a sport centre with gyms, a swimming pool and a ski lodge and a recreation centre. The university has sports camps in the picturesque Altai Mountains and in the suburbs of Novosibirsk.

3. *What do these numbers from the text refer to?*

1992, 1953, 1080, 4, 6, 5, 11, 8,

4. *Match the words from the text with their corresponding definitions.*

- | | |
|----------------|--|
| 1. facilities | a. physical parts of the computer, machinery |
| 2. magazine | b. programs |
| 3. journal | c. something that can be relied on |
| 4. textbook | d. to get, to obtain, to receive |
| 5. software | e. pieces of equipment |
| 6. hardware | f. a book containing texts about a particular subject |
| 7. reliability | g. a magazine that deals with a specialized subject |
| 8. to gain | h. a publication which contains articles, advertisement, stories and photographs |
| 9 a device | i. an object invented for a particular purpose |

5. *Complete the sentences with the words from the text:*

- In 1992 NSTU ----- of a technical university.
- NSTU is a large educational and scientific center in -----.
- NSTU ----- in 35 areas at 10 faculties.
- The period of study depends on ----- .
- 8 teaching blocks.
- The direction of the research refers to ----- .

Grammar Focus: Present/past simple passive

The object of the active sentence becomes the subject of the passive sentence. for e.g.: *Researches develop new measuring facilities.*

New measuring facilities are developed by researches.

Present simple passive pattern: am/is/are + the past participle of the verb
for e.g.: *Students are trained in 35 areas.*

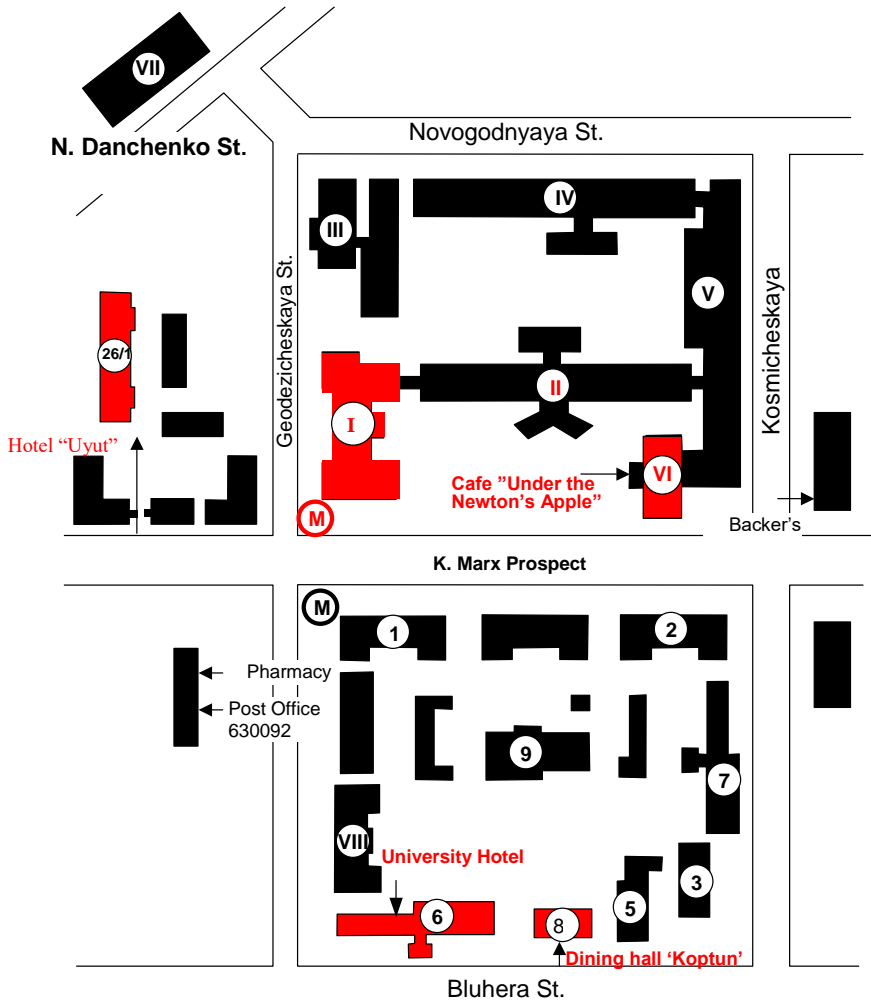
Past simple passive pattern: was/were + the past participle of the verb
for e.g.: *NSTU was founded in 1953.*

6. *Complete the sentences using the correct form of the verb in brackets:*

... .. are
... .. were ed
... .. is ne
... .. are

- 1 After defending the Master's theses, students ----- usually (award) M.SC. degree.
- 2 Last year the laboratories ----- (equip) with the most reliable measuring facilities.
- 3 What fields of science the research-----(do)?
- 4 What subjects -----(study) at the university by students?
- 5 Postgraduate students -----(offer) 3-year program of study.
- 6 What international programs----- the university (participate) in?
- 7 The technique -----(aim) at developing modern electronic devices.

NSTU CAMPUS MAP



I ÷ VIII Academic buildings

1 ÷ 7 Dormitories

(M) Metro station "Studencheskaya"

9 – Sports complex

7. Asking the Way. Can you find your way around the university?

NSTU houses 8 teaching buildings with lots of classrooms, lecture theatres, laboratories, workshops and libraries. The university has sports and recreation centres. NSTU provides accommodation, so it has 7 dormitories. When coming to the university for the first time, it's too difficult to find the room or teaching building you are looking for.

a) *Study the map of the NSTU campus.*

b) *Work in pairs. Take turns giving directions to the places you are looking for. Use your map and give the information he or she asks for.*

A: I'm trying to find.... Is there one around here? How can I get to...? Could you tell me the way to....? Could you tell me where the library is.

B: Yes there is one on the ground floor. Let me tell how to get there.

Useful prepositions, words and phrases:

1. across, behind, up/down the street, in front/back of, in the middle of the block, near, opposite, next to, over, on the corner of
2. climb up/down stairs, it's upstairs/downstairs, go straight, go past..., take the first/second turning on the left/right, stop at, turn to, walk back, go up to and you'll see, cross
3. Dean's office, teaching block, ski lodge, swimming-pool, polyclinic, classroom, workshop, chemical laboratory, lecture theatre, fast food outlet, coffee shop, bar, canteen, gym, Human Resource department, the department of foreign languages, lounge, recreation center.

8. Study the structure and the useful language of a presentation given below. Prepare and make the presentation of NSTU.

II. PRESENTATION TECHNIQUES

1. *Split the class into the groups of four. Discuss the following:*

1. What is a «presentation»?
2. For what purposes are presentations made?
3. What makes a presentation effective?

2. *Study effective presentation tips. Tick the tips you consider to be of primary importance:*

1. When preparing a presentation, try to find out what your audience already knows.

2 Visit the room in which you are presenting before you actually make the presentation.

3 The first stage of your presentation is when you should get the full attention of your audience.

4 If you memorize the introduction, you will be more confident when making a presentation.

5 The whole text of your presentation should be written on postcards.

6 If you use an overhead projector, you should remember to turn it off when you don't need it.

7 Remember that the content of the presentation is much more important than your presenting style.

3. Comment on the following statements. In your opinion are they: a) essential b) helpful c) unhelpful for a successful presentation?

1. Tell a joke at the beginning.

2. Speak more slowly than you normally do.

3. Smile a lot.

4. Involve the audience.

5. Invite questions during the presentation.

6. Always keep to your plan.

7. Move around during your presentation.

8. Use a lot of gestures to emphasize important points.

9. Read out your presentation from a script.

10. Stand up when giving your presentation.

4. Study the useful language of the effective presentation used to start, to sequence, to make the main body and conclude the presentation.

Table 1

Introduction	
Introducing your-self	Greeting, name, position
Introducing your talk: Title/ sub-ject:	I'm going to talk about... I'd like to talk about ... My topic/ my subject is ... The subject of this talk/my talk is ... I'd like to talk to you about... I'm going to present the recent... / explain our position on ... /inform you about... / describe ... The focus of my presentation/ paper (academic)/ topic / speech (usually to public audience)
Purpose/ objective	We are here today to / decide / agree, learn about... The purpose of this talk is to show / take a look at / report on / outline /give an overview / discuss / review This talk is designed to act as a springboard for discussion /start the ball rolling

Length	I shall take (...) minutes of your time I plan to be brief This should last (...) minutes
Outline/ parts	I've divided my presentation into (four) parts/ sections. They are ... The subject can be looked at under the following headings... We can break this area down into the following fields: Firstly/ first of all/ Secondly / then/ next... Thirdly/ and then we come to ... Finally / lastly/ last of all...
Questions	I'd be glad to answer any questions at the end of my talk. If you have any questions, please feel free to interrupt. Please interrupt me if there's something, which needs clarifying. Otherwise, there'll be time for discussion at the end.

Table 2

Main part	
Sequencing Order- ing points Transi- tion / Changing topic	First / next / then / after that Let's turn to ... The / my next point is ... The next thing is ... After all, ... Last of all ... Finally, ... Now let's look at / move on / turn to ...
Referring to an earlier point / de- parting from your plan / digressing	Going back to ... By the way, ...
Giving examples/ Introducing and commenting on visuals (graphs, charts, diagrams, tables, pictures, handouts)	For example / for instance / such as / One example of this is / Let's look at Take a look at ... /Have a look at ... Let's take/ have a look at I'd like you to look at ... If you take a closer look at ..., you'll notice ... I'd like to focus your attention on ... I'd like to draw your attention to ... I'd like you to look at... in more details / In the picture we can see /As you can see from the picture The graph/ chart shows /presents
Conclusions	
summary	Let me just run over the key points again. I'll briefly summarize the main issues. To sum up. ... Briefly ... In brief... In short ...
Conclusion or	So, / In conclusion ... / We've seen that As you can see, there are some very good reasons... I'd like to leave you with the following thought / idea ...

recommendations (if appropriate)	So, I would suggest that we ... / I'd like to propose (more formal) /In my opinion, the only way forward is ...
a signal to end	That brings me to the end of my presentation. That completes my presentation. Before I stop/ finish, let me just say ... That covers all I wanted to say today.

Table 3

Questions	
an invitation for questions/ to make comments, or start a discussion	I'd be glad to try and answer any questions. So, I'd now be glad to answer any questions. So, let's throw it open to questions. / Any questions? / I'd like to suggest we start the discussion now.
Check you have understood the question	Rephrase or clarify
Classify the question and <u>reply</u>	«easy», «difficult», «irrelevant», «hostile»
Checking the questioner is satisfied.	Does that answer your question? Is that clear? May we go on?
close	
	Thank you for your attention. Thank you for listening I hope you will have gained an insight into

MODULE 2 ECOLOGICAL PROBLEMS

UNIT 5 POLLUTION

- **Focus:** Pollution no easy answers (Its types, causes and effect on the environment and people)
- **High-tech pollution**
- **Grammar focus:** Future with *will* or *to be going to*
- **Skills focus:** Reading for specific information; learn to analyze the problem of pollution and look for the ways of its solution

TEXT A

Vocabulary

an unsightly billboard –неприглядный, уродливый рекламный щит
to toss – бросать

to do harm – причинять вред
stuff – вещество, материя
manure – навоз, компост
scattered settlement – расположенные на расстоянии поселения
to take its toll – сыграть свою роль, иметь негативные последствия
integrity of earth's life-support systems – целостность системы жизненно-
го обеспечения на земле
lead – свинец
garbage – мусор
dump – свалка
fertilizer –удобрение
new toxic pollutants –новые отравляющие вещества
pin down – точно определить, установить
to overlap –совпадать, перекрываться
issue –спорный вопрос, проблема; публикация, статья
to contaminate –загрязнять
habitat – среда обитания
to deface buildings – портить, разрушать здания
technological advance –технологический прогресс
internal combustion engine – двигатель внутреннего сгорания
pressing problems – проблемы требующие срочного. безотлагательного
решения
the lack of economic incentives – отсутствие экономических стимулов
consequences of pollution – последствия загрязнения
exhaust – выхлопные газы
poverty – нищета
people on limited incomes – люди с ограниченными доходами
risk assessment – оценка степени риска
value system – система ценностей
to quantify the risks – определить величину степени риска
to prevent – предотвращать
to threaten – угрожать

1. Pollution is a pressing problem which must be immediately solved.

Work in pairs. Try to give your own definition of this term. Make the list of pollution causes.

2. *Read the text and compare your answer with the pollution definition in the text.*

POLLUTION - NO EASY ANSWERS

It's not hard to find examples of pollution in our society. But it is hard to define exactly what pollution is. For example, is a can tossed on the ground pollution? How about an unsightly billboard? The noise from a nearby airport?

According to experts, all of these examples can be types of pollution. Broadly defined, *pollution is any human-caused change in the environment that creates an undesirable effect on living and nonliving things*. Most types of pollution cause some type of physical harm. But some don't. Noise, for example, often creates more psychological damage than physical damage, but it's still considered a type of pollution. *In short, pollution is bad stuff—for the environment and for people and other living things*.

From Manure to Monoxide: As long as people lived in scattered settlements and the world's human population was relatively small, pollution wasn't much of a problem. But once people began to live in cities and to invent machines and synthetic chemicals, pollution started taking its toll. Pollution has been linked to the fall of Rome (lead in the pipes); the cholera epidemic in 19th-century London (garbage in the streets); and many other significant events throughout history.

Though pollution has been around for thousands of years, the sources of our pollution problems have changed, and the amount of pollution has increased dramatically. A century ago, people were dealing with pollution from animal waste, coal ash, and open dumps. Today, pesticides, fertilizers, radiation, carbon monoxide, acid rain, and a lot of other «new» and toxic pollutants are the troublemakers. This increase in the number, and toxicity of pollutants, combined with an ever-increasing human population, has made pollution worse than ever before — threatening the very integrity of earth's life-support systems.

Hard to Pin Down: In this issue, we focus on air, water, and land pollution. However, in many cases the categories overlap. For example, pesticides can contaminate air, water and land, depending on how they are manufactured, used, and disposed of. Many pollutants also travel great distances and can change form, making it hard to pin down exactly where they came from.

Pollutants can affect different people in different ways. People with respiratory problems and allergies, for example, are often more sensitive to air pollution than people without these problems. Pollution does more than affect human health. It also limits our activities, harms wildlife and habitat,

defaces buildings, and damages the planet's natural systems, including global climate patterns.

No Single Cause: Almost every human activity creates some type of pollution. And a combination of factors, from economics to politics, further complicates pollution problems.

Technological advances designed to make our lives easier, such as the internal combustion engine and plastics, have created some of our most pressing pollution problems. The lack of economic incentives to produce pollution-free products, as well as the fear that pollution controls will reduce jobs, lower our standard of living, and keep us from competing in foreign markets, are part of the problem too.

Not understanding the consequences of pollution is also part of the problem. For years, people thought that they could safely get rid of garbage, exhaust, and other waste products by throwing them away or releasing them into the air. But we're now realizing that the waste we dispose of can come back to do harm in a variety of forms.

Poverty and Pollution: Pollution is directly linked to social problems, such as poverty and overpopulation. In many cases, people on limited incomes cannot just move away from a chemical dump site or a smog-filled city. They can't afford to drink bottled water or pay for organically grown vegetables.

Weighing the Risks: We know that some pollution will always exist. But how much pollution is acceptable? What are the short- and long-term risks of a polluted environment to individuals, communities, and society as a whole? To deal with questions like these, policymakers are starting to rely on a relatively new process called *risk assessment*. Risk assessment helps people understand and quantify the risks caused by using certain technologies. But determining and evaluating risks is often extremely difficult. In many cases, data on the risks involved with new technologies don't exist.

A Question of Values In the past, we've spent most of our efforts *cleaning up* pollution rather than *preventing* it. First of all, preventing pollution saves money, protects resources, prevents health problems, and improves the overall quality of life.

But making the decision to prevent pollution involves values. Taking into account both short- and long-term risks, people must rely on their own value systems to decide how important it is to prevent pollution.

3. Read the text again and answer the following questions.

1. What causes pollution?
2. What effect does pollution have on a) people, b) wildlife, c) environment?

3. Do you see any link between poverty and pollution?
4. What human activities lead to environment contamination?
5. What's your pollution IQ? How do you contribute to pollution?

4. Decide if the following statements are true (T) or false (F).

1. Pollution has the worst effect on living and nonliving things.
2. Pollution is not caused by the growth of population.
3. Some pollutants contaminate water, air, land and can travel over long distances.
4. Pollution was a serious problem when people lived in scattered settlements.
5. People with respiratory health problems prefer living in polluted areas.
6. Pollution damages the planet and causes global climate changes.
7. Pollution isn't linked to such a social problem as poverty.

5. Match the words from the text with the corresponding definitions.

- | | |
|-------------------|---|
| 1. to pollute | a. substances that pollute the environment |
| 2. pollution | b. something that stimulates |
| 3. pollutant | c. progress |
| 4. to contaminate | d. to make dirty or harmful |
| 5. incentive | e. to make water, air or land dirty and dangerous for people |
| 6. advance | f. the importance or worth of something |
| 7. consequence | g. result or effect |
| 8. value | h. the process of polluting air, water or land with chemicals |

6. Choose the word to match with the translation into Russian:

1. чувствительный, восприимчивый к a) incentive to b) sensitive to c) to contribute to
2. быть в состоянии, позволить себе a) to afford b) to prevent c) to involve
3. полагаться на что-либо a) to depend on b) to rely on c) to exist on
4. устранять загрязнение a) to prevent b) to deface c) to clear up
5. избавиться a) to consist of b) to accuse of c) to get rid of
6. принимать во внимание a) to take into account b) to count c) to accept
7. оценивать, определять степень риска a) to take risks b) to face a risk c) to assess a risk

7. Find the odd word out

1. throw away, dump, dispose of, discard, disregard
2. waste, garbage, litter, rubbish, trash, pollution
3. recycle, reuse, redo, reprocess

4. toxin, poison, venom, garbage
5. pollute, contaminate, poison, delude
6. combustible, flammable, contaminated, incinerated, burnt

8. In pairs replace the underlined words with the words used in the text.

1. Pollution began to have a negative effect (to t--- its t---) when people started to produce synthetic chemicals.
2. It's hard to define exactly (to p-- d---) what pollution is.
3. More and more companies produce environmentally friendly (p-----n f---) products.
4. Some politicians (p----m----s) rely on the method of risk assessment.
5. The toxicity level increased sharply (d-----y).

Grammar Focus: Future with will or to be going to

To talk about the future we use **will** for:

predictions – e.g. *The new airport will be finished by 2009.*

future intentions – e.g. *I'll start tomorrow.*

promises – e.g. *I'll pay you back on Thursday.*

spontaneous decisions – e.g. *Do you want another cup of coffee? I'll make it for you.*

We use **to be going to** for **future plans** – e.g. *Next year we are going to India.*

predictions from what you can see e.g. *Look at the sky – it's going to rain.*

9. Choose either will or going to in these sentences.

1. If we don't start protecting the environment now, the planet will/is going to die.
2. What will you/are you going to do to protect the environment?
3. I will/am going to take plastic bottles to the recycling point today. Do you want me to take yours?
4. That's a good idea, I will/am going to go with you.
5. I think that by the year 2000, everybody will/is going to have more efficient cars.
6. I will/am going to change my car next year – this one doesn't take unleaded petrol.
7. This river has got so much rubbish in it. It looks like it will/ is going to die.

10. Complete these dialogues with will or to be going to and the verbs in the box.

do	build	put	have a rest	launch	be finished	do harm	die
contaminate							

1. **A:** There is nothing we can do about the environment: eventually the earth *will die*.

B: Don't be so pessimistic I----- all my old newspapers in the paper bank- that's a start.

2. **A:** What ----- you ----- tomorrow?

B: I ----- in the forest not far from our town.

A: I'm afraid you can't, there's a construction site now.

B: What ----- they ----- here?

A: A plant producing fertilizers. It ----- by 2010.

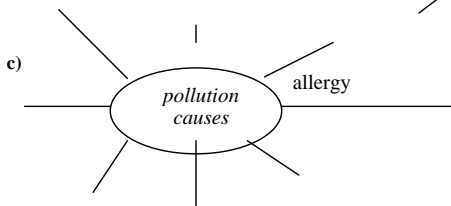
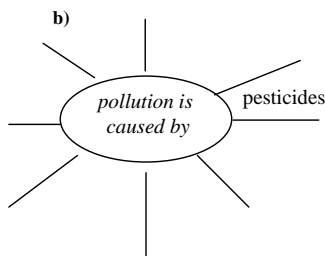
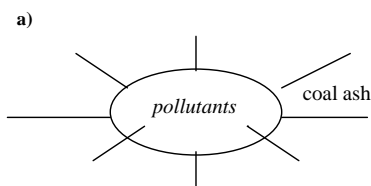
B: Bad news. Pollutants ----- the soil and water and ----- to the wildlife and habitat.

A: We ----- the campaign against building the plant in our neighborhood.

10. Translate from Russian into English.

Планета Земля на грани уничтожения. Деревья засыхают, редкие виды животных и растений исчезают, воздух загрязнен вредными химическими веществами, а реки и моря отходами, урожаи гибнут, и люди страдают от тяжелых заболеваний. Следовательно, загрязнение окружающей среды - одна из важнейших проблем. Люди должны срочно принять меры по спасению человечества. Так как такие природные нарушения приводят к значительным климатическим изменениям на планете.

11. Skim through the text to define: a) pollutants, b) causes of pollution, c) harmful effect of pollution. Complete the diagrams given below:



TEXT B

Vocabulary

decade – десятилетие; десятидневка

device – электронный прибор

gadget – механическое приспособление/устройство

appliances – электроприборы

casing – корпус

component – компонент, часть электронного устройства

insulation – изоляция

out of date – устаревший, несовременный

turnover – товарооборот

to cover disposal cost – покрывать затраты на устранение/вывоз мусора

at the time of purchase – с момента покупки

scrap heap – мусорная свалка/куча

uphill struggle – трудная, напряженная борьба

fault – неисправность/дефект/ошибка

faulty equipment – неисправное/поврежденное/бракованное оборудование

to confine to – ограничивать

vast majority – основное большинство

legal – легальный, законный

to charge – 1.обвинять 2. брать плату

to lease – сдавать в наем/ в аренду/ сдавать во временное пользование

leased – выданный напрокат/ во временное пользование

to hire – брать напрокат

to monitor – управлять, контролировать

to govern – управлять, руководить

municipal authorities – городские власти

bromine – бром

to incinerate – сжигать

extremely toxic dioxide – сверх-токсичная двуокись

toxic flame retardant – ингибитор; огнезащитное, вещество препятствующее воспламенению; плохо воспламеняющееся вещество

eco-visionaries – эксперты по решению и предсказанию экологических проблем

opposed to – в противопоставление

to come into force – войти в силу, в действие

1. You are going to read a newspaper article about pollution.

a) Work in groups of three and answer the following questions:

What do you think high tech pollution is?

What are major causes of pollution in general?

b) *Suggest six words you would expect to find in the article.*

2. *Read the text, check your suggestions and choose the most suitable heading from the list A-I for each part of the article. There is one extra heading which you don't need to use.*

A. A slow and expensive process.

B. A very short life time.

C. Longer-lasting technology.

D. All TV parts are recycled.

E. Trying to determine what they're made of.

F. An idea packed with problem.

G. Hurrying to purchase new technology.

H. Who is responsible?

I. Discarding toxic parts and breaking the rules.

HIGH TECH POLLUTION

The recycling of high-tech garbage is becoming a pressing problem. In the last few **decades** we've been like children in the toy shop trying to get the latest **electronic gadgets**. Manufacturers bring new toys faster than we can buy. And the more we buy the more we throw them away.

I

The speed of **turnover** is very high. Anyone who has ever bought a computer will be sure that a PC is **out of date** as soon as you buy it. If a computer has a **fault** it is more economical to throw it away and buy another than **mend** it.

II

This trend isn't confined to computers either. Germany, Europe's richest nation, **discards** 1.5 million tons of electrical appliances every year. Only about 100.000 tons of units are recycled. The vast majority are burnt or thrown on the **scrap-heap**. And this causes serious problems. One of the country's major recycling firm has been charged with dumping toxic waste containing the substance PCB once widely used in TVs and computer as insulation. Since 1985 its production has been illegal and disposal is governed by strict rules. But these rules aren't being followed.

I III

Klaus Brodersen of Erlangen University is trying to produce a definite classification what chemicals should and should not be used in production of high-tech equipment. But it is an uphill struggle. It costs up to \$ 7.000 to analyze a single component, and so far Brodersen has examined only 200 of the 100.000 most **common**.

I IV

Siemens Nixdorf, which runs a very expensive recycling programme for its old equipment, says there are more than 100 different plastics in its computer casings. No one knows precisely what went into each model. The only certainty is that all the casings contain bromine a kind of toxic **flame retardant**. It is also impossible to recycle and **to incinerate** it. If you are able to burn the casing, you'll produce extremely toxic dioxins.

V

So what is to be done about electronic waste? Eco-visionaries propose a future in which appliances not bought but **leased**. This would be a tricky practice. Who would be responsible for faulty and toxic equipment? Who would take back the equipment – the dealer, manufacturer or importer? Who is going to monitor manufactures? And, of course, in the long run it is more expensive to hire a TV or a computer than it is to buy one.

I VI

The Swiss have solved the problem by making charge to cover all disposal costs at the time of purchase. There is chaos in Germany where this system has yet to come into force. Some firms make you pay, some collect without charge, some take all goods, others refuse to have anything to do with it. Municipal authorities are disorganized.

VII

The answer to all problems lies in **intelligent** construction which are aimed at economy, ease of disposal and increasing life expectancy of products. The manufacturer Loewe has developed a green TV which contains only 39 grams of plastic as opposed to the standard 6.7 kilos and 50 grams of toxic materials against 5 kilos. It is expected to last up to 30 years, twice as long as other TVs. Companies like this show the way forward.

2. Families disposing garbage can divide it into two categories:

1. The waste that can be recycled and burnt	2. The waste that can't be recycled or incinerated

a) Which of these categories would these items be placed in? Complete the table.

...old newspapers ... aluminum beer cans ... acids and chemicals ... broken plates, cups ... glass bottles ... electric appliances: irons, kettles, hair dryers, blenders ...an old color TV ... a faulty computer ...electronic components ... outdated cassette-recorders and telephones ...torn woolen sweater ...metal tin opener ...plastic casings ...PCB containing insulators

b) Which from the above mentioned discarded items could be referred to **high-tech garbage** or **electronic waste** ?

c) What is the **average life span** or **expectancy** for: a mobile phone, a washing machine, color TV set?

4. Match the words in bold from the text with the corresponding definitions.

- | | |
|-----------------------|---|
| 1. turnover | a. to dump |
| 2. discard | b. to repair |
| 3. incinerate | c. period ending in ten years |
| 4. intelligent | d. old-fashioned |
| 5. flame retardant | e. clever |
| 6. decade | f. small machine or device |
| 7. common | g. to burn |
| 8. scrap heap | h. pile of garbage |
| 9. out of date | i. ordinary |
| 10. mend | j. value of goods or services sold during a particular period of time |
| 11. electronic gadget | k. substance which makes something burn slower |
| 12. leased | l. hired |

5. Skim through the texts «Pollution no Easy Answers» and «High-Tech Technology».

Match a verb and a noun to make word combinations.

VERB	NOUN
to follow	the programme
to take	harm
to cover	strict rules
to do	its toll
to run	into force
to make	disposal cost
to come	charge from

6. Complete the table with the words from the text.

NOUN	VERB
1.	to manufacture
2. purchase	
3. deal	
4.	to import

Speaking

7. What do these numbers from the text refer to?

1 500 000, 100 000, 7 000, 200

8. Read the text again and answer the following questions.

1. Why is recycling of high-tech garbage becoming a pressing problem?

Look for several reasons in the text.

2. How is the problem of disposing electronic gadgets and electric appliances being solved?

3. What «green» or environmentally-friendly materials are being developed by scientists?

4. What are new intelligent technologies aimed at?

5. What do municipal authorities monitor?

9. Match types of pollution with their effects.

1. acid rain	turns the planet into	a. skin cancer
2. traffic congestion		b. respiratory problems
3. water contamination	causes	c. a scrap-heap
4. destruction of the ozone layer		d. carbon monoxide given off
5. high-tech garbage		e. stomach related diseases
6. air pollution		f. forests dying

10 Companies need to be aware of the effect they have on the environment.

What actions are taken by manufacturers and local authorities to solve high-tech pollution problem?

Complete the table:

Actions taken by municipal authorities	Actions taken by manufacturers

11. Study high-tech pollution problems and add more items to the diagram in task 11 in the Text A

UNIT 6 ECOLOGICAL PROBLEMS OF BIG CITIES AND THEIR SOLUTION

Focus: Ecological problems of cities and their solution.

Grammar focus: Present perfect simple, clauses of purpose

Skills focus: Reading for specific information; learn to analyze the problem of pollution and look for the ways of its solution; writing for suggesting ways to improve the situation and explaining the results of each suggestion.

Vocabulary:

soil – почва

lifespan – жизненный отрезок, длительность существования

urgent need – острая необходимость

highway – большая дорога, магистраль, шоссе

to ban – запрещать

exhaust – выпуск, выхлоп

unleaded petrol – неэтилированный бензин

greenhouse effect – тепличный эффект

congested road – перегруженные дороги

biodegradable materials – разлагаемые микроорганизмами материалы

environmentally friendly materials – экологически чистые/ приемлемые материалы

drinking water – питьевая вода

1 Do you know that:

- The most common form of drinking water pollution: soil, sand and minerals washed from the land into the water.
- The biggest cause of air pollution in cities (85%): cars, trucks and buses.
- Amount of garbage produced in the US per year: 144 million tons.

- Amount of garbage thrown away by the average North American per day: 3 kilograms.
- Expected lifespan of a plastic container buried in the ground: 50, 000 years.

Discussion: *In pairs try to find an answer to the following questions:*

What are the main sources of pollution in your city?

How is garbage disposal controlled in your city?

What are two reasons for and two against using plastic containers?

2. *Match information in columns A and B to make sentences then compare them with your partner:*

A

- 1) Paying for their children's education
- 2) An urgent need in many industrial cities
- 3) Reducing traffic noise
- 4) Banning smoking in public places

B

- a) is a good way to protect people's health
- b) is a problem for people living near highways
- c) is a problem for many parents
- d) reducing air pollution

3. *Fill in correct words from the box and discuss the way to solve pollution problem in cities:*

aerosol, exhaust, recycling center, public transport, boycott, waste, dispose, influence, unleaded

Pollution is getting worse and we must solve this pressing problem. You can start by taking your unwanted 1)..... to a 2)....., instead of throwing it away. You also need to properly 3) of any garbage that can't be recycled. A good way to 4)..... big companies is to 5) any products which are harmful to the environment. This forces the companies to change their methods of production. If you buy an 6)..... spray, for example, always make sure it is an 7)..... one. If you drive a car, try to get one which takes 8)petrol because 9) fumes given off are less harmful to the environment. If you are traveling in the city, don't use the car, but take 10)..... instead. It's much more environmentally friendly, and often faster as well.

TEXT C

Vocabulary

landfill – мусорная свалка/ яма для закапывания мусора и отходов

kitchen trash – пищевые отходы

noncombustible garbage – негорючий мусор

upon request – по требованию, заявке

item – отдельный предмет, вещь

employment – занятость

handicapped – с физическими недостатками

4. *Before reading the text on solving the problem of garbage disposal answer the following questions:*

Is garbage disposal a problem in your city?

How many different forms of garbage disposal are used?

WASTE NOT, WANT NOT

Disposing of the garbage we produce is a major problem in cities around the world. In the United States, over 160 million tons of garbage are produced every year. Ten percent is recycled, ten percent is burnt, and the rest is put in landfills. But finding lands for new landfills is becoming more difficult.

A city that has solved this problem in unusual way is Machida in Tokyo, Japan. They have developed a totally new approach to garbage disposal. The key to this operation is public cooperation. Families must divide their garbage into six categories:

1 Garbage that can be easily burnt (that is, that is combustible garbage) such as kitchen or garden trash

2 noncombustible garbage, such as small electrical appliances, plastic tools and plastic toys

3 products that are poisonous or that cause pollution, such as batteries or fluorescent lights

4 bottles and glass containers that can be recycled

5 metal containers that can be recycled

6 large items such furniture and bicycles

The items in categories 1 to 5 are collected on different days. (Large items are only collected upon request). Then the garbage is taken to the center that looks like a clean new office building or hospital. Inside the center special equipment is used to sort and process the garbage. Almost everything can be reused: garden or kitchen trash becomes fertilizer; combustible garbage is burnt to produce electricity; metal containers and bottles are re-

cycled; and old furniture, clothing and other useful items are cleaned, repaired and resold cheaply or given away. The work provides employment for handicapped persons and gives them a chance to learn new skills.

Nowadays, officials from cities around the world visit Machida to see whether they can use some of these ideas and techniques to solve their own garbage disposal problems.

5. Skim through the text and answer the questions:

1. What is the major problem in cities around the world?
2. What percentage of the disposed garbage is put in landfills?
3. How many categories must families divide their garbage into?
4. Which of the garbage categories would these items be placed in?
 milk packagesbatteriesperfume bottles
small electrical appliances bookshelves
5. What happens to these things in the garbage disposal center?
6. How do local officials solve unemployment problem?

6. Read the article again and make notes under the heading, compare your notes with the partners:

Advantages of opening the recycling centre in Machida	
1.	
2.	
3.	

7. Find the synonyms for: *trash, dispose of, combustible, to recycle* (Mod. 2, Un. 5, task 7).

8. In pairs replace the underlined words with the words used in the text.

1. Electrical kettles and hair dryers (a-----s) can't be incinerated (are n--c-----e).
2. Physically disabled people (h-----d) are employed by the recycling center.
3. All the items in the recycling can be used and sold again (r----d and r-----d).
4. Dumping garbage (d-----l of t---h) is a pressing problem of big cities.
5. Municipal authorities (o-----s) from other cities arrive in Machida to borrow the recycling technique.
6. Batteries and fluorescent items are toxic (p-----s) for the environment.

Grammar Focus: Present Perfect

Present perfect simple pattern: **have/has + past participle**

We use present perfect to talk about **1) experiences** – things we have done in our lives with the following time expressions: **ever, never, once, twice, times**:
e.g.: Have you ever bought food in biodegradable packages?

2) an action which has recently finished and whose **result is visible in present** with the following time expressions: **already, yet, always, just recently, lately, up to now, so far**

e.g.: Scientists have recently developed new recycling technologies.

3) an action which began in the past and continues up to the present; in this case we often use **for, since** and **how long** – questions. *e.g. The residents of industrial areas have faced the problem of pollution for many years.*

TEXT D

Vocabulary

fossil fuels – ископаемое топливо

rotor blades – вращающиеся лопасти

renewable – возобновимый, возобновляемый (о природных ресурсах)

9. Complete the project aimed at solving a serious energy crises in Britain with either present perfect or present simple of the verbs in brackets.

THE ANSWER IS BLOWING IN THE WIND

Britain is in the middle of serious energy crises! We 1_____ (look for) a new form of energy which will be able to generate enough power in recent years.

Usually the British 2_____ (burn) **fossil fuels** or 3_____ (build) **nuclear power** stations. As a result they emit harmful **greenhouse gases**, which 4_____ (cause) **global warming** and **climate change**.

How can we produce enough energy without damaging the environment? What can we use as an alternative reliable form of energy? Wind power.

The countries like Holland and Denmark 5_____ (use) wind power as an alternative source of energy for many years. Britain is one of the windiest countries in Europe, but it 6_____ (be) slow to take advantage of wind power. The strong wind which 7_____ (blow) around Britain's coastline could easily be used to provide us with all energy needs. All we need now is to set up some wind farms.

Wind farms 8_____ (be) a number of electricity generating **wind turbines**, which are tall, slim towers with two or three **rotor blades** at the top.

The wind 9 _____ (turn) the blades, which rotate the pole. Computers monitor the wind direction and speed, and can shut down the turbine if the wind 10 _____ (become) too strong. We 11 _____ already (install) a single wind turbine which can produce enough electricity to power 375 homes, and it never 12 _____ (make) any noise.

So, wind power offers a solution to all our energy problems by being a **renewable**, clean and safe source of energy which easy to live and work with.

Speaking

10. Look at the following pictures and notes, then in pairs discuss what the problems of big cities are and how they can be solved.

Problems: noise, smog, congested roads, gas emission, acid rain, careless disposal of waste, unpleasant smells, unnecessary packaging, scrap heaps, dumping oil/toxic waste/outdated appliances and devices, water/ air / soil pollution, greenhouse effect, growth of population, unemployment

Solution: filters, unleaded petrol, better public transport, fines, biodegradable packaging, recycling, incinerate waste, develop new environmentally friendly materials, ban on careless disposal of rubbish, recycling factories/points, improved waste disposal systems, living outside the city/ in the suburbs, economy water and electricity, develop technologies, plant trees, ride a bicycle



Grammar Focus: Clause of Purpose:

- (in order) to + infinitive
- so that + can/will + infinitive
- so that + can't/won't + infinitive

e.g. We should install filters **to** reduce air pollution.

We should install filters **so that** we can reduce air pollution.

We should install filters **so that** we won't have polluted cities.

Writing

11. Your town is facing serious problems. **Suggest ways to improve the situation, explaining the results of each suggestion.** You can use ideas from units 5 and 6 as well as your own ideas.

Before you write a **composition** providing solutions to the problems, you should make a list of the suggestions and the results. Start your composition by stating the problem(s) and cause(s), then present each of your suggestions and results in separate paragraphs. Join your suggestions and results using **so, consequently, therefore, by doing this, in this way**, etc. End your composition by summarizing opinion.

PLAN

I. INTRODUCTION: 1. state the problem: *The living conditions in our city are getting worse and worse. Exhaust fumes and smoke from the factories are polluting the air. Furthermore,.....(state other problems). We should do something before it's too late.*

II. MAIN BODY

2. suggestion 1& result

3. suggestion 2& result

4. suggestion 3& result

III CONCLUSION

5. summarize your opinion: *All things considered , there are many solutions to all the problems. The sooner we put them into practice, the better our lives become.*

MODULE 3 CITIES

UNIT 7 CITIES AND WORLD-FAMOUS ATTRACTIONS

Focus: Cities of English speaking countries

Grammar focus: Degrees of comparison; articles with geographical names

Skills focus: Reading for specific information; making comments; writing a tourist leaflet; discussion.

TEXT A

Vocabulary

accommodation – жилье

celebrity – знаменитость, звезда

fascinating – обворожительный, очаровательный, пленительный

to eat out – питаться в ресторане или в кафе, а не дома

1. *Look at these phrases about countries and cities and arrange them into four categories:*

a) good points, **b)** problems, **c)** sightseeing, **d)** transportation
...exciting cities ...high crime rate ...beautiful scenery ...friendly people
...good prices ...fantastic museums ... too many tourists ... excellent trains
...terrible poverty ...reasonable hotels ... safe at night ...poor roads

2. Read the article and answer the questions.

1. Where is LA located?
2. Where can you stay in LA? What is special about these places?
3. Which places can you visit? What can you see there?
4. Where can you eat out? What is special about each place?
5. Where can you go shopping? What can you buy there?
6. Where can you go in the evening? What can you do there?

Los Angeles is the second largest city in America. It's also home to film stars, sunny weather, tall buildings and heavy traffic.

LOS ANGELES - THE CITY OF ANGELS

Accommodation

The hotels in LA are more expensive than those in many other American cities, but they are clean and safe. The Biltmore and the Omni are lovely and close to special bus stops where you can get cheap rides to the various sights.

Places to visit

There are many interesting places you can visit, like Venice Beach with its street performers, Universal Studios to see how they make films, and Griffith Park. You can also see the handprints and footprints of film stars outside Grauman's Chinese Theatre. Children can visit the Children's Museum – one of the most exciting museums in the world.

Eating out

There are famous restaurants you can eat in, like the Buffalo Club, a place packed with celebrities, or Musso & Frank's, Hollywood's oldest restaurant. For the most delicious Mexican dishes, eat at the Border Grill.

Shopping

You can buy cheap fashionable clothes on Melrose Avenue. Do you want designer clothes? Then go to the expensive shops on Rodeo Drive. A visit there is always unforgettable.

Entertainment

The nightlife is exciting on the Sunset Strip, an area in Hollywood with famous clubs like the Whiskey and the Roxy. There you can enjoy rock 'n' roll music. 24-hour cafes like Van Go' Ear are popular with visitors.

LA is a modern city with something for everyone. It's noisy and crowded, but it's also fascinating.

3. Replace the article sub-headings with the ones in the list:

Nightlife – Restaurants – Shops – Hotels – Sights

4. Fill in the missing adjectives:

1. The hotels in LA are more e----- than those in many other American cities.

2. There are many i----- places you can visit.

3. There are f----- restaurants you can eat at.

4. You can buy c---, f----- clothes on Melrose Avenue.

5. Transport is c----- in the rush hour.

6. LA is a modern, n--- and f-----ng city.

5. Match the adjective-noun collocations, then make sentences with them.

Quiet – noisy *place*

Clean – dirty\polluted *streets*

Tall – small *buildings\restaurants*

Cheap – expensive *shops\hotels\restaurants*

Modern – old *city\town*

Exciting – boring *nightlife*

6. Fill in: of, in, at, to, with, on

1. the second largest city ... America; 2. it's home ... film stars;
3. close.... special bus-stops; 4. footprints ... film stars; 5. you can get rides
.... the various sights; 6. eat ...a restaurant; 7. packed celebrities;
8. the world; 9. ... Rodeo Drive; 10. popular ... visitors

7. Fill in synonyms.

District, not dangerous, memorable , well- known, interesting, near

1. safe..... 4. famous.....

2. close..... 5. unforgettable.....

3. fascinating 6. area.....

Grammar Focus: Degrees of Comparison

	adjective	Comparative	Superlative
One-syllable adjectives	cheap large big	cheaper larger bigger	the cheapest the largest the biggest
-y adjectives	noisy	noisier	the noisiest

Adjectives with two or more syllables	expensive	more expensive	the most expensive
Irregular adjectives	good bad much many little	better worse more more less	the best the worst the most the most the least
<ul style="list-style-type: none"> • We usually use than with comparative adjectives. • We use the superlative form to compare more than two people, things, places etc. We use <i>the... of/in</i> with superlative adjectives. • We can also use (not) as + adjective + as to compare two places, things, people, etc. • We use much\far\bit\ a little + comparative degree. 			

8. Use the adjectives in the list to compare LA with the place you live in.

Large, clean, noisy, polluted, crowded, small, dirty, safe, expensive, old, modern, peaceful, cheap

9. Fill in the superlative forms and choose the correct item.

1. Which city is the first(large) city in America?

A Chicago B New-York C Los Angeles

2. Which is (high) mountain in the world?

A Ben Nevis B Mount Mckinley C Mount Everest

3. Which is..... (long) river in the world?

A the Missouri B the Mississippi C the Nile

4. Where is (dry) place in the world?

A in Chile B in Canada C in China

5. Which is (small) country in the world?

A Luxembourg B Wales C the State of the Vatican City

6. Where is (hot) place in the world?

A Death Valley B Tokyo C Malta

7. Which is (tall) building in the USA?

A the Empire State Building B the John Hancock Centre C the Sears Tower

TEXT B

Vocabulary

arid – сухой, засушливый, безводный

prosperous – процветающий, успешный, благополучный

harbour – гавань, порт

spectacular – впечатляющий, волнующий, захватывающий

pace of life – темп жизни

resident – житель

thriving – преуспевающий, процветающий

the Gold Rush – Золотая Лихорадка

1. *Complete the sentence using the adverbial of purpose or reason.*

Nowadays many tourists like to visit Australia

2. *Before reading the text, answer the question: Which city is the Australian capital? (Perth, Brisbane, Sydney, Canberra, Melbourne). Read the text and check your answer.*

AUSTRALIAN CITIES – A TRIP TO AUSTRALIA

Much of the land in Australia is so arid that people are unable to live on it in its undeveloped state. That explains why most Australians live in metropolitan areas, many of which line the coast, and why Australia is considered one of the world's more urbanized countries. Australia's cities each have their own unique character, with plenty to keep the visitor busy, however long your stay.

Sydney

Sydney is Australia's largest city, with a population of more than 4 million. It is a prosperous business centre and people are still enjoying the success of the 2000 Olympic Games.

The city was founded by the British as a prison colony in 1788 – they chose the place because of its natural harbour. All who visit Sydney come away with memories of seeing one of the most beautiful harbours in the world, made even more spectacular by the famous bridge and opera house.

Melbourne

Melbourne is Australia's second city with half a million fewer people than Sydney. For those who live there, however, there is no better place in the world to live. It has parks and gardens and plenty of excellent restaurants. The city was founded early in the 19th century and became a major financial centre during the Gold Rush. It was Australia's capital city until the Federal capital, Canberra, was founded in 1927. The city has a warm, open feel to it, though as any local will tell you the weather can change from fine and warm to cold and windy in no time at all.

Perth

The capital of Western Australia is known as the most remote capital city in the world. It lies on the west coast, between the Indian Ocean and the Great Australian Desert – nearly 3,500 kilometres from Sydney. It has a

population of about one and a half million, about 90% of the population of the state.

Being so far away from the centre of Australian life, Perth is not as busy as either Sydney or Melbourne. It has retained a quiet dignity and a slow pace of life. Many of its old Victorian buildings survive to add to the charm of the city.

Brisbane

The third largest city in Australia is widely regarded as the best city for the quality of life it offers its residents. The capital of Queensland has a tropical climate and its 1.8 million people enjoy greenery, outdoor restaurants and open-air cinemas. It wasn't always the case. Brisbane was a prison colony until 1842.

Now a thriving, though relaxed, business centre, its warmth, both in the weather and the friendliness of its people have helped to make it the fastest growing city in Australia. It has a growing tourist industry, being the gateway to the Great Barrier Reef as well as to the Queensland.

3. Read the text again and choose the best ending for each sentence.

1. Every city has ...
 - A. many visitors.
 - B. different characters.
 - C. a different character.
 - D. places with character.
2. Sydney is ...
 - A. a prison colony.
 - B. a harbour.
 - C. a bridge.
 - D. more than 200 years old.
3. The capital city of Australia ...
 - A. is Melbourne.
 - B. is Canberra.
 - C. has good weather.
 - D. has many good restaurants.
4. Perth is known ...
 - A. as a busy city.
 - B. for its history.
 - C. as a quiet place.
 - D. for being isolated.
5. Brisbane is said to be ...
 - A. a tropical city.

- B. famous for its gates.
- C. a good place to live.
- D. a national capital city.

Vocabulary

4. *Match these words from the text with the corresponding definitions.*

- | | |
|----------------|--|
| 1 remote | a. very successful |
| 2 metropolitan | b. inhabitants, people living in the area, town city |
| 3 arid | c. entrance, place you go through |
| 4 gateway | d. belonging to or typical of a large city |
| 5 greenery | e. far away |
| 6 thriving | f. very dry |
| 7 residents | g. plants that make a place look attractive |

Writing

5. *Write a tourist leaflet on two cities in your country.*

1 Use these notes to help you.

- *Where is it, (area population)?*
- *What famous buildings, places are there?*
- *What is there to do (daytime, evening)?*
- *What people think of the place.*

2. Include some of these words and phrases: large, small, crowded, busy, nearby, choose from, local people or residents, attractions or sightseeing, exciting, thriving, marvelous, spectacular

Write 200-250 words

TEXT C

Communication: Making Comments

1. *Skim through the excursion script.*

Sydney

On behalf of Boomerang Tours, welcome to Sydney. My name is Angela, and I'm your guide for today. Our driver is Paul and we will be showing you the sights of our lovely city, so sit back and enjoy yourselves.

Sydney is in the state of New South Wales. It has a population of 4 million people from 140 different countries, making us a cosmopolitan multi-cultural city. To your left is Great Harbour Bridge built in 1932 – a wonder of modern construction. To your right, our famous Opera House, built by Joern Utzon, in 1973, home to the Sydney Symphony Orchestra. We are now going through the business area, constructed on the site of the original

settlement. To your right is the Art Gallery of New South Wales, which was built in 1874 and today houses the best collection of Australian art in the world. We are now passing the site of the first farm. Thirty hectares of lawns, gardens and exotic plants, today, our Royal Botanical Gardens. To your right, the shopping, hotel and entertainment area. As you can see, we have many theatres, cinemas, and restaurants with shows. Restaurants with shows, films and food from all over the world. We shall stop here for the afternoon to permit you to have lunch and to do some shopping. This evening we shall be going to the Opera House to see the ballet, *Sleeping Beauty*, and to end our evening with dancing and fun in a local disco. As you can see Sydney is an exciting city with lots to see.

2. Work in pairs, fill in the missing information and describe the places::

Name	Sydney
Location	New
Sights	Great Harbour Bridge built in... House built in
	Art of New South Wales built in
	Royal Botanical.....
Free-time	theatres,.....
Activities	shopping,
Feelings city

TEXT D

centennial – столетний, вековой

1. Work in pairs. Before reading the text answer the questions:

1. Have you ever seen the Statue of Liberty?
2. What does the statue have in its hand?
3. Where does the statue stand?

2. Read the text and check your answers.

THE STATUE OF LIBERTY – THE WORLD-FAMOUS ATTRACTION

One of the most famous statues in the world stands on an island in New York Harbour. This statue is, of course, the Statue of Liberty. The Statue of Liberty is a woman who holds a torch up high. Visitors can go inside the statue. The statue is so large that as many as twelve people can stand inside the torch. Many more people can stand in other parts of the statue. The statue weighs 225 tons and is 301 feet tall.

The Statue of Liberty was put up in 1886. It was a gift to the United States from the people of France. Over the years France and the United States had a special relationship. In 1776 France helped the American colonies to gain independence from England. The French wanted to do something special for the U.S. centennial, its 100th birthday.

Laboulaye was a well-known Frenchman who admired the United States. One night at a dinner in his house, Laboulaye talked about the idea of a gift. Among Laboulaye's guests was the French sculptor Frederic Auguste Bartholdi. Bartholdi thought of a statue of liberty. He offered to design the statue.

Many people contributed in some way. The French people gave money for the statue. The Americans designed and built the pedestal for the statue to stand on. The American people raised money to pay for the pedestal. The French engineer Alexander Eiffel, who was famous for his Eiffel Tower in Paris, figured out how to make the heavy statue stand.

In the years after the statue was put up, many immigrants came to the United States through New York. As they entered New York Harbor, they saw the Statue of Liberty holding up its torch. It symbolized a welcome to a land of freedom.

Vocabulary

3. *Complete the sentences. Circle the letter of the correct answer.*

1. The people of France wanted to give the United States a special ...
a. gift b. torch
2. France and United States had a special ...
a. independence b. relationship
3. France helped the American colonies ... independence.
a. build b. gain
4. A famous Frenchman, Laboulaye, ... the United States.
a. admired b. visited
5. Frederic Bartholdi ... to design the statue.
a. contributed b. offered
6. The Statue of Liberty stands on a ...
a. pedestal b. harbour

Grammar Focus: The Definite Article The with Geographical Names and Places

<p><i>We use the with:</i></p> <p>the names of rivers (the Nile), seas (the Black Sea), oceans (the Pacific), canals (the Panama Canal), groups of islands (the Canary Islands), mountain ranges (the Alps), countries when they include words such as state, Kingdom, republic (the United Kingdom) and the names or nouns with 'of '(the Leaning tower of Pisa)</p> <p>NOTE: the equator, the North/South Pole, the North of England, the south/west/north /east</p>	<p><i>We don't use the with:</i></p> <p>the names of countries (Italy but: the Netherlands, the Lebanon, the Sudan, the Vatican City), cities(Paris), streets (Oxford Street, but: the High Street, the Strand, the Mall, the London Road, the A19, the M6 motorway), squares (Trafalgar Square), bridges (Tower Bridge), parks (Hyde Park), railway stations (Victoria Station), mountains (Ben Nevis), individual islands (Tahiti), lakes (Lake Geneva), continents (Africa)</p>
<p>the names of cinemas (the Rex), hotels (the Carlton), theatres (the Globe), museums (the British Museum), galleries (the Tate Gallery), newspapers/magazines (the Times but Time magazine), ships (the Mary Rose), organizations (the EU).</p>	<p>two-word names when the first word is the name of a person or a place (Gatwick Airport, Windsor Castle but: the White House)</p> <p>names of pubs, restaurants, shops, banks and hotels named after people who started them and end in -s or 's (Lloyds Bank, Harrods, Dave's Pub but: the Red Lion (pub))</p>

4. Complete the sentences with the correct article.

Use *a* or *the*. If no article is necessary, write –.

Example: The statue stands on an island in – New York Harbor.

1. ... Statue of ... Liberty was ... gift to ... United States from ... people of ... France.
2. Over ... years ... France and ... United States had ... special relationship.
3. In ... 1776 ... France helped ... American colonies to gain ... independence from ... England.
4. ... French paid for ... statue.
5. ... American people paid for ... pedestal.
6. We saw.... Buckingham Palace and Houses of Parliament on our tour yesterday.
7. ... British Museum and ... Louvre hold the collections of art treasures.
8. We'll get off at ... Waterloo Station.

5. Work in pairs. a) Look for **main ideas** and circle the letter of the best answer.

1. The Statue of Liberty is a famous statue in

a. France b. The United States

2. The Statue of liberty was a gift

a. from the people of France to the USA

b. from Laboulaye and Eiffel to the USA

3. The Statue of Liberty symbolizes

a. a woman with a torch b. land of freedom

b) Look for **details** and circle *T* if the sentence is true or circle *F* if the sentence is false.

1. Twelve people can stand inside the torch of the Statue of Liberty. T F

2. The United States helped France to gain its independence in 1776. T F

3. Alexander Eiffel was among the guests at Laboulayes's house. T F

4. Frederic Auguste Bartholdi was a French engineer. T F

5. Alexander Eiffel figured out how to make the statue stand. T F

6. Americans designed the pedestal for the statue. T F

6. Discuss the answers to these questions with your group-mates.

1. What other famous statues or monuments can you think of?

2. When we think of New York, we think of the Statue of Liberty and the Empire State Building. List five other cities and the buildings, statues, and places they make you think of.

3. Do you have any famous statues or monuments in your country? What are they?

Description Tips

To describe *a place, a building or a monument*

a) **first**, you should give the name and location of the place, building or monument and the reason for choosing it; b) **second**, you should describe the main aspects of the place, building or monument in detail – for example what you can see and do there, the exterior and the interior and the historical facts about it, tell who built the house or erected the monument; c) **then** give your comments/feelings/ recommendations.

MODULE 4 SCIENCE AND TECHNOLOGY

UNIT 8 GREAT SCIENTISTS

Focus: Vocabulary Study: verbs to discover and to invent; science (general notion)

Focus: Great Scientists: Ernest Rutherford; Zhores Alferov – Nobel Prize Winner

Grammar focus: Uncountable nouns; the use of articles with abstract nouns

Skills focus: Reading for specific information; learning special terms; making a project.

I. Vocabulary Study:

1. Verbs: to discover and to invent

Nouns: **a discovery** and **invention**. What is the difference?

Look at the examples below and choose the correct words to put into the sentences in the box.

- Alexander Graham Bell invented the telephone in 1876.
- Early man probably discovered fire when lightning struck a tree and made a fire in the forest.
- Marie Curie discovered uranium.
- The Aztecs discovered the chocolate tree, growing in the rain forest many hundred years ago. Then they invented a drink made from the fruit of this tree.
- Many people say that Christopher Columbus discovered America in 1492. But that's not really true. There were people living there already, so they knew all about America!
- The word «robot» was invented by Karel Capek in 1921. Now everybody uses the word, but it was a new word then.
- The planet Pluto was discovered in 1930, but of course it had been in the sky for billions of years.

When someone makes a _____, he or she finds something that already existed in our world. He or she _____ something new, but doesn't create it.
When someone creates an _____, he or she makes something new and useful. This idea or thing did not exist in the natural world before. He or she _____ something that no-one has ever thought before.

Grammar Focus: Uncountable nouns - Articles

Uncountable nouns are **mass** nouns which we can't count.

Uncountable nouns include: **a) solid substances or many kinds of food:** *coal, earth, flour, sugar, meat, cheese, rice, etc.* **b) liquids, gases:** *water, coffee, oil, petrol, wine, tea, air, smoke, oxygen, , steam, hydrogen.* **c) materials:** *silicon, iron, copper, silver, gold, brass, plastic , glass, paper, wool, cotton.* **d) languages:** *English, French, German, Japanese, Spanish, Italian, Danish, Dutch, etc.* **e) abstract nouns:** *knowledge, education, information, power conductivity, voltage, etc.* **f) words whose equivalents in other languages might be regarded as countable nouns:** *research, money, cash, advice, news, behavior, harm, weather accommodation, garbage, litter, rubbish, hardware, software, equipment, machinery, furniture, progress, luggage, baggage, jewellery, cutlery, poetry, lightning, leisure, luck, fun.*

Uncountable nouns: - always take singular verbs. *e.g. Gold is more expensive than silver.*

– **don't go with a/an/one/two when talking about things in general.**

e.g. Fresh air is healthy. Water is good for you.

– **can be used alone or with some/any/much/little/my/the.**

e.g. Don't forget to buy (some) coffee.

We use singular verb forms and no articles with words which refer to school subjects or scientific studies: *chemistry, economics, mathematics (maths), physics, politics, electronics, biology, programming, engineering, geometry, geophysics, etc.*

2. 1) A basic knowledge of science or conscious thought is important for solving problems, but our unconscious minds often help in a surprising way.

Read the stories below and write the name of the person, their problem and what helped them to find the solution.

Name	the problem	the chance helped with the great discovery

2) Read the text again and put a, an, the or – in each gap.

a) Archimedes in his bath

Do you remember the story of 1____ Greek scientist Archimedes? He was trying to solve 2____ problem in 3____ physics – how to show if the king's crown was made of 4____ gold or not.

He thought and thought, but he could not find the answer. So he stopped worrying and had 5____ bath instead. Suddenly, 6____ answer came to his mind. He was so excited that he jumped out of his bath, naked, and ran

down the street shouting, 'I've found it!' Actually, what he said in 7 ____ Ancient Greek was 'Eureka!' We still use this word in 8 ____ English when we suddenly find 9 ____ answer to a problem.

b) Einstein on the tram

Albert Einstein had 1 ____ first idea about 2 ____ Theory of 3 ____ Relativity when he was traveling home from 4 ____ work on the tram in Geneva.

c) The scientist who saw the solution on a bus

The chemist 'Kekule' is famous for having discovered a lot about how 1 ____ atoms and 2 ____ molecules are arranged.

3 ____ first discovery happened when he was riding on a bus, one evening in about 1855, thinking about other things. Suddenly, he saw 4 ____ atoms dancing before his eyes. Then one atom joined another one to make 5 ____ chain. When he got off the bus he understood how 6 ____ atoms join together to make molecules.

3. Fill in the gaps with *the, a, or -*. Underline the correct word.

__ Scientists do __ lot of __ research in order to find __ cues for various diseases.

__ lot of money **is/are** spent on __ equipment every year, but __ information collected **is/are** invaluable.

4. SCIENCE

Look through the text and prove the importance of science and scientists. Discuss in pairs the answer to the questions: 1. What impact does science have on our life?

2. What great discoveries and inventions have revolutionized the way we live and work?

Science is important to most people living in the modern world for a number of reasons. In particular, science is important to world peace and understanding, to the understanding of technology, and to our understanding of the world.

Science is important to world peace in many ways. On one hand, scientists have helped to develop many of the modern tools of war. On the other hand, they have also helped to keep the peace through research, which has improved life for people. Scientists have helped us understand the problem of supplying the world with enough energy; using energy from the sun and from the atom. Scientists have also analyzed the world's resources. Scientists study the Universe and how to use its possibilities for the benefit of men.

Science is also important to everyone who is affected by modern technology. Many of the things that make our lives easier and better are the results of advances in technology.

Scientists are learning to predict earthquakes, to study many other natural events such as storms. Scientists are also studying various aspects of human biology and the origin and developments of the human race. The study of the natural world may help improve life for many people all over the world.

II. GREAT SCIENTISTS

TEXT A

Vocabulary

M.A. Master of Arts – магистр гуманитарных наук

to expose(to) – подвергать воздействию

behavior of ions – поведение ионов

x-rays – рентгеновские лучи

radium emanation – излучение, испускание луче радием

to devise a method – разрабатывать метод

alpha particle – альфа частица

to emit from – излучать, испускать, выделять

scattering of alpha rays – рассеяние альфа лучей

postulation – постулирование, принятие без доказательства

nucleus – ядро, центр

positive charge – положительный заряд

to steer – править рулем. управлять, руководить

direct or indirect suggestion – прямое или косвенное предположение

knight – посвящать в рыцари, возводить в рыцарское достоинство

to appoint to the Order of Merit – награждать орденом «За заслуги»

elected fellow – избранный на должность члена совета колледжа/стипендиата, занимающегося исследовательской работой

honour – награда, почесть, знак отличия

honorary doctorates – присвоенные докторские степени

in the nave of Westminster Abbey – корабль церкви (архит. термин для узкой части строения, расположенной в центре здания и окруженной колоннами)

to be concerned with – быть 1) озабоченным, 2) заинтересованным

Do you know that

double first – (in Britain) two first-class university degrees obtained at the same time. People have to be very clever to achieve this.

first degree – obtained after completing a basic university degree such as BA or BSc. referred to the **basic degree** as the **first one**.

ERNEST RUTHERFORD

1. Read the text to learn more about the great physicist E. Rutherford whose discoveries brought major alterations into our life.

Ernest Rutherford was born on August 30, 1871, in Nelson New Zealand, the fourth child and second son in a family of seven sons and five daughters. His father James Rutherford emigrated to New Zealand with Ernest's grandfather and the whole family in 1842. His mother was an English schoolteacher, who with her widowed mother also went to live there in 1855.

Ernest received his early education in Government school and at the age of 16 entered Nelson Collegiate School. In 1899 he was awarded a University scholarship and he proceeded to the University of New Zealand, Wellington, where he entered Canterbury College. He graduated M.A. in 1893 with a double first in mathematics and physical science and he continued with research at the college for a short time receiving the B.Sc. degree the following year. In 1897 he was awarded the B.A. Research Degree.

Rutherford's first researches in New Zealand were concerned with the magnetic properties of iron exposed to high-frequency oscillations and this thesis was entitled «Magnetization of Iron Frequency Discharges». He was one of the first to design highly original experiments with high-frequency alternating currents.

On his arrival at Cambridge his talents were quickly recognized by Professor Thomson. He worked jointly with Thomson on the behaviour of ions observed in gases which had been treated with x-rays. In 1898 he reported the existence of alpha and beta rays in uranium radiation and indicated some of their properties.

In Manchester, Rutherford continued his research on the properties of the radium emanation with H. Geiger, he devised a method of detecting a single alpha particle and counting the number emitted from radium. In 1910, his investigations into scattering of alpha rays and the nature of the inner structure of the atom led to the postulation of his concept of the «nucleus» his greatest contribution to physics. According to him practically the whole mass of the atom, and at the same time all positive charge of the atom concentrated in a minute space at the centre.

An inspiring leader of the Cavendish Laboratory, he steered numerous future Nobel Prize Winners towards their great achievements. Chadwick, Blackett, Cockroff, Walton C.D. Ellis, his co-author in 1919 and 1930,

pointed out «that the majority of the experiments at the Cavendish were really started by Rutherford's direct or indirect suggestion».

Rutherford was knighted in 1914, he was appointed to the Order of Merit in 1925. He was elected Fellow of the Royal Society in 1903 and was its President from 1925 to 1930. Amongst his many honours, he was awarded D.Sc. degree of the University of New Zealand and honorary doctorates from the Universities of Pennsylvania, Wisconsin, Birmingham, Edinburgh, Melbourne, Yale, Glasgow, Giessen, Copenhagen, Cambridge, Durham, Oxford, Liverpool, Toronto, Bristol, Capetown, London and Leeds.

He died in Cambridge on October 19, 1937. His ashes were buried in the nave of Westminster Abbey, just west of Sir Isaac Newton's tomb and by that of Lord Kelvin.

2. Supply with the English equivalents from the text:

1. магнитные свойства
2. высококачественные колебания
3. крошечное пространство
4. высокочастотные, переменные токи
5. наблюдаемые в газах ионы
6. существование альфа и бета лучей
7. радиовое излучение

3. Read the text again to find the answer to the questions:

1. Where was Rutherford born?
2. What family did he come from?
3. Where did he receive his early education?
4. When did he continue his research?
5. What discovery did he make in New Zealand?
6. What were his greatest discoveries?
7. Which of his contributions to physics remain valid?
8. What honours did he have?

4. Use the appropriate tense forms in the Passive voice:

1. He(bear) in Nelson, New Zealand in 1871.
2. In 1899 he (award) a University scholarship.
3. His first researches (concerned) with the magnetic properties of iron.
4. His talents(recognize) by Professor Thomson.
5. Rutherford(knight) in 1914 and(appoint to) the Order of Merit in 1925.
6. The scientist's ashes ... (bury) in Westminster Abbey.

5. Complete the sentences with the information from the text:

1. E. Rutherford was born in a family.....
2. He received his early education in
3. He graduated M.A. with
4. In 1897 he.....
5. He worked jointly with Thomson on.....
6. He devised a method of
7. In 1914 he – and in 1925 he.....
8. E. Rutherford was the first to carry out experiments with.....
9. He discovered alpha and beta rays.....
10. E. Rutherford came to conclusion that the whole mass of atom ad its positive charge.....

6. Sum up the text using the key-words:

- Rutherford's origin
- his main interests
- his main discoveries in **physics**
- Rutherford's contribution to **chemistry**
- his honours

TEXT B

Vocabulary

superconductor properties – свойства сверхпроводников

semi-conductor – полупроводник

solar cells – солнечный элемент/батареяка

LED (light emitting diodes) – СИД светоизлучающий диод

authority on physics – крупный специалист, авторитет

transistor-based circuits – транзисторная схема, схема на полупроводниковых приборах

Zhores Alferov – Nobel Prize Winner

Zhores Alferov was born in 1930, in Vitebsk, USSR. He has been awarded many international prizes for his groundbreaking research in physics. His best known works are his published papers on superconductor properties – especially important today, as superconductors form the heart of modern computer technology. Alferov has also investigated lasers, solar cells and LEDs (light emitting diodes) and is widely regarded as one of the world's leading authorities on electro-physics. In 2000 he was given science's greatest award – the Nobel Prize.

Alferov was too young to take part in the Second World War and instead spent the war years with his father, a factory director in Sverdlovsk. After the war he continued his education in Minsk before attending the Electrotechnical Institute in Leningrad. He graduated in 1952 and accepted a position at the Physico-Technical Institute. He became its director in 1987. It was at the Physico-Technical Institute that he found the opportunity to do what really fascinated him - practical research in the laboratory. He designed some of the earliest transistor-based circuits at the beginning of a new and exciting technological era, and the Institute's policy of introducing young scientists at the highest level helped to keep their work updated and groundbreaking. In a few short years he had developed electronic components for the Soviet submarine fleet, before going on to improve semiconductor lasers.

In the late 1960s, he visited London to work with top British scientists. He was disappointed by the fact that the British seemed more interested in theory than in conducting experiments using this new technology. He returned home to his experiments and to marry Tamara Darskaya. Tamara worked in the aerospace industry in Moscow and the two would fly between Moscow and Leningrad every weekend. Eventually the traveling became too much and Tamara moved to Leningrad.

From 1969 to 1971 he worked in both the USSR and the USA. He found the experimentation in America more to his liking than the theories of the British. In 1971 he was given his first international award, the USA's Franklin Institute Gold Medal. This pleased him greatly. He was not the first Soviet scientist to receive this award, but he is one of only a handful who have been honoured. The Lenin prize followed a year later on the same day that his son was born.

To date Alferov has published four books and hundreds of articles in academic journals. He has been awarded ten international prizes and holds 50 patents for his inventions in semi-conductor technology.

2. Answer the questions in your own words.

1. Why do you think Alferov's work on superconductors is important?
2. What did he find so interesting at the Physico-Technical Institute?
3. How did the institute ensure their research was always new?
4. How did the scientists in London disappoint him?
5. Why do you think he was so pleased to be given the Franklin institute's award?
6. What evidence do we have of the success of Alferov's work?

3. Match the words with their definitions.

- | | |
|--------------------|---|
| 1. research | a. idea that explains how or why something happens |
| 2. property | b. very significant and positive, providing some new ideas |
| 3. theory | c. detailed study of something |
| 4. handful | d. a ship that can travel both above and below the surface of the sea |
| 5. groundbreaking | e. new, modern |
| 6. updated | f. parts of electronic devices |
| 7. superconductors | g. small number |
| 8. semiconductors | h. metal that allows electricity to pass through it without resistance at low temperatures |
| 9. components | i. substances used in electronics whose ability to conduct electricity increases with greater heat |
| 10.submarine | j. a quality or feature of something. |

4. Look through the text and say why these dates and numbers are very important in the life of the outstanding Russian scientist.

a. 2000 b. 1987 c. 1971 d. 1972 e. 50 f. 10 g. 4

5. Read the text again and complete the chart with the most important events happened in the life of the Nobel Prize winner.

R & D	Awards	Positions occupied

6. Writing

You've won a prize for your university project. *Write a letter to your friends to tell them about it.*

1. Think about what prize you have one and what you have won it for. Then use some of these notes to help you:

say – What was your project about? Did you work alone or in a team? How did you do the work for the project? What did you find out?

did – paper work, searched the Internet, worked in a lab/library/museum etc.

feel – finally say something about how you felt when you won the prize; mixed feelings – surprised: others had interesting ideas/projects; could hardly believe; pleased – worked hard.

2. Include some of these words and phrases: *couldn't believe it, worked really hard, accurately, made sure, checked*








UNIT 9 GREAT INVENTORS AND INVENTIONS

Focus: Vocabulary Study: gadgets and machines; the history of 2 inventions

Focus: Great Inventor: Thomas Alva Edison

Grammar focus: Infinitive/Gerund

Skills focus: Reading for specific information; describing personality; making a project.

GADGETS AND MACHINES						
microscope	coffee vending machine	tape recorder	electric washing machine	Scotch tape	ballpoint pen	compact disc
						
Holland 1590	France 1891	Denmark 1899	United States 1907	Great Britain 1937	Hungary 1938	Great Britain & US 1983

I. What on Earth is this?

1. Complete the information below. Then compare it with your partners.

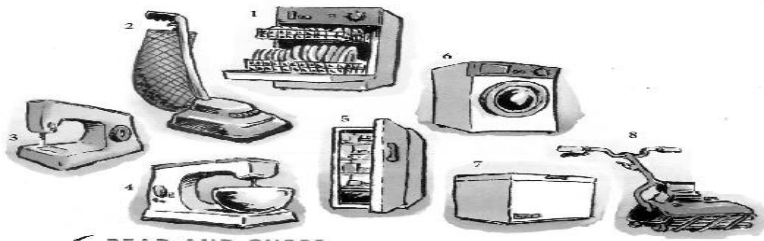
The three most useful machines in my home:

The three most useful gadgets I own:

The most useless gadget I ever got:

The three most important inventions in the last 50 years:

2. Here are some very useful machines that can help us with jobs around the house. Find the words that go with the picture: **vacuum cleaner, freezer, lawn mower, washing machine, fridge, food mixer, washing-up machine, sewing machine**



TEXT C

to suck the dust – всасывать пыль

to make a fortune – заработать/получить состояние

wheel – колесо

3. *Read the stories about the **invention** of two of these useful things and complete the blanks.*

The man who invented this useful machine was called Hubert Cecil Booth. But the idea wasn't completely original. In 1901, Mr. Booth saw a show at the theatre in which the 'real' inventor showed how to clean a room with a magic machine. The only problem was that it blew the dirt! It didn't suck it up. It just moved it around. Everyone in the front seats started sneezing! Booth spoke to the inventor, 'Your machine is wonderful, but it should suck not blow.' 'That's not possible!' said the angry inventor. 'Yes, it is,' replied Booth and he went away and made a simple change to the design. He made a machine which sucked the dust into a bag, and he made his fortune. The most famous name connected with this machine is not Booth, however. In Britain, it is Hoover, the name of one of the first companies to manufacture these machines, and we even use the name as a verb. We often say 'I'm just going to Hoover the floor,' when we go to the cupboard to get out the _____.

The most famous name connected with this useful machine is Singer. Isaac Singer did not invent the first machine of this type but he thought of an improvement to the origin design. In 1851, the first Singer _____ machines were sold. They weren't electric, of course. You made the needle go up and down by moving a pedal with your foot. The pedal moved wheels which were connected with the needle. The Singer factory in Coventry also made bicycles and then cars because the mechanism of the wheels was very similar in all these machines.

4. *Discuss in pairs the answer to the following questions:*

1. Which machines are being described?

Use your general knowledge and the description to find out.

2. Do most people know the names of the people who first invented them?

3. Whose names are most connected with these machines?

Vocabulary Study: machines, gadgets, devices, appliances

5. You all know what a machine is. Look at the machines in exercise 2.

Which definition do you think is the best? Add ideas of your own.

1. A machine is something which is made by people. You don't find it in the natural world.

2. A machine is something made by people, which has moving parts and which helps us to do useful things.

3. A machine has moving parts like wheels.

4. A machine can be operated by people, with their hands and feet, but it can also use electricity or wind or water to make its parts move.

6. *Look up these words in the dictionary and explain the difference in their meanings.*

Make the list of gadgets, appliances and devices known to you

equipment

facilities

gadget (key finder,)

appliance (an electric kettle,)

device (a computer,)

Grammar Focus: Infinitives and Gerunds after prepositions

Infinitives	Gerunds
An iron is used to press clothes.	A remote control is used for switching to another channel.
You can use it to press clothes.	You can use it for controlling from a distance.

7. *Write four questions about gadgets in your home. Then take turns asking your questions.*

e. g. What is your computer used for?

II. Great Inventors

TEXT B

Vocabulary

shuffle – шарканье

courage – бесстрашие, мужество, смелость

wit – разум, ум, остроумие

humility – скромность

to explode – взрывать

firecracker – фейерверк, шутиха

engine – двигатель

nap – короткий сон днём, дремать

phonograph – фонограф

incandescent bulb – лампа накаливания

pressure – давление

small talk – пустой разговор

rubber – резина
goldenrod – бот. золотая розга
chemicals – химикалии, химические вещества
to inspire – вдохновлять
failure – неудача, провал, промах
dopey – 1) вялый, инертный, полусонный 2) глупый, тупой
hesitate – колебаться, сомневаться, не решаться
wizard – колдун, чародей, фокусник, волшебник
vibration – колебание, вибрация, резонанс

THOMAS ALVA EDISON (1847–1931)
THE LIGHTS STILL BURN

(From «My Most Unforgettable Character» by Charles Edison)

1. Read the text *The Lights Still Burn* and a) give your idea of the author's choice of the title.

b) Work in pairs, choose the title on your own.

Thomas Alva Edison never looked like a man whose inventions had changed the world. And he never acted like one either. He moved about his laboratory at Menlo Park, New Jersey, with a funny walk that was more of a shuffle. His hair fell down over one side of his forehead. There were always chemical burns on his unpreserved clothing. No, he didn't look like a man who had changed our world.

Yet every day, those of us who were close to him realized what a great man he was. His contributions to better living were 1093 inventions, but it is not for these that I remember him. It is for his courage, his imagination and determination, his humility, his wit.

Because he spent such long hours in the laboratory, he was at home very little. But he did find time to go fishing and take short trips with the family. And when the children were young, he often played games with us. He might start the day exploding a huge firecracker at dawn, awakening us and the neighbours, too. Then he would shoot off fireworks of different kinds all day long.

Always Father led us to experiment and explore for ourselves. He had provided all sorts of material and got us to work with them laughing, joking, questioning. He had me washing-bottles in his laboratory when I was six. When I was ten, he helped me start building a full-sized car. It never did get any seats, but it did have a fine engine by the time I finished with it. It worked, too.

At home or at the laboratory, Father seemed to know how to get other people to do things. He could and did give orders, but he liked better to inspire people by his own example. This was one of the secrets of his success.

He was not, as many people believe, a scientist working alone in his laboratory. After he sold his first successful inventions for \$40,000, he began hiring chemists, mathematicians, engineers – anyone who knew things that he thought would help him solve a difficult problem.

Often Father had money troubles and couldn't pay his men. Father himself usually worked 18 or more hours a day. «Achievement provides the only real pleasure in life», he told us. He slept only four hours each night, with a few additional short *naps*. «If you sleep too much», he said, «you get dozey. You lose time and opportunities, too».

His many successful inventions are well-known. Among them were the phonograph, which he invented when he was 30; the incandescent bulb, which lighted the world, and moving pictures. These are only three of hundreds. He also made the inventions of other people into practical things that could be bought and sold. Without his work, the telegraph and telephone, for example, might have remained unknown.

It is sometimes asked, «Didn't he ever fail?» The answer is yes. He failed quite often. But he never hesitated to act because he was afraid of failing.

His feelings about money were somewhat the same. He never hesitated to spend every cent that he had. He considered money a material, like metal, to be used rather than kept. He put nearly all his money into his experiments. Several times he was almost completely without money, but that didn't stop him.

I especially remember a freezing December night in 1914, when Father's experiments on another invention of his were still a great disappointment. Father had spent ten years and a lot of money on it. Only the money from his motion-picture machines and photographs was keeping the laboratory open and his family alive.

On that December evening the cry «Fire» was heard in the laboratory. Within moments everything was burning. Chemicals were exploding like fireworks. Firemen from eight nearby towns arrived, but the heat was so great and the water pressure so low that they could do nothing. When I couldn't find Father, I became worried. Was he safe? Would losing his laboratory make him losing his courage and determination? He was 67, too old to begin again, I thought. Then I saw him in the yard running toward me. «Where's Mom?» he shouted, «Go get her! Tell her to tell her friends!

They'll never see a fire like this again.» At 5.30 the next morning the fire was still burning but under control. He called his workmen together. « We are going to build again,» he said. And he started giving orders.

Because he was able to lose everything and start again, and because he invented so many practical machines both before and after the fire, he appeared to have a magic power. He was often called « The Wizard of Menlo Park.»

And Father never changed his sense of values. It has often been said that Edison had no schooling. And it is true that he went to school for only six months, but his mother taught him at his boyhood home in Port Huron, Michigan. With her help, he was reading histories of the Roman Empire at the age of eight or nine. After he started selling newspapers on Michigan trains, he spent whole days reading in the Detroit Free Library. In our home he always had books, magazines and a half dozen daily newspapers.

From childhood, this man who was to achieve so much was almost completely deaf. He could hear only the loudest noises, but this did not trouble him. He believed that it drove him to reading when he was young, provided silence in which he could think, and saved him from *small talk*.

He enjoyed music, and he could «listen» by putting one end of a pencil between his teeth and the other end on the phonograph. The vibrations came through perfectly. The phonograph was his favourite of all his inventions.

Father never stopped working. And he was not afraid of growing old. At the age of 80, he began to study botany, a science – new to him. He wanted to find a North American plant which would produce rubber. He experimented with 17, 000 kinds of plants and finally got rubber from an ordinary roadside plant, the goldenrod.

Finally, at 84, his health started to fail. Newspapermen arrived at our door to keep watch. Every hour the news was sent out to them: «The light still burns.» But at 3:24 in the morning of October 18, 1931, the word came: « The light is out.»

On the day he was buried, all electric lights in the nation were to be turned off for one minute in his honour. But this seemed too dangerous and costly. Instead, only certain lights were turned low for a minute. The work of the nation was not stopped, even for a second. Thomas Edison, I am sure, would have wanted in that way.

2. Read the text again and discuss in pairs the answer to the questions:

1. Who wrote the story about Thomas Alva Edison?
2. What did the great inventor look like?
3. What did the author remember the great man for?

4. What life episodes did the author choose to describe Edison as a father?
5. What were the secrets of Edison's success?
6. Which of Edison's inventions were the most successful?
7. Which inventions of other scientists were made by Edison into practical things?
8. How many years had been spent on disappointing experiments by the time Edison lost his laboratory in a fire?
9. What made Edison's son feel worried about his father on the day of the fire?
- 10 Why were people sure that Edison had a magic power?
11. How did the contemporaries give honour to Edison on the day he was buried?

Vocabulary

3. *Underline the following words in the text then match a verb and a noun to make verb patterns.*

VERB	NOUN
to explode	fishing
to have	watch over something
to drive	money into experiments
to put	somebody to something
to keep	money troubles
to go	firecrackers

4. *Complete the sentences with word patterns from the box above. Mind the tense.*

1. Sometimes the scientists who worked at Edison's laboratory didn't get a salary for months, because he _____ .
2. Although Edison made a fortune in motion-picture machine sales his family often _____ .
3. When fire started in the laboratories chemicals _____ like _____ .
4. Edison was deaf and he was sure that it _____ him _____ .
5. Edison was a busy man, but he always found the time to spend with his kids, they _____ and _____ at dawn.
6. When Edison was dying, the newspapermen wanted to get news and _____ over the events.

Discussion

5. Read the text again and find out what circumstances might have prevented Edison from becoming a great scientist and inventor.

6. Edison often said, « *There is always some value in every trouble.* »

Work in pairs think of the meaning of Edison's words and say what, according to Edison, the value of these troubles was. Share your own point of view.

1. From childhood, this man was almost completely deaf.
2. He had a lot of disappointing experiments.
3. His laboratory was completely ruined by the fire when he was 67.

7. Skim through the abstracts from the text and make predictions about Edison's traits of character which led him inevitably to success in spite of plentiful obstacles.

Discussing Edison's Personality

- Edison always led us to experiment and explore for ourselves. He provided all sorts of material and got us to work with them laughing, joking, questioning.

- Thomas Alva Edison never looked like a man whose inventions had changed the world.

- He never acted like one either.

- He was not, as many people believe, a scientist working alone in a laboratory.

- After he sold his first successful inventions for \$ 40,000, he began hiring chemists, mathematicians, engineers – anyone who knew things that he thought would help him solve a difficult problem.

- He put nearly all his money into his experiments. Several times he was almost completely without money, but that didn't stop him.

- Once, when a visitor asked whether he had received many honours and medals, he replied, «Oh, yes, Mom has baskets of them up at the house.»

- « If you sleep too much, you get doopey. You lose time and opportunities , too.»

- «We haven't failed,» he told an unhappy worker during one set of disappointing experiments.

- «We now know 100 things that won't work. So we are much closer to finding one that will.»

- He was often called « The Wizard of Menlo Park.»

- It has been said that Edison had no schooling.

8. *Edison's words of wisdom. Read these sentences. What do they mean?*

«Education isn't play and it can't be made to look like play. It's hard work but it can be made interesting work.»

«If you do not learn to think when you are young, you may never learn.»

«Achievement provides the only real pleasure in life.»

«Genius is 1 per cent inspiration and 99 per cent perspiration.»

9. *Draw a conclusion:*

- what made Edison world famous and worthy of respect ;
- what features essential to a scientist he possessed;
- what lesson a young scientist can learn from Edison's life.

10. *What modern inventions would be admired by Edison? Give reasons for the choice.*

Project Work

11. *Work in groups of four. Suppose you are to write a film script about Edison's life.*

Say which facts you would choose for a documentary film and which episodes from Edison's life you would select for a feature film. Say what evidence you can find in the story that:

- Edison was a true scientist;
- Edison was a great inventor;
- Edison was a great personality.

UNIT 10 RESEARCH AND DEVELOPMENT

SCIENTIFIC ACHIEVEMENTS: STUDY OF SPACE

Focus: Space Station Mir. The Hubble Telescope.

Grammar Focus: Conditional Sentences

Skills Focus: Reading for specific information about Russian and American scientific achievements in space exploration; making presentation; describing tools.

TEXT A

Vocabulary

to launch – запускать

artificial satellite – искусственный спутник

manned flight – пилотируемый человеком

permanent space station – космическая станция многоразового пользования

crew – экипаж

unmanned cargo vehicle – беспилотный/управляемый автоматически грузовой корабль

to decommission – списывать, переводить в резерв

1. Everyone knows that the Soviet scientists have made the greatest contribution to space exploration. *Work in pairs; complete the chart with achievements and dates connected with the universe investigation. Compare your notes with other students.*

Date	Achievements
1963	Valentina Tereshkova was launched in the spacecraft Vostok 6, which completed 48 orbits in 71 hours.

2. *Read the text, check your suppositions; correct the dates if they are wrong, add more events to the chart.*

Space Station Mir

On the 4th October 1957, the USSR launched the world's first artificial satellite, *Sputnik 1*. In response the USA founded NASA, the US space agency, and the Space Race began.

The USSR led race for the next few decades. In April 1961 the first manned flight was made by the cosmonaut Yuri Gagarin in the spacecraft *Vostok 1*. The less than a month later NASA sent the American astronaut Alan Shepherd into space. On the 19th of April 1971 the Soviet space station *Salyut 1* was put into orbit, followed two years later by the Americans' launch of *Skylab*. At about the same time NASA was beginning *to focus on* the development of a partially reusable space craft, the *Space Shuttle*. Meanwhile the USSR followed up the success of *Salyut* with the larger, more permanent space station *Mir*.

Mir was launched in 1986 and continued in service for fifteen years. It was designed to give astronauts the opportunity to remain in space for a long time and enable them to work in a well-equipped scientific laboratory. It succeeded in this, proving to be the most successful of all the space projects *initiated* by the USSR, equaling the American's major achievement – the *Apollo* moon projects. Out of the 5,511 days that *Mir* was in orbit around the earth, 28 crews occupied the space station for a total of 4,459 days. Some astronauts stayed on board *Mir* for more than a year at a time.

The cosmonauts were resupplied through regular visit from Soyuz space capsules, which brought new components or replacement crew. Routine supply missions were made by unmanned Progress cargo vehicles.

Since Perestroika, the emphasis in space exploration has been one of co-operation rather than competition. *Mir* truly lived up to its name of ‘Peace’ and was visited and crewed not only by Soviet, and later, Russian cosmonauts, but by cosmonauts from other countries such as Syria, France, Germany. Even the *Space Shuttle* brought an American crew who worked alongside their Russian counterparts for several weeks. *Mir* was finally *de-commissioned* in 2001, having served far longer than had been originally planned. Yet the work of the cosmonauts, designers and engineers continues in the new great symbol of scientific space co-operation – the *international space Station*. Indeed, *Mir* was such *a triumph* that without the knowledge gained from its long flight around the earth, it is doubtful whether a permanent station in space would be possible today.

3. Read the text again and choose the best title for each paragraph.

Paragraph 1

A Founding NASA

B Sputnik

C The race begins

D Visitors

Paragraph 3

A Supplying *Mir*

B Years in space

C Twenty-eight crews

D Visitors

Paragraph 2

A Manned flights

B Leading the race

C Developments in space

D Further exploration

Paragraph 4

A International Space Station

B Co-operation

C *Mir* justifies its name ‘Peace’

D The next generation

4. Match the words with the corresponding definitions

1. response

a. great success

2. focus

b. take out of service

3. initiate

c. reply or reaction

4. decommission

d. a thing one concentrates on

5. triumph

e. begin

Speaking

5. Discuss the answers to these questions with the partner.

- Is space travel useful to mankind? Why/ why not?
- Could the money be better used for other things? What things?
- Is there life on other planets?

6. Give a short presentation on advantages and disadvantages of space exploration for the world. Talk about:

- New discoveries
- New technologies
- The costs
- The danger

Use the notes to help you.

- discoveries – know more about planets, understand stars
- technology – new materials (metals, fabrics), new research (medicines, fuels)
- costs – expensive; spend money on hospitals, schools, developments
- danger – take off and landing (fire, human error), cosmonauts or robots?

Remember to:

- give contrasting points of view
- use conditional sentences (**if present tense + will; if past tense + would**) e.g. *If we develop new inflammable materials, we'll make great progress in space exploration*
- use modals of possibility (*may, could*)

TEXT B

Vocabulary

online – 1. работающий под управлением основного оборудования, работающий в режиме онлайн 2. Работающий в оперативном режиме (в темпе поступления информации в реальном времени)

to site – помещать, размещать, располагать

distortion – искажение, искривление

to twinkle – мерцать, мигать

to deploy – использовать, употреблять

software – программное обеспечение

crystal clarity – кристалльность (*стекла, жидкости*), абсолютная четкость/ясность изображения

overjoyed – очень довольный, счастливый, вне себя от радости

to pool – объединять в общий фонд

1. Before reading the text answer the questions: 1. When was NASA set up? Why? 2. What field of research does NASA concentrate on?

2. Read the text and find the answer to the questions below.

The Hubble Space Telescope

(Extracts from the journal of DK Munro, Astronomer)

I can hardly wait – tomorrow Hubble comes online and we will move into a new era of astronomy. Ever since Galileo identified the planets in the 17th century we have looked at the stars and been disappointed. We have spent years looking for the best place to site our telescope, to minimize the distortion caused by the earth's atmosphere, to find the clearest skies. Though telescopes have improved over the years, stars still appear to twinkle. We know that they don't, it's just the way the light comes into atmosphere. Now with a telescope in space we can see stars as they really are.

In a couple of hours, I will be able to see the first images from Hubble. All those years of planning – NASA and the European Space Agency have been working together for almost twenty years, beginning in the 1970s, and have pooled their resources to build this telescope. The space shuttle Discovery was deployed to put Hubble 600 kilometres above the earth. Any time now we can expect the clearest images of the moon, the planets and the stars.

I've just had a look at the first of Hubble's images and all I can say is 'Oh, dear!' The pictures are no clearer than the ones taken through a telescope on earth. There seems to be a problem. Have we been wrong all this time and stars really twinkle? I don't think so. There could be any number of reasons why Hubble's images are out of focus. The people at NASA are checking the software, but it looks as if the problem is something to do with the mirror.

I'm hoping today will be a good day. The Shuttle arrives at Hubble and the astronauts will spend as much time as they can fixing the mirror. They have to fix the mirror so that it moves in and out to focus accurately. If they can do that, then we can try to look at the stars again and hopefully this time we'll see them in crystal clarity.

At last, the astronauts have repaired the mirror and looking at images is just like being out there.

I wish Edwin Hubble could see these pictures. He was the scientist who first realized that the universe was expanding and would have been overjoyed to see the stars as clearly as I can see them now. Although Edwin Hubble expanded our understanding of the universe, the telescope named after him will increase our knowledge of the planets, stars and galaxies we can now see properly.

1. Which project was run jointly by NASA and the European Space agency?

2. What place was chosen to site the Shuttle telescope?

3. What new technologies were deployed by investigators to get images from space?

4. What problem arose with the telescope? How was the problem solved?

5. Why was the telescope named after Edwin Hubble?

6. Could astronomers In American high schools, there is often much interest in other students make new discoveries by using the Hubble telescope?

3. Read the text again and choose the best ending for the sentence.

1. Images of the stars are unclear because ...

A of poor quality telescopes.

B stars twinkle.

C of the light coming into the atmosphere.

D the sky isn't always clear.

2. Hubble was built ...

A by the Americans.

B by the Europeans.

C over a 20 year period.

D in space.

3. A space shuttle ...

A sent back clear images.

B launched the satellite.

C built the telescope.

D put Hubble into orbit.

4. There was a problem

A with Hubble's mirror.

B with the Space Shuttle program.

C repairing the telescope.

D deploying the telescope.

5. Edwin Hubble was the first to

A notice that the universe was getting larger.

B say how old the universe is.

C discover new planets.

D see another universe.

4. Match the words with the definitions.

1 identify

a. use something for a specific purpose

- | | |
|----------|--|
| 2 site | b. get bigger |
| 3 pool | c. combine or share |
| 4 deploy | d. recognize someone or something |
| 5 expand | e. put something in a particular place |

Writing

5. A New Telescope

Your friend has a new telescope. *Write a letter asking him about it.*

1. Use these notes to help you.

The new telescope – modern, size, price

What he can see with it stars, planets, the moon

If he can take photographs – camera, connect to computer

Can you use it? – send photos

2. Include some of these words and phrases such as: *how much/far, can you, connect to, through, love to, show me.*

SUPPLEMENTARY MATERIALS**TO Module 1 Education, Unit 2, Task 7**

tuxedo – смокинг

Text 1**SOCIAL LIFE**

During the high school years, students make strong friendships. They remember high school friends and other students long after they finished school. So every ten years they come together. They have a special party with others from their graduating class. The graduating class is all the students who finished school the same year. At that big class party, students look at old yearbook photos and talk about what happened at school. In American high schools, there is often much interest in other students as there is in school subjects. You can see this when you look at a typical high school yearbook. It is written once a year by students in the twelfth grade. In the yearbook, there is a picture of each teacher and student. Other photos show teachers and students at football and basketball games, in class, at club meetings, or at school dances.

Choosing leaders is a large part of high school life. The children decide which students should direct school business and lead them in Student Council. This is a group of five or six students who talk to teachers about what happens at school. Once a month, some of the Student Council leaders go to a meeting of PTSA (Parent Teacher Student association). There they work with parents and teachers to make their school better.

For many students in American high schools, the important thing is making friends, being popular, and having a good social life. Many students go out together after school – to fast food restaurants, movies, or dances. One big social event that takes place in high schools is the ‘prom’ or school dance. The students go to the ‘prom’ in couples. The boys wear ‘tuxedos,’ and the girls wear beautiful dresses.

and what has happened since then. They often remember the high school years as the best years of their lives.

Text 2

cheer – одобрительное приветствие, восклицание, аплодисменты

SPORTS IN SCHOOL

Americans learn sports as part of their education. They learn two or more games, such as football or basketball. At high school, they choose groups of boys or girls to make teams. They choose those who are best at sport. These teams compete against teams from other schools. In many schools students learn wrestling, running, tennis, golf and swimming. They have teams for some of these sports, too.

Robert's high school basketball team is very good. They have won the most games against other high school basketball teams in their state. Robert's parents, friends, and teachers all travel with the team to other schools to watch them play.

Robert's team practices often. The team meets every day after school, and two Saturdays a month. Sometimes Robert wishes he had more time to meet with his friends, and he doesn't like getting up early on Saturdays. But most of the time he is happy to be on the team. He loves basketball, and enjoys playing against other schools.

The games between schools are often exciting. Other students, the ones not on the team, love to watch them. They let everyone know this by shouting and cheering when the team is playing well.

There is a special club of girls and boys (mostly girls) who jump up and down and shout for their football team. They call themselves, cheerleaders, because they lead everyone in shouts and cheers. They wear clothes of a special color – the color of their school's team. The football players wear that color, too. Each school has a team color and a team name. Cheerleaders call out the team name in their cheers. They practice many hours to learn the special jumping and cheering. cheerleading is almost a sport itself.

Text 3

Pledge of Allegiance – обет/клятва верности/преданности

CEREMONIES IN SCHOOL

Pledge of Allegiance

Every classroom has an American flag in it. From elementary to high school, students start each day by standing up and saluting the flag. They put their hands over their hearts and say the 'Pledge of Allegiance.' This is a

promise to the country. It was written by people who came to America over 200 years ago. Saluting the flag helps people think about the United States and its freedom.

Homecoming

At many high schools and universities there is a big football game once a year and a parade afterwards. This is called 'Homecoming.' Students who graduated from the school like to return for Homecoming to see their old friends and teachers again. In the parade cheerleaders and football players walk together. The school band plays loud music for their fans and team. The parade is full of the school colors.

Awards

In American schools there are ceremonies for students who have done good work in school or who are excellent at sports. At these special ceremonies all the students and teachers come together.

They watch the school director give prizes to the students. Sometimes the prize is money for later university study.

Graduation

When students graduate from high school, each of them gets a prize. The prize they get is the high school diploma, written on nice paper with the name of the student and the school. Afterwards the graduating class has a big party, or 'prom.' Everyone wears fine clothes and a band plays dance music. It is a party to remember. Student, teachers and parents have worked hard for each diploma. Graduation is the greatest ceremony of all in American schools.

SUPPLEMENTARY MATERIALS TO Module 3 Cities

TEXT A

NOVOSIBIRSK

1. Read the text and answer the questions a) What are the most important facts about Novosibirsk? b) What does Novosibirsk pride itself on?

2. Look up the underlined words and phrases in the dictionary. Make up sentences with them.

Novosibirsk is a city that prides itself on size: it is the twelfth-largest city in Russia (the biggest city east of the Urals), has the biggest railway station along the trans-Siberian route, the biggest library in Siberia, and the biggest opera/ballet theater in all of Russia - even bigger than Moscow's Bolshoy. The red-brick Cathedral of St. Alexander Nevsky, while not the biggest, is considered one of the finest existing examples of pure Russian Orthodox architecture.

In 1943, the Academy of Sciences opened up its Siberian branch in Novosibirsk, which marked the beginning of the city's transformation into the educational hub of Siberian Russia. While many research institutes are located within Novosibirsk itself, still many more are clustered in Akademgorodok, a small city founded in the 1950s by the Academy, 30 km south of Novosibirsk.

At its height, Akademgorodok was home to 65,000 scientists and their families, and was a privileged area to live in, with well-stocked stores and *dachas* for the academic *elite*. Gorbachev's *perestroika* was initially conceived here, by economists who then moved to Moscow to author the economic revolution. In recent years, Akademgorodok has fallen on hard times thanks to slashes in government funding, and many of the younger researchers who once populated the town have left.

Info	
Population	1,400,000
Founded	1893
Longitude	82° 55' E
Latitude	55° 02'N

Altitude	600ft. 200 m
Time Zone	GMT +8 hours
Temperature of January	-16° C
Temperature of July	+20° C
Precipitation	13 inches 35cm

TEXT B

Vocabulary

rank – занимать rather – довольно facilities – возможности establishment – учреждение stock exchange – биржа settlement – поселок ship yard – верфь weaving factory – ткац- кая фабрика knitted-goods factory - трикотажная фабрика	staff – состав pride – гордость cathedral – собор orthodox – православ- ный exhibit – экспонат marvel – чудо exposure – разоблаче- ние embossment – чеканка embroidery - вышивка carving – резьба	total(v) – насчитывать finding – находка jewelry–драгоценности comprehend – распознать cut – обработанный rough – необработанный enable – давать возмож- ность multitude – многочислен- ный sundry – всякий разный endangered species - редкие, вымирающие виды
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5. *Read the text about Novosibirsk. Look for events which influenced the decision to turn the town into the capital of Siberia , the third largest city in Russia.*

NOVOSIBIRSK

- I. Novosibirsk was founded in 1893. In 1993 we celebrated its 100-year anniversary. For a relatively **short** period of time, Novosibirsk turned from a **tiny** settlement into a district town and grew into a **large industrial, scientific, cultural** and **educational** center, the capital of Siberia. Its foundation dated back to the construction of the railway laid through Siberia to the Pacific Ocean. In 1893, 2000 workers were hired to build the Trans-Siberian railway and the bridge connecting the right and the left banks of the Ob river. So, a **small temporary** settlement for the workers engaged in the railway bridge construction appeared opposite Krivoshchokovo village. Garin-Mikhailovsky, a well-known writer and an engineer, was considered to be a founder of the city. He marked **the narrowest** place for the bridge. In 1897, the bridge was constructed and most workers left the **temporary** settlement, which had to be liquidated. But in 1897 **local** authorities took the decision to preserve the settlement, which was called Novonikolayevsk. In December 1903 the set-

tlement got the status of a town, and in 1917 it was a **commercial** center with trade banks and its own stock exchange.

II In 1926 Novonikolayevsk was renamed into Novosibirsk, which became a center of Siberian region (oblast). In the 1930s a machine building plant, a knitted-goods factory, a shoe factory, a weaving factory, soap works, a ship yard, a river port, a **new** railway station and a cinema factory were built. That time electric power plant was constructed on the left bank of the Ob river. In the 1930s eight institutes and ten **special technical** schools were started.

III The **Great Patriotic** war changed dramatically the life and the **economic** structure of the city. Those times Novosibirsk was compared with Chicago for the **sharp** growth of the population from 1940 to 1956. More than 50 plants, R&D institutions with the equipment and specialists were evacuated to Novosibirsk. New residents arrived in the city from **rural** areas to work at military plants and to reconstruct the capital of Siberia. In the result, the population doubled and totaled 730.000 from 1940 to 1956.

In the 1960s, Novosibirsk **Electrotechnical** Institute (NETI), Novosibirsk Institute of Geodesy and Cartography were built; Teachers' Training, **Medical and Agricultural** institutes were expanded.

IV The history of Tolmachevo Airport began on 12th of July 1957, when Tu-104 jet made the first passenger flight to Moscow. In 1963 the first **largest** airport in Siberia called Tolmachovo was put into operation to receive passenger jets arriving from **different** parts of the country. Today the airport became **an independent** enterprise with the status of an **international** airport. It is one of the fourth **biggest** and well-equipped airports in Russia.

Novosibirsk is **the biggest** river port in Siberia and the twelfth **largest** city of Russia with the population about 1.6 million. It's situated on the banks of the Ob river, which divides the city into 2 parts **stretching** along the Trans-Siberian railway and the river. Novosibirsk consists of ten **administrative** districts.

Novosibirsk underground was built in 1986 and aimed to solve transportation problems.

V The 1960s were marked by **the great** contribution into science, research and development. That time Akademgorodok - the first town of science was built on the shore of the man-made Obskoye sea (reservoir). The

scientific and education complex of Novosibirsk Region ranks the third in the Russian Federation. In 1963 ten R&D institutions were set up and first living blocks were built. At the end of the 1970s the Academy of Agricultural Sciences was founded and the construction of a new agricultural center (Koltsovo) was started. At the end of 1980s the third R&D medical center was built.

Akademgorodok is an educational center. Though Novosibirsk State University (NSU) is rather small (only about 5000 students), it gives students as good facilities for study and research as anywhere else in the world. An exceptional students-to-professor ratio (4 and 1) justifies the high qualification of young researchers that graduate from our university. During the last forty years NSU has trained around 28000 researchers, teaching staff for higher education establishments and specialists for business.

VI Novosibirsk is a cultural center of Siberia with its Fine Arts gallery, 10 drama theatres, 6 musical theatres and concert halls, Opera and Ballet House, Puppet theatre. The pride of citizens of Novosibirsk is the biggest in Russia Opera and Ballet House, which has won international recognition. This theatre is a symbol of Novosibirsk; it was opened on 12th of May in 1945 when Glinka's opera Ivan Susanin was staged and performed. During the war, the exhibits from world-famous museums of Moscow (the Tretyakovskaya Gallery), Leningrad (Hermitage), Novgorod, Sevastopol and other Soviet cities were kept and saved here. The theatre is famous for its unique architecture and two permanent ballet and opera companies. There are several acting Orthodox cathedrals, a Catholic cathedral, a Moslem mosque. The Alexander Nevsky Cathedral was built in 1897 (one of the first stone-buildings of the city), but in 1937 it was closed. In 1988 it was decided to give the Cathedral back to the Russian Orthodox church, and in 1992 it was fully reconstructed. A tiny St. Nikola's chapel with three golden domes was erected on the place symbolizing the center of Russia on Krasny Prospekt, which is the main longest street running through the center of the city.

Novosibirsk is one of the most attractive cities with its magnificent buildings and straight, broad streets.

TEXT C

Museums of Novosibirsk

Novosibirsk is also proud of its **Fine Arts Gallery**, which is the biggest in Siberia. There are icons, works of Russian and foreign painters in its expositions. A collection of Nikolay Roerich's pictures occupies the central place in art collection of the gallery.

The Museum of Local Law presents the history and ethnography of Siberia. Some of the expositions are: A Thousand Year Panorama of Siberia, The Native People of Siberia, The Region at the End of XIX Century/ Mode of Life, The History of Novonikolayevsk Beginning, A Fashion in XIX century, Development of Siberia in XVI–XIX centuries and During the Soviet Period, the Siberian Flora and Fauna.

For over 10 years in Akademgorodok there exists a somewhat unique **Museum of the Sun**. It is the only museum in the world where, thanks to the efforts of its founder and director Mr. Valery Lipenkov, they have collected various images of the Sun – embossments, embroideries, carvings from various materials, etc. – totaling over 350 pieces of art. Each image has its unique character and, most certainly, history. The basis of the museum was a private collection of images of the Sun and Sun gods of the ancient civilizations, made in wood.

The Museum of Stone is located at the International Exhibition Centre – the Siberian Fair. Main activities of the museum are tours of regular and scientific-educational type. In the past years the stones used in jewelry and decoration have become so diversified that an ordinary person fails to comprehend them all. Visiting the museum of Stone can help you to find your own stone. Minerals on display – both cut and rough, decorative and natural stones, rare exhibits from the pits from all over Siberia and the Far East - provide an exceptional view. Every person can see the displays and get to know the wonderful world of stones.

Zoological Garden is situated in a beautiful forested park. The Novosibirsk Zoo keeps 4000 animals of 399 species. More than 120 species are entered into the Red Book. A zoological team participates in 32 international programs on preservation and reproduction of endangered species. The Novosibirsk Zoo has contact with more than 100 Zoos in the world and is a

member of the European Association of Zoos and Aquariums. It is the only Zoo entered into the International Directors Union. Among all the world's Zoos, only the Novosibirsk Zoo possesses the unique argali and Putoransky ram.

Grammar Focus

8. Read the text about the longest undergrounds in the world. Compare Novosibirsk Metro line with other undergrounds.

SOME SPOTLIGHTS

The first underground was built in London in 1863. Until 1891 trains were steam-driven.

The oldest underground in continental Europe is in Budapest. It was put into operation in 1986.

The Moscow underground, or Metro, was built in 1935. 11 Soviet cities had their undergrounds - Moscow, Leningrad, Kiev, Tbilisi, Baku, Kharkov, Tashkent, Yerevan, Minsk, Gorky and Novosibirsk. It was planned to build undergrounds in Sverdlovsk, Kuibyshev, Riga and Dnepropetrovsk.

The shortest interval between trains in Moscow Metro is 1 min 20 s. The longest underground route is in New York. It totals 400 km and has 500 stations. The shortest underground is in Istanbul. It is less than a kilometer.

The deepest underground is in Pyongyang. Its tunnels lie at a depth of over 100 metres.

The highest-elevated underground is in Mexico lying at an altitude of 2279 metres above the sea level.

The longest landing platform, 1100 metres, is at an underground station in Chicago.

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**АНГЛИЙСКИЙ ЯЗЫК
БАЗОВЫЙ КУРС**

PRE-INTERMEDIATE

Часть 1

Методические указания

В авторской редакции

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