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ENVIRONMENTAL ISSUES

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Учебно-методическое пособие реализует требования программы, предъявляемые к дисциплине «Иностранный язык» для студентов-бакалавров, обучающихся по направлению подготовки 05.03.06 Экология и природопользование. Основной целью пособия является развитие профессионально-иноязычной компетенции студентов в сфере их будущей профессиональной деятельности, а также формирование профессионально-важных качеств современного инженера-эколога.

Пособие основано на материале аутентичных текстов интернет-сайтов и журналов (США, Великобритания), разработано с учетом современных методических принципов и направлено на активизацию изученного материала.

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TEXT 1*Before you read*

- **What have you heard about climatic changes in the world?**
- **What are the reasons?**

*Reading***1. Read the article and answer the questions:**

1. What is the result of the growing worldwide consumption of fossil fuels?
2. What is the counterbalancing effect of carbon dioxide?
3. What can cause melting of the polar ice caps, raising of the sea level, and flooding of the coastal areas of the world?
4. What is the phenomenon of acid rain?

Climatic effects of polluted air

Less obvious than local concentrations of pollution but potentially more important are the climatic effects of air pollutants. Thus, as a result of the growing worldwide consumption of fossil fuels, atmospheric carbon dioxide levels have increased steadily since 1900, and the rate of increase is accelerating. The output of carbon dioxide is believed by some to have reached a point such that it may exceed both the capacity of plant life to remove it from the atmosphere and the rate at which it goes into solution in the oceans. In the atmosphere carbon dioxide creates a “greenhouse effect”. Like glass in a greenhouse, it allows light rays from the Sun to pass through, but it does not allow the escape of the heat rays generated when sunlight is absorbed by the surface of the ground. An increase in carbon dioxide, therefore, can cause an increase in the temperature of the lower atmosphere. If allowed to continue, this could cause melting of the polar ice caps, raising of the sea level, and flooding of the coastal areas of the world. There is every reason to fear that such a climatic change may take place. Counterbalancing the effect of

carbon dioxide is the increase of particulate matter in the air, a result of the output of smoke, dust, and other solids associated with human activity. Such an increase might, in turn, increase the reflectance, or albedo of the atmosphere, causing a higher percentage of solar radiation to be reflected back into space. This, in time, could cause a lowering of the Earth's surface temperature and, potentially, a new ice age. At present, however, the greater danger appears to lie in the steady increase in carbon dioxide, with its associated atmospheric warming. Scientists also fear that the ozonosphere is being depleted by the chemical action of chlorofluorocarbons emitted from aerosol cans and refrigerators and by pollutants from rockets and supersonic aircraft. Depletion of the ozone layer, which absorbs ultraviolet radiation from the Sun, would have serious effects on living organisms on the Earth's surface, including increasing frequency of skin cancer among humans.

Another climatic effect of pollution is acid rain. The phenomenon occurs when sulfur dioxide and nitrogen oxides from the burning of fossil fuels combine with water vapour in the atmosphere. The resulting precipitation is damaging to water, forest, and soil resources. It is blamed for the disappearance of fish from many lakes in the Adirondacks, for the widespread death of forests in European mountains, and for damaging tree growth in the United States and Canada. Reports also indicate that it can corrode buildings and be hazardous to human health. Because the contaminants are carried long distances, the sources of acid rain are difficult to pinpoint and hence difficult to control. Acid rain has been reported in areas as far apart as Sweden and Canada, and in parts of the United States from New England to Texas. The drifting of pollutants causing acid rain across international boundaries has created disagreements between Canada and the United States and among European countries over the causes and solutions of the precipitation. The international scope of the problem has led to the signing of international agreements on the limitation of sulfur and nitrogen oxide emissions.

2. Match the words to make phrases, translate and find them in the text.

- | | |
|---------------|--------------------------|
| 1 growing | a) caps |
| 2 fossil | b) effect |
| 3 polar ice | c) the coastal areas |
| 4 raising of | d) fuels |
| 5 greenhouse | e) worldwide consumption |
| 6 flooding of | f) the sea level |
| 7 solar | g) layer |
| 8 ozone | h) radiation |

3. Find in the text English equivalents to these Russian words:

1. уравновешивающий
2. отражательная способность
3. устойчивый
4. живые организмы
5. осадки
6. точно определять
7. источники кислотных дождей
8. гибель лесов

Over to you

What can we do to stop air pollution all over the world?

TEXT 2*Before you read*

- Have you ever had health problems because of bad environmental conditions?
- What kind of problems did you have?
- What were they caused by?
- What do you think this article is about, judging by the title?

*Reading***1. Match the words to their English equivalents:**

- | | |
|------------------------|---------------------------------|
| 1. to blister | a. питать |
| 2. logging | b. коварный |
| 3. slash-and-burn | с. требования к выхлопным газам |
| 4. rheumy | d. дымить |
| 5. to reek | e. страдающий насморком |
| 6. revengeful | f. вырубка |
| 7. to seep | g. просачиваться, протекать |
| 8. to rocket | h. взлетать |
| 9. denuded | i. сильнодействующий |
| 10.drastic | j. оголённый |
| 11.drastically | к. радикально |
| 12.exhaust regulations | l. вырубка и выжигание |
| 13.to nourish | m. вызывать волдыри |

COUGH CITY

Deep breathing is not recommended in Sao Paulo, Brazil's largest city and the world's second largest. The air may injure your lungs or blister your skin. When the Jesuits first colonized it, Sao Paulo was a temperate forest. Later the city's mild and pleasant winters attracted huge numbers of Italians and Japanese who came to stay. Now it contains about 10m inhabitants with as many again in its suburbs. One third of Brazil's 14m cars and lorries drive on its roads. It is the headquarters of 30 of Brazil's largest companies, whose plants blow 350000 tons of smoke into the air each year.

When foreigners think of Brazil's environment, their minds run to illegal logging, slash-and-burn, the destruction of the rain forest. From Sao Paulo the rain forest of the Amazon is 2650 kilometers northward, about as far as Istanbul is from London. Paulistas are more closely affected by dirty clothes, blackened buildings, sore eyes and rheumy children.

They also worry about getting to work. The underground railway is spotless and efficient, but miniature. Thousands of old buses, reeking exhaust fumes, are packed to bursting. So 42% of workers double the proportion in Mexico City, similarly huge, crowded and polluted – drive to work in their own cars. One Wednesday in July 1988, in an immense environmental experiment, motorists were asked to leave their cars at home, and 98% of them did so. Sao Paulo, carless, was transformed. Drivers are now advised to leave their cars at home if "pollution meters" indicate danger; they have not done yet.

Nature makes things worse. In April, when autumn begins, the soil temperature falls and the cool air above it no longer carries toxic gases off into the sky above. A revengeful twilight descends just before noon. The water is getting fouler too. Last December a suspicious smell began seeping from the main reservoir. Sales of mineral water rocketed and the authorities, though claiming that the tap water was drinkable, distributed bottles in some districts.

The Sao Paulo state government has spent heavily to clear up urban pollution, and sometimes succeeded. At Cuba Tao, half-way between Sao Paulo and its

citizens' favourite seaside resorts, factories cluster around a petrochemical complex. In 1984 each one of Cuba Tao's 100000 residents received a daily quota of 10 kilograms of pollutants, one-quarter of it industrial dust, the rest nasty gases such as sulfur dioxide and oxides of nitrogen. Since then, the state government has compelled the polluters to capture 90% of that horrible cocktail before it gets into the atmosphere. Helicopters have spread a specially-developed gelatin over the denuded hills, to fix and nourish tree seeds. The UN Environment Programme holds up Cuba Tao as an example to industrial polluters.

Sao Paulo's industries too have installed filters and drastically cut their output of dust and gas. As in much richer cities, cars are now the main polluters. Brazilian cars are ruled by exhaust regulations as strict as those in the United States and Japan.

2. Answer the questions:

- 1) Why isn't deep breathing recommended in Sao Paulo?
- 2) What do foreigners think of Brazil's environment?
- 3) Is Sao Paulo's traffic system effective? Why?
- 4) How does nature add to pollution?
- 5) Does the state government try to improve the environment?
- 6) What has been done to protect the environment?

3. Agree or disagree with the following statements. Prove your answers.

- 1) The air in Sao Paulo may injure lungs and blister skin.
- 2) Sao Paulo has no traffic problems.
- 3) Nature helps to solve environmental problems in Sao Paulo.
- 4) The Sao Paulo state government has worked hard to clear up urban pollution.
- 5) As in many large cities, cars are now the main polluters in Sao Paulo.

Over to you

Do you agree with the title of the text?

Speak on the environmental problems of Sao Paulo.

TEXT 3*Before you read*

- How can tourism damage the environment?
- What do you know about “eco-tourism”?

Reading

1. Read the article and answer the questions above.

Think of another title for it.

2. Match the words to their English equivalents:

- | | |
|------------------------|------------------------|
| 1. to adjust | a. торговаться |
| 2. impact | b. осуществить мысль |
| 3. commit the idea | c. влияние |
| 4. remote destinations | d. вымирающие животные |
| 5. to haggle | e. устанавливать |
| 6. endangered animals | f. отдаленные места |

TRAVEL WISE

Many of us look forward to our summer holidays all year. We can't wait to get away from our everyday lives, to visit new places, to try new things, or just to relax and lie in the sun. But how many of us think about the effect our holidays have on the places we visit?

Although tourism has many benefits, such as bringing extra money into local economy, there are also negative effects. Tourism can do all sorts of damage to the environment, the culture and the people of a country, especially in places which aren't prepared for large numbers of holidaymakers. In recent years there has been a large increase in the number of independent travelers who want to get off the beaten track, and this has meant that many remote destinations have to adjust to new visitors.

It certainly isn't all bad news though. The last few years have also seen a huge increase in 'eco-tourism'. This is tourism where holidaymakers try to have a positive effect on the people and places that they visit. If you are really committed to this idea, then you can spend your holidays helping out on an organic farm in Britain, or taking part in conservation projects in Africa or the Amazon rainforest. Don't worry, though, if it doesn't sound like your idea of a holiday. Wherever you go and whatever you want to do, there are still ways to make sure that you have the best possible impact on your holiday destination.

If you are heading off a place for the first time, it is an excellent idea to find out as much about it as possible. A guide book is a great place to start. As well as learning about the local places of interest, you can read about the way you will be expected to behave and dress. This can save you from making embarrassing mistakes and means that you are less likely to upset or offend your hosts. Don't stop at the guidebook, though. If you can, listen to some music or read some literature from your chosen destination. Knowing a little about the place that you are visiting before you leave can make your holidays much more enjoyable when you arrive.

It is also important to think about how you spend your money when you are on holiday. Whenever you can, try to put it into the local people's hands. You can do this by eating and drinking local products rather than imported brands, staying in locally owned accommodation and using local guides. In some parts of the world, you might be relatively well off compared to the local population. Even in places where you are expected to haggle or bargain, you should always pay a fair price for things. Remember that what might be a very small amount of money to you, can make a big difference to some people.

Another important thing for the eco-tourism is to have as little effect on the local environment as possible. This is easy to do if you follow common-sense advice. Don't leave litter lying around and use biodegradable products whenever possible. If resources like water or fuel are in short supply, then use as little of these as you can, and of course you should never buy products made from endangered animals or rare plants. If you are lucky enough to visit a truly exotic destination such as a coral reef,

Remote Mountain or desert region, or a rainforest then you should try to leave it exactly as you found it, so that future visitors can enjoy it just as you did.

Eco-tourism organizations say that respecting the culture and environment of the places that you visit will lead to much more rewarding and enjoyable holidays. If we try to encourage the local economy, leave the environment undamaged and are aware of the different laws and attitudes in the places we visit, then all of us can enjoy our 'eco-holidays' much better now and in the future. With more and more of us planning holidays in new locations every year, we should all do our bit to make sure that we are always welcome wherever we go.

3. Choose the correct answer A, B, C or D:

- 1) Tourism does the most damage in countries
 - A. where there has been an increase in eco-tourism.
 - B. which aren't ready for a lot of tourists.
 - C. where there are a lot of people traveling on their own.
 - D. which have a strong local economy.
- 2) What is meant by eco-tourism?
 - A. Helping out on organic farms.
 - B. Helping to conserve the rainforests.
 - C. Having a positive effect on the environment.
 - D. Helping places to get used to new visitors.
- 3) What should you do before you take your eco-holidays?
 - A. Buy a guidebook.
 - B. Learn how to dress.
 - C. Find out about the local attractions.
 - D. Learn about your destination.
- 4) How can a tourist help the economy of a country?
 - A. Bargain for everything they buy.
 - B. Buy the goods and services provided by the local people.
 - C. Pay a fair price for everything.

- D. Buy expensive imported brands.
- 5) What is meant by 'can make a big difference to some people'?
- A. You can change their lives.
 - B. You can help to preserve their local environment.
 - C. You can help them to have a better life.
 - D. You can be fair.
- 6) What do eco-tourist organizations say about tourism?
- A. If we show consideration for the place and people, we will have a more satisfying holiday.
 - B. If we visit unusual places, we should leave them just as we found them.
 - C. If we have a holiday in a new place, we should make sure we will be welcome there.
 - D. If we visit a foreign country, we should try to support the local economy.
- 7) The writer's attitude to eco-tourism is
- A. hopeful.
 - B. disappointing.
 - C. interesting.
 - D. supportive.

Over to you

Name the perfect places for eco-tourism and discuss in pairs advantages and disadvantages of using them for it.

TEXT 4***Before you read*****Answer the questions:**

- 1) What are the main sources of water pollution?
- 2) What water bodies on our planet need immediate help?
- 3) What are the main measures to preserve water resources?
- 4) What can every person do for keeping water clean?

Reading**1. Read the text and circle the correct answer for items 1 to 4:****WATER, WATER EVERYWHERE ...**

Imagine a world with no drinking water, and no water to wash or cook with. It's hard to imagine this, because we use water every day without even thinking about it. Yet there are terrible water shortage all over the world. In parts of Africa and China, for example, many people don't even have clean water to drink. In fact, over half of the people in the world have to live with water shortage every day. We all need water – not just for our homes and factories, but to survive. Fortunately, there are things that we can all do to save water.

The solution of the problem begins at home. We can save the water from our baths and use it for the garden, instead of wasting hundreds of liters of clean water on our lawns and plants. This would help to save many liters of water every, especially in the summer.

Governments can help by passing laws to stop factories from wasting and polluting water. If factories recycled water and stopped pouring chemicals into our lakes and rivers, there would be a lot more clean water around.

Governments could also stop water companies from wasting millions of liters of water because leaking pipes. All in all, there are many things we can do to save our

planet's disappearing water supplies. The time has come to start understanding the value of water, before a world without clean water becomes a terrible reality.

1) The writer says that in many parts of the world people ...

- a. don't have water at all.
- b. don't have any clean water.
- c. have too much water.

2) The writer suggests that we should ...

- a. use more water at home.
- b. stop using water at home.
- c. stop using so much water at home.

3) There would be more clean water around if factories ...

- a. produced more water.
- b. used the same water several times.
- c. only used water from rivers and factories.

4) Water companies can help ...

- a. by fixing pipes.
- b. by giving us more water.
- c. by making people pay a lot more.

2. Make up a list of suggestions leading to the improvement of water resources.

Share your ideas with your group-mates.

Discuss in pairs the results of these suggestions.

Over to you

Speak on the problems of water purification.

TEXT 5***Before you read*****1. Can you answer these questions?**

1. What are the ways to protect water supplies?
2. Who do you think are the biggest users of freshwater?
3. How can farm animals pollute water supplies?
4. How can trees and bushes help streams and rivers?

2. Let's revise the following words:

Agriculture, average, fertilizers and poisons, to store (stored chemicals), cattle, pipes, pump, tree roots.

3.



Listen to the report “Simple Ways to Protect Water Quality” and answer the questions from exercise 1.

Reading & Listening**1. Listen to the report again and fill in the missing words.**

Simple Ways to Protect Water Quality

..... are the biggest users of freshwater resources. The Food and Agriculture Organization says agriculture uses percent of all surface water supplies. That is the world average. Without the right measures, agriculture can be a major cause of water pollution.

But solutions do not have to cost much. There are methods for farms of any size to reduce or prevent pollution of water supplies. We are going to talk about a few of them.

The first deals with fertilizers and poisons. One way such chemicals can enter the is when they are not stored correctly. Stored chemicals can slowly leak into the soil and get into groundwater. To help avoid such problems, chemicals should be kept in structures with a floor made of cement.

Farm animals can also pollute water supplies. Animals like cattle, pigs, sheep and goats are often left to feed on grass in bordered by streams or rivers.

Large animals loosen dirt and rocks as they walk along waterways to drink. Animal waste also enters water supplies. Experts say it is important to keep large away from water supplies with the use of a fence or barrier.

Instead of leading animals to water, bring the water to them. It does not have to be transported Farmers can send water through pipes to a watering area for their animals with a pump powered by electricity or fuel. Human-powered treadle pumps are another solution.

Trees, bushes and smaller plants can act as barriers along streams and rivers. Bushes provide excellent ground cover when grown near waterways or along the borders of fields. Animals avoid bushes with sharp thorns.

Tree roots provide natural support for soil. Trees planted near waterways help stop soil loss from heavy They also help keep the sun from drying out soil. Other plants and grasses also help protect water quality. They hold soil in place during rains and ease the water flow.

These methods will not solve all problems. But they are good first steps.

2. Find in the text English equivalents to these Russian words:

1. главная причина
2. уменьшить или предотвратить загрязнение
3. просачиваться в почву
4. достичь грунтовых вод
5. использование забора или ограждения
6. обеспечить отличное покрытие земли
7. острые шипы
8. остановить потерю почвы

3. If you are curious you can google what treadle pumps are.

Over to you

Do you think these ways to protect water supplies are relevant for our country?

Why? / Why not?

TEXT 6***Before you read*****1. Can you answer these questions?**

1. What is the problem with coral reefs?
2. What regions have problems with coral reefs?
3. What factors threaten coral reefs?
4. What is the largest group of coral reefs in the world?
5. Can coral reefs recover?

2. Let's revise the following words:

Coral reefs, threat, to threaten, to destroy, limestone, to lose-lost-lost, rising ocean temperatures, damaging condition, to recover, to protect, to bar.

3. Listen to the report “Environmental Damage from Human Activities. Coral Reefs” and answer the questions from exercise 1.

***Reading & Listening*****1. Read and listen to the report and fill in the missing numbers.****Environmental Damage from Human Activities. Coral Reefs**

Another report says the world's coral reefs are in trouble. It warns that more than of the reefs are threatened or have been destroyed.

..... scientists from more than countries studied the condition of corals worldwide.

Corals are groups of small organisms, called polyps. They live within a skeleton made of a substance called limestone. Corals are found in warm water. of corals grow together to form coral reefs. The reefs support many kinds of sea life. Reefs protect coastal communities in storms. They also can be important to local and national economies.

The Global Coral Reef Monitoring Network produced the report. Clive Wilkinson is coordinator of the group. He says the problems are everywhere. In the Persian Gulf, for example, percent of the coral reefs have been destroyed. South and Southeast Asia have lost nearly their reef cover.

The report names several threats to coral reefs. They include pollution, coastal development, poor land use, and destructive fishing activities. Rising ocean temperatures are another problem. This causes a damaging condition called bleaching, or whitening.

Higher than normal water temperatures cause corals to expel the small plants they feed on. If the water stays too warm, the corals die. Mister Wilkinson says extreme weather severely damaged coral reefs years ago. Some of the reefs are recovering. Yet, Mister Wilkinson says many reefs show little signs of renewal.

The report urges governments, lending organizations, international agencies, and environmental groups to work together to protect coral reefs.

Mister Wilkinson says Australia has taken the lead by expanding protected areas around the Great Barrier Reef. This reef extends more than kilometers along Australia's northeast coast. Scientists believe the Great Barrier Reef is about years old. It is the largest group of coral reefs in the world.

Last year, the Australian government declared of the reef a “no-take zone.” The government barred fishing there. People also are barred from collecting live fish or coral in the area.

The Global Coral Reef Monitoring Network supports protected no-take zones. The group also called for a reduction in pollution and a ban of destructive fishing

activities. Clive Wilkinson says the coral reefs can recover. But he believes more government involvement is needed.

2. Find in the text English equivalents to these Russian words:

1. в беде
2. по всему миру
3. местная и национальная экономика
4. неэффективное использование земель
5. признаки обновления
6. проявлять инициативу
7. простирается на тысячи километров
8. заявить / провозгласить
9. снижение загрязнения
10. участие правительства

Over to you

Do you know any other water species that are endangered?

TEXT 7*Before you read*

Do you know anything about antipollution laws?

Match the words to their English equivalents:

- | | |
|-----------------------------|--------------------------------------|
| 1. target | a. строгие стандарты |
| 2. legislation | b. применять |
| 3. implement | c. законодательство |
| 4. tough standards | d. цель |
| 5. low-sulphur diesel fuels | e. транспортные средства |
| 6. vehicle fleet | f. топливо с низким содержанием серы |

Reading

1. Read the article and answer the question.

NEW ANTIPOLLUTION LAWS

There are too many cars in the West. In the European Union, car ownership has grown on average by 4.2 per cent a year over the past two decades, fuelled partly by ever more attractive financing schemes. In the US, the number of registered motor vehicles has grown by nearly 100 per cent since 1970. In the same period, road capacity increased by just 6 per cent. Similarly, in the UK, the mileage covered by cars and vans has increased tenfold in the last 50 years, while road capacity has grown by just a quarter. Average traffic speeds have dropped to as low as 2.5 miles an hour in some urban centers, making progress as slow as in the days of the horse-drawn carriage.

European auto makers are ready to accept some of the toughest air standards in the world. The manufacturers have supported European Commission proposals for pollutant levels which are even lower than those in the USA. The new standards

which would be implemented have been developed after two-year study by the European Commission and the European oil industry. The Commission studied traffic problems and pollution levels in six cities: Athens, Cologne, London, Lyon, Madrid and Milan.

Following the study, called the European Auto-Oil Programme on Emissions, Fuels and Engine Technologies, the commission wants 100% compliance in Europe for standards set by the World Health Organization for average concentrations of carbon monoxide, benzene, nitrogen dioxide and ozone.

The Commission has said existing anti-pollution legislation will ensure compliance with most targets. There will be difficult decisions for auto makers and governments if nitrogen dioxide and ozone targets are to be met. In certain European cities, such as Athens, Madrid and Milan, this could mean halving nitrogen dioxide by 2010.

With nitrogen dioxide identified as an important part of low-level ozone-“summer smog” – the Commission made the reduction of nitrogen dioxide a major goal. A 50% cut in nitrogen oxides causes a 60-70% fall in carbon monoxide levels, a 45-65% cut in hydrocarbons, 60-75% lower benzene levels.

It is clear that targets can best be met with tough legislation, effective inspection and maintenance, and governmental measures, including scrap programme, traffic management and the use of improved, low-sulphur diesel fuels.

The solution is more difficult in the most polluted cities, where best available technologies for vehicles and fuels are not enough to meet targets, mainly because of slow renewal rate of the vehicle fleet.

2. Write down from the text the chemicals which are harmful for the environment, name other damaging substances.

3. Answer the questions:

- 1) The vehicle fleet has grown greatly for the last decades, hasn't it?
- 2) Are auto makers ready to accept some of the toughest air standards?

- 3) Where did the Commission study traffic problems?
- 4) What emissions were decided to be reduced?
- 5) Why is it difficult to implement targets?
- 6) What is necessary to do to improve the ecological situation?
- 7) Can you tell that the car is the main air polluter in your city?

3. Complete the following sentences:

- 1) Car ownership has grown by ...
- 2) European auto makers are ready to accept ...
- 3) It will be difficult to ...
- 4) Nitrogen oxide is identified as ...
- 5) The targets can be met with ...
- 6) It's not easy to meet targets mainly because of ...
- 7) The only way to decrease emissions is ...

Over to you

- **What for do we need antipollution laws?**
- **What do you think the most effective antipollution laws are?**

TEXT 8*Before you read*

- **What do you know about Russian environmental legislation?**
- **What have you heard about environmental laws in Great Britain?**

*Reading***1. Match the words to their English equivalents:**

- | | |
|-------------------------------------|---|
| 1. to conserve the nature | a. всеобъемлющее заявление |
| 2. to protect the environment | b. в сотрудничестве с |
| 3. in collaboration with | c. сжигание отходов |
| 4. international cooperation | d. декларация о лесном хозяйстве |
| 5. incinerating waste | e. широкий спектр полномочий и обязанностей |
| 6. to protect biological diversity | f. защищать окружающую среду |
| 7. a wide range of power and duties | g. подписать Конвенцию |
| 8. signed the conventions | h. защищать биоразнообразие |
| 9. declaration on forestry | i. сохранять природу |

2. Read the article and answer the questions.

1. How long has Britain been developing policies to conserve the nature?
2. What important event happened in Rio de Janeiro in June 1992?
3. What is the National Rivers Authority responsible for?
4. What does environmentally sustainable development mean?

Environmental Protection in Great Britain

For more than a century Britain has been developing policies to conserve the nature and build heritage and protect the environment against pollution from industry and other sources.

The Environment White Paper “This common Inheritance”, published in 1990, was the first comprehensive statement by the Government on environmental policy. Two further update reports have been published.

In June 1992 Britain participated fully in the “Earth Summit” in Rio de Janeiro and signed the conventions negotiated there to protect biological diversity and to guard against global climate change through the “greenhouse effect”. The conference also adopted Agenda 21, a statement of principles designed to promote environmentally sustainable development, and a declaration on forestry.

Britain supports international cooperation on environmental protection. Increasingly, much of Britain’s legislation on pollution control is being developed in collaboration with other European Community member states and organizations such as the United Nations.

Legislation sets out a wide range of power and duties for central and local government, including controls over waste, air pollution, litter, noise and water pollution. The National Rivers Authority is responsible for the control of water pollution in England and Wales. Her Majesty’s Inspectorate of Pollution helps to control emissions to land, air and water from harmful industrial processes. The Government plans to merge these two bodies into a single Environment Agency. Similar controls apply in Scotland and Northern Ireland.

Britain supports measures that help to improve the global environment. It stopped incinerating waste at sea after 1990, and will end sea dumping of sewage sludge by 1998. Along with European partners, it has agreed major cuts in emissions from large combustion plants (such as coal-fired power stations) of the main gases that lead to acid rain. The Government is committed to meeting EC requirements concerned with the protection and improvement of the water supply, and with quality of water needed to support freshwater fisheries and bathing.

3. Find in the text English equivalents to these Russian words.

1. загрязнение
2. мусор
3. шум
4. выбросы
5. парниковый эффект
6. кислотный дождь

Over to you

What new information have you found out from this text about environmental legislation in Great Britain?

TEXT 9*Before you read*

What do you know about environmental legislation in the USA?

*Reading***1. Match the words to their English equivalents:**

- | | |
|--------------------------------------|---|
| 1. to reduce the amount of pollution | a. более эффективно
использовать ресурсы |
| 2. government rules | b. запрет на сжигание отходов |
| 3. to reduce taxes | c. способствовать
экономическому росту |
| 4. prohibition on burning wastes | d. сброс сточных вод в реку |
| 5. dumping of sewage in a river | e. уменьшать количество
загрязнений |
| 6. contribute to economic growth | f. понизить налоги |
| 7. more efficient use of resources | g. правила установленные
правительством |

2. Read the article and answer the questions.

1. Which forms of pollution control does government in the United States effort?
2. What does direct regulation refers to?
3. What have you found out about effluent fees from the text?
4. Are tax credits good idea to protect the environment?
5. Has environmental protection slowed economic growth in the USA?

Pollution Control in the USA

In the United States, government efforts to control pollution have taken three forms: direct regulation, effluent fees and tax credits.

Direct regulation refers to government rules to protect the environment. The prohibition on burning wastes, or the dumping of sewage in a river, and the banning of a particular pesticide (such as DDT) are examples of this form of pollution control. Those who fail to obey government regulations are subjects to fine, imprisonment, or both.

Effluent fees are charges levied on polluters (*взимаются с загрязнителей*) for discharging wastes. For example, a factory that pumps its waste into the atmosphere or a nearby stream will be charged on the basis of the quantity of waste discharged.

Tax credits enable firms to reduce their taxes in exchange for investing in equipment that will enable them to reduce the amount of pollution they generate.

Has environmental protection slowed economic growth in the USA? Upon the whole, it hasn't. Of course, dislocations have occurred. That is, some workers in particular companies have lost their jobs, and a few firms had to close down or do with lower profits for a while. In a short run, complying with clean air and clean water laws was costly for many firms but most were able to do so.

Pollution control may actually contribute to economic growth. There is now a blooming "pollution control industry" that has created new employment and new markets. They deal with research, construction and equipment design and maintenance. In addition, many firms are working to make more efficient use of resources by recycling paper, aluminium and other raw materials.

Over to you

What do you think about such forms of pollution control as mentioned in the text to use in our country?

TEXT 10***Before you read*****1. Can you answer these questions?**

1. Which country is among the top users of solar water heaters?
2. When was solar water heater developed?
3. How much water can it heat?
4. How many parts are there in a solar water heater? What are they?
5. How long does this device work without any repairs?

2. Let's revise the following words:

Energy costs, device, insulation material, pipes, average outside temperature, storage tank.

Reading & Listening

1.



Listen to the report “How to Make a Solar Water Heater” and answer the questions from exercise above.

How to Make a Solar Water Heater

Solar water heaters save on energy costs. They also (1) *save / are saved* on oil and other forms of energy needed for electric or gas-powered water heaters.

The Taiwan News reported this month that the Ministry of Economic Affairs will increase its budget for a program to help pay for solar water heaters. The program was supposed to end this year. But officials (2) *have decided / have been decided* to continue it through next year. A ministry official said Taiwan is among the top users of solar water heaters in the world.

Solar water heating (3) *uses / is used* worldwide. The device we are about to describe (4) *developed / was developed* in Afghanistan more than thirty years ago. Since then, it has been used in many countries. It can heat seventy liters of water to sixty degrees Celsius. It can do this between sunrise and noon on a clear day with an average outside temperature of thirty-two degrees Celsius.

There are two parts to the solar water heater. One part is the solar collector. This (5) *makes / is made* of metal sheets painted black. The collector (6) *places / is placed* in contact with the water.

There are several kinds of metal sheets that can be used for the collector. Metal sheets that have raised sections will work very well. These corrugated sheets often (7) *use / are used* to make the roofs of houses.

Once the water is heated, it is kept hot with insulation material. This helps the water stay warm for a long time.

The second part of the solar water heater is the storage tank. The tank can be a container that holds about one hundred liters. Two rubber pipes (8) *attach / are attached* to the storage tank. One pipe lets water flow into the system. The other lets water flow out.

When the water heater is working correctly, water will flow from the storage tank to the collector and back again. You (9) *can use / can be used* the hot water at the top of the tank for washing and cleaning. You can change the flow of water so that the temperature is hot or warm as desired.

This solar water heater is easy to build and operate. It will last about two years before the rubber pipes need to be replaced. However, it will heat water only on sunny days.

2. Find in the text English equivalents to these Russian words:

1. экономить на оплате электроэнергии
2. увеличить бюджет
3. используется по всему миру
4. от восхода до полудня
5. металлические листы
6. крыши домов
7. резиновые трубки

3. Choose either Active or Passive Voice for the verbs in 1 to 9. Listen and check.

Over to you

Discuss advantages and disadvantages of solar water heaters.

TEXT 11***Before you read*****1. Can you answer these questions?**

1. What energy sources do you know?
2. Which of them are renewable?

2. Let's revise the following words:

Design a device, energy deficiency, calculations, inventor, competitor, renewable energy.

Reading**1. Read the text and find information to fill the table below.****Rainergy**

“She is just 15 years old, but has already designed a smart device that generates electric power from raindrops. Reyhan Jamalova, a ninth grade student at the ISTAK Lyceum in Baku, Azerbaijan, came up with the idea for Rainergy after her father wondered: “If you can make energy from wind, why not from rainwater?”

Rain is one of the last unexploited energy sources in nature. When it rains, billions of liters of water can fall, which have enormous electric potential if used in the right way. “We designed Rainergy to produce electricity from the rain, to solve the problem of energy deficiency in rainy and low income countries,” says Jamalova, whose motto is “Light up one house at a time.”

Jamalova and a friend, Zahra Gasimzade, assisted by their mentors, worked for four months running calculations and developing a device to harvest energy from rainwater during the ClimateLaunchpad program organized by Social Innovation Lab.

The State of Azerbaijan underwrote the initial costs of building it, 34,100 Azerbaijani manats (USD 20,000). Azerbaijan's First Vice President Mehriban Aliyeva met with young Azerbaijani inventors Reyhan and Zahra, and said that the state will provide necessary support for their project.

Rainergy has since attracted interest from other investors, in particular from India.

The nine-meter-high instrument consists of four main parts: a rainwater collector, a water tank, an electric generator and a battery. The collector fills the reservoir with rainwater that will later flow at high speed through the generator to produce energy. The generated energy is stored in the battery, and can relieve pressure on the local power grid by providing communities with an additional source of electricity. The team has developed two prototypes. One lights up three LED lamps while the other produces enough electricity to light 22 LED lamps for up to 50 seconds using only seven liters of rainwater. Jamalova says that underprivileged communities can use Rainergy to power items such as street lamps.

Rainergy's competitors for renewable energy include solar panels, wind turbines and piezoelectricity (which results from subjecting some solids to mechanical stress). Most of these alternatives require substantial investment, labor, and energy or electricity experts to build and operate them, whereas the Rainergy device has a relatively simple design.

"Our model is much more efficient in comparison with similar systems," explains Jamalova, noting that piezoelectric rain generators produce only 25 microwatts of power. Rain-harvested energy emits 10g/kwh of CO₂ during electricity production, which Jamalova claims is "very low compared to alternative energy solutions."

Another advantage of the Rainergy device is that it stores energy in a battery, so that it is effective even when there is no rain. Also Rainergy has been already applied for patent and passed from first level of process successfully.

Rainergy was first presented in the ClimateLaunchpad competition and won “Audience favorite startup” award in national final. Then it was represented globally at the Global Summit of Entrepreneurship in India in November 2017.

While Rainergy’s creators originally conceived of the device for regions of Azerbaijan with the heaviest rainfall, they are aiming to market it internationally – especially since, as Jamalova says, “Azerbaijan is not a rainy country.” In countries such as the Philippines, India, Malaysia and Indonesia, where monsoon rains are frequent, this device could be a perfect solution for reducing dependence on power lines and improving access to electricity. 21 percent of the population in India and 11 percent in the Philippines lack access to electricity, according to the Global Tracking Framework 2014 report. “In the future, we want to create a business based on this device,” says Jamalova. For now, the invention has landed its young creator on Forbes 30 Under 30 Asia list 2018 – the first Azerbaijani person in history to make the rating.”

Name of invention	
Names of inventors	
Country of origin	
How long it took to develop	
What it does	
Initial cost	
Potential investors	
Technical parameters: Height Structure Power	
Competitors	
Advantages over competitors	
Award	

2. Find in the text English equivalents to these Russian words:

1. вырабатывать электроэнергию из дождевых капель
2. предложить идею
3. страны с низким уровнем доходов
4. обеспечить необходимую поддержку
5. местная энергосистема
6. требовать значительных капиталовложений
7. выиграть награду
8. муссонные дожди
9. не иметь доступа к электричеству

Over to you

- **Do you think this invention will be successful?**
- **Which countries could be interested in it?**
- **Do you know about any other useful devices?**

TEXT 12

Read this text in Russian, choose the ideas that you like and be ready to discuss them with your partner in English.

С чего начать спасение планеты: простые советы от WWF

Каждый из нас оказывает влияние на природу. Из того, сколько ресурсов мы используем, складывается наш экологический след. Если человечество продолжит жить, как сейчас, к 2050 году ему понадобятся ресурсы трех таких планет, как Земля!

WWF предлагает следовать ряду простых экологических советов. Вспоминайте об этих правилах в разных ситуациях – в дороге, в офисе, дома, в магазине или на отдыхе.

I. Экономя воду, вы не только сохраняете ценный ресурс, но и помогаете снизить выбросы парниковых газов. Системы коммунального водоснабжения расходуют много энергии на очистку и распределение воды по домам и квартирам.

- Не забывайте вовремя чинить протекающие краны. Из-за протечек можно потерять до 30 литров воды в день.
- Принимайте душ, а не ванну, и сократите время на прием душа до 4 минут.
- Установите экономичную насадку для душа. Она может сохранить 13 литров воды в минуту.
- Выключайте воду, когда чистите зубы. Таким образом вы сэкономите до 9 литров в минуту.
- Можно сильно снизить расход воды, установив унитаз с экономичным режимом смыва. Следите, чтобы в нем не подтекала вода – это может привести к бесполезной трате до 20 тысяч литров воды в год.

- Если есть такая возможность, на балконе или рядом с домом установите контейнеры и собирайте дождевую воду. Не стоит тратить питьевую воду на полив растений.

II. В офисе можно и нужно снижать расход энергии и объем отходов. Вы с коллегами можете сделать многое для сохранения окружающей среды.

- Не забывайте гасить свет там, где в нем нет необходимости, в том числе в течение дня. А на освещение пустого офиса ночью можно израсходовать столько же энергии, сколько необходимо для приготовления 1000 чашек кофе!
- Выключайте компьютер на ночь и используйте функции энергосбережения. Техника продолжает потреблять электроэнергию и в режиме ожидания.
- Используйте оборудование для теле- и видеоконференций. Так вам с коллегами реже придется совершать авиаперелеты, что поможет сэкономить деньги, время и уменьшить объемы выбросов CO₂. Если без самолета не обойтись, используйте программу компенсации выбросов CO₂.
- Распечатывайте только необходимое и на обеих сторонах листа – такой режим можно легко установить в настройках принтера. Измените установки полей в текстовом редакторе таким образом, чтобы на странице помещалось больше слов.
- Закупайте бумагу, сертифицированную Лесным попечительским советом (Forest Stewardship Council), или переработанную бумагу. Маркировка подтверждает, что бумага была произведена с соблюдением экологических стандартов.

- Пользуйтесь ноутбуком – он потребляет в пять раз меньше электроэнергии, чем стационарный компьютер.
- Не предлагайте участникам бизнес-встреч воду в пластиковых бутылках. Для производства 1 литра такой воды расходуется 3 литра.



“The skulls of your enemies are much more environmentally friendly than plastic cups. Just sayin’.”

III. В магазине:

- Покупайте только то, что необходимо – излишки окажутся на свалке. Треть всей еды в мире выбрасывается.
- Отдавайте предпочтение местным и сезонным продуктам, чтобы снизить ущерб, наносимый природе их транспортировкой. Доставка авиатранспортом одной тонны клубники в Европу из Северной Африки или Ближнего Востока приводит к выбросу в атмосферу до 4 тонн CO₂.
- Сокращайте потребление мяса, так как для его производства затрачивается большое количество ресурсов – воды, энергии, кормов. И откажись от мясных полуфабрикатов: чем выше степень переработки продукта, тем больший вред наносится окружающей среде.
- Выбирайте продукты, на производство которых затрачивается меньше водных ресурсов. Например, на производство 1 килограмма говядины тратится 15 415 литров воды, 1 литра пива – 296 литров воды, 1 кг сливочного масла – 5553 л, 1 кг шоколада – 17 196 л, 1 кг сыра – 3178 л, 1 кг помидоров – 214 л, 1 кг яблок – 822 л, 1 кг макарон – 1849 л, 1 кг картошки – 287 л.

- Отправляясь за покупками, возьмите с собой многоразовую сумку. Использование такой сумки вместо пластикового и даже одноразового бумажного пакета из магазина поможет уменьшить количество отходов.
- Покупайте подержанные товары, когда это уместно. И сами не выбрасывайте одежду и другие вещи, если они вам больше не нравятся или не нужны. Отдайте их благотворительным организациям, сдайте в переработку или продайте на специализированных сайтах. Это позволит сэкономить природные ресурсы и энергию.

Text 13**Reading****Read the article and translate it into Russian****ЗАГРЯЗНЕНИЕ**

Научно-технический прогресс привел к вмешательству человека в природу. А деятельность человека создала угрозу для окружающей среды. Многие ученые считают, что наш мир переживает глобальный экологический кризис, который приведет к постепенному уничтожению человеческой расы. Игнорируемые сегодня факторы могут оказаться очень опасными для окружающей среды. Все эти проблемы изучает экология. Современная экология базируется на физике, химии, биологии, географии, технике и других науках.

В настоящее время мы часто слышим о загрязнении воздуха. Загрязнение воздуха является одной из основных проблем окружающей среды. Воздух, которым мы дышим, загрязняется продуктами человеческой деятельности. В настоящее время воздух содержит 140 вредных веществ: пыль, дым, сажу, углекислый газ, диоксид серы, оксид азота и др. Промышленность и транспорт являются основными источниками загрязнения окружающей среды. Воздух больших городов сильно загрязнен. Заводы и фабрики на нашей планете выбрасывают более 250 миллионов тонн токсичных отходов. Основными загрязнителями воздуха в городах являются автомобили. Каждый автомобиль выпускает газы, содержащие ядовитую углекислоту. Этот газ предотвращает выброс тепла Земли в космос, что приводит к так называемому “парниковому эффекту” и глобальному потеплению.

Вода считается самым существенным материалом цивилизации. Человек не может жить, а промышленность не может работать без воды. Реки, моря и озера становятся сильно загрязненными. Это загрязнение происходит из многих источников: промышленных отходов, тепловых отходов электростанций,

бытовых отходов. Суда часто загрязняют морскую и речную воду нефтепродуктами. Пестициды из сельскохозяйственных сточных вод и опасные бактерии в сбросах городских сточных вод также ответственны за загрязнение воды. Загрязнение воды вредно не только для людей, но и для рыб, животных и птиц.

Другой актуальной проблемой является загрязнение почв. Разрушение лесов, повышение засоленности почв и эрозия сельскохозяйственных угодий влияют на плодородие почв. Фрукты и овощи, загрязненные химическими веществами, могут влиять на здоровье людей.

Технический прогресс привел к повышению уровня шума. Высокие уровни шума на фабриках снижают эффективность работы и могут быть опасны для здоровья рабочих. Для измерения и контроля уровня шума были созданы специальные лаборатории.

Конец 20-го века принес человеку целый ряд природных и техногенных катастроф. Среди них можно отметить столкновения и взрывы танкеров в море, взрывы и утечки химических веществ на промышленных предприятиях и аварии на атомных электростанциях. Серьезной проблемой стало нефтяное загрязнение моря, а также радиоактивные осадки. Химическое и радиоактивное загрязнение влияет на флору и фауну. У людей развиваются опасные болезни. Все большее значение приобретает охрана окружающей природной среды.

Значительная работа по наблюдению и оценке воздействия человека на биосферу проводится рядом международных организаций. Они разрабатывают программы мониторинга глобальных изменений в атмосфере Земли и в состоянии мирового океана. Есть много постов управления для проверки качества воздуха, земли, пресной и морской воды. Все крупные заводы имеют системы очистки. Ученые всего мира разрабатывают экологически чистые и безотходные технологии. Мощные электрические фильтры используются для очистки воздуха и воды. Что касается автомобилей, то они будут использовать экологически чистые топливные элементы, а электромобили уже появились на дорогах. Все эти меры помогут защитить окружающую среду. В мире

существует более 150 «супер городов» с населением от 1 до 15 миллионов человек и более. Токио, Нью-Йорк, Лондон, Мексика, Москва – это лишь некоторые из «супер городов». Их численность и размеры быстро растут, и их население все больше страдает от загрязнения окружающей среды. Смог, нависающий над крупными городами, является серьезной угрозой для здоровья человека. Экологические проблемы «сверхгородов» – это повод для беспокойства мировых ученых.

Vocabulary

intervention – вмешательство

threat – угроза

destruction – разрушение

pollution – загрязнение

soot – сажа

to consume – потреблять

emission – выпуск

waste – выброс

salinity – кислотность

fertility – плодородие

collision – столкновение

leakage – утечка

estimating – оценка

impact – влияние

purification – очищение

concern – беспокойство

Answer the questions.

1. What sciences is modern ecology based on?
2. What is “the greenhouse effect”?

3. Why do people not want to live near airports?
4. How many “super-cities” are there in the world?
5. Is our world going through a global ecological crisis?
6. Which ecological disaster do you consider the most dangerous?

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ENVIRONMENTAL ISSUES

Учебно-методическое пособие

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