Учреждение образования «Гомельский государственный университет имени Франциска Скорины»

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# ПРОБЛЕМЫ ЭКОЛОГИИ: ВЛИЯНИЕ ЦИВИЛИЗАЦИИ НА ОКРУЖАЮЩУЮ СРЕДУ

Практическое пособие

для студентов факультета иностранных языков специальностей 1-02 03 06 «Иностранные языки (английский, немецкий)», «Иностранные языки (английский, французский)»

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Практическое пособие «Проблемы экологии: влияние цивилизации на окружающую среду» направлено на развитие речевых умений и навыков студентов по данной теме, а также на оптимизацию работы студентов по формированию иноязычной коммуникативной компетенции в рамках профессионального общения.

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# ОГ.ЛАВ.ЛЕНИЕ

Предисловие	4
Unit One	
Unit Two	18
Unit Three	22
Unit Four	
Unit Five	31
Unit Six	35
Литература	39

Целью данного практического пособия является развитие навыков и умений всех видов речевой деятельности, что позволит будущему специалисту использовать английский язык в качестве инструмента профессиональной деятельности, в коммуникативной, когнитивной, экспрессивной и других функциях, а полученные навыки – для адекватного понимания английской речи в ее культурном и социальном контекстах.

В пособии предусмотрены задания для развития всех видов речевой деятельности: письма, чтения, восприятия речи на слух, говорения в рамках изучаемой тематики.

Оно состоит из шести разделов. Первый раздел представляет собой словарный минимум по изучаемой теме, также в данном предложены разнообразные упражнения разделе ДЛЯ семантизации и активизации лексических единиц. Остальные разделы содержат один или несколько аутентичных текстов, упражнения, подготавливающие предтекстовые К работе С текстом, сам текст и упражнения для послетекстовой работы, упражнения. Bce упражнения речевые располагаются ПО возрастающей сложности, принципу И В конечном итоге подготавливают к устному и/или письменному высказыванию по данной ситуации.

При составлении данного издания авторы использовали аутентичные тексты из современных учебных пособий, изданных в последние годы в нашей стране и за рубежом.

Практическое пособие по дискурсивной практике предназначено студентам 3-го курса факультета иностранных языков во втором семестре.

# UNIT ONE

## Ex. 1. Read the introductory text.

#### **Environmental Protection**

Some hundreds of years ago people lived in harmony with nature, because industry was not much developed. Today, however, the contradictions between man and nature are dramatic. The Earth is the only planet in the solar system where there is life. If you look down at the Earth from a plane you will see how wonderful our planet is. You will see blue seas and oceans, rivers and lakes, high snow-capped mountains, green forests and fields. For centuries man lived in harmony with nature until industrialization brought human society into conflict with the natural environment.

Today, the contradictions between man and nature have acquired a dramatic character. With the development of civilization man's interference in nature has increased. Every year the world's industry pollutes the atmosphere with millions of tons of dust and other harmful substances. The seas and rivers are poisoned with industrial waste, chemical and sewage discharge. People who live in big cities are badly affected by harmful discharge from plants and city transport and by the increasing noise level which is as bad for human health as lack of fresh air and clean water.

The twenty first century is a century of the scientific and technological progress. The achievements of the mankind in mechanization and automation of industrial processes, in chemical industry and conquering outer space, in the creation of atomic power stations and ships are amazing. But at the same time, this progress gave birth to a very serious problem – the problem of environment. Environmental protection is a practice of protecting the natural environment on individual, organisation controlled or governmental levels, for the benefit of both the environment and humans. Due to the pressures of over consumption, population and technology, the biophysical environment is being degraded, sometimes permanently. This has been recognized, and governments have begun placing restraints on activities that cause environmental degradation. Since the 1960s, activity of environmental movements has created awareness of

the various environmental issues. There is no agreement on the extent of the environmental impact of human activity and even scientific dishonesty occurs, so protection measures are occasionally debated.

Ecology and the contamination of environment, is concerned with climate, overpopulation in certain areas, deaths of plant and animals, chemical contamination of seas, lakes and rivers as well as atomic experiments and dumping of atomic waste from power stations. Floods, unexpected draughts, and the greenhouse effect are the next reasons.

There are many consequences of damaging the environment. One of them is acid rain. Another one is water shortage resulting from abuse of arable lands in agriculture. The third one is destroying the ozone layer of the Earth through pollution from factories and plants. The fourth problem is damage o water and soils. The fifth one is damage to wildlife: numerous species of animals and plants can disappear. At last, the most serious danger arising from damaging the environment is the result of the abovementioned consequences. This is the danger for the life and health of the man.

The protection of natural resources and wildlife is becoming a political programme in every country. Numerous anti-pollution acts passed in different countries led to considerable improvements in environment. In many countries purifying systems for treatment of industrial waters have been installed, measures have been taken to protect rivers and seas from oil waters.

But the environmental problems have grown beyond the concern of a single country. Their solution requires the co-operation of all nations. If we are unable to learn to use the environment carefully and protect it from damage caused by man's activities, very soon we'll have no world to live in. Ecological problems have no borders. European states solve these problems together: the necessary measures are taken, congresses and conferences on these questions are organized, and these questions have already the reflection in the legislation of many countries.

The activity of many public organizations is directed to protect environment. One of the most known organizations is "Greenpeace", whose purpose is prevention of environment degradation. This organization was founded in 1971 by the activists from the USA and Canada and it has representations in 25 countries of the world. "Greenpeace" acts against nuclear tests, radiating threat, pollution of the environment by waste industrial products, to protect the animal world, etc. This organization influences public opinion through mass media, under its aegis manifestations and protest actions are carried solutions for concrete ecological problems.

For example, the "Greenpeace" sent its boats to protect whales, and today commercial whaling is banned. In the North Sea Greenpeace swimmers turned back dump ships carrying chemical waste, and a new laws to protect the North Sea have been considered.

When we look around we realize that not all people understand the importance of nature protection. On fine summer days a lot of people go out of town. They have picnics on the shores of lakes and the banks of rivers or on beautiful forest glades and they often leave behind a lot of rubbish – plastic bags and bottles, tins and paper. It can make us feel sad when we see people returning to town with huge bunches of forest or meadow flowers. Many of these plants are included into the Red Book which contains the names of rare plants and animals. Some of them have become extinct and others are on the verge of disappearing. If we don't realize that we are all responsible for what's happening around us we will never feel secure about the future of the world we live in.

What can be done to protect nature? Environment disasters can be avoided if people broaden ecological education and every person understands that the beauty of nature is extremely fragile and people must obey the unwritten laws of nature. Governments must be prepared to take action against pollution. Air pollution could be reduced if plants and factories were made to fit effective filters on chimneys and car exhausts. Green zones around big cities must be protected and extended. Natural resources should be used economically because their stocks are not unlimited.

### **Ex. 2.** Answer the questions:

- 1. What ecological problems do you know?
- 2. Why is the protection of natural resources very important?
- 3. What can we do to save the planet?

Ex. 3. For questions 1–15, read the text below and decide which word A, B, C or D best fits each space. There's an example at the beginning (0).

#### **Saving Europe's Woodlands**

Hidden in almost every European country there are ancient and untouched forests. These forests are often (0)... in wildlife and are (1)... to many endangered species. One example is a small patch of Scottish forest which (2)... a variety of coniferous trees (3)... for a wide range of birds and insects. Although many of the ancient (4)... of Europe worshipped trees, there is (5)... respect for them today. The World Wildlife Fund has decided to (6)... attention to the importance of Europe's ancient woodlands. They are asking for the remaining forests to be protected by controlling the trade in wood. (7)..., governments are being asked to regenerate forests where (8)..., and manage them in a more nature-friendly way. At present almost a third of Western Europe is (9)... by trees. Unfortunately, many of these were only (10)... recently. This means they can't support such a(n) (11)... variety of plant and animal life. If we destroy the ancient forests, we will cause many species to (12)... extinct. The decline of ancient forests began thousands of years ago. Yet, with the growing awareness of the (13)... of ancient woodlands, it is hoped those remaining will be (14).... By the year 2000 the W.W.F. hopes to have (15)... many forest reserves across Europe. It isn't too late to do something for our ancient trees.

- A full 0 1 A house 2 A contains 3 4 5 6
  - A capable A humans
  - A small
  - A draw
- 7 A As well as
- 8 A necessary
- 9 A loaded
- 10 A placed

B wealthy C prosperous C home

place

B suitable

tiny

B bring

includes

peoples

B In addition

B important

B packed

put

В

B

В

В

В

- C embraces
- C able
- C beings
- C little
- C carry
- C Too
- D Plus D vital
- C urgent
- C full
- C plotted
- D covered

D rich

D shelter

D holds

D plenty

D few

D move

D persons

D planted

8

11	A deep	B wide	C excessive	D extreme
12	A come	B end	C become	D get
13	A value	B advantage	C gravity	D seriousness
14	A released	B endured	C survived	D saved
15	A done up	B set up	C brought on	D made out

#### **Topical Vocabulary**

#### Natural resources & attractions ПЕРЕВОД НЕ ВЕЗДЕ?

*minerals* – минерал, руда, полезные ископаемые;

fresh water-supplies – запасы пресной воды;

reservoir – хранилище; накопитель;

floods;

rainfalls – количество осадков, ливни;

vegetation – растительность;

greenery;

woodlands – леса, лесонасаждения;

*forestry* – лесничество, лесное хозяйство, леса, лесные массивы, лесоводство;

wildlife – дикая природа;

animal kingdoms (population) – фауна, царство / мир животных;

*flora & fauna* – флора, растительный мир и фауна, животный мир;

*arable land (soil)* – пахотный;

*cultivated land* – возделанная земля;

open land – открытый грунт;

*"green" belts* – зелёная зона (вокруг города), зелёные насаждения, лесопарковая зона;

*recreation areas* – рекреационная зона; зона отдыха, туристская зона, спортивная площадка, площадка для игр и развлечений, место отдыха и развлечений, зона для отдыха и развлечений;

*coastal areas* – прибрежные зоны; прибрежные области, побережье, взморье;

*country parks* – зона отдыха;

national park – большой государственный заповедник; национальный парк, американский заповедник;

clear landscapes – нетронутый;

public open spaces;

#### Environment & man

*to link man to nature* – устанавливать связь человека с природой;

to adapt to environment;

*to be preoccupied with economic growth* – экономический рост; экономическое развитие;

*unrestricted industrialization* – неограниченное развитие промышленности, промышленный рост;

*the sprawl of large-built areas* – разрастание застроенных территорий;

*industrial zoning* – промышленное зонирование, разделение на отдельные зоны;

to upset the biological balance – нарушить природное равновесие; экологическое равновесие; биологическое равновесие, природный баланс;

*to abuse nature* – злоупотреблять, портить, неосторожно / нерационально пользоваться чем-либо;

*to disfigure (litter – засорять) the landscape –* обезображивать, уродовать; безобразить, калечить, портить;

ecology – экология;

ecosystem – экосистема;

to be environment-conscious – учитывающий необходимость охраны окружающей среды, понимающий необходимость охраны окружающей среды;

to be environment-educated – знать о состоянии окружающей среды, быть экологически образованным;

ozone layer – озоновый слой;

to reduce carbon dioxide emissions – снизить выбросы углекислого газа;

*to cut greenhouse-gas emissions* – сократить выбросы парниковых газов;

the greenhouse effect – парниковый эффект;

natural disasters – природные катастрофы;

changing weather patterns – меняющиеся погодные условия;

environmental catastrophe – экологическая катастрофа;

*impact on water supplies* – влияние на запасы воды;

melting glaciers – тающие ледники;

searing heat – экстремальная жара;

widespread flooding – наводнения широких территорий;

to limit the amount of carbon dioxide – ограничить количество углекислого газа;

to prevent illegal logging – предотвратить незаконную вырубку леса;

to slow deforestation – замедлить уничтожение лесов;

to halt deforestation – остановить уничтожение лесов;

*adverse environmental effects* – неблагоприятное влияние на окружающую среду;

land and resources are strained by excessive use – земля и ресурсы истощены от чрезмерного использования;

*impacts on vegetation, wildlife, mountain, marine and coastal environments* – влияние на растительность, диких животных, горы, моря и берега;

destruction of ecosystems – разрушения экосистем;

air travel causes the destruction of ozone layer – авиапутешествия являются причиной (вызывают) разрушения озонового слоя;

significant contributor tourism is a to the increasing greenhouse concentrations of туризм существенно образом) влияет (существенным усиление парникового на эффекта;

to introduce green taxes – ввести налоги, направленные на защиту окружающей среды;

*to develop alternative energy sources* – развивать альтернативные источники энергии;

solar heating – солнечный обогрев / солнечное отопление;

to dump waste – сливать отходы;

disposal of household waste – уничтожение домашних отходов; to recycle waste – перерабатывать отходы;

*power station* – электростанция;

**Environmental destruction & pollution** 

land pollution – загрязнение грунта, почвы;

*to harm / damage / destroy / pollute the environment* – наносить ущерб окружающей среде;

derelict land – лишённая плодородия земля;

*industrial wastes* – промышленные отходы;

*the by-products of massive industrialization* – побочные продукты производства крупной промышленности;

*to dump waste materials on land* – выгружать, разгружать, сваливать отбросы / отходы на землю;

*extensive use of agrochemicals* – широкое применение сельскохозяйственных химикатов, агрохимикатов; химических препаратов, химического удобрения;

*the denudation of soil* – эрозия; обнажение пород смывом; процесс смыва, оголение;

*the toxic fall-outs of materials* – токсические, ядовитые побочные эффекты веществ / материалов;

water pollution;

*a dropping water level* – снижение уровня воды;

to face the fresh-water supply problem;

*depletion of water resources* – истощение (о недрах), исчерпывание, опустошение;

*the disruption of water cycle* – нарушение круговорота воды в природе;

*marine pollution* – загрязнение морской среды, загрязнение моря;

*oil spillage* – утечка масла, разлив нефти (на поверхности воды);

*air (atmospheric) pollution* – загрязнение воздуха; загрязнение атмосферы, загрязнение воздушной среды;

*the air pollution index* – показатель / коэффициент загрязнения атмосферы; индекс загрязнения воздуха;

to produce foul air – плохой воздух, нечистый воздух; отработанный воздух, заражённый воздух, загрязнённый воздух, воздух с высоким содержанием диоксида углерода; воздух с высоким содержанием двуокиси углерода; спертый воздух; испорченный воздух;

*to exhaust toxic gases (fuel)* – выпускать отравляющие газы; токсичные газы;

*combustion of fuel* – сгорание топлива, сжигание;

*concentration of smoke in the air* – дым, копоть;

*dust content in the air* – запылённость воздуха; концентрация пыли, содержание пыли; пылесодержание;

*radiation* – радиация;

high (low) radioactivity – высокий (низкий) уровень радиоактивности;

to store (disperse) radioactive wastes – запасать, откладывать, хранить (уничтожать) радиоактивные отбросы; радиоактивные отходы;

noise offenders – нарушители тишины;

*pollutants* – загрязняющее вещество, загрязнение; примесь (в воздухе), токсичная составляющая (в выхлопных газах);

merciless killing of animals;

destruction of animal habitats – естественная среда обитания;

acid rain – кислотный дождь;

after-effect – последствие;

global warming – глобальное потепление;

*ultraviolet light* – ультрафиолетовое излучение;

Nature conservation & environmental protection

*a global imperative for environment* – всеобщая обязанность / долг перед природой;

global environmental security – безопасность окружающей среды, экологическая безопасность;

to preserve ecosystems – сохранять, оберегать;

environmentalist / green (person) – эколог, «зеленый»;

to create disaster-prevention programmes;

*to harmonize industry & community* – достичь гармонии, гармонизировать деятельность промышленности и общества;

plants & people;

*conservation movement* – движение в защиту природы и природных ресурсов, движение в защиту природных ресурсов; природоохранное движение, экологическое движение;

to preserve woodlands – лес; лесистая местность; лесной массив;

*to protect & reproduce animal (fish, bird) reserves* – заповедник, резервация; место, отгороженное от остального пространства или специально отведенное для какой-либо цели; чья-либо личная территория, место обитания, популяции;

to fight pollution – бороться с загрязнением;

to install antipollution equipment – очистное оборудование;

to minimize noise disturbance – сводить к минимуму шумовые помехи, мешающий шум, помехи;

to reduce pollution – ослаблять, понижать, сокращать, уменьшать уровень загрязнения;

to dispose garbage (litter, wastes) in designated areas – размещать мусор на указанной, определенной, обозначенной, территории, в определенном месте;

garbage – отбросы; остатки, гниющий мусор;

*litter* – cop, мусор;

*wastes* – мусор; отходы; отбросы, сточные воды; загрязняющие вещества;

alternative forms of transport/sources of energy etc. – «альтернативные виды транспорта», т. е. не наносящие ущерба окружающей среде;

*purification system* – очистные сооружения;

to recycle – перерабатывать;

recycling centers – центры по переработке отходов;

*solar / wave / wind power –* энергия солнца, волн, ветра;

### Urbanization

*modern metropolis* – современный метрополис;

exhaust fumes – выхлопные газы;

finite resources – исчерпаемые ископаемые;

to spur economic growth – стимулировать экономический рост;

pressing problems – насущные проблемы;

waste-disposal problems – проблемы с вывозом мусора;

*intensive urban growth* – интенсивный городской рост;

automobile exhaust – выхлопы от автомобилей;

*multiple health hazards* – многочисленные риски для здоровья; *magnify the risk* – увеличивать риск;

toxic substances – токсичные вещества;

to upgrade energy use – улучшить использование энергии;

*alternative transport systems* – альтернативные транспортные системы;

to plant trees – сажать деревья;

traffic congestion – дорожные пробки;

to destroy green spaces – уничтожать зелёные зоны;

**Overpopulation** 

*less developed countries* – менее развитые страны; *a fast-growing population* – быстро растущее население; *to ensure a reasonable quality of life* – обеспечить приемлемое качество жизни;

rising carbon emissions – растущие выбросы углерода;

densely populated countries – густонаселённые страны;

Energy

prevent acid rain – предотвратить кислотные дожди;

*the lowest impact on the environment* – наименьшее влияние на окружающую среду;

to reduce carbon dioxide emissions – снизить выброс углекислого газа;

environmentally benign – благоприятный для окружающей среды;

*waste byproducts* – отходы;

nuclear waste disposal – удаление ядерных отходов;

to *decontaminate radioactive material* – дезактивировать радиоактивные вещества;

shutdown of nuclear plants – закрытие атомных станций; harmful pollutants – вредные загрязнители;

health effects of radiation – влияние радиации на здоровье;

accidents in nuclear power plants – аварии на АЭС;

blackout – отключение электричества.

# Vocabulary practice

# Ex. 1. Divide the words and expressions given below into two lists: "protectors of the environment" and "threats to the environment":

greenhouse effect, car, power station, national park, smog, Greenpeace, acid rain, urban development, recycling, species extinction, global warming, lead-free petrol, exhaust fumes, ozone layer, cutting down trees, toxic waste, rubbish, dustbins.

## Ex. 2. Match word combinations with their translations.

to pollute the atmosphere	токсичные отходы
rubbish bin	парниковый эффект
environmental problems	загрязнять атмосферу

endangered species	электростанция
acid rain	мусорный бак
the greenhouse effect	переработанная бумага
ultraviolet light	солнечная энергия
solar power	проблемы окружающей среды
the ozone layer	исчезающий вид
power station	кислотный дождь
toxic waste	ультрафиолетовые лучи
recycled paper	озоновый слой

#### Ex. 3. Put in an appropriate word or word combination.

1. All the bottles we use now are made from... glass.

2. Wolves used to be common throughout Europe, but are now...

3. Local people are protesting because the planned new road will... the environment.

4. ...the forest will destroy the habitat of thousands of birds and animals.

5. The biggest... today is the car.

6. ...may cause the ice at the North Pole and South Pole to melt and sea level to rise, leading to serious in many parts of the world.

7. ... is the layer of gases that protects us from... the sun.

8. In the last few years the news has been full of stories of hurricanes, floods, droughts and other... caused by the weather.

#### Ex. 4. Translate into English.

1. Захоронение токсичных отходов в земле приводит к загрязнению почвы.

2. Кислотные дожди наносят ущерб не только здоровью людей и природе, но также и старинным зданиям.

3. За последнее время количество дыр в озонном слое резко возросло.

4. Парниковый эффект вызван скоплением в атмосфере газов, препятствующих выходу в космос тепла с поверхности земли.

5. Во многих больших городах мира воду из местных водоемов пить нельзя, так как она загрязнена промышленными отходами.

6. В результате глобального потепления сухие тропические регионы могут стать еще суше, а влажные – еще влажнее.

## **Ex. 5.** Correct the following statements.

1. Acid rain is friendly to nature.

- 2. The more trees we cut down, the more trees grow.
- 3. It's better to bury rubbish than to recycle it.
- 4. The higher the average temperature on the Earth, the better.
- 5. Recycling centers are places where rubbish is buried.
- 6. People who are trying to protect nature are called naturalists.

## **Ex. 6. Explain the following:**

green peacealternativepower stationthe greenhacid rainglobal war

alternative forms of transportsmogthe greenhouse effectrecyclingglobal warmingdump

17

# **UNIT TWO**

### Ex. 1. Read the text.

The environment is dynamically interconnected with ecology. Environment includes such physical factors as temperature, radiation, light, chemistry, climate and geology, the social world of human relations and the built world of human creation.

One can't help noticing that if a change occurs in one ecological or environmental factor it will affect the dynamic state of an entire ecosystem.

Environmental protection is a practice of protecting the environment, on individual, organizational or governmental level, for the benefit of the natural environment and (or) humans.

Due to the pressures of population and our technology the biophysical environment is being degraded, sometimes permanently. This has been recognized and governments begun placing limits on activities that caused environmental degradation. The global ecology movement is based upon environmental protection, and is one of several new social movements that appeared at the end of the 1960s.

Environmental protection has become an important task of protecting the environment from various human activities. Waste, pollution, loss of biodiversity (i.e. various life forms within a given ecosystem), introduction of aggressive species (i.e. both native and non-native species that heavily colonize a particular environment), release of genetically modified organisms and toxics are some of the problems relating to environmental protection.

As all these detrimental factors do not respect political boundaries, making international law is an important aspect of environmental law.

Many countries now recognize the people's fundamental right to live in a healthy environment and the right to environmental protection. Governments adopt environmental laws which are to regulate the interaction of humanity and the rest of the biophysical or natural environment, toward the purpose of reducing the impacts of human activity, both on the natural environment and on humanity itself. Furthermore, many laws that are not exclusively "environmental" nonetheless include significant environmental components and integrate environmental policy decisions.

Academic institutions lead very active environmental policy and offer courses such as environmental studies, environmental management and environmental engineering that study the historyand methods of environmental protection.

We can't but understand the threat to our planet and must do everything to save it for many future generations.

# Ex. 2. Find the English equivalents in the text.

Важный аспект экологического закона: ухудшение экологической модифицированные ситуации; генетически окружающей социальный организмы; защита среды; мир человеческих отношений и мир, возведенный в результате биологического творческой деятельности людей; утрата разнообразия; для пользы окружающей среды и (или) людей; экологической политики; решения по вредные факторы; разнообразная деятельность; здоровая среда человеческая обитания.

# **Ex. 3.** Give the word according the definition.

Environment, ecology, pollution, overcrowding, destruction, resources, exhaust, extinct, cause, habitat, littering, living things.

1. The scientific study of the natural relations of plants, animals, people.

2. The act of making air, water, land dangerously impure.

3. Too many people in one place.

4. The act of destroying, putting an end to the existence of something.

5. The act of throwing things away untidily.

6. Plants, animals, people.

7. The natural home of a plant or animal.

8. Surroundings, circumstances and influences.

9. Something which can help in doing something that can be turned to for support and help.

10. To use something up completely.

11. No longer in existence; having died out.

12. That which produces an effect or event.

### **Ex. 4.** Answer the questions:

1. What is the environment dynamically interconnected with?

2. What does environment include?

3. What is environmental protection?

4. Why did governments begin placing limits on certain activities?

5. What problems is environment protection connected to?

6. What do governments do to protect environment?

7. What courses are offered by academic institutions for studying history and methods of environment protection?

8. What must mankind do in front of the threat to our planet?

## Ex. 5. Retell the text.

## Ex. 6. Fill in the blank spaces using the words below.

disastrous	warming	starvation	catastrophe
disappear	droughts	extinct	threat
unite	pollution		

## **Global warming**

The scientists' consensus is that people are causing global \_\_\_\_\_\_. They claim, if nothing is done, the Earth can face the global \_\_\_\_\_\_\_. Is it such a serious danger? In my opinion, global warming is causing a wide range of changes which are \_\_\_\_\_\_\_. Firstly, increasing temperature leads to ice melting and in the result of this oceans and seas levels are rising, and many islands and huge coastal parts may \_\_\_\_\_\_ under water. Secondly, the duration and intensity of different extreme weather events, such as floods, \_\_\_\_\_\_, tornadoes have increased lately.

They destroy people's property and make them unhappy. Finally,

there are some other effects of global warming. Agriculture in many countries faces problems and a lot of people suffer from \_\_\_\_\_\_

or high prices on food, diseases like malaria are returning to areas where they have been previously eliminated, a lot of animals and plants are becoming \_\_\_\_\_\_.

However, according to other people's opinion, global warming is not an important problem. They say that disasters used to happen in the past, when climate changes were not observed. Moreover, these people are sure that the extinction of different species of wildlife occurs because of \_\_\_\_\_\_ and illegal hunting. They may be right to some extent, but I think that global warming is a real \_\_\_\_\_\_ to our planet. I am sure strict and urgent measures should be taken to save it.

In conclusion, despite other people's opinion, I still believe that we must \_\_\_\_\_\_ our efforts and try to cut greenhouse emissions, use natural resources. A lot depends on us!

## **UNIT THREE**

#### Ex. 1. Read the text.

#### **The Environment: Problems and Solutions**

**Problems.** Our environment is constantly changing. There is no denying that. However, as our environment changes, so does the need to become increasingly aware of the problems that surround it. With a massive influx of natural disasters, warming and cooling periods, different types of weather patterns and much more, people need to be aware of what types of environmental problems our planet is facing.

Pollution is damage to the air, sea, rivers or land caused by chemicals, waste and harmful gases. The biggest polluter today is the car. Exhaust fumes are the main cause of bad air quality, which can make people feel ill and have difficulty breathing. This problem is especially bad in big cities where, on days when there is not much wind, a brown layer of smog hangs in the air. The number of cars is and this increasing every year causes serious congestion. Governments build new roads trying to improve the situation, but this means that they cut down trees and destroy more of the countryside. Pollution of air, water and soil require millions of years to recoup. Industry and motor vehicle exhaust are the number one pollutants. Heavy metals, nitrates and plastic are toxins responsible for pollution. While water pollution is caused by oil spill, acid rain, urban runoff; air pollution is caused by various gases and toxins released by industries and factories and combustion of fossil fuels; soil pollution is majorly caused by industrial waste that deprives soil from essential nutrients.

<u>Global Warming:</u> Climate changes like global warming is the result of human practices like emission of Greenhouse gases. Global warming leads to rising temperatures of the oceans and the earth' surface causing melting of polar ice caps, rise in sea levels and also unnatural patterns of precipitation such as flash floods, excessive snow or desertification.

<u>Overpopulation</u>: The population of the planet is reaching unsustainable levels as it faces shortage of resources like water, fuel and food. Population explosion in less developed and developing countries is straining the already scarce resources. Intensive agriculture practiced to produce food damages the environment through use of chemical fertilizer, pesticides and insecticides. Overpopulation is one of the crucial current environmental problem.

<u>The greenhouse effect</u> is caused by harmful gases known as greenhouse gases. These gases are produced when we burn fuels, especially coal burned in power stations to make electricity. The gases go up into the Earth's atmosphere and stop heat from leaving the Earth. As the heat cannot escape, the temperature on the Earth is running up. This is known as global warming. Global warming may result in the melting of the ice at the Poles and rising of sea levels, leading to serious flooding and other disasters in many parts of the world. In other places the temperature will rise and there will be less rain, turning more of the land into desert.

<u>Holes in the ozone layer</u>. The ozone layer is a layer of gases that protects us from ultraviolet light coming from the sun, which can have a harmful effect on animals and causes skin cancer in humans. The ozone layer is an invisible layer of protection around the planet that protects us from the sun's harmful rays. Depletion of the crucial Ozone layer of the atmosphere is attributed to pollution caused by Chlorine and Bromide found in Chloro-floro carbons (CFC's). Once these toxic gases reach the upper atmosphere, they cause a hole in the ozone layer, the biggest of which is above the Antarctic. The CFC's are banned in many industries and consumer products. Ozone layer is valuable because it prevents harmful UV radiation from reaching the earth. This is one of the most important current environmental problem.

<u>Acid rain</u> is a rain harmful to the environment because it contains acid from factory smoke. Acid rains cause damage to trees, rivers and buildings. Acid rain occurs due to the presence of certain pollutants in the atmosphere. Acid rain can be caused due to combustion of fossil fuels or erupting volcanoes or rotting vegetation which release sulfur dioxide and nitrogen oxides into the atmosphere. Acid rain is a known environmental problem that can have serious effect on human health, wildlife and aquatic species.

<u>Species extinction</u> is a natural feature of the evolution of life on earth, the best-known example is the disappearance of the dinosaurs. In the last 400 years, however, human activities have been responsible for the loss of most of the animals and plants that have disappeared. <u>Deforestation</u> is the term used to describe the disappearance of forests from large parts of the world's surface. Deforestation has been occurring steadily since the XXth century. Our forests are natural sinks of carbon dioxide and produce fresh oxygen as well as helps in regulating temperature and rainfall. At present forests cover 30% of the land but every year tree cover is lost amounting to the country of Panama due to growing population demand for more food, shelter and cloth. Deforestation simply means clearing of green cover and make that land available for residential, industrial or commercial purpose.

**Solutions.** <u>Alternative forms of transport</u>. One of the main problems with cars is that they cause a lot of pollution and often carry only one person. Public transport is more environmentally friendly because buses and trains can carry large numbers of people at the same time. Even cleaner solutions are electric cars and bicycles.

<u>Alternative energy sources</u> – such as wind, wave and solar power do not pollute the environment. They are much cleaner than oil and coal, but it's more difficult to get them regularly.

<u>Recycling</u> is another solution: instead of throwing away glass, paper, cans can be taken to special "banks" and recycled there.

<u>Protesting</u>. Many people try to protect the environment by joining environmental groups that inform people about ecological problems and try to persuade governments to take more care of the environment, especially by organizing protests.

# Ex. 2. Which word in each line is the odd one out? Why?

car – bicycle – plane – space rocket;

to pollute – to harm – to litter – to recycle;

ultraviolet light – acid rain – smog – the greenhouse effect;

rain – flooding – melting – air pollution;

recycling – burying rubbish – planting trees – ecological education.

### Ex. 3. Translate from Russian into English.

одна из главных проблем	охранять окружающую среду
перевозить кого-либо	информировать о чем-либо
одновременно	убеждать
выбрасывать	наносить ущерб чему-либо

перерабатывать	выхлопные і	газы	
исправить положение	сжигать топл	ПИВО	
вырабатывать электричество	пустыня		
защищать кого-либо от	вызывать	что-либо,	быть
чего-либо	причиной че	го-либо	

# Ex. 4. Fill in the correct word derived from the word in brackets.

#### The Environment: Our Responsibility

These days it is (*possible*) to open a newspaper without reading about the damagewe are doing to the environment. The earth is being (*threat*) and the future looks (*horror*). What can each of us do?

We cannot clean up our (*pollute*) rivers and seas overnight. Nor can we stop the (*appear*) of plants and animals. But we can stop adding to the problem while (*science*) search for answers and laws are passed in nature's (*defend*). It may not be so easy to change your lifestyle and habits (*complete*) but some steps are easy to take: cut down the amount of (*drive*) you do or use as little plastic as possible. It is also easy to save energy, which also reduces (*house*) bills.

We must all make a personal (*decide*) to work for the future of our planet if we want to (*sure*) a better world for our grandchildren.

#### Ex. 5. Answer the questions on the text.

1. Why is the car the biggest polluter? What are other polluters?

2. Why can the greenhouse effect be dangerous?

3. What do you know about holes in the ozone layer?

4. What are the alternative forms of transport? Can they really solve the problem of air pollution?

5. What is recycling?

6. Do you think the protests organized by the "greens" are really effective?

#### Ex. 6. Points for discussion.

- Observe environmental problems and solutions to them.

- Think of some consequences of the environmental problems.

Use the 1-st and 2-nd Conditionals and don't forget about modal verbs.

*Example:* If the average temperature increases it might lead to flooding. If there were no ozone layer we would die of skin cancer.

- Do you think that the condition of the environment depends only on industry or on ordinary people too?

- We often hear the words "harmful effects of civilization on nature". What do they mean? Illustrate the results of harmful and helpful influences of human contacts with nature.

## Ex. 7. Speaking activities. Work in pairs or groups.

1. A: You want to build a new motorway in your city to solve traffic problem. -B: You object to it.

2. A: You want to provide some opportunities for cyclists to ride around the city. -B: You are a driver and you object to it.

3. A: You want to construct a new car park next to B's house. – *B: Persuade him not to do that.* 

4. A: You want to drink some tap water. -B: Warn A against doing that.

# **UNIT FOUR**

### Ex. 1. Read the text.

## **Ecological Problems of a Big City. London**

The City of London has been found to be one of the most polluted places in Europe after monitoring equipment recorded dangerous levels of minute particles for the 36th time this year. Under EU rules, Britain is allowed no more than 35 "bad air" days in the whole year, and now faces court cases and unlimited fines by Europe.

It was in Britain that the word "smog" was first used (to describe mixture of smoke and fog). As the world's first industrialized country, its cities were the first to suffer this atmospheric condition. In the XIXth century London's "pea-soupers" (thick smogs) became famous through descriptions of them in the works of Charles Dickens and in the Sherlock Holmes stories. The situation in London reached its worst point in 1952. At the end of that year particularly bad smog, which lasted for several days, was estimated to have caused between 4000 and 8000 deaths.

Water pollution was also a problem. In the XIXth century it was once suggested that the Houses of Parliament should be wrapped in enormous wet sheets to protect those inside from the awful smell of the River Thames. In the middle years of this century, the first thing that happened to people who fell into the Thames was that they were rushed to hospital to have their stomachs pumped out!

Then, during the 1960s and 1970s, laws were passed which forbade the heating of homes with open coal fires in city areas and which stopped much of the pollution from factories. At one time, a scene of fog in Hollywood films was all that was necessary to symbolize London. This image is now out of date, and by the end of the 1970s it was said to be possible to catch fish in the Thames outside Parliament.

However, as in the rest of Western Europe, the great increase in the use of the motor car in the last quarter of the XXth century has caused an increase in a new kind of air pollution. This problem has become so serious that the television weather forecast now regularly issues warnings of "poor air quality". On some occasions it is bad enough to prompt official advice that certain people (such as asthma sufferers) should not even leave their houses, and that nobody should take any exercise, such as jogging, out of doors.

Ex. 2. Find English equivalents for Russian words.

страдать			
a) surprise;	b) suffer;	c) suggest;	d) surround;
ужасный			
a) awkward;	b) available;	c) awful;	d) average;
запрещать			
a) forbid;	b) forgive;	c) forget;	d) foretell;
предостереже	ение		O//
a) warming;	b) warring;	c) warrant;	d) warning;
качество		5	
a) quality;	b) quantity;	c) quarrel;	d) quarter;
условие		• Ø .	
a) conviction;	b) conclusion;	c) connotation;	d) condition.

Ex. 3. Complete the collocations below by adding an appropriate noun. Some can combine with more than one noun.

warming waste pollution	effect rain transport	energy layer resources	fumes changes gases	fuels disasters
acid global nuclear natural sea finite clean	27	exhaust ozone public air solar greenhou recycled	se	
noisy		renewable	e	

# Ex. 4. Open the brackets and use the verb in the required tense-form; fill in the blanks using a word from the following list:

1) weather;	4) recycling;	7) environmental;
2) exhaust;	5) fuel;	8) atmosphere;
3) greenhouse effect;	6) resources;	9) energy.

In recent years, the number of **a**)... problems (*to increase*) dangerously. One of the most serious problems is changes to the **b**)... which (*to lead*) to the "**c**)..."; this (*to make*) most climates warmer.It already (*to affect*) several areas of the world with unusual **d**)... causing droughts or heavy storms. Cutting down on **e**)... fumes from vehicles (*to help*) solve the problem. Natural **f**)... such as oil and coal are not endless, so using the other forms of **g**)... such as wind, sun, wave and even sea waves (*to help*) preserve our planet. Very soon we (*to be able*) to drive cars in cities that run on electricity – a much cleaner **h**)... than petrol. And we can also help preserve finite resources by **i**)... things made of glass, aluminium, plastic and paper.

## Ex. 5. Translate into English.

1. Впервые слово «смог» появилось в Великобритании.

2. Одно время лондонский туман в голливудских фильмах был неотъемлемым символом Лондона.

3. Рост использования автомобилей привел к росту загрязнения атмосферы.

4. В середине шестидесятых был принят закон, который контролировал загрязнение атмосферы фабриками.

5. В некоторых случаях, когда загрязнение воздуха превышает норму, больным астмой рекомендуют не выходить из дома.

6. Людей, упавших в Темзу, сразу отправляли в больницу, где им делали промывание желудка.

7. Говорят, что в середине семидесятых в Темзе уже можно было ловить рыбу.

# Ex. 6. What environmental problems do these passages refer to?

1. Some experts predict that by 2090 the average temperature can be higher than today.

2. For some years scientists checked and rechecked their findings. By October 1984 the "hole" over Hajley Bay showed a 30 per cent reduction in ozone.

3. The alarm was sounded in 1970 by the Scandinavian countries where acid rain has destroyed all life in many of their lakes.

4. Gone forever, for example, are seventeen species of bears, five of wolves and foxes, four of cats, five of horses and zebras and three of deer.

5. Around the world between 11 and 15 million hectares of tropical forest are lost every year, an area larger than Austria.

6. 25% of the world's electricity comes from dams and rivers.

7. At the moment most countries only turn between 5% and 10% of their rubbish into energy.

#### Ex. 7. Points for discussion.

- How did they manage to get rid of smog in London?

- Describe the ecological situation in your city/town. Compare it with previous times. Use used to when talking about past.

*Example*: There are more cars nowadays than there used to be.

- Compare ecological situation in the city and in the countryside. Use comparative formulas (e.g. much cleaner, better than, as... as etc.).

- How can the condition of the environment influence the climate, for example in your city?

- Speak about practical steps being undertaken to protect the environment.

# **UNIT FIVE**

Ex. 1. Read the text.

## How Can We Contribute to Solve the Rubbish Problem?

Here are some ways to beat the throw-away society. All of them are cleaner and cheaper than burying rubbish.

**1.** Throw away less rubbish. In Denmark, for example, it's illegal to sell drinks in cans. And it's not just governments which can produce less rubbish. It's ordinary people, too. For example, anyone can decide to:

- buy products with as little packaging as possible;

- use and throw away fewer plastic bags;

- waste less paper.

2. Turn rubbish into energy. How? By burning it. The use of rubbish as fuel is a good idea because it:

- saves fossil fuels;
- means burying less rubbish;
- cuts pollution.

Energy from rubbish is cleaner and cheaper than energy from fossil fuels. Every year millions of tones of rubbish are dumped into the ground. It could be used instead to generate electricity, create heat for industrial purposes, or heat hospitals, schools, public buildings or even whole districts.

**3.** Use rubbish again. It is possible, in fact, to recycle 80% of domestic rubbish. This includes paper, glass, metal and plastic. It's important to increase the number of recycling centers. For example, there are more "bottle banks" nowadays than ever before. In many countries there are not only bottle banks but also aluminium banks, steel banks, plastic banks, paper banks, used batteries banks, old clothes banks. Denmark has an interesting system. Aluminium cans are not allowed to be sold, nor are non-standard bottles. Any shop which sells bottled drinks has to accept returned bottles.

This system significantly reduces the amount of glass thrown away as refuse – and the amount of broken glass turning up in the countryside and on the beaches. 4. Spread knowledge about rubbish problem among people and inform them what they can do to reduce it.

# Ex. 2. What can we do with rubbish? List as many actions as you can.

Example: to burn rubbish ...

# Ex. 3. Match English words and word combinations with their Russian equivalents.

plastic bags	неэкономно расходовать бумагу
to cut pollution	использовать что-либо снова
recycling centers	бытовой мусор
to generate electricity	полиэтиленовые пакеты
used batteries	вырабатывать электричество
to bury rubbish	топливо
to re-use	снижать загрязнение
fuel	«захоранивать» мусор
domestic rubbish	использованные батарейки
to waste paper	центры по переработке мусора

#### Ex. 4. Translate into English.

1. На самом деле, возможно перерабатывать до 80 % бытового мусора.

2. В Дании продажа напитков в жестяных банках запрещена законом.

3. Ежегодно «захораниваются» миллионы тонн мусора, что ведет к заражению почвы и подземных вод.

4. В настоящий момент в мире лишь 10 % мусора идет на выработку электроэнергии.

5. Система пунктов приема стеклотары значительно снижает количество выбрасываемого и разбиваемого стекла.

# Ex. 5. Fill in the correct word derived from the words at the end of the sentence.

1. What can we do to reduce the... of the **pollute** atmosphere?

2. The change in the climate has produced... floods. terror extinct

3. Many rare species are in danger of...

4. Many of gases produced by factories are... to our harm health.

effects 5. Exhaust fumes have... the damage on environment.

6. Many countries must control the growth of the... populate

7. Protecting the environment is essential to our... survive

of the environment is 8. The... protect everyone's responsibility.

9. While some countries get richer, the... in the poor others gets worse.

10. Millions of people in the world are threatened starve with...

#### Ex. 6. Multiple choice.

The Baltic is a small sea, A... it becomes B... very easily. Its water changes slowly through the shallow straits. 150 rivers run C... the Baltic. There are hundreds of factories D... these rivers and millions of people live among them. Seven industrial countries E... the Baltic. F... a lot of big cities lie on its G... All of this combined with active navigation of the sea naturally H... the state of the sea water and the shoreline flora and fauna.

Once we I... a sea it's very difficult to J... it. Fortunately all the countries in the Baltic area have realized the problem. They cooperate actively K... solving ecological problems of the Baltic basin. L... international law and the national laws of the coastal states M... the regime of environmental protection of the Baltic Sea. The N... of the agreements among these states is to **O**... oil pollution of the sea, to organize rational fishing and the preservation of sea life.

А	1) as;	2) because;	3) so that;	4) so;
В	1) muddy;	2) dusty;	3) dirty;	4) greasy;
С	1) into;	2) out of;	3) through;	4) across;
D	1) at;	2) on;	3) in;	4) above;
E	1) gather	2) encircle;	3) surround;	4) round up;
	around;			

F	1) quite;	2) rather;	3) pretty;	4) very;
G	1) beach;	2) coast;	3) shore;	4) banks;
Η	1). reflects;	2) effects;	3) forces;	4) affects;
Ι	1) had	2) pollute;	3) have polluted;	4) polluted;
	polluted;			
J	1) brush;	2) clean;	3) polish;	4) scour;
Κ	1) in;	2) over;	3) within;	4) for;
L	1) either;	2) neither;	3) and;	4) both;
Μ	1) deprive;	2) define;	3) decline;	4) defile;
Ν	1) target;	2) point;	3) objective;	4) aim;
0	1) prevent;	2) protect;	3) preserve;	4) pretend.

### Ex. 7. Points for discussion.

- What do you do with your domestic rubbish (paper, cans, bottles etc.)?

- Are there any "bottle", "paper", "cans" banks in your city? What can you say about their work?

- What can you say on the subject of litter on the streets? How is this problem solved in your city?

34

# UNIT SIX

#### Ex. 1. Read the article about the first atomic explosion.

#### "I am become Death, the destroyer of worlds"

The first explosion of the atom bomb, on July 16, 1945, was summed up by Robert Oppenheimer with these words from a Hindu poem.

Peter Millar reports on the race led by Oppenheimer, the brilliant physicist, at Los Alamos, New Mexico, to create the weapon that would-end the Second World War

In the foothills of the New Mexican Mountains, on a dusty desert plain known as the Jornada del Muerto – Dead Man's Journey – camped the greatest collection of scientific brains on earth. They were men who would redefine the 20th century: Robert Oppenheimer (American), Enrico Fermi (Italian), George Kistiakowski (Ukrainian), Otto Frisch (Austrian), General Leslie Groves (American), Edward Teller (Hungarian), and Klaus Fuchs (born in Germany, but a naturalized Briton).

Better than any men in the world, they should have known what to expect in those still minutes before dawn in the desert. But none of them knew for sure what would happen. The- explosion at 05.29 on the morning of July 16, 1945 stunned its creators and changed the world: the atomic bomb worked.

There were several eye-witness accounts of that first atomic explosion. "It blasted; it pounced; it bored its way right through you. It was a vision which was seen with more than the: eye. It seemed to last forever. You longed for it to stop. Altogether it lasted about two seconds. Finally it was over." Another observer wrote: "It was like a ball of fire, too bright to look at directly. The whole surface of the ball was covered with a purple luminosity." His report ends: "I am sure that all who witnessed this test went away with a profound feeling that they had seen one of the great events in history."

Los Alamos today supports a community of just over 18,000 people. On first impressions it is like many other small towns in western America: full of low two-storey buildings, dusty, with rather dingy shopping malls, a couple of banks, filling stations, Mexican and Chinese fast-food joints, a motel, and a McDonald's. But there are

plenty of indications that this is no ordinary town. Big blue signs along State Highway 84 advise travellers that the road and land on either side belong to the US government A notice declares that it is "forbidden to remove dirt". At one point a high watchtower stands sentry behind a twenty-foot barbed-wire fence.

Before 1942, however, Los Alamos had no history because it didn't exist. It was created for one purpose only, to house the technicians who would make the bomb before anyone else did. All mail was censored, SO and everyone was sworn to secrecy. The US government did not even trust their own protégés. Oppenheimer, who had mixed left-wing groups in his youth, was tailed by FBI men. Einstein, who had written to President Roosevelt in 1939 urging him to develop the atomic bomb, was ruled out because of his outspoken pacifism and Zionism. Yet the real villain went undetected. Klaus Fuchs was revealed in 1950 as Stalin's spy.

What is interesting is that the scientists were much more interested in sharing the bomb with the Russians than the politicians were. Some physicists dreamed of the bomb as an end to all wars, a possible means of establishing global government. As it progressed from a theoretical possibility to an experimental reality, concern grew among some of those involved about how it would be used. By early 1945, Germany, the original target, no longer needed an atomic explosion to force its surrender. Attention switched to Japan. In 1943 Harold Argo was a graduate from Washington University when he was summoned to New Mexico. Now over 80, he describes his time at Los Alamos as "the most exciting two years of my life'. He dismisses those whose consciences troubled them. 'I don't understand all those skeptics who had second thoughts. I had two brothers out there in the Pacific. If Harry Truman hadn't dropped the bomb, the war could have gone on forever."

Carson Mark is more reflective. "At the time, we thought it would put an end to organized war, because no one can put up with destruction on that scale. But we didn't know how imminent it was that the Japanese would have to call it quits. Why kill all those people if you don't need to?"

In May 1945 nobody was sure just how devastating the bomb would be. There was a general agreement that the simpler type of bomb would work, but the more complicated plutonium implosion device would need testing. Oppenheimer named the test Trinity, partly because of the Christian concept of God the Father, the Son, and the Holy Spirit, but mainly because of the Hindu three-in-one godhead of Vishnu, Brahma, and Siva, the power of life, the creator, and destroyer.

The site selected was 33 miles from the nearest town. The VIP observation site was located 20 miles away. The scientist had a bet with each other to guess how many tonnes' equivalent of TNT their bomb would produce. So imprecise was their knowledge that Oppenheimer conservatively suggested 300. Teller, wiser, speculated an incredible 45,000. Radiochemical analysis revealed the blast had equaled 18,600 tonnes of TNT, four times what most of those involved on the project had guessed.

Even as they were celebrating at Los Alamos, hours after the explosion, the warship *Indianapolis* sailed out of San Francisco harbour, carrying the atomic bomb nicknamed *Little Boy* on its fateful voyage to the island of Tinian in the Pacific. After unloading its deadly cargo, the ship sailed on towards the Philippines. On July 29 it was sunk by a Japanese submarine; of the 850 who survived the sinking, more than 500 were eaten alive by sharks.

On Tinian, group commander Paul Tibbets had his B-29 bomber repainted, and he gave it his mother's name, Enola Gay. In Hiroshima and Nagasaki, the citizens slept.

Just three weeks after the test, the bomb was used for real. As the historian Richard Rhodes wrote in his book *The Making of the Atomic Bomb*, "Once Trinity proved that the atomic bomb worked, men discovered reasons to use it."

## **Ex. 2. Explain the title of the article.**

#### Ex. 3. Answer the questions.

1. Did the scientists know exactly what would happen when the first bomb exploded?

- 2. Did they expect it to be bigger or smaller?
- 3. How did they feel when it went off?
- 4. How did the eye-witnesses describe it?
- 5. What are the indications that Los Alamos is no ordinary town?
- 6. Why isn't the town on any map before 1942?

7. Why did the scientists want to share their knowledge with the Russians? Why do you think the politicians didn't agree with them?

8. In what way do Harold Argo and Carson Mark have different opinions?

9. What do you know about the warship Indianapolis?

10. When and where was the first atomic bomb used in warfare?

11. How did the atomic bomb alter the course of history in the twentieth century?

12. Do you agree with the historian Richard Rhodes?

# Ex. 4. Who are these people? What does the text say about them?

- a) the greatest collection of
- scientific brains;
- b) none of them;
- c) its creators;
- d) a community;
- e) travellers;
- f) the technicians;
- g) its own protégés;

h) the real villain;
i) the original target;
j) all those sceptics;
k) God;
l) VIP;
m) Little Boy;
n) Enola Gay.

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