Министерство образования и науки Российской Федерации

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ
РОССИЙСКИЙ ГОСУДАРСТВЕННЫЙ ГИДРОМЕТЕОРОЛОГИЧЕСКИЙ УНИВЕРСИТЕТ

Н.Ю. ФЕДОРОВА

THINK ECOLOGICALLY
Workbook

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Учебное пособие предназначено для студентов специальности «Реклама и связи с общественностью», изучающих английский язык.

Пособие является дополнением к учебнику “Think ecologically” и используется для организации как домашней, так и аудиторной работы обучающихся. Предложенные в сборнике упражнения нацелены на закрепление пройденного лексико-грамматического материала и формирование устойчивых навыков и умений его использования в речи. В сборнике также содержатся задания, направленные на формирование умений и стратегий работы с профессионально ориентированными текстами. Ряд заданий предусматривает обсуждение проблемных ситуаций, проективную и поисковую деятельность обучающихся.

The workbook is for PR students who specialize in the sphere of ecology.

It is used as a supplement to “Think Ecologically: Textbook” both in class and for homework. The exercises included in the workbook are intended to help students master their lexical skills. There are also tasks aimed at writing and reading skills and strategies development. The workbook offers a range of tasks that involve discussing problems, research and project work.

ВВЕДЕНИЕ

Данный сборник заданий предназначен для студентов специальности «Реклама и связи с общественностью». Он является дополнением к учебнику “Think ecologically” и содержит 4 главы, освещающие проблемы, связанные с изменением климата, загрязнением атмосферы, альтернативными источниками энергии, утилизацией бытовых отходов. Каждая глава данного сборника состоит из двух частей: «Revision» и «Development».

Сборник используется для организации как домашней, так и аудиторной работы обучающихся. Предложенные в сборнике упражнения нацелены на закрепление пройденного лексико-грамматического материала и формирование устойчивых навыков и умений его использования в речи. В сборнике также содержатся задания, направленные на формирование умений и стратегий работы с профессионально ориентированными текстами. Ряд заданий предусматривают обсуждение проблемных ситуаций, проективную и поисковую деятельность обучающихся. В сборник также включены задания, которые призваны помочь обучающимся научиться организовывать усвоение нового лексического материала.

Раздел “Revision” содержит преимущественно задания, направленные на закрепление пройденного на занятиях материала. В разделе “Development” предложены задания более высокого уровня сложности, базирующиеся, кроме известного, на новом языковом материале.

Цель большинства упражнений указана в задании. Ниже даны русские эквиваленты и объяснение некоторых из используемых в пособии формулировок.

Grammar – грамматика. Упражнения, направленные на усвоение грамматического материала и формирование навыка использования отрабатываемых структур в речи.

Vocabulary – лексика. Упражнения, направленные на усвоение новых слов и словосочетаний и формирование навыка их использования в речи.

Word formation – словообразование.

Word combination – упражнения, направленные на развитие умений комбинирования слов в речи.

Pronunciation – произношение.

Spelling – правописание.

Vocabulary revision - повторение лексики.

Skills development – формирование умений выполнения речевых задач с использованием изученного лексико-грамматического материала.

Learning skills development – задания, направленные на формирование учебных умений.

Predicting skills. Для того, чтобы читать быстро и эффективно воспринимать информацию, а также догадываться о значении незнакомых слов, необходимо уметь предвосхищать то, что будет сказано дальше. Это важное умение требует специального развития.

Case study. Известно, что один из наиболее эффективных методов овладения специальностью – обучение на примерах. Обсуждая предложенные в данном пособии примеры из практики профессиональной деятельности, вы совершенствуете свой английский язык и узнаёте что-то новое о специальности.

Discussion. Обсуждение той или иной темы с другими студентами позволяет более полно усвоить информацию. Те обучающиеся, которые участвовали в профессиональных дискуссиях на уроках иностранного языка, намного увереннее чувствуют себя в ситуациях реального общения с коллегами. Однако, невозможно провести дискуссию без подготовки. Вы должны располагать достаточной информацией для того, чтобы ваша речь была аргументированной и интересной для собеседника. Для подготовки к дискуссиям используйте, англоязычную версию сайта Википедия (Wikipedia), а также сайты, рекомендованные в данном пособии. Обратите внимание на разделы «References» и «External links» Википедии, которые дают ссылки на источники дополнительной информации.

1. CLIMATE CHANGE AND GLOBAL WARMING

Revision

1. ***Speaking and writing about your course of study***.

QUIZ

How well do you know your university? Answer the questions.

a) What does RSHU stand for?

b) Can you pronounce "hydrometeorological" correctly? How do you pronounce letter "y"?

c) Look at the names of the faculties below. Translate them into Russian.

- Meteorological Faculty
- Hydrological Faculty
- The Faculty of Oceanography
- The Faculty of Ecology and Environmental Physics
- The Faculty of Economics and Socio-humanitarian Sciences

d) What faculties do the following departments belong to?

Meteorological Forecasts Department
The Department of Experimental Physics of Atmosphere
The Department of Land Hydrology
The Department of Integrated Coastal Zone Management
The Department of Marine Information Technologies
The Department of Economics and Management
Public Relations Department

e) How many departments are there in your faculty? Can you name them?

2. ***Vocabulary.*** Twelve words and phrases you should know to talk about your course of study.

University, study, faculty, department, subject, research, graduate programmes, bachelor's degree, master's degree, lectures, classes and seminars, apprenticeship.

Divide the words into groups to talk about the following:

University structure: _____
The process of study and types of work: _____
Programmes of study: _____

3. ***Writing***. Write a short text for your personal Internet page.

Writing tips. Before you begin writing:

· Think who might read your page? (your group mates? young people studying at other universities in your country? university students in other countries? school leavers who want to know what it is like to be a student at your university?)
· What kind of information might they be interested in?
· Write a list of what you want to write about.
· Think how you can introduce yourself.

4. ***Word formation***. Use a dictionary to fill in the chart. For some words you have to leave some spaces blank.

Noun	Person	Adjective	Verb
Science			
Study			
Environment			
Change			
Distribution			
Meteorology			
Relation			

5. ***Reading and vocabulary***.

Do you know what the following subjects study? Math each of the subjects with a definition.

1. Ecology	a) the study of the earth s atmosphere and its changes, which forms the base for the weather forecast.
2. Meteorology	b) the study of the ocean including marine organisms, ocean currents, waves, the geology of the sea floor.
3. Oceanography	c) the study of the relation between plants, animals and people and their environment.

4. Climatology	d) the study of movement, distribution and quality of water throughout the Earth including water resources and environmental sustainability.
5. Biogeography	e) the study of climate.
6. Hydrology	f) the study of distribution of species throughout the Earth.

What subject (subjects) from the chart above do you associate with each of the departments below?

Meteorological Forecasts Department.
The Department of Land Hydrology.
The Department of Integrated Coastal Zone Management.
The Department of Marine Information Technologies.
The Department of Fishery Oceanography and Nature Waters Protection.
The Department of Ecology.

6. ***Learning skills development***. Look at the chart and the list of departments in Exercise 5. Which words are international? Translate them.

Example. Meteorology - метеорология

7. ***Vocabulary***. Explain the difference between the words in each pair. Check your answers with a monolingual dictionary for advanced learners.

1. ecology, environment.
2. species, animals
3. organisms, animals
4. movement, current.
5. climate, weather
6. forecast, prediction
7. quality, quantity.
8. faculty, department.

8. ***Reading and vocabulary***. Each of the paragraphs below answers one of the following Frequently Asked Questions. Put a relevant question before each paragraph.

satellite - спутник

to equip - оборудовать
device - прибор
to measure (v) – измерять
to ban - запрещать
to take into account – учитывать, принимать во внимание
evenly - равномерно
precise - точный

Frequently Asked Questions about the weather and climate

1. What is the difference between the Celsius and the Fahrenheit scales?
2. What can we see from a meteorological satellite?
3. Why do meteorologists make mistakes in the weather forecast?
4. Is the Earth warming evenly across the globe? If yes, why are winters in Saint Petersburg so cold?

1. _____

From the 1960s we get information about the atmosphere conditions from the space. Photographs of the Earth, which are sent several times a day, help scientists to determine the direction and speed of air currents in the atmosphere. Modern satellites are also equipped with devices that measure temperature at different heights in the atmosphere. Photographs taken in the 1990s showed that the ozone layer had been depleting. This resulted in certain measures taken by governments to ban the production of CFCs.

2. _____

As technologies develop, weather forecast becomes more and more precise. However, it is impossible to take into account all the factors that influence the weather conditions. Air pressure, temperature, mountain ranges, ocean currents and many other factors combine to affect the weather. This is why the weather forecast is sometimes misleading.

At present greater understanding of the science and powerful computer models make the weather forecast more reliable than they used to be. According to the World Meteorological Organisation, a five-day weather forecast today is generally as reliable as a three-day forecast two decades ago.

3. _____

Daniel Fahrenheit (1686–1736), of Germany, built the first mercury thermometer. He also developed the Fahrenheit temperature scale in 1724. In 1742, astronomer Anders Celsius (1701–1744), of Sweden, developed the Celsius temperature scale. The scientists used different temperature points as zero points at their scales. Besides 1 F is not equal to 1 C.

$$t\,(F) = 32 + t\,(C) \times 9 / 5$$

The Fahrenheit scale is used in English speaking countries. But at present it is gradually replaced by the Celsius scale.

4. _____

According to the IPCC scientists the climate change will affect the severity of extreme temperature events. These effects will vary from place to place. In general there will be fewer cold waves. However it is likely that in some places at some times it will be colder than the average.

Sources: IPCC, 2007: www.ipcc.ch

WMO: www.wmo.int

9. ***Vocabulary***. Look at the texts again. Find the same ideas.

a) Definite steps were taken by governments to ban CFCs due to this.
b) more accurate
c) The weather forecast is not always true.
d) to affect the weather
e) As the IPCC scientists say

10. ***Pronunciation***.

Pronounce the pairs of words. Pay particular attention to the letters in **bold.** Is the pronunciation the same or different?

1. eq**ui**p, satell**i**te
2. satell**i**te, dev**i**ce
3. condi**t**ions, mea**s**ure
4. b**a**n, f**a**ctors
5. **a**verage, **a**lways
6. v**a**pour, w**a**ter

11. ***Reading***. The text summarises some of the effects of global warming. Read the text quickly. Match the headings below with the paragraphs.

a) Extreme weather events
b) Shifts in the natural world
c) The winter on the move

1. _____

Arctic air temperatures increased by about 5 degrees C during the 20th century — ten times faster than the global surface temperature.

Snow cover has decreased by some 10 per cent in the mid- and high latitudes of the Northern Hemisphere since the late 1960s. The annual duration of lake and river ice cover apparently shortened by about two weeks during the 20th century.

Almost all mountain glaciers in non-polar regions moved to higher altitudes during the 20th century. The overall volume of glaciers in Switzerland decreased by two-thirds.

2. _____

Scientists have observed climate-induced changes in many biological species. In the Alps, some plant species have been migrating upward by one to four meters per decade, and some plants previously found only on mountain tops have disappeared.

In Europe, egg-laying of some bird species has occurred earlier in the season — in the United Kingdom, for example, egg-laying by 20 of 65 species, advanced by an average of eight days between 1971 and 1995.

3. _____

Powerful storms and hotter, longer dry periods are predicted by computer models. Warmer temperatures mean greater evaporation, and a warmer atmosphere is able to hold more water vapour. So there is more water in the atmosphere that can fall as precipitation. Similarly, dry regions will lose still more moisture if the weather is hotter. This will result in droughts and desertification.

More frequent and powerful cyclones and hurricanes, more frequent and

intense floods and droughts are predicted. Scientists say that a recent increase in "extreme weather events" is an indication that climate change already has begun.

Source: EPA, 2010: http://www.epa.gov

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

a) Arctic air temperatures increased ___ about 5 degrees C during the 20th century.

b) The duration of ice cover shortened __ about two weeks during the 20th century.

c) The overall volume of glaciers in Switzerland decreased _____ two-thirds.

d) Some insects are now living _____ higher latitudes and altitudes.

e) Droughts and desertification will result _____ food shortages in dry regions.

f) Changes in temperature and wind patterns are predicted _____ computer models.

13. ***Grammar***. Focus on the Present Perfect.

a) Look at the sentences. What verb tenses are used? Why?

Snow cover **has decreased** by some 10 per cent in the mid- and high latitudes of the Northern Hemisphere since the late 1960s.

The annual duration of lake and river ice cover apparently **shortened** by about two weeks during the 20th century.

b) The text describes changes in extreme weather events. Fill in the gaps using the correct verb forms.

Since 1950, the number of heat waves _____ (increase). The extent of regions affected by droughts _____ also _____ (increase) as precipitation over land _____ marginally _____ (decrease) while evaporation _____ (increase) due to warmer conditions. Generally, number of heavy daily precipitation events _____ (rise), but not everywhere. Tropical storm and hurricane frequencies vary considerably from year to year, but evidence suggests substantial increases in intensity and duration since the 1970s.

14. ***Spelling***. The words below are associated with the weather. Fill in the gaps. Translate the words.

Dr _ _ _ ht, h _ rri _ ane, pre _ ipita _ ion, h _ avy rain, h _ _ t, temp _ ra _ ure, snow c _ _ er, w _ rm, c _ clone

Which words do you usually you use to talk about the weather:
in summer? _____
in winter? _____
Which words are used in the weather forecast? _____

15. ***Vocabulary***. Put the words in the appropriate column of the chart according to their function.

Decrease, increase, vary, marginally, rise, heat waves, heavy, storm, hurricane, considerably, shorten, apparently, cyclone, powerful, dry period, drought.

Verbs describing changes	Adverbs describing the intensity (degree) of changes	Nouns naming weather conditions	Adjectives describing the intensity of weather events

Add some more words to the columns. You may use the textbook.

16. ***Pronunciation***.

a) Pronounce the pairs of words. Pay particular attention to the letters in **bold.** Is the pronunciation the same or different?

1. dr**ou**ght, h**u**rricane,
2. gl**a**ciers, ch**a**nge
3. spe**c**ies, precipita**t**ion
4. w**a**rming, w**a**ter
5. occ**ur**, h**u**rricane
6. c**o**ver, h**u**rricane
7. c**y**clone, dr**y**

17. ***Grammar***. The Present Perfect. Comment on the changes shown in the chart.

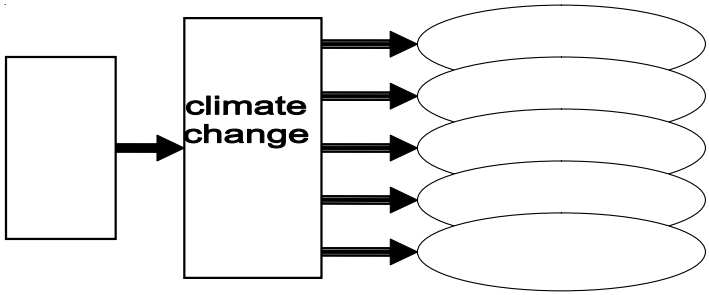
Factors	Beginning of the 20th century	Now
Population (billions)	≈ 1	6
Growth of desert area (million hectares)	< 156	156
Extinction of biological species (%)	< 20	20
Territory covered by forests (million km^2)	57.49	50.07

Source: Положинцев Б.И. Introduction to Ecology.

18. ***Vocabulary revision and spelling***. Fill in the gaps.

Циклон – c_ _lone
Засуха – drou _ _ _
Осадки – pre _ ipita _ ion
Предсказывать – pr _ di _ t
Наводнение – fl _ _ d
Биологические виды – spe _ _ _ s
Учёные – S _ i _ ntists
Биосфера – bios _ _ ere
Вымерший (биологический вид) – e _ tin _ t
Последствие – cons _ _ _ ence
Проблема – I _ s _ e

19. ***Vocabulary learning skills***. On the left of the diagramme write what causes climate change. On the right write problems induced by climate change. Prepare a talk on the causes and consequences of climate change.



Fill in the chart with words you are going to use when talking about climate change.

What causes climate change	What is happening with the climate	The effects of climate change

Development

1. ***Case study***. Look at the announcement from EPAs site. It is intended to influence people's habits so that they do less harm to the environment.

What actions do the pictures suggest? Write a slogan and a short text for each of the suggested actions. Compare your texts with the original ones in the KEYS (Appendix 2).

2. *Reading*. Here are some definitions from EPAs site. There may be a lot of unknown words. Do not look them up in a dictionary until you have completed the task. It is important that you read the extracts as quickly as you can.

Find a definition for each of the following:
Biosphere, Anthropogenic, Climate Model, Conference of the Parties, Ecosystem, Recycling.

1.**xxxxxxxxxxxxxxxx**

The supreme body of the United Nations Framework Convention on Climate Change (UNFCCC). It comprises more than 180 nations that have ratified the Convention. Its first session was held in Berlin in 1995.

The **xxxxxxxxxxxxxxxx**'s role is to promote and review the implementation of the Convention. It will review new scientific findings, and the

effectiveness of national climate change programs.

2. **xxxxxxxxxxxxxxxx**

Any natural unit including living and non-living parts that interact to produce a stable system through cyclic exchange of materials.

3. **xxxxxxxxxxxxxxxx**

Collecting and reprocessing a resource so it can be used again. An example is collecting aluminum cans, melting them down, and using the aluminum to make new cans or other aluminum products.

4. **xxxxxxxxxxxxxxxx**

The part of the Earth system comprising all ecosystems and living organisms, in the atmosphere, on land or in the oceans, including derived dead organic matter, such as litter, soil organic matter and oceanic detritus.

5. **xxxxxxxxxxxxxxxx**

A quantitative way of representing the interactions of the atmosphere, oceans, land surface, and ice.

6. **xxxxxxxxxxxxxxxx**

Made by people or resulting from human activities. Usually used in the context of emissions that are produced as a result of human activities.

Adapted from http://www.epa.gov.

3. ***Saying figures and years***. Match a figure on the left with a word or phrase on the right.

2005 (year)	Fifteen degrees Celsius
50%	Two thousand and five
10 F	One hundred and twenty five thousand
15 C	Ten degrees Fahrenheit
125 000	Fifty percent

Note the stress!!! Fifty percent

Put a tick where you say “and” in the numbers. Say the numbers.

3 3 0
4 5 0 0 0 0
4 5 0 3 2 0

Say the numbers: 560, 45 980, 450 000, 500 000, 560 000, 351 670.

4. ***Skills development***. Quoting.

Look at how the data and conclusions published by the IPPCC and NOAA were quoted in a brochure launched by EPA. Underline the words that refer the reader to the source.

a) According to NOAA seven of the eight warmest days have occurred since 2001.

b) The IPCC has concluded that the global warming is partially due to human activities.

c) The IPCC projects a six inch to 2 foot rise in sea level during the 21st century.

d) The IPCC experts report that the salinity of oceans has decreased.

Quote the following.

a) NASA: *"Arctic sea ice set a record low in September 2007."*

b) IPCC: *"The global temperature will grow by 3 to 7 F."*

c) EU commission: "*Carbon emissions rose 3.5 % in 2009 across the European Union, as power demand and industrial output rose."*

d) NASA: *"Approximately 965 000 square miles of the Amason Forest were affected by the 2010 drought."*

e) IPCC: *"Droughts could be more frequent in the Amason region in the future."*

f) IPCC: *"Non-climate factors such as urbanisation and pollution can influence ecosystems."*

g) IPCC: *"There is a measured trend towards less snow at low altitudes in certain areas."*

h) IPCC: *"There could be more navigation in northern regions due to the decrease in sea ice."*

i) NASA: "*The losses reduce the ability of the sea ice cover to insulate the atmosphere from the ocean, which increases the amount of heat transferred from the ocean to the atmosphere."*

Sources: www.nasa.gov, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. 976 pp www.ipcc.ch

2. AIR POLLUTION. ACID RAIN. OZONE

Revision

1. ***Reading and vocabulary***. The ozone layer depletion.

Pre-reading task.

1. What is the ozone layer?
2. Why is it important to life?
3. What substances can destroy ozone?
4. Where do these substances come from?

You are going to read an article by Joe Farman, the British scientist who, together with Brian Gardiner and Jon Shanklin, discovered the ozone hole over Antarctica. Look at the title and answer the questions below.

Unfinished business of ozone protection.

What issue do you think the article raises? How do you think the author feels about the problem? Are the governments doing enough to address the issue? Read the text quickly. Have you guessed correctly?

Read the text and say if the statements are true or false. If a statement is false, explain why.

a) When CFCs were invented in the 1920-s, people knew that they were hazardous for the environment.

b) There are other substances that deplete the ozone layer.

c) In 1989 the governments signed an agreement that banned all the ozone depleting substances.

d) At present ozone depleting substances are not produced anywhere in the world.

e) Now the ozone layer has recovered completely.

In the 1985 a gigantic hole in the ozone layer was discovered. The hole was estimated to be larger than the continental United States and higher than Mount Everest. The fact that chlorofluorocarbons (CFCs) deplete ozone was discovered earlier, in 1974. In the past CFCs were used in industry. CFCs were supposed to be absolutely safe as they are chemically inert, non-toxic,

and they do not dissolve in water. However, they are resistant to removal in the lower atmosphere.

CFCs survive until, after 1-2 years, they reach the stratosphere and are broken down by ultraviolet radiation. The chlorine atoms within them are released and directly attack ozone. Worst of all, ozone depleting substances can reside for several decades in the stratosphere before breaking down.

There are also other compounds that release chlorine and bromine, which are responsible for the loss of ozone in the stratosphere. One kind of such chemicals are halons - bromine-containing substances used in fire-fighting. There are also hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) to be named.

In January 1989, the Montreal Protocol went into force. Under the Protocol the production of certain ozone-destroying chlorinated compounds was reduced. By 1986 the production of CFCs was stopped.

However, the depletion of the ozone layer stopped much later because the concentrations of ozone depleting substances have been falling very slowly. In 2008 NASA reported a 3.8 percent decrease in the concentrations of ozone depleting substances. The largest ozone hole occurred in 2006 at a size of 10.6 million square miles.

Some scientists suppose that there is another reason for such a slow recovery. Joe Farman, one of the British Scientists who discovered the ozone hole, writes that under the Protocol CFCs and halons were replaced by hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs). HCFCs and HFCs also harm the ozone layer, though to a lesser extent.

But the production of these chemicals in developing countries was not controlled until some further agreements were ratified. As a result according to some sources HCFCs and HFCs production grew in the 1990s, especially in China and India.

Based on: Joe Farman. Unfinished business of ozone protection,
Жуков Б. Протоколы монреальских мудрецов.

Satellite photographs of the ozone hole and up-to-date information about its size can be found at www.nasa.gov.

2. ***Vocabulary***.

The sentences below define the underlined words in the text. Write the defined words.

_____ - to calculate roughly the cost or size, etc. of something.
_____ - to reduce greatly the size or quantity, etc of something.
_____ - to make something free.
_____ - to exchange something for something.
_____ - to be present in.
_____ - to make a document officially valid by signing it.
_____ - a return to a normal state.
_____ - a contract made with somebody.
_____ - the first or original version of an agreement in writing.

3. ***Pronunciation***.

Pronounce the pairs of words. Pay attention to the letters in **bold.** Is the pronunciation the same or different?

G**i**gantic surv**i**ve
Ultrav**i**olet l**ay**er
Occ**ur** f**ur**ther
Agr**ee**ment rel**ea**se
Depl**e**te decr**ea**se
Decades **d**estroy

4. ***Discussion***.

Why do you think all ozone depleting substances were not banned immediately after the ozone hole had been discovered?

5. ***Grammar***. Passive forms. Fill in the gaps in the text using the correct forms of the verbs in brackets.

Forests _____ (call) "carbon sinks" because they _____ (take) CO_2 from the air and _____ (store) it. When trees _____ (cut down) and _____ (burn), the CO_2 that _____ (store) in them _____ (release) back into the air. Scientists _____ (believe) that every year, 2 billion to 5 billion tonnes of CO_2 _____(release) into the air from forests that _____ (cut down) and _____ (burn).

6. ***Grammar***.

Passive and active forms. Express the same ideas using passive forms. Use the Passive with "by" where appropriate.

a) Scientists first measured atmospheric concentration of CO2 at the South Pole in 1958.

b) Climatologists use large computer models to estimate future possible warming.

c) The governments signed the Montreal Protocol in 1989.

d) Under the Protocol the industrialized countries stopped CFCs production.

e) Until the 1970-s people thought that CFCs were absolutely safe.

f) NASA uses satellites to check the ice in the Arctic region.

g) Ultraviolet radiation (UV-B) causes mutations in animal and plant cells.

e) They founded IPCC in 1972.

7. ***Case study***. A new communication channel is used in the case below. Read the announcement and answer the questions below.

1. What communication channel is used?
2. What is the aim? (to inform? to educate the public? to persuade people to buy a product? to influence people's habits?)
3. Who are the target publics in terms of their age, profession, country, etc.
4. Would it be interesting for you?

Do Something in the Fight Against Climate Change

A new and unique Facebook game with a social mission—fighting climate change through offline actions. Featuring a coastal setting, gamers must build and save their habitat by completing offline energy-efficient and environmentally friendly actions that reduce greenhouse gas emissions—such as changing bulbs to ENERGY STAR qualified bulbs; powering down computers; recycling plastic bags, bottles, or aluminum cans; walking, biking, or taking public transportation for week; and more!

eMission participants can also win eco-friendly prizes and scholarships from DoSomething.org. Learn more about these opportunities.

Source: www.energystar.gov.

Discuss. Do you think that this kind of game can influence people's behaviour? Why?

8. ***Vocabulary revision and spelling***. Fill in the gaps.

Разрушение озонового слоя - ozone l _ _ er d _ ple _ ion
Опасные вещества – h _ zardo _ s subst _ n _ es
Инертный – c _ emi _ ally in _ rt
Атмосфера – atmos _ _ ere
Ультрафиолетовое излучение – ultra _ iolet radia _ ion
Влияние - influ _ n _ e
Выхлопные газы – car ex _ _ _ st gases

Development

1. ***Case study***. Read the following public announcement and answer the questions.

1. What does the announcement try to encourage people to do?
2. How would you complete the last sentence of the announcement? (the original one is in the KEYS (Appendix))
3. Do you think that the event was successful the previous years? You can find the answer in the archive at http://wwf.panda.org.

Earth Hour

What is Earth Hour?

It is the biggest environmental awareness campaign ever seen!

When is it?

Earth Hour takes place once every year, the last Saturday of March.
This year it will be Saturday 26th from 8.30 to 9.30 PM local time.

What's the aim?

To raise environmental awareness and get us do small things in our daily lives that together can have huge impacts: in other words, to go beyond the hour.

What does it involve?

Simply turning off your lights for 1 hour. Earth's hour.

How useful is this?

Earth Hour is a highly "visible" symbolic act.
One that millions of people can easily join in with.
And one that allows you to <u>have fun</u> while sending out a serious message to our politicians and governments, that says: ……

From: http://wwf.panda.org.

Explain the following expressions from the extract:
to go beyond the hour (Earth hour)
highly "visible" symbolic act
sending out a serious message to our politicians

How would you express the same ideas in the Russian language? Remember that you can't just translate the words.

2. ***Learning skills development***. Using a monolingual dictionary.

a) Look at the definition of the word "**agreement**".

Agreement n **1** [C] an arrangement, a promise or contract made with sb: *an international agreement* o *Please sign the agreement* **2** [C, U] harmony in opinion or feeling: *The two sides failed to reach* ***(an) agreement*** o There is little agreement as to what our policy should be …..

What do the examples add to the understanding of a word? What do you usually try to remember – the definition or the examples?

b) Look at the examples illustrating the use of the words in bold.

We have a ***contract*** *with the government to supply vehicles.*
sign a peace ***treaty*** *with a neighbouring government*
the Geneva ***Convention***
The ***Protocol*** *is subject to further additional agreements*
I have an ***arrangement*** *with the bank to cash the cheques here.*

c) All the words illustrated by the examples below are similar in meaning to word "agreement". But there is a difference. To explain the difference, answer the questions.

1. How many sides (or participants) are supposed to be there?
2. Who are the participants?
3. What is the situation? Is it formal or informal? Is there a problem to solve or a conflict to deal with? Are there any goods or services to be sold?

Check your answers in a dictionary.

3. ***Vocabulary***. Make verb – noun combinations.

ratify	a treaty	reach	sign	an arrangement
the Protocol	an agreement	develop	go into force	
a pact	adopt	make	a programme	

4. ***Reading and learning skills development***.

What do the following stand for? UNEP, IPCC, EPA. What are they called in the Russian language?

Read the first paragraph of the text. What do "actors" and "roles" mean in this context.

Environmental policy makers

The world faces today a number of global environmental challenges. Where global environmental problems are concerned, the most significant factor is efficient coordination of efforts on all levels, from the national to the global level. Let us look at the leading actors and their roles in environmental policies making.

Here is a list of the many actors that have to cooperate to tackle environmental issues such as climate change.

- The United Nations
- Global economic institutions, e. g. the World Trade Organisation
- The European Union
- National governments
- Sub-national governments
- Government agencies, e. g. environmental protection agencies
- Private corporations
- Non-governmental environmental organisations
- Households
- Individuals

The two later actors are essential because democratic governments cannot develop environmental policy without public support. On the other hand public opinion affects policy making.

The main barrier to effective environmental policy is the lack of collective action. If individuals and groups dont act in an environmentally-friendly way,

governments will need to develop instruments to improve the situation. There are three types of instruments: legislative, economic and voluntary instruments. Voluntary instruments involve, for example, education campaigns to raise people's awareness of environmental issues and ways to achieve sustainability results. Government agencies, such as the Environment Agency in the UK and the Environmental Protection Agency (EPA) in the USA act as regulatory body developing legislation and issuing orders to industry. These include establishing emissions standards or specifying quality objectives.

But governments around the world are beginning to recognize their inability to address environmental problems on their own. On the international level organizations such as UNEP play an important role in creation the conditions for intergovernmental cooperation. They ensure scientific consensus collecting, analyzing and distributing scientific data. For instance United Nations Environmental Programme (UNEP), in cooperation with the World Meteorological Organisation founded the Intergovernmental Panel on Climate Change (IPCC). The IPCCs first report provided the basis for future negotiations on climate change. UNEP also monitor and coordinate international action, organize conferences and negotiations.

There are also a wide range of environmental groups with different aims and strategies. They try to influence environmental policy through different kinds of actions. The actions range from informal and formal lobbying to demonstrations and marches. For example, Greenpeace became widely known after attracting media attention to whaling and nuclear testing.

Effort - усилие
Barrier – барьер
Legislative - законодательный
Basis - основа
Lobbying - лоббирование
Whaling – китовый промысел

Learning skills. Look at the words below. Find them in the text. What part of speech is each one? Using a dictionary, check if in the given context the words and their cognates are similar in meaning.

Подберите русское однокоренное слово к каждому из следующих слов. К какой части речи относится подобранное вами однокоренное слово? С помощью словаря проверьте, имеет ли русское слово в данном контексте то же значение, что и английское.

Policy, public, discipline, barrier, collective, action, individual, instruments, voluntary, campaign, standards, creation, cooperation, provide, monitor.

5. ***Vocabulary***. Match words and phrases with similar meanings.

significant	cooperate
to coordinate someone's efforts	on the global level
to solve a problem	influence
to address environmental problems	important
essential	to tackle an issue
affect	to try to solve environmental problems
on the international level	important/necessary

6. ***Vocabulary***. "Positive action" verbs.

Look at the sentences. Translate the phrases in bold into Russian.

a) Government agencies **develop legislation** and **issue orders** to industry.

b) They **provide instruments and mechanisms** that are intended to control greenhouse gases emissions.

c) On the international level organizations such as UNEP **create the conditions** for intergovernmental cooperation.

d) They **collect, analyze and distribute scientific data**.

e) UNEP also **monitor** and **coordinate international action**, **organize conferences** and negotiations.

f) UNEP **compile, assess, and publish** information related to climate change.

g) The organisation also **identifies efficient environmental management practices** in order to **share** them with the governments.

h) They also **identify** and try to **solve** environmental problems.

i) The organization **takes action** to protect ground water from petroleum contamination.

Legislation - законодательство

To be intended to – быть предназначенным для

Conditions – условия
Compile – собирать
Assess – оценивать
Contamination - загрязнение

7. ***Vocabulary***. ***Word combination***. Look at the sentences in Exercise 6 again. What verbs can you use with the following nouns?

a)_____
_____ data / information
_____
_____

b)_____
_____ legislation / law / regulation / legal acts

c)_____
_____ standards / methods / instruments / strategies

d)_____
_____ international action / work / efforts

e)_____
_____ efficient environmental management practices / policies

f) _____ conferences / meetings / workshops

g)_____
_____ environmental problems

h)_____ action

Add the following verbs: *participate in, adopt, resolve, implement, address*
Add the following nouns: *steps, measures*.

8. ***Read*** the text from Environmental Defense Trusts Internet site. Fill in the gaps.

The science is clear: Global warming is the most _____ environmental _____ of our time – and it is accelerating at an alarming rate.

Our goal: to _____ the pollution that causes global warming and avoid catastrophic climate change.

We _____ practical solutions at the state and local levels to show how national policies can work.

We _____ market schemes for clean energy, which are good for the economy and _____pollution.

We help businesses _____ low-carbon innovations.

Sourse: www.edf.org/page.cfm

What page has this text been taken from? Possible answers are the following:

Contact us
What you can do
What we do
Market based solutions
International work
Privacy policy

9. ***Writing***. Write about an environmental organization.
What issues are they committed to solve?
What actions do they take?
Who do they cooperate with?
What successes are there?

10. ***Writing*** a summary or a review.

Look at the review of The Newsletter produced by the Rio+20 Secretariat in the Division of Sustainable Development of DESA.

Volume 2, Issue 6 is a special issue that focuses on one of the two themes of the UN Conference on Sustainable Development (Rio+20), a "green economy in the context of sustainable development and poverty eradication." It provides information and resources on the preparatory work on the theme along with upcoming events.

Sourse: UNEP

There are a number of different ways to say what the author writes about. Match a verb or phrase from the left with the word or phrase from the right.

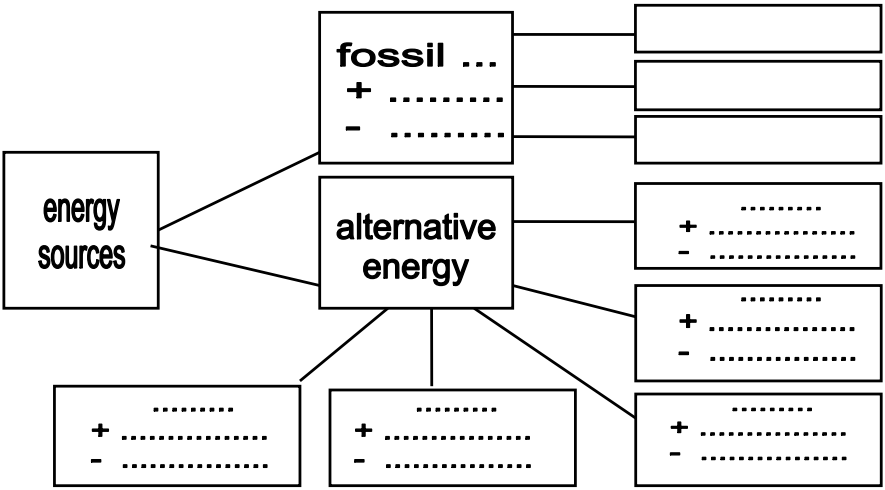
To focuse on	the idea that…
To provide	information (data)
To highlight	research results
To deal with	the outcomes of …
To consider	the students who study …
To report on	the latest developments in …
To summarise	the situation
To concern	an issue (problem, topic, theme)
To present	
To give an overview of	
To be based on	
To analise	
To cover	
To target at	
The author stresses	

Write a review of a book or a summary of an article.

3. ALTERNATIVE ENERGY

Revision

1. ***Vocabulary learning skills***. The diagramme below summarises sources of energy. Fill in the gaps in the diagramme. Next to signs "+" and "-" write the advantages (pluses) and disadvantages (minuses) of the sources of energy.



2. ***Vocabulary***. Compile as many different phrases as you can using the words below.

Solar photovoltaic equipment
Power station energy plant installation

3. ***Word formation***. Use a dictionary to fill in the chart. For some words you have to leave some spaces blank.

Noun	Person	Verb
		install
		produce
		equip
		develop
		emit
		improve

4. ***Vocabulary***. Using the right word combination.

What should we do to solve the problem of air pollution? Tick the right cells in the chart to find the answer.

	energy	emissions	energy consumption	alternative energy	fossil fuels	the use of fossil fuels
Reduce						
Use						
Burn						
Switch to						
Conserve						
Cut						
Replace						

5. ***Vocabulary and learning skills***. Using the right word. Fill in the gaps using the suitable words from the chart below. Explain why the other word in each line is not suitable. What dictionary do you use to compare the meaning and use of words that can be confused?

Most of the immediate progress that can be made to reduce greenhouse-gas _____ (1) involves using fossil fuels more _____ (2). The savings will buy time for the global climate system while alternative-energy technologies can be _____ (3) and made _____ (4). It is hoped that emissions-free sources will replace fossil fuels as energy supply. Let us look at some possible options.

* Gasoline fuel cells and other advanced automotive technologies can _____(5) carbon-dioxide emissions from transport approximately in half, as can "hybrid" gas/electricity _____ (6), some of which are already on the _____ (7).

* Another possible _____ (8) is to switch to natural gas. Natural gas _____ (9) less carbon dioxide than coal or oil. So, switching to natural gas is a quick way to cut emissions.

* _____ (10) more efficient lighting and appliances in buildings can cut electricity use _____ (11).

1	exhaust	emissions
2	efficiently	extensively

3	invented	developed
4	costly	cost-effective
5	cut	chop
6	vehicles	cars
7	sale	market
8	solution	decision
9	releases	relieves
10	installing	improving
11	significantly	seriously

6. ***Reading and vocabulary***. Hydropower.

What renewable energy sources do you know?

You are going to read a text about hydropower plants. Have you heard of any disadvantages of hydropower technology?

Read the article and list the pluses and minuses of hydropower. Add short notes of what you have written to the diagramme in Exercise 1.

Electricity from Hydropower

Hydropower is considered a renewable energy resource because it uses the Earth's water cycle to generate electricity. The movement of water as it flows downstream creates kinetic energy that can be converted into electricity. A hydroelectric power plant converts this energy into electricity by forcing water, often held at a dam, through a hydraulic turbine that is connected to a generator. The water exits the turbine and is returned to a stream or river below the dam.

Although hydropower has no air quality impacts, construction and operation of hydropower dams can significantly affect natural river systems as well as fish and wildlife populations.

Hydropower often requires the use of dams, which can greatly affect the flow of rivers, altering ecosystems and affecting the wildlife and people who depend on those waters.

Often, water at the bottom of the lake created by a dam is inhospitable to fish because it is much colder and oxygen-poor compared with water at the top. When this colder, oxygen-poor water is released into the river, it can kill fish living downstream that need warmer, oxygen-rich water to live in.

Source: http://EPA: www.epa.gov.

7. ***Vocabulary and learning skills***. It is a good idea to group new words. Divide the words into 3 groups and write them in the appropriate column.

Cost-effective, install, develop, efficient, emissions-free, fossil fuels, energy supply, equip, appliances, generator, wildlife habitats, turbine, renewable energy.

ecology	economy	technical \ engineering words

8. ***Grammar***. Passive forms. Make the following sentences passive.

1. Emissions-free sources will replace fossil fuels as energy supply.
Fossil fuels _____
2. Improving building insulation can greatly reduce the amount of fuel needed for heating or air-conditioning.
The amount of fuel needed for _____.
3. Hydroelectric turbines convert the kinetic energy of moving water into electricity. _____.
4. Hydropower plant construction may affect the fish population in the river. The fish population _____.

9. ***Research***. Find information about hydropower plants in Russia to answer the following questions.

1. What are the biggest hydropower plants in Russia?
2. Where are they?
3. When were they built?
4. Are there any interesting facts about the power plants?

Development

1. ***Reading***. Read the following extracts from articles quickly and answer the questions below. Do not stop to translate any unknown words. Underline the lines in the texts related to the questions.

1. Which article mentions an event targeted at car owners?

2. Which article suggests that renewable energy has really good prospects?

3. Which article shows that people cannot rely on fossil fuels forever?

4. Which article mentions a survey revealing that a lot of people have habits that damage the environment?

5. Which article considers social benefits that developing renewable technologies could bring?

6. Which article implies that people consume too much oil?

A. The growing offshore wind power industry could bring up to 76,000 new jobs to the UK, according to a report released last month by the Department for Trade and Industry and Greenpeace. Offshore Wind - Onshore Jobs project was produced by Europe's leading authority on alternative energy and carbon management, Energy for Sustainable Development Ltd.

Nearly half of the jobs could be created in the North East of England, where some offshore turbines are already in operation.

Energy for Sustainable Development looked at three different scenarios for future development in which the contribution from offshore wind power provides 10%, 20% and 30% of the UK's electricity supply by 2020. The top case scenario shows that 76,000 jobs could be created. The Government already has a commitment of having up to 20% of the UK's energy generated from renewable sources by 2020.

Source: http://news.scotsman.com, 19th October 2004.

Offshore – расположенный в воде

Authority on something = expert in something

Contribution – вклад

The top case scenario – сценарий, рассматривающий максимальные параметры

Commitment – обязательства

B. Honda is encouraging drivers to adopt eco-driving techniques in order to make each journey less damaging to the environment.

The Japanese car giant believes too many Brits waste petrol through bad driving. The company will hold 'Green Wheels Day' to encourage more fuel-saving techniques on October 25th.

The announcement follows research carried out as part of the Energy Saving Trust's Energy Saving Week. The survey shows that 54 per cent of those polled did not turn off their engine in traffic jams.

John Kingston, environment manager at Honda, said: "In the same way people might turn off the tap when brushing their teeth, drivers could switch off their engines when stuck in traffic.

"This could save them money, but more importantly, could reduce emissions and help the environment," he added.

Source: http://www.est.org.uk © EST, UK 2007

Encourage – поощрять, побуждать
Waste – напрасно расходовать
Through – посредством
Techniques = methods
Hold – проводить (о мероприятии)
Survey – опрос
turn off, switch off – выключать

C. World oil stocks could begin to severely deplete within four years, according to a claim in a British paper.

Despite official figures from BP released yesterday suggesting there is enough oil for at least 40 years, a report in the Independent has said that a number of scientists believe that oil reserves will sharply decline in the next few years.

Scientists at the London based Oil Depletion Analysis Centre told the paper that global production will peak within the next four years and after that a decline will follow.

Dr Colin Campbell, the head of the centre, told the paper that according to the peak oil theory, consumption will soon outstrip supply and reserves will begin to deplete.

© Adfero 2007 Source: http://www.est.org.uk.

Stocks - запасы
Deplete – истощаться
Claim – заявление
Reserves – ресурсы
Decline – идти на убыль
Peak – достигнуть максимума
Outstrip – превышать
Supply – снабжение

2. ***PR TASK. Creating a headline***.

Look at the following statements. Which ones can be good advice for creating a successful headline? Write T (true) or F (false). Then discuss your answers with a partner.

1. Use a lot of difficult words and specialist jargon to show how intelligent you are.
2. The more information is included in the headline the better. So, complex sentences are OK.
3. A short sentence giving the main idea of the article is better than a long title with lots of details.
4. It is better to use simple words that are easily understood by the general public.
5. Use specialized words only if the article is targeted at the insiders of the industry.

3. ***Read one of the articles in Exercise 1***. Take notes of any new words.

a. Think of a headline for the article.

b. Look at page 71 to find out what the original headlines are. Are they perfect in your opinion? Can they be improved? How?

4. ***Write a resume of the article you have chosen***. The questions from Exercise 1 can help you to formulate the main idea of the article.

5. ***PR TASK***. The following are lines from advertisements for some products which are intended to make our life "greener". Look at the extracts and answer the following questions.

1. What product is being advertised? Choose from the following options: biodiesel, the hybrid car, energy saving lamps, solar water heating equipment, photovoltaic panels.
2. Who is it targeted at? (People? Businesses?)
3. How can this product make the ecological situation better?
4. Do you think it is economically viable?
5. Would you buy and use this product? Why? Why not?
6. Which extracts stress the economical viability and which ones stress ecological benefits?

a) Vehicles are responsible for 51% of CO2 released by a typical household.

b) As the use of fossil fuel becomes more and more expensive and harmful to our environment, using solar energy is a viable alternative power source.

c) YOU don't just change a bulb, YOU can change the world. Our energy savers offer up to 80% energy saving and up to 8 times longer life.

d) You burn biofuel that same way you use regular diesel but without all the smoke. Biofuel gives you clean power from a renewable resource – soybeans – and the cost to you is the lowest it has ever been.
It's "green fuel" that lets you keep another kind of green in your pocket.

e) Each household solar water heating system is estimated to save between 360 and 1,600 kg of greenhouse gas emissions a year compared to using a standard electric hot water cylinder.

6. ***Vocabulary***. Find the equivalents to the following words in the advertisements above.

Cars, trucks and buses
Cost-effective
Emmited
Inexhaustible
Ecologically friendly

7. ***Project***. Choose an ecologically friendly product. Use the Internet to gather information on the product. Prepare a short presentation for the product. Explain how it works and what problem it is intended to solve (give a short background of the problem).

8. ***Case study***. Read the text quickly and find out what ZIP stands for and who could benefit from it.

The Pacific Gas and Electricity Company ZIP programme

Background information.
The Pacific Gas and Electricity Company (the PG&E Company), founded

in California in 1905, provides natural gas and electricity to most of the northern two-thirds of California.

Since 2004, PG&E has launched a number of programs and campaigns to promote its environmental image.

About ZIP programme.

The aim was to influence customers to conserve energy. To implement energy saving ideas would require certain home improvements.

The idea was that home owners should be provided with detailed data and ideas on how to do that.

The programme included several components.

1) Energy kit. A telephone hotline was established and widely publicized so that interested customers could order an energy kit detailing what the average home owner could do to reduce energy use.

2) Service bureau. The company, at no charge, sent representatives to homes to check the efficiency of water heaters and other appliances, and to consult home owners on efficient insulation.

3) ZIP. The cost of making a home more energy efficient was funded by zero-interest loans to any qualified customer.

Today the PG&E support the idea of energy conservation by a variety of published materials (for example brochures). There are also energy saving tips and an energy cost calculator on-line.

Sources: www.pge.com,

Public relations: Strategies and tactics / D. L.Wilcox, P. H.Ault, W. K.Agee, G. T.Cameron; Ed. P.McGeehon. Harlow: Longman 2000. 584 p

9. ***Discuss***.

How much do you pay for electricity each month?
Do you know any ways to conserve energy?
What steps do you need to take?
How much would in cost?
Are there any low-interest loans available in your country?

10. ***Vocabulary***.

In the text in exercise 8 find the words and phrases that mean the following:
a) has started a number of programs

b) to put the ideas into effect so that they work successfully
c) without any money paid for that
d) was given the necessary amount of money
e) money that a customer pays for borrowing money from the bank

11. ***Vocabulary***. Verb – noun combinations.

	a campaign	a hotline	a company	a programme	an idea
Ipmlement					
Establish					
Found					
Launch					
Fund					

12. ***Grammar***. Rewrite the following phrases as in the example.
Example. *a calculator of the cost of energy – energy cost calculator*

1. tips on how to save energy -_____
2. use of energy -_____
3. a system for heating water in households -_____

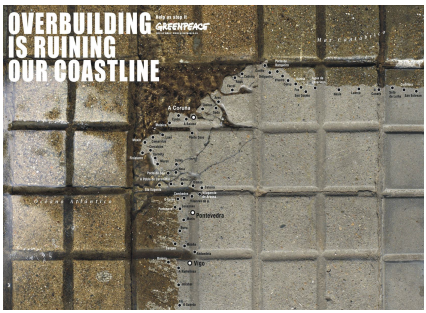
13. ***Case study***. A public awareness campaign.

1. Preparation. Look at the slogans in 1 – 5 and social announcements in 6 – 8.

1. More windmills
2. Stop forest crime
3. Save the Amazon
4. Nuclear energy is a dead end

5.

6.



7.

Source:
Greenpeace: http://www.greenpeace.org/international/en/campaigns

Answer the questions about each slogan.

1. What issue does the campaign address?
2. What is the aim? To inform? To encourage people to do something?
3. Which slogans cannot be translated into Russian? Why? Which ones need no translation?

14. ***PR Task***. Use one of the sites listed below and choose an environmental awareness announcement.

http://www.advertolog.com/company/environmental-awareness
http://wwf.panda.org
http://www.greenpeace.org/international/en/campaigns

Find all the necessary background information about the campaign you have chosen. Prepare to talk about the campaign using the questions below.

1. What is the issue?
2. Are there any interesting facts and figures in the media and the Internet?
3. What is the message of the campaign?
4. What slogan is used?
5. How would you express the same idea in the Russian language? (It is not always a good idea just to translate the slogan)
6. What image is used? Would it work in Russia?
7. What would you change in the picture? Why?

4. WASTE MANAGEMENT

Revision

1. ***Reading and vocabulary***. Hazardous waste.

Find pairs. Tick the words that are similar in meaning.

danderous	take to local recycling centers
contaminate	in the right way
dispose of	use
properly	chemical
element	polluite
handle	hasardous

2. ***Pre-reading task***. Answer the questions.

1. Why do the following items should be treated and disposed of with care?

compact fluorescent lamps (bulbs)
thermometers
batteries
computer monitors

2. Which of the above do you have at home?
3. What do you know about hazardous waste disposal facilities? Are they available in your city, district? Do you use them?
4. How do people in your city get information about hazardous waste treatment?

3. ***Read*** the article from EPAs site and answer the following questions.

1. What are the main kinds of hazardous waste?
2. Why are they potentially dangerous for human health?
3. How is the problem of hazardous waste management solved in the USA?

Hazardous waste is waste that is dangerous or potentially harmful to our health or the environment.

One of potentially dangerous elements in household waste is Mercury. It has traditionally been used to make products like thermometers, switches, and some light bulbs, batteries, electronics. These items should be handled with care. Otherwise they can release mercury vapors into the environment.

Mercury affects the brain, spinal cord, kidneys and liver. It affects the ability to feel, see, taste and move. Long-term exposure to mercury can result in symptoms that get progressively worse and lead to personality changes, stupor and coma.

Any products containing mercury should be disposed of properly to prevent mercury contamination in the environment.

Many electronics products contain mercury in very small amounts. But if consumer electronics are not disposed of properly, they will add to the existing mercury contamination.

Button batteries (such as those used in watches and toys) are also a potential source of mercury contamination. According to EPA, button batteries add three to five tons of mercury to U.S. commerce each year.

Everyone now is looking for energy efficient lighting solutions. Compact fluorescent lamps and bulbs (CFLs) are more energy efficient but they contain a small amount of mercury. Mercury allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact. However CFLs should also be handled with care and disposed of properly.

The EPA recommends that all kinds of the listed items are taken to local recycling centers or household hazardous waste events that accept them. Many cities accept waste at household hazardous waste (HHW) facilities.

4. ***Pronunciation***. How is **c** pronounced in the following words?

Is it |**s**| as in *place*? Is it |**k**| as in ***c****ollect*?

Re**c**y**c**le
A**cc**ept
Fa**c**ilities
Sour**c**e
Redu**c**tion

Redu**c**e
Conserve
Contaminate
Contain

5. ***Spelling***. Fill in the gaps.

Эффективный – Effic _ _ nt
Вторичная переработка - re _ _ cling

Принимать – a _ _ ept
Источник – so _ r _ e
Производственный процесс – man _ fa _ t _ ring pro _ ess
Оказывать влияние - _ ffe _ t

6. ***Vocabulary***. Write phrases as in the example.

Example: A source of light ⇒ *a light source*

1. Contamination with mercury ⇒
2. Facilities that help people to dispose of household hazardous waste ⇒
3. A solution to the problem of disposal of hazardous waste ⇒
4. Reduction of sources of waste ⇒

7. ***PR Task***. In the news. What hazardous materials have been in the news recently?

Find an article about hazardous waste and complete the following chart using the information from the article.

Household items	
Chemical (chemicals) contained	
Effects on human health	
Effects on the environment	
Possible disposal solutions	

Prepare to talk on the issue using the chart.

Development

1. ***Reading***. You are going to read a text about plastic. Why do you think there has been so much concern about plastic in waste?

Read the text and choose the best headline for each paragraph. Two of the headlines are extra ones.

A. Just Facts
B. Source Reduction
C. Plastics Recycling
D. How Plastics Are Made
E. Plastic death
F. Markets for Recovered Plastics

Read the text again and find the facts that cause public concern about plastic.

Is finding efficient recycling solutions important for the economy. Why?

Plastics

1. _____

Plastics play an important role in almost every aspect of our lives. Plastics are used to manufacture everyday products such as beverage containers, toys, and furniture. The widespread use of plastics demands proper disposal management. Plastics make up more than 12 percent of the municipal solid waste stream. The largest category of plastics are found in containers and packaging (e.g., soft drink bottles, lids, shampoo bottles), but they are also found in durable (e.g., appliances, furniture) and nondurable goods (e.g., diapers, trash bags, cups and utensils, medical devices).

In 2009, the United States generated 13 million tons of plastics as containers and packaging, almost 11 million tons as durable goods, such as appliances, and almost 7 million tons as nondurable goods, for example plates and cups. Only 7 percent of the total plastic waste generated in 2009 was recovered for recycling. In 2009, the category of plastics which includes bags, sacks, and wraps was recycled at 9 percent.

Plastics also are found in automobiles, but recycling of these materials is counted separately from the MSW recycling rate.

2. _____

Plastics can be divided in to two major categories: thermosets and thermoplastics. A thermoset solidifies or “sets” irreversibly when heated. They are useful for their durability and strength, and are therefore used primarily in automobiles and construction applications. Other uses are adhesives, inks, and coatings.

A thermoplastic softens when exposed to heat and returns to original condition at room temperature. Thermoplastics can easily be shaped and molded into products such as milk jugs, floor coverings, credit cards, and carpet fibers.

3. _____

According to the American Chemistry Council, about 1,800 US businesses handle or reclaim post-consumer plastics. Plastics from MSW are usually collected from recycling bins or drop-off sites. Then, they go to a material recovery facility, where the materials are sorted into broad categories (plastics, paper, glass, etc.). The resulting mixed plastics are sorted by plastic type and sent to a reclaiming facility. At the facility, any trash or dirt is sorted out, then the plastic is washed and ground into small flakes. A flotation tank then further separates contaminants, based on their different densities. Flakes are dried, melted, filtered, and formed into pellets. The pellets are shipped to product manufacturing plants, where they are made into new plastic products.

4. _____

Markets for some recycled plastic resins, such as PET and HDPE, are stable and even expanding in the United States. Currently, the US has the capacity to be recycling plastics at a greater rate. The capacity to process post-consumer plastics and the market demand for recovered plastic resin exceeds the amount of post-consumer plastics recovered from the waste stream. The primary market for recycled PET bottles continues to be fiber for carpet and textiles, while the primary market for recycled HDPE is bottles, according to the American Chemistry Council.

Looking forward, new end uses for recycled PET bottles might include coating for corrugated paper and other natural fibers to make waterproof products like shipping containers. PET can even be recycled into clothing, such as fleece jackets. Recovered HDPE can be manufactured into recycled-content landscape and garden products, such as lawn chairs and garden edging.

Source: EPA: www.epa.gov

2. ***Discuss***.

1. How is plastic waste management organized in your country?
2. What could be done to reduce the amount of plastic we use?

3. ***Case study***. EPA *Plug-in to recycling* campaign.

This case study describes how EPA succeeded in increasing the rate of recycled electronics.

Read the text and discuss the following.

1. Why is it important to recycle electronics?
2. What is the aim of the campaign?
3. Describe the strategy of the campaign.
4. What benefits do the key messages highlight? Who will benefit?
5. Why do you think the campaign has been successful?

The United States Environmental Protection Agency (EPA) launched *Plug-in to* recycling program. It was designed to encourage people to reuse or recycle electronics and gadgets. It is also targeted at electronics manufacturers and retailers. The idea was that electronics manufactures and stores should help organise old appliances and gadgets collection.

The aim is to increase the national recycling rate from 30 percent to 35 percent and to cut the generation of 30 harmful chemicals by 2005.

The EPA launched the campaign at the Consumer Electronics Show (CES) (January 9-12, 2003) and is now rolling out the recycling message. The EPA is asking consumers to take their used consumer electronics to one of the collection events across the country. They provide clear guidelines on how to.

The key messages are the following:

Helps others. Donating your used electronics benefits others by passing on ready-to-use or refurbished equipment to those who need it.

Conserves natural resources. Recycling recovers valuable materials from electronics that can be used to make new products. As a result, we reduce pollution and save energy by extracting fewer raw materials from the earth.

Protects your health and surroundings. Safe recycling of electronics supports responsible management of toxic chemicals such as lead and mercury.

In 2008 the EPA Plug-In To eCycling Program collected 66.5 million pounds of used electronics and gadgets through their Plug-In To eCycling Partners. Through these efforts, the EPA reports that the recycling of these items helped save enough energy to power over **fourteen thousand** U.S. homes for over a

year. Their partner list includes mobile phone manufacturers such as LG Electronics, Motorola, Nokia, Samsung, and Sony Ericsson, PC retailers such as Best Buy, Dell, Intel, and Walmart (as well as PC component manufacturers).

All of them were free to choose the tactics. Office Depot offers the following method for recycling your old electronics. You can purchase a small ($5), medium ($10), or large ($15) recycling box, fill with any combination of old electronics and then drop the box off at any Office Depot location. The fee pays for the box and shipping service.

Best Buy offers an In-Store Take Back Program, which encourages customers to bring up to two consumer electronic units per household per day to stores for recycling. Consumers pay $10 for recycling each TV, monitor and laptop, and in return, receive a $10 Best Buy gift card. All other items accepted through the program are free to the consumer. Best Buy collected over 60 million pounds of electronics in 2009.

4. ***Reading***. Read the press-releases quickly.

Which of the releases is targeted at the general public and which is targeted at electronic manufactures and retailers?

Underline the sentences that help you to answer this question. The following features might help you: quotations, figures and facts, which might be interesting to a particular group of readers.

1. EPA Supports Electronics Recycling
   Release date: 01/10/2007

(Washington, D.C. - Jan. 10, 2007) Retailers and electronics manufacturers voluntarily recycled more than 34 million pounds of electronics in 2006 as part of their commitment to the Environmental Protection Agency's Plug-In To eCycling program.

The program is a voluntary partnership between EPA and electronics manufacturers and retailers to offer consumers more opportunities to donate or recycle their used electronics. Since 2003, Plug-In partners have recycled more than 95 million pounds of electronics.

"Our Plug-in partners have energized the industry to give consumers practical alternatives for recycling their used electronics," said Scott Sherman,

EPA's associate assistant administrator for the Office of Solid Waste and Emergency Response. "When these materials are reused and recycled it is a win-win for both the community and the environment." Electronics are made with valuable resources such as precious metals, engineered plastics, glass, and other materials, all of which require energy to manufacture. Conserving resources helps reduce emissions and pollution otherwise generated by extracting virgin materials. As a result, Plug-In partner recycling efforts last year generated energy savings equal to the energy needed to power over 7,000 U.S. homes and prevented greenhouse gas emissions equivalent to annual emissions from 12,000 cars.

Plug-In partners have taken various approaches—either national or regional—to give individuals ecycling options. Partners may offer online take back or trade-in programs, create partnerships with local organizations to facilitate collections or host collection events at retail locations, and support local recycling events with cities and municipalities. Plug-In partner initiatives are successful because they share responsibility for recycling among manufacturers, retailers, governments, and consumers. These efforts often complement local recycling efforts.

EPA's Plug-In to eCycling Partners include: Apple, Best Buy, Cingular, Dell, eBay's Rethink initiative, HP, Intel, JVC, Lexmark, NEC Display, Office Depot, Panasonic, Philips, Samsung, Sharp, Sony, Staples and Toshiba.

2. eCycle for Earth Day
Release date: 04/20/2007

(Washington, D.C. - April 20, 2007) Don't trash your old computer when you can pass it on for reuse or recycling. That's the _____ (1) behind EPA's "Pass It on Week," which runs April 22 – 28, 2007. EPA is encouraging consumers to use EPA's Plug-In To eCycling partner _____ (2) to find local donation and recycling opportunities for consumer electronics.

"Americans have the opportunity to make a difference," said Susan Bodine, assistant administrator for EPA's Office of Solid Waste and Emergency Response. "Donating or recycling computers gives more people access to technology and helps reuse valuable materials, which _____ (3) energy and reduces green house gas emissions.

"EPA's Plug-In To eCycling partnership _____ (4) of consumer electronic manufacturers and retailers that work to increase safe recycling of

electronic products, such as computers, televisions, and cell phones. The partners offer different recycling _____ (5) to consumers. Some offer online take-back or trade-in programs; some _____ (6) collection events at retail locations; still others support local recycling events sponsored by local communities.

In 2006, the Plug-In partners recycled more than 34 million pounds of electronics, saving enough energy to power over 7,000 homes or _____ (7) emissions from more than 12,000 cars. Plug-In To eCycling partners _____ (8): Cingular Wireless, Best Buy, Dell, eBay's Rethink initiative, HP, Intel, JVC, Lexmark, NEC Display, Office Depot, Panasonic, Philips, Sharp, Sony, Staples and Toshiba.

5. ***Vocabulary. Learning skills***. Using the right word.

Fill in the gaps in the second press-release using the suitable words from the chart below. Explain why the other word in each line is not suitable. What dictionary do you use to compare the meaning and use of words that can be confused?

1	message	thinking	idea
2	programs	programmes	schemes
3	reduces	produces	saves
4	depends	consists	include
5	options	schemes	suggestions
6	have	organize	hold
7	avoid	prevent	refuse
8	include	consist	depend

APPENDIX. KEYS

Climate change and global warming
Development

1. Case study. Look at the announcement from EPAs site.

Slogans and explanations.

Save electricity! Do a home energy audit, buy Energy Star products, turn stuff (computers etc.) off when finish working, and change your bulbs to energy efficient ones.

Reduce, reuse, recycle! Try to find products with less packaging, take reusable bags on shopping trips, creatively reuse other products, and recycle what's left

Turn the light off!

Use less water! Take showers instead of baths, fix leaks, and turn off the tap when brushing your teeth.

Commute without polluting! Use public transportation, walk, or bike whenever possible to reduce air pollution and save on fuel costs.

Air pollution
Development

1. Case study.

"*I care about my planet!*"

Alternative energy
Development

HEADLINES.

WIND ENERGY COULD CREATE

76,000 BRITISH JOBS

Honda Promotes Greener Driving Techniques

World Oil Stocks are to Deplete

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RECOMMENDED INTERNET SITES

www.wmo.int
www.ipcc.ch
www.epa.gov/climatechange
www.edf.org
www.nasa.gov.
www.ipcc.ch
www.wmo.int
http://wwf.panda.org

CONTENT

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