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СОВРЕМЕННЫЕ ПРОБЛЕМЫ ЭКОЛОГИИ

Учебное пособие по английскому языку
для студентов-бакалавров факультетов
иностранных языков педагогических вузов

На английском языке

Челябинск
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А94 Современные проблемы экологии : учебное пособие по английскому языку для студентов-бакалавров факультетов иностранных языков педагогических вузов : на английском языке ; поясн. записка на русском языке / О. Ю. Афанасьева, М. Г. Федотова, А. С. Солоницына ; Южно-Уральский государственный гуманитарно-педагогический университет. – [Челябинск] : Южно-Уральский научный центр РАО, 2022. – 248 с.

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Настоящее учебное пособие предназначено для студентов факультетов иностранных языков, обучающихся по направлению «Педагогическое образование», и нацелено на развитие иноязычной коммуникативной компетенции и функциональной грамотности будущих учителей английского языка. Материал пособия может быть использован для аудиторной и самостоятельной работы студентов старших курсов, а также в дистанционном режиме обучения в процессе изучения таких дисциплин, как «Иностранный язык», «Практика устной и письменной речи», «Практический курс английского языка» и т. п.

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Содержание

Пояснительная записка

В настоящее время состояние окружающей среды является предметом оживленных дискуссий как среди специалистов-экологов, так и широкого круга людей, интересующихся проблемами экологии. Эта тема активно обсуждается в профессиональных сообществах и медиапространстве, что обуславливает ее включение в перечень вопросов, изучаемых на практических занятиях по иностранному языку в рамках таких курсов предметного цикла, как «Иностранный язык», «Практический курс английского языка», «Практикум по культуре речевого общения» и т. п., и отраженных в рабочих программах этих дисциплин.

Предлагаемое учебное пособие предназначено для использования в образовательном процессе на факультетах иностранных языков педагогических вузов в целях обучения будущих учителей английскому языку. Авторы предполагают, что оно может активно применяться в аудиторной работе студентов как в онлайн, так и офлайн режимах, а также во внеаудиторной работе и при подготовке к экзаменам.

Будучи рекомендованным прежде всего для студентов, обучающихся по программам бакалавриата, пособие может также использоваться студентами-магистрантами очной и заочной форм обучения.

Пособие включает десять разделов, содержательным центром каждого из которых является текст, посвященный той или иной экологической проблеме. Большое разнообразие текстов и различной сложности заданий к ним позволяет преподавателю применять материалы пособия как в индивидуальной, так и групповой работе студентов с учетом уровня их подготовки, при этом обучающиеся имеют возможность проверить правильность выполнения заданий при помощи ключей.

Представленные в пособии типы заданий — дотекстовые, текстовые и послетекстовые (собственно коммуникативные) — имеют целью развитие иноязычной коммуникативной компетенции, лежащей в основе функциональной грамотности будущего учителя иностранного языка, которая состоит в умениях и навыках применения усвоенных языковых знаний в реальных ситуациях профессионального и межкультурного общения.

Раздел “Additional Vocabulary” дает студентам возможность познакомиться с дополнительной лексикой по теме «Экология», которая будет использоваться ими при выполнении послетекстовых заданий, нацеленных на развитие их коммуникативных навыков и умений.

Кроме того, в пособии содержится раздел, включающий в себя тексты, также объединенные экологической тематикой, но предназначенные для развития методической компетенции будущих учителей иностранного языка. Задания к этим текстам, аналогичные заданиям к текстам 1–10, должны быть

разработаны самими обучающимися в процессе внеаудиторной самостоятельной деятельности.

Следует заметить, что пособие может быть предложено не только вниманию студентов и преподавателей факультетов иностранных языков, но и лицам, интересующимся английским языком и изучающим его самостоятельно или в учреждениях дополнительного образования.

Unit 1

Before reading task

Discuss the following questions:

1. What do you understand under the term “climate changes”?

2. What is microplastic? Is it dangerous for ocean and sea life forms?

3. In what way are seas and oceans important for overall ecological sustainability?

4. What aquatic systems are the most important in Russian ecology?

Read the text:

The Agonizing Death of the Aral Sea

After decades of environmental disaster, fish and wildlife may rebound to Central Asia’s Aral Sea, but the lake will never be restored to its former glory.

The Aral Sea, located on the border of Kazakhstan and Uzbekistan in a remote part of Central Asia, was for hundreds of years a lush oasis in an arid region. Unconnected to the ocean, the Aral Sea was really a giant lake. The waters of the sea and its tributaries historically supported bountiful fisheries, wildlife, and the nomadic people of the region. But that ended about 50 years ago. Today, the Aral Sea is a dusty salt flat, littered with the rusting hulks of abandoned ships, victim of deeply irresponsible water management.

As recently as 1960, the Aral Sea was the world's fourth largest lake, covering 66,000 square miles. It was fed by two major river systems, the Syr Darya and the Amur Darya. Starting in the 1920s and continuing under Stalin, Soviet managers decided that the Central Asian steppes crossed by those rivers were the right place to jump start a cotton industry. Using dams and irrigation canals, the water for the cotton was diverted from the rivers that fed the Aral Sea.

For the first decade, food crops such as wheat were grown alongside the cotton, but as the decades passed, cotton, an extremely water-intensive crop, took over. By the 1950s, Soviet managers were focused entirely on cotton production in the region. The Soviets demanded higher and higher targets for cotton production, resulting in the diversion of more and more water. The water was seen as limitless, so as often happens there was no effort to use the resource efficiently. Most of the diverted water evaporated or sank into the dry soil.

By the 1950s, the Aral Sea was shrinking rapidly. A Soviet program to gain agricultural independence accelerated the water diversion, to the point that flow into the Sea declined eleven fold. Evaporation meant the remaining water had high salinity, effectively killing the once-thriving fishery. Fertilizer and pesticide from the cotton industry has contaminated the remaining water and the surrounding area. Economically, the region has been devastated. People living nearby suffer from health problems due to the contaminated dust that blows from the dried up lake bed.

But there is some hope. The lake did not completely dry up. There are still three remnant lakes where some water is still present. At present there is little hope of restoring the larger Southern portion, but the situation in the North is more promising. A dam between the northern and southern lakes was completed in 2005, and the Northern Sea, while small, has refilled in record time. As the water returns, salinity is decreasing. Fish and wildlife may one day rebound, but the lake will never be restored to its true former glory, but signs of life are returning. The Aral Sea remains a cautionary tale.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– to rebound — ...;
– lush — ...;
– arid — ...;
– tributary — ...;
– nomadic — ...;
– abandoned — ...;
– hulk — ...;
– irrigation — ...;
– crop — ...;
– wheat — ...;
– to evaporate — ...;
– agricultural — ...;
– remnant — ...;

– salinity — ...;
– cautionary — ... .

2. Match the words from column A to the words in column B to make word combinations:

Column A	Column B
wildlife may	independence
lush	people
arid	evaporated
tributaries	tale
nomadic	hulk
abandoned	wheat
rusting	salinity
irrigation	rebound
food	oasis
ripe	lake
water	of the sea
agricultural	ships
remnant	canals
high	region
cautionary	crop

3. Explain in English what is meant by these words:
– lush — ...;
– arid — ... ;
– tributary — ...;
– nomadic — ... ;
– abandon — ...;

– irrigate — ...;

– crop — ...;

– evaporate — ...;

– remnant — ...;

– salinity — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

rebound	lush	arid	tributary
nomadic	abandoned		hulk
irrigation	crop		wheat
evaporate	agricultural		remnant
salinity	cautionary		

1. Using dams and _____ canals, the water for the cotton was diverted from the rivers.

2. The waters of the sea and its _____ historically supported bountiful fisheries.

3. The Aral Sea remains a _____ tale.

4. Some deserts are so _____, they appear totally devoid of all vegetation.

5. Food _____ were grown alongside the cotton.

6. This place looks completely _____.

7. There are three _____ lakes where some water is still present.

8. Fish and wildlife may _____ to Central Asia's Aral Sea.

9. It was a good-sized piece of land with _____, sheep and ostriches.

10. Evaporation meant the remaining water had high _____.

11. Most of the diverted water _____ or sank into the dry soil.

12. The Aral Sea was for hundreds of years a _____ oasis.

13. A Soviet program to gain _____ independence accelerated the water diversion.

14. The _____ lifestyle does not allow for much permanence

15. The Aral Sea is littered with the rusting _____ of ships.

5. Replace the given words with the synonyms from the box. Reproduce the sentences from the text in which these synonyms can be used:

agricultural lush abandoned cautionary rebound irrigation evaporate nomadic salinity arid wheat remnant crop tributary hulk

– agrarian — ...;

– abundant — ...;

– deserted — ...;

– preventive — ...;
– to revive — ...;
– flooding — ...;
– to vaporize — ...;
– peripatetic — ...;
– mineralization — ...;
– parched — ...;
– cereal — ...;
– residue — ...;
– fruitage — ...;
– feeding — ...;
– skeleton — ... .

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. Was the Aral Sea the world's fourth largest lake?
2. Did the lake completely dry up?
3. What river systems was the Aral Sea fed by?
4. Do people living nearby the sea suffer from any problems?
5. Were the Central Asian steppes the right place to jump start a flax or cotton industry?
6. Which sea has refilled in record time: The Southern or Northern?
7. Who demanded higher and higher targets for cotton production?

8. What did the waters of the Sea and its tributaries historically support?

9. How many square miles did the Sea cover?

10. What did evaporation mean for the remaining water?

7. Translate the following sentences from English into Russian:

1. The lake will never be restored to its former glory.

2. The Aral Sea was for hundreds of years a lush oasis in an arid region.

3. The waters of the sea and its tributaries historically supported bountiful fisheries, wildlife, and the nomadic people of the region.

4. The Aral Sea is a dusty salt flat, littered with the rusting hulks of abandoned ships, victim of deeply irresponsible water management.

5. Soviet managers decided that the Central Asian steppes crossed by those rivers were the right place to jump start a cotton industry.

6. With dams and irrigation canals, the water for the cotton was diverted from the rivers that fed the Aral Sea.

7. Food crops such as wheat were grown alongside the cotton.

8. Translate the following sentences from Russian into English:

1. Советская власть требовала все более и более высоких показателей по производству хлопка.

2. Большая часть отведенной воды испарилась или впиталась в сухую почву.

3. Советская программа по обретению независимости сельского хозяйства ускорила отвод воды.

4. Удобрения и пестициды, производимые хлопковой промышленностью, загрязнили оставшуюся воду и прилегающую территорию.

5. Люди, живущие поблизости, страдают от проблем со здоровьем из-за загрязненной пыли, которая поднимается со дна высохшего озера.

6. Надежда на восстановление большей южной части мала, но ситуация на севере более многообещающая.

7. По мере того как вода возвращается, соленость уменьшается.

8. Аральское море остается поучительной историей.

9. Retell the text “The Agonizing Death of the Aral Sea”.

10. Give a summary of the text “The Agonizing Death of the Aral Sea”.

11. Make up a dialogue on the Aral Sea issue.

12. Render the text into English:

Спасение Арала: существует ли надежда?

В ответ на снижение уровня Аральского моря, которое было предсказано отдельными географами в Советском Союзе в 1970-е годы, были проведены научные исследования

возможности переброски стока рек, текущих на север. Это противоречивое предложение привело бы к перемещению больших объемов воды не в Северный Ледовитый океан, а в направлении пустынных районов Центральной Азии, — воды, которая не обязательно использовалась бы для пополнения моря.

Сразу же после получения независимости центральноазиатские республики создали несколько региональных межправительственных организаций, занимающихся улучшением экологических, санитарных и экономических условий в регионе. Некоторые предложенные ими меры прямо или косвенно были связаны с количеством, качеством, а также распределением водных ресурсов региона. Центральноазиатские республики создали Международный фонд спасения Арала (МФСА) для преодоления кризиса и улучшения социально-экономического положения населения в регионе Аральского моря. В 2002 г. в рамках МФСА они положили начало новой программе конкретных действий по улучшению экологической и социально-экономической обстановки в бассейне Аральского моря на период 2003–2010 г. г. Среди прочего программа включает борьбу с опустыниванием, улучшение здоровья населения и экосистем, более эффективное использование воды, улучшение биологического разнообразия, восстановление водно-болотных угодий в дельтах обеих рек, усиление межгосударственных организаций и решение региональных социальных проблем. Вполне вероятно, что в определенный момент Афганистан присоединится к МФСА, так как он занимает значительную территорию бассейна Амударьи.

13. Render the text from English into Russian:

Marine Ecology and Aquatic Ecology

The interest of the ecology of water and aquatic landscapes, marine life, their relationships and interactions – both abiotic and biotic factors. Experts in this area will look at biological life at the biochemical, cellular, individual, and community. Marine ecosystems are also of interest, including the marine environment as a biosphere as well as external pressure from weather systems, and dry land ecosystems and pressure. Some examine marine geology and geography and the impact of underwater landscape on life and chemical processes.

14. Make a list of big water bodies in your region and ecological issues they are facing. Discuss them with your partner.

15. Make up and act out a dialogue on the problem of water pollution in your region.

16. Do a web search for problems of plastic and microplastic in water bodies. Choose a negative outcome or positive solution that looks interesting. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation of some anti-pollution projects concerning oceans and other water bodies; discuss it with your partner.

18. Read and translate the following extract from "The Old Man and the Sea" by Ernest Hemingway, and reproduce it to your partner:

The clouds over the land now rose like mountains and the coast was only a long green line with the gray blue hills behind it. The water was a dark blue now, so dark that it was almost purple. As he looked down into it, he saw the red sifting of the plankton in the dark water and the strange light the sun made now. He watched his lines to see them go straight down out of sight into the water and he was happy to see so much plankton because it meant fish. The strange light the sun made in the water, now that the sun was higher, meant good weather and so did the shape of the clouds over the land. But the bird was almost out of sight now and nothing showed on the surface of the water but some patches of yellow, sun-bleached Sargasso weed and the purple, formalized, iridescent, gelatinous bladder of a Portuguese man-of-war floating dose beside the boat. It turned on its side and then righted itself. It floated cheerfully as a bubble with its long deadly purple filaments trailing a yard behind it in the water.

19. What linguistic means does the author use for nature description (metaphors, similes, epithets, repetitions, alliteration etc.)?

20. Describe a piece of nature in the place you live using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– concerning issues of water ecology;

– non-fictional style.

22. Questions for discussion:

1. Do you think the problem of draining the Aral Sea is important?

2. Was it really necessary to jump start a cotton industry in the Central Asian steppes?

3. What consequences of the decision may still arise in the future?

4. How can the problem be solved?

5. Is it necessary to interfere so much in the natural process of nature?

Keys 1:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used.

– to rebound — [rɪˈbaʊnd] — восстанавливаться;

– lush — [lʌʃ] — цветущий;

– arid — [ˈærɪd] — засушливый;

– tributary — [ˈtrɪbjʊtərɪ] — приток реки;

– nomadic — [nəʊˈmædɪk] — кочевой;

– abandoned — [əˈbændənd] — заброшенный;

– hulk — [hʌlk] — остов;

– irrigation — [ɪrɪˈgeɪʃn] — орошение;

– crop — [krɒp] — сельскохозяйственная культура;

– wheat — [wiːt] — пшеница;

– to evaporate — [ɪˈvæpəreɪt] — испаряться;

– agricultural — [ˌægrɪˈkʌlʧərəl] — сельскохозяйственный;

– remnant — [ˈremnənt] — остаток;

– salinity — [səˈlɪnɪtɪ] — соленость;

– cautionary — [ˈkɔːʃən(ə)rɪ] — поучительный.

2. Match the words from column A to the words in column B to make word combinations:

– wildlife may rebound;

– lush oasis;

– arid region;

– tributaries of the sea;

– nomadic people;

– abandoned ships;

– rusting hulk;

– irrigation canals;

– food crop;

– ripe wheat;

– water evaporated;

– agricultural independence;

– remnant lake;

– high salinity;

– cautionary tale.

3. Explain in English what is meant by these words:

– lush – a lush area has a lot of healthy grass, plants, or trees;

– arid – very dry and without enough rain for plants;

– tributary – a river or stream that flows into a larger river or sea;

– nomadic – nomadic people move from place to place;

– to abandon — to leave someone or something somewhere, sometimes not returning to get them;

– to irrigate — to provide water for an area of land so that crops can be grown;

– crop — a plant such as a grain, fruit, or vegetable that is grown in large amounts by farmers;

– to evaporate — if a liquid evaporates or is evaporated, it changes into gas or vapour (= very small drops of water);

– remnant — a piece of something that continues to exist when the rest of that thing has gone;

– salinity — the amount of salt contained in something.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. Using dams and *irrigation* canals, the water for the cotton was diverted from the rivers.

2. The waters of the sea and its *tributaries* historically supported bountiful fisheries.

3. The Aral Sea remains a *cautionary* tale.

4. Some deserts are so *arid*; they appear totally devoid of all vegetation.

5. Food *crops* were grown alongside the cotton.

6. This place looks completely *abandoned*.

7. There are still three *remnant* lakes where some water is still present.

8. Fish and wildlife may *rebound* to Central Asia's Aral Sea.

9. It was a good-sized piece of land with *wheat*, sheep and ostriches.

10. Evaporation meant the remaining water had high *salinity*.

11. Most of the diverted water *evaporated* or sank into the dry soil.

12. The Aral Sea was for hundreds of years a *lush* oasis.

13. A Soviet program to gain *agricultural* independence accelerated the water diversion.

14. The *nomadic* lifestyle doesn't allow for much permanence.

15. The Aral Sea is littered with the rusting *hulks* of ships.

5. Replace the given words with the synonyms from the box. Reproduce the sentences from the text in which these synonyms can be used:

1) agrarian — agricultural;

2) abundant — lush;

3) deserted — abandoned;

4) preventive — cautionary;

5) revive — rebound;

6) flooding — irrigation;

7) vaporize — evaporate;

8) peripatetic — nomadic;

9) mineralization — salinity;

10) parched — arid;

11) cereal — wheat;

12) residue — remnant;

13) fruitage — crop;

14) feeding — tributary;

15) skeleton — hulk.

7. Translate the following sentences from English into Russian:

1. Озеро никогда не будет восстановлено в своем былом великолепии.

2. Аральское море в течение сотен лет было пышным оазисом в засушливом регионе.

3. Воды моря и его притоков с давних времен поддерживали обильное рыболовство, дикую природу и кочевое население региона.

4. Аральское море — пыльная соляная равнина, усеянная ржавыми остовами брошенных кораблей, жертва глубоко безответственного управления водными ресурсами.

5. Советские руководители решили, что степи Центральной Азии, пересеченные этими реками, были подходящим местом для начала хлопковой промышленности.

6. Используя плотины и оросительные каналы, вода для хлопка отводилась из рек, питавших Аральское море.

7. Наряду с хлопком выращивались продовольственные культуры, такие как пшеница.

8. Translate the following sentences from Russian into English:

1. The Soviets set higher and higher targets for cotton production.

2. Most of the diverted water evaporated or sank into the dry soil.

3. A Soviet program to gain agricultural independence accelerated the water diversion.

4. Fertilizer and pesticide from the cotton industry has contaminated the remaining water and the surrounding area.

5. People living nearby suffer from health problems due to the contaminated dust that blows from the dried up lake bed.

6. There is little hope of restoring the larger Southern portion, but the situation in the North is more promising.

7. As the water returns, salinity is decreasing.

8. The Aral Sea remains a cautionary tale.

Unit 2

Before reading task

Discuss the following questions:

1. What are the prospects of human civilization?
2. Is technological development dangerous for our planet? Why (not)?
3. What can air, water and soil pollution lead to?
4. How does pollution influence human's health?

Read the text:

What Will Earth Look Like in 500 Years?

If you could travel back in time five centuries, you would encounter an Aztec empire nearly at the end of its run, fresh paintings from Raphael, Titian and Durer, and cooler temperatures across the Northern Hemisphere. This was a world in the midst of the Little Ice Age (1300 to 1850 C.E.) and a period of vast European exploration now known as the Age of Discovery.

But what if we could look 500 years into the future and glimpse the Earth of the 26th century? Would the world seem as different to us as the 21st century would have seemed to residents of the 16th century?

The answer to this question largely depends on the relationship between human civilization and our natural environment — its past, its present and, of course, its future. We have been altering Earth since at least the Agricultural

Revolution of the Neolithic Age, and scientists disagree on exactly how many animal extinctions from even before that point should be lain at our feet. We manipulated the evolution of domestic plant and animal species, transformed the landscape and burned fossil fuels to power our way of life.

As a result, the planet's climate has changed — and is changing still. Some experts date the beginning of human climate change back to the Industrial Revolution in the 1800s, others to slash-and-burn agricultural practices in prehistoric times. Either way, overwhelming scientific consensus indicates that human activity is almost certainly responsible for climate-warming trends over the last century.

Our planet is warming, extreme weather continues to increase and our natural surroundings are changing. These changes threaten the balance of already highly exploited natural resources. The United Nations warns that the resulting droughts, floods, heat waves and wildfires will only speed up land degradation and accelerate the danger of severe food shortages. Such shortages are exactly the catalyst that historically leads to social unrest, mass migration and conflict.

So, on one level, 26th-century Earth will have had to come to terms with climate change. According to some computer models, melting Antarctic ice could cause sea levels to rise by 1 foot (0.3 meter) by the end of this century and 26 feet (8 meters) by the year 2300.

Perhaps our 26th-century descendants will see that we made the sorts of technological, cultural and political changes

necessary to prevent mass extinctions, political upheaval, environmental destruction and even civilizational collapse. Certainly, courses of action have been set in place to begin the work, as long as we can remain culturally and politically obliged to follow the course.

Or perhaps they will look back on a people who willingly drove the world into ruin.

Theoretical physicist and futurist Michio Kaku predicts that in a mere 100 years, humanity will make the leap from a type 0 civilization to a type I civilization on the Kardashev Scale. In other words, we will become a species that can harness the entire sum of a planet's energy.

Wielding such power, 26th-century humans could be masters of clean energy technologies such as fusion and solar power. Furthermore, they would be able to manipulate planetary energy in order to control global climate. Still, futurists disagree on the timing of such a hypothetical upgrade in our technological prowess — and the upgrade is far from assured.

Physicist Stephen Hawking predicted that overcrowding and energy consumption would make the Earth uninhabitable by 2600.

What other technologies will shape the world of the 26th century? Futurist and author Adrian Berry believes the average human life span will reach 140 years and that the digital storage of human personalities will enable a kind of computerized immortality. Humans will farm the oceans,

travel in starships and reside in both lunar and Martian colonies while robots explore the outer cosmos.

These technologies may come in handy, at least for a privileged few, if serious changes are not put in place to deal with climate change.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– civilization — ...;
– agricultural — ...;
– extinction — ...;
– fuel — ...;
– hazardous — ...;
– shortage — ...;
– solar — ...;
– calamity — ...;
– humidity — ...;
– toxic — ...;
– destruction — ...;
– endangered — ...;
– acid — ...;
– depletion — ...;
– fume — ... .

2. Match the words from column A to the words in column B to make word combinations:

Column A	Column B
agricultural	fume
exhaust	shortages
human	substance
mass	power
solar	humidity
endangered	revolution
soil	destruction
food	civilization
critical	wastes
acid	extinctions
fossil	depletion
natural	species
environmental	fuels
toxic	rain
hazardous	calamity

3. Explain in English what is meant by these words:

– shortage — ...;
– toxic — ...;
– extinction — ...;
– endangered — ...;
– solar — ...;
– fume — ...;
– depletion — ...;
– civilization — ...;
– destruction — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

endangered civilization depletion extinction humidity fuels acid toxic calamity hazardous fumes agricultural shortage solar destruction

1. The answer to this question largely depends on the relationship between human _____ and our natural environment.

2. We have been changing Earth since at least the _____ Revolution.

3. Perhaps our 26th-century descendants will see that we made the sorts of technological, cultural and political changes necessary to prevent mass _____.

4. We manipulated the evolution of domestic plant and animal species, transformed the landscape and burned fossil _____ to power our way of life.

5. Liquid _____ wastes enter the soil, thus polluting the groundwater.

6. The United Nations warns that the resulting droughts, floods, heat waves and wildfires will only speed up land degradation and accelerate the danger of severe food _____.

7. Wielding such power, 26th-century humans could be masters of clean energy technologies such as fusion and _____ power.

8. My lungs have been raised on exhaust _____ and industrial waste.

9. In some cases this _____ rain results in pollution of lakes and rivers.

10. Murdering elephants, tigers and other _____ species is not just cruel; it is also illegal.

11. Hazardous and partly _____ substances were emitted to the environment creating risks to human health.

12. Perhaps our 26th-century ancestors will see that we made the sorts of technological, cultural and political changes necessary to prevent mass extinctions, political upheaval and environmental _____.

13. Irresponsible attitudes to nature can lead to _____.

14. Global warming is affecting air _____.

15. The unsustainable use of natural resources leads to soil _____.

5. Replace the words in bold with their synonyms from the text:

1. Hazardous and partly **poisonous** substances were emitted to the environment creating risks to human health.

2. The United Nations warns that the resulting droughts, floods, heat waves and wildfires will only speed up land degradation and accelerate the danger of severe food **deficiency**.

3. Perhaps our 26th-century descendants will see that we made the sorts of technological, cultural and political changes

necessary to prevent mass extinctions, political upheaval and environmental **ruin**.

4. Wielding such power, 26th-century humans could be masters of clean energy technologies such as fusion and **cosmic** power.

5. Irresponsible attitudes to nature can lead to **disaster**.

6. My lungs have been raised on exhaust **smoke** and industrial waste.

7. Global warming is affecting air **evaporation**.

8. In some cases this **chemical** rain results in pollution of lakes and rivers.

9. The unsustainable use of natural resources leads to soil **decrease**.

10. Murdering elephants, tigers and other **threatened** species is not just cruel; it is also illegal.

11. Perhaps our 26th-century ancestors will see that we made the sorts of technological, cultural and political changes necessary to prevent mass **desolation**.

12. We have been altering Earth since at least the **Farming** Revolution of the Neolithic Age.

13. The answer to this question largely depends on the relationship between human **development** and our natural environment.

14. We manipulated the evolution of domestic plant and animal species, transformed the landscape and burned fossil **gas and oil** to power our way of life.

15. Liquid **harmful** wastes enter the soil, thus polluting the groundwater.

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. Have we been altering Earth since at least the Agricultural Revolution? How?

2. Did we manipulate the evolution of domestic plant and animal species, transform the landscape and burn fossil fuels? Why?

3. Why has the planet's climate changed?

4. Is human activity responsible for climate-warming trends over the last century?

5. What will droughts, floods, heat waves, and wildfires lead to?

6. When will humanity make the leap from Type 0 to Type 1 civilization?

7. Who says that overcrowding and energy consumption will make the Earth uninhabitable by 2600?

8. Does Adrian Berry believe that the average human life expectancy will reach 140 years or 250?

9. What kind of immortality might be possible in the future?

10. Will humanity survive if we take action on global climate change?

7. Translate the following sentences from English into Russian:

1. The answer to this question largely depends on the relationship between human civilization and our natural environment.

2. We have been changing Earth since at least the Agricultural Revolution.

3. Perhaps our 26th-century descendants will see that we made all sorts of technological, cultural, and political changes necessary to prevent mass extinction.

4. We manipulated the evolution of domestic plant and animal species, transformed the landscape and burned fossil fuels to power our way of life.

5. Liquid hazardous wastes enter the soil, thus polluting the groundwater.

6. The United Nations warns that the resulting droughts, floods, heat waves and wildfires will only speed up land degradation and severe food shortages.

7. Wielding such power, 26th-century humans could be masters of clean energy technologies such as and solar power.

8. My lungs have been raised on exhaust fumes and industrial waste.

9. In some cases, this acid rain results in pollution of lakes and rivers.

10. Murdering elephants, tigers and other endangered species is not just cruel; it is also illegal.

8. Translate the following sentences from Russian into English:

1. Глобальное потепление влияет на влажность воздуха.

2. Нерациональное использование природных ресурсов приводит к истощению почвы.

3. Человеческая деятельность почти наверняка привела к тенденции потепления климата за последнее столетие.

4. Наша планета теплеет, экстремальные погодные условия продолжают усиливаться, а наше природное окружение меняется.

5. В будущем мы станем видом, который сможет использовать всю энергию планеты.

6. Люди смогут манипулировать энергией планеты, чтобы контролировать глобальный климат.

7. Перенаселенность и потребление энергии сделают Землю непригодной для жизни к 2600 году.

8. Цифровое хранение человеческой личности обеспечит своего рода компьютерное бессмертие.

9. Люди создадут океанические фермы, будут путешествовать на звездолетах и жить в лунных и марсианских колониях.

10. В связи с глобальным потеплением произойдут большие изменения в погодных условиях.

9. Retell the text “What Will Earth Look Like in 500 Years?”

10. Give a summary of the text “What Will Earth Look Like in 500 Years?”

11. Make up a dialogue on the topic of Earth’s future.

12. Render the text into English:

Какой будет Земля в 2050 году?

Люди пожертвуют приватностью ради удобства… или наоборот?

Денежный перевод, покупка билетов или заказ такси — все это сегодня делают посредством смартфонов. Если его взломают или украдут, преступник сможет снять деньги, получить пароли и другую личную информацию. А взлом странички в социальной сети ничем не хуже «жучка» в комнате жертвы. Через несколько лет появятся еще и «виртуальные близнецы» — программа, способная принимать решения, основываясь на персональных данных владельца. Переложить ежедневные покупки или поиск авиабилетов на компьютер — заманчивая идея. Но о приватности придется забыть: программе потребуется максимум информации о пользователе. Данные «виртуальных близнецов» станут потенциальной целью преступников и промышленных шпионов. Впрочем, новая программа сама по себе не несет угрозы. Каждый сам решит, что важнее: удобство или приватность.

Хакеры будут разрушать заводы и отключать электричество?

Стратегические объекты во Вторую мировую уничтожали диверсионные группы, а с разрушением иранского завода справился компьютерный вирус. Хакеры способны не только похищать данные или портить компьютеры, но и вывести из строя оборудование фабрики. А значит, кибератаки способны стать орудием терактов. Взлом

компьютерных систем аэропорта или метрополитена грозит не только поломками, но и жертвами. По мнению экспертов, в будущем кибератаки будут уносить жизни и обходиться потерпевшим в миллиарды долларов. Особенно если их организацией займутся не вольные хакеры, а спецслужбы мощных государств.

13. Render the text from English into Russian:

Tech Innovations That Will Change the World

The Evolution of Smartphones

Our smartphones already control much of our lives. Look for even more technological concepts to make your devices more powerful and useful.

Many believe holographic displays and communications will become a common feature on most smartphones. Advances in graphic chips will make phones better for gaming than most current consoles.

Expect phones to become more fully integrated with IoT (Internet of Things) technology, as well. The smart homes of the future may also allow you to dock your phone in a single station and still make calls or issue voice commands from anywhere in the house.

Connecting the World to the Internet

While the Internet is commonplace in many countries, there are still regions of the world where connecting to the web is impossible. Several communications companies, including Google, Amazon, and SpaceX, are in a race to

change that. They are trying to beam broadband signals from space to remote areas.

A company called OneWeb is already launching satellites into space, with the goal of eventually connecting rural schools to the Internet.

3D Printing

3D printers work by building objects layer by layer, using a variety of materials including plastic and metal. 3D printers have been around for some time now, but the applications in the future almost seem limitless.

We will see 3D printers used to build …

– houses;

– cars;

– food;

– rebuild damaged coral reefs;

– medical models, instruments and artificial devices;

– rockets and rocket engines;

– footwear;

– home goods;

– dental products such as dental implants, bridges, and dentures.

14. Make a list of environmentally problematic trends of today's civilization. Discuss possible perspectives of their development with your partner.

15. Make up and act out a dialogue on the future of planet Earth.

16. Do a web search for futuristic views on ecology of the planet. Choose a point of view that supports your personal opinion. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation on some possible technologies of the future aiming to support and revive wildlife; discuss it with your partner.

18. Read and translate the following extract from "The Murderer" by Ray Bradbury and reproduce it to your partner:

"Suppose you tell me when you first began to hate the telephone".

"It frightened me as a child. Uncle of mine called it the Ghost Machine. Voices without bodies. Scared the living hell out of me. Later in life I was never comfortable. Seemed to me a phone was an impersonal instrument. If it felt like it, it let your personality go through its wires. If it didn't want to, it just drained your personality away until what slipped through at the other end was some cold fish of a voice, all steel, copper, plastic, no warmth, no reality. It's easy to say the wrong thing on telephones; the telephone changes your meaning on you. First thing you know; you've made an enemy. Then, of course, the telephone's such a convenient thing; it just sits there and demands you call someone who doesn't want to be called. Friends were always calling, calling, calling me. Hell, I hadn't anytime of my own. When it

wasn't the telephone it was the television, the radio, the phonograph. When it wasn't the television or radio or the phonograph it was motion pictures at the corner theater, motion pictures projected, with commercials on low-lying cumulus clouds. It doesn't rain rain any more, it rains soapsuds. When it wasn't High-Fly Cloud advertisements, it was music by Mozzek in every restaurant; music and commercials on the busses I rode to work. When it wasn't music, it was interoffice communications, and my horror chamber of a radio wristwatch on which my friends and my wife phoned every five minutes. What is there about such 'conveniences' that makes them so temptingly convenient? The average man thinks, Here I am, time on my hands, and there on my wrist is a wrist telephone, so why not just buzz old Joe up, eh? “Hello, hello!” I love my friends, my wife, humanity, very much, but when one minute my wife calls to say, “Where are you now, dear?” and a friend calls and says, “Got the best off-color joke to tell you. Seems there was a guy. “And a stranger calls and cries out, “This is the Find-Fax Poll. What gum are you chewing at this very instant?” Well!”

“How did you feel during the week?”

“The fuse lit. On the edge of the cliff. That same afternoon I did what I did at the office”.

“Which was?”

“I poured a paper cup of water into the intercommunications system”.

The psychiatrist wrote on his pad.

“And the system shorted?”

“Beautifully! The Fourth of July on wheels! My God, stenographers ran around looking lost! What an uproar!”

“Felt better temporarily, eh?”

“Fine! Then I got the idea at noon of stomping my wrist radio on the sidewalk. A shrill voice was just yelling out of it at me, “This is People's Poll Number Nine. What did you eat for lunch?” when I kicked the wrist radio!”

19. What linguistic means does the author use for describing the troubles of future society (metaphors, similes, epithets, repetitions, alliterations etc.)?

20. Describe your usual day full of technological devices using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– concerning issues of ecologically harmful trends of human civilization;

– non-fictional style.

22. Questions for discussion:

1. What can you personally do right now to prevent bad outcomes of civilization development for our planet?

2. Is it possible to control bad influence of technical development on wildlife?

3. Who are to blame in global ecological problems: average citizens, big corporations or governments?

4. Do you think humanity will have survived by the year 3 000?

Keys 2:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– civilization — [ˌsɪvɪlaɪˈzeɪʃ(ə)n] — цивилизация;

– agricultural — [ˌægrɪˈkʌltʃərəl] — сельскохозяйственный;

– extinction — [ɪkˈstɪŋ(k)ʃ(ə)n] — вымирание;

– fuel — [ˈfjuːəl] — топливо, горючее;

– hazardous — [ˈhæzədəs] — опасный;

– shortage — [ˈʃɔːtɪdʒ] — нехватка, дефицит;

– solar — [ˈsəʊlə] — солнечный;

– calamity — [kəˈlæmɪtɪ] — бедствие, беда;

– humidity — [hjʊˈmɪdɪtɪ] — влажность;

– toxic — [ˈtɒksɪk] — ядовитый;

– destruction — [dɪˈstrʌkʃ(ə)n] — разрушение, уничтожение;

– endangered — [ɪnˈdeɪndʒəd] — вымирающий (вид), находящийся в опасности;

– acid — [ˈæsɪd] — кислота, кислотный;

– depletion — [dɪˈpliːʃn] — истощение, опустошение;

– fume — [fjuːm] — дым, пар.

2. Match the words from column A to the words in column B to make word combinations:

– agricultural revolution;

– exhaust fume;

– human civilization;

– mass extinctions;

– solar power;

– endangered species;

– soil depletion;

– food shortage;

– critical humidity;

– acid rain;

– fossil fuels;

– natural calamity;

– environmental destruction;

– toxic substance;

– hazardous wastes.

3. Explain in English what is meant by these words:

– shortage — a lack of something needed;

– toxic — poisonous, or relating to poisonous substances;

– extinction — a situation in which something no longer exists;

– endangered — animals or plants that may soon not exist because there are very few now alive;

– solar — of or from the sun, or using the energy from the sun to produce electric power;

– fumes — harmful or strong-smelling gases or smoke;

– depletion — a reduction in something;

– civilization — human society with its well-developed social organizations;

– destruction — the act of ruining something;

– fuel — a substance that is used to provide heat or power, usually by being burned.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. The answer to this question largely depends on the relationship between human *civilization* and our natural environment.

2. We have been changing Earth since at least the *Agricultural* Revolution.

3. Perhaps our 26th-century descendants will see that we made the sorts of technological, cultural and political changes necessary to prevent mass *extinction*.

4. We manipulated the evolution of domestic plant and animal species, transformed the landscape and burned fossil *fuels* to power our way of life.

5. Liquid *hazardous* wastes enter the soil, thus polluting the groundwater.

6. The United Nations warns that the resulting droughts, floods, heat waves and wildfires will only speed up land degradation and accelerate the danger of severe food *shortage*.

7. Wielding such power, 26th-century humans could be masters of clean energy technologies such as fusion and *solar* power.

8. My lungs have been raised on exhaust *fumes* and industrial waste.

9. In some cases this *acid* rain results in pollution of lakes and rivers.

10. Murdering elephants, tigers and other *endangered* species is not just cruel; it is also illegal.

11. Hazardous and partly *toxic* substances were emitted to the environment creating risks to human health.

12. Perhaps our 26th-century ancestors will see that we made the sorts of technological, cultural and political changes necessary to prevent mass extinctions, political upheaval and environmental *destruction*.

13. Irresponsible attitudes to nature can lead to *calamity*.

14. Global warming is affecting air *humidity*.

15. The unsustainable use of natural resources leads to soil *depletion*.

5. Replace the given words with their synonyms:

1) toxic;

2) shortage;

3) destruction;

4) solar;

5) calamity;

6) fumes;

7) humidity;

8) acid;

9) depletion;

10) endangered;

11) extinction;

12) agricultural;

13) civilization;

14) fuels;

15) hazardous.

7. Translate the following sentences from English into Russian:

1. Ответ на этот вопрос во многом зависит от взаимоотношений между человеческой цивилизацией и нашей природной средой.

2. Мы изменяем Землю, по крайней мере, со времен сельскохозяйственной революции.

3. Возможно, наши потомки в 26 веке увидят, что мы произвели те технологические, культурные и политические изменения, которые были необходимы для предотвращения массового вымирания.

4. Мы манипулировали эволюцией видов домашних растений и животных, изменяли ландшафт и сжигали ископаемое топливо для обеспечения нашего образа жизни.

5. Жидкие опасные отходы попадают в почву, тем самым загрязняя грунтовые воды.

6. Организация Объединенных Наций предупреждает, что вызванные этим засухи, наводнения, тепловые волны и

лесные пожары только ускорят деградацию земель и ускорят нехватку продовольствия.

7. Обладая такой силой, люди 26-го века могли бы стать мастерами технологий чистой энергии, такой как солнечная энергия.

8. На мои легкие повлияли выхлопные газы и промышленные отходы.

9. В некоторых случаях кислотные дожди приводят к загрязнению озер и рек.

10. Убийство слонов, тигров и других исчезающих видов не только жестоко, но и незаконно.

8. Translate the following sentences from Russian into English:

1. Global warming is affecting air humidity.

2. The unsustainable use of natural resources leads to soil depletion.

3. Human activity is almost certainly responsible for climate-warming trends over the last century.

4. Our planet is warming, extreme weather continues to increase and our natural surroundings are changing.

5. In the future we will become a species that can harness the entire sum of a planet's energy.

6. People will be able to manipulate planetary energy in order to control global climate.

7. Overcrowding and energy consumption would make the Earth uninhabitable by 2600.

8. The digital storage of human personalities will enable a kind of computerized immortality.

9. Humans will farm the oceans, travel in starships and reside in both lunar and Martian colonies.

10. There are great changes in weather patterns due to global warming-up process.

Unit 3

Before reading task

Answer the following questions:

1. How do river systems influence wildlife and landscape?
2. What significant rivers of our country do you know?
3. Do you know any countries where there are no rivers?
4. Is it important for a city to have a river in terms of urban development?

Read the text:

Amazon problems

The Amazon is the longest river in the world (over 6 km) and belongs to the basin of the Atlantic Ocean. This river has many tributaries, so it has a huge amount of water. During periods of rains, the river floods vast tracts of land. On the shores of the Amazon a wonderful world of flora and fauna has formed. But, in spite of all the power of the water area, modern environmental problems did not pass by it.

Huge populations of fish are hiding in the Amazon, but in recent decades, due to intense human activity, the ecosystem's biodiversity has undergone changes. Scientists have discovered about 2.5 thousand freshwater fish in the Amazon. For example, the prehistoric fish of Arapaim was on the verge of extinction, and in order to maintain this species, this fish began to be bred on farms.

The waters of this water area are home to many interesting fish and animals: piranha, bull shark, Caiman crocodile, anaconda snake, pink dolphin, electric eel. And they are all threatened by the activities of people who only want to consume the wealth of the Amazon. In addition, since the discovery of America and this water area, many people have hunted various species of fauna, and then boasted trophies, and this also led to a reduction in populations.

There are many ways to pollute the Amazon. So people cut down the tropical forests of South America, and in these areas ecosystems are not restored, the soil is depleted and washed off into the river. This leads to siltation of the water area and its shallowing. The installation of dams and the development of industry on the shores of the Amazon leads not only to the disappearance of flora and fauna, but also contributes to the flow of industrial water into the water area. All this affects the change in the chemical composition of water. The atmosphere is polluted, the air is filled with various chemical compounds, rainwater falling over the Amazon and its shores also significantly pollutes water resources.

The water of this river is the source of life not only of flora and fauna, but also of local people living in tribes. In the river they earn their livelihood. In addition, in the Amazonian jungle, Indian tribes have the opportunity to hide from foreign invasions and live in peace. But the activity of foreigners, the development of the economy, leads to the crowding out of the local population from their usual

habitats, and dirty water contributes to the spread of diseases, from which these people die.

The life of many people, animals and plants depends on the Amazon River. The exploitation of this water area, deforestation and water pollution leads not only to a reduction in biodiversity, but also to climate change. Here is the home of many people who have had a traditional way of life for several millennia, and the invasion of Europeans has noticeably done harm not only to nature, but to human civilization as a whole.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– tract — ...;
– tributary — ...;
– fauna — ...;
– decade — ...;
– biodiversity — ...;
– extinction — ...;
– species — ...;
– eel — ...;
– siltation — ...;
– dam — ...;
– composition — ...;
– invasion — ...;
– millennia — ...;
– trophy — ...;

– reduction — ... .

2. Match the words from column A to the words in column B to create word combinations:

Column A	Column B
tracts	fauna
several	dams
reduction in	tributaries
various	biodiversity
electric	extinction
boasted	invasions
many	populations
recent	trophies
ecosystem's	species
flora and	eel
foreign	millennia
chemical	of land
the verge of	the water area
installation of	composition
siltation of	decades

3. Explain in English what is meant by these words:

– decade — ...;
– biodiversity — ...;
– extinction — ...;
– species — ...;
– eel — ...;
– siltation — ...;

– dam — ...;

– composition — ...;

– invasion — ...;

– tributary — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

tributaries eel invasion tracts reduction species fauna millennia decades extinction biodiversity dams siltation composition

1. This river has many _____, so it has a huge amount of water.

2. During periods of rains, the river floods vast of land.

3. On the shores of the Amazon a wonderful world of flora and _____ has formed.

4. Huge populations of fish are hiding in the Amazon, but in recent _____, due to intense human activity, the ecosystem's _____ has undergone changes.

5. The prehistoric fish of Arapaim was on the verge of.

6. In order to maintain this _____, this fish began to be bred on farms.

7. Many people have hunted various species of fauna, and then boasted _____, and this also led to a _____ in populations.

8. All this affects the change in the chemical of water.

9. This leads to _____ of the water area and its shallowing.

10. The installation of _____ and the development of industry on the shores of the Amazon contributes to the flow of industrial water into the water area.

11. Here is the home of many people who have had a traditional way of life for several _____.

12. The _____ of Europeans has noticeably done harm not only to nature, but to human civilization as a whole.

13. The waters of this water area are home to many interesting fish and animals: bull shark, anaconda snake, pink dolphin, electric _____.

5. Replace the words in bold with their synonyms from the text:

1. During periods of rains, the river floods vast **areas** of land.

2. This river has many **inflows**, so it has a huge amount of water.

3. Huge populations of fish are hiding in the Amazon, but in recent **decades**, due to intense human activity, the ecosystem's **biological variability** has undergone changes.

4. The prehistoric fish of Arapaim was on the verge of **disappearance.**

5. In order to maintain this **kind**, this fish began to be bred on farms.

6. Many people have hunted various species of fauna, and then boasted **booties**, and this also led to a **decrease** in populations.

7. All this affects the change in the chemical **structure** of water.

8. The **intervention** of Europeans has noticeably done harm not only to nature, but to human civilization as a whole.

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. Which river is the longest in the world?

2. Why has the biodiversity of the Amazon irreversibly changed in recent decades?

3. What kinds of fish and animals live in the Amazon?

4. Does the life of many people, animals and plants, depend on the Amazon?

5. How does atmospheric pollution affect the pollution of the Amazon?

6. Is damming and industrial development on the banks of the Amazon damaging the environment or helping to restore the Amazon ecosystem?

7. What ocean does the Amazon drain into?

8. Why does the silting of the water area and its shallowing occur?

9. Do any tribes live in the Amazon jungle?

7. Translate the following sentences from English into Russian:

1. The life of many people, animals and plants depends on the Amazon River.

2. The Amazon is the longest river in the world.

3. The Amazon belongs to the basin of the Atlantic Ocean.

4. This river has many tributaries, so it has a huge amount of water.

5. During periods of rains, the river floods vast tracts of land.

6. On the shores of the Amazon a wonderful world of flora and fauna has formed.

7. Huge populations of fish are hiding in the Amazon, but in recent decades, the ecosystem's biodiversity has undergone changes.

8. The prehistoric fish of Arapaim was on the verge of extinction.

9. In order to maintain this species, this fish began to be bred on farms.

10. Many people have hunted various species of fauna, and then boasted trophies, and this also led to a reduction in populations.

8. Translate the following sentences from Russian into English:

1. Все это влияет на изменение химического состава воды.

2. Это приводит к заиливанию акватории и ее обмелению.

3. Установка плотин и развитие промышленности на берегах Амазонки способствуют поступлению промышленных вод в акваторию.

4. Это родина многих людей, которые вели традиционный образ жизни на протяжении нескольких тысячелетий.

5. Активность иностранцев и развитие экономики приводят к вытеснению местного населения из привычных мест обитания.

6. Грязная вода способствует распространению болезней, от которых умирает много людей.

7. Ученые обнаружили в Амазонке около 2,5 тысяч пресноводных рыб.

8. Несмотря на всю мощь акватории, современные экологические проблемы не обошли ее стороной.

9. Существует много способов загрязнить Амазонку.

10. Почва истощается и смывается в реку.

9. Retell the text “Amazon Problems”.

10. Give a summary of the text “Amazon Problems”.

11. Make up a dialogue on the topic of the Amazon River problems.

12. Render the text into English:

Чем богаты российские реки

По данным Государственного доклада Минприроды о состоянии и об охране окружающей среды Российской Федерации от декабря 2020 г., уровень загрязнения рек в стране в 2019 г. вырос более чем на 15 % по сравнению с предыдущим отчетным. Из документа следует, что за весь 2019 г. в России было зафиксировано 3 095 случаев высокого и экстремально высокого загрязнения воды.

Минприроды пока не публиковало полный доклад о состоянии водных ресурсов в 2020 г. При этом, по данным исследования аудиторской компании FinExpertiza, за период с января по сентябрь 2020 г. число подобных нарушений уже превысило 2 200. По словам аналитиков компании, даже снижение числа загрязнений не обязательно означает качественное снижение вреда. В первую очередь оно зависит от веществ, попадающих в воду.

Также негативно состояние водных ресурсов оценивали аудиторы Счетной палаты, которые по итогам двух лет реализации нацпроекта «Экология» говорили о «загрязнении практически всех рек в стране». По данным ведомства, 88 % сточных вод, подлежащих очистке, сбрасываются неочищенными до требуемого уровня.

Основную нагрузку водные объекты несут из-за большого количества попадающих в них промышленных отходов, содержащих вредные химические элементы. Особенно актуальна эта проблема стала на фоне участившихся аварий на расположенных вблизи рек

добывающих предприятиях. По данным все того же доклада Минприроды, в Волге, Оби и Енисее ежегодно фиксируют наличие в воде нефтепродуктов, фенолов и аммонийного азота.

13. Render the text from English into Russian:

River ecosystems

The ecology of the river refers to the relationships that living organisms have with each other and with their environment – the ecosystem. An ecosystem is the sum of interactions between plants, animals and microorganisms and between them and non-living physical and chemical components in a particular natural environment.

River ecosystems have:

– flowing water that is mostly unidirectional;

– a state of continuous physical change;

– many different (and changing) microhabitats;

– variability in the flow rates of water;

– plants and animals that have adapted to live within water flow conditions.

Water flow

Water flow is the main factor that makes river ecology different from other water ecosystems. This is known as a lotic (flowing water) system. The strength of water flow varies from torrential rapids to slow backwaters. The speed of water also varies and is subject to chaotic turbulence. Flow can be affected by sudden water input from snowmelt, rain and groundwater. Water flow can alter the shape of riverbeds

through erosion and sedimentation, creating a variety of changing habitats.

Substrate

The substrate is the surface on which the river organisms live. It may be inorganic, consisting of geological material from the catchment area such as boulders, pebbles, gravel, sand or silt, or it may be organic, including fine particles, leaves, wood, moss and plants. Substrate is generally not permanent and is subject to large changes during flooding events.

14. Make a list of endangered aquatic species and the dangers threatening them. Discuss the issue with your partner.

15. Make up and act out a dialogue on the problems of river pollution in your region.

16. Do a web search for options of river integration into urban environment. Choose one that may be introduced in your city or town. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation of one of the longest rivers in the world: its features, problems, etc. Discuss it with your partner.

18. Read and translate the following extract from "Gone with the Wind" by Margaret Mitchell, and reproduce it to your partner:

Now that the sun was setting in a welter of crimson behind the hills across the Flint River, the warmth of the April day was ebbing into a faint but balmy chill. Spring had come early that year, with warm quick rains and sudden frothing of pink peach blossoms and dogwood dappling with white stars the dark river swamp and far-off hills. Already the plowing was nearly finished, and the bloody glory of the sunset colored the fresh-cut furrows of red Georgia clay to even redder hues. The moist hungry earth, waiting upturned for the cotton seeds, showed pinkish on the sandy tops of furrows, vermilion and scarlet and maroon where shadows lay along the sides of the trenches. The whitewashed brick plantation house seemed an island set in a wild red sea, a sea of spiraling, curving, crescent billows petrified suddenly at the moment when the pink-tipped waves were breaking into surf. For here were no long, straight furrows, such as could be seen in the yellow clay fields of the flat middle Georgia country or in the lush black earth of the coastal plantations. The rolling foothill country of north Georgia was plowed in a million curves to keep the rich earth from washing down into the river bottoms. It was a savagely red land, blood-colored after rains, brick dust in droughts, the best cotton land in the world. It was a pleasant land of white houses, peaceful plowed fields and sluggish yellow rivers, but a land of contrasts, of brightest sun glare and densest shade. The plantation clearings and miles of cotton fields smiled up to a warm sun, placid, complacent. At their edges rose the virgin forests, dark and cool even in the hottest noons, mysterious, a

little sinister, the soughing pines seeming to wait with an age-old patience, to threaten with soft sighs: “Be careful! Be careful! We had you once. We can take you back again.”

19. What linguistic means does the author use for nature description (metaphors, similes, epithets, repetitions, alliterations etc.)?

20. Describe your favorite river embankment using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– endangered aquatic species in Russia;

– non-fictional style.

22. Questions for discussion:

1. What is the best way to relax by the river? Is it possible to organize eco-friendly activities on the river shore?

2. Is it possible to create electrical power grid in a country without using rivers?

3. What are possible volunteer activities to improve ecological state of rivers?

4. Can we stop wasting liquid chemicals from factories and cities into rivers? How?

Keys 3:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– tract — [trækt] — тракт;

– tributary — [ˈtrɪbjʊtəri] — приток;

– fauna — [ˈfɔːnə] — животный мир;

– decade — [ˈdekeɪd] — десятилетие;

– biodiversity — [ˌbaɪəʊdaɪˈvɜːsɪti] — биоразнообразие;

– extinction — [ɪksˈtɪŋkʃən] — вымирание;

– species — [ˈspiːʃiːz] — вид, виды;

– eel — [iːl] — угорь;

– siltation — [sɪlˈteɪʃn] — заиливание;

– dam — [dæmz] — плотина;

– composition — [ˌkɒmpəˈzɪʃən] — состав;

– invasion — [ɪnˈveɪʒən] — вторжение;

– millennia — [mɪˈlenɪə] — тысячелетия;

– trophy — [‘trəʊfi] — трофей;

– reduction — [rɪˈdʌkʃən] — сокращение.

2. Match the words from column A to the words in column B to create word combinations:

– tracts of land;

– many tributaries;

– flora and fauna;

– recent decades;

– ecosystem’s biodiversity;

– the verge of extinction;

– various species;
– electric eel;
– siltation of the water area;
– installation of dams;
– chemical composition;
– foreign invasions;
– several millennia;
– boasted trophies;
– reduction in populations.

3. Explain in English what is meant by these words:

– decade — a *period* of ten years;

– biodiversity — the *number* and *types* of *plants* and *animals* that *exist* in a *particular area* or in the *world generally*;

– extinction — a *situation* in which something no *longer exists*;

– *species — a class of individuals having common attributes and designated by a common name; an individual or kind belonging to a biological species*;

– *eel* — a *long, thin*, snake-like *fish*, some *types* of which are *eaten*;

– *siltation* — the *process* of *blocking* something with *sand* or *soil*; the *sand* or *soil* that *blocks* something;

– dams — a *wall built across* a *river* that *stops* the river's *flow* and *collects* the *water*, *especially* to make a *reservoir* that *provides water* for an *area*;

– *composition* — *parts*, *substances*, etc. that something is made of;

– invasion — an *action* or *process* that *affects* someone's *life* in an *unpleasant* and *unwanted* way;

– tributary — a *river* or *stream* that *flows* into a *larger river* or a *lake*.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. This river has many *tributaries*, so it has a huge amount of water.

2. During periods of rains, the river floods vast *tracts* of land.

3. On the shores of the Amazon a wonderful world of flora and *fauna* has formed.

4. Huge populations of fish are hiding in the Amazon, but in recent *decades,* due to intense human activity, the ecosystem's *biodiversity* has undergone changes.

5. The prehistoric fish of Arapaim was on the verge of *extinction.*

6. In order to maintain this *species*, this fish began to be bred on farms.

7. Many people have hunted various species of fauna, and then boasted *trophies*, and this also led to a *reduction* in populations.

8. All this affects the change in the chemical *composition* of water.

9. This leads to *siltation* of the water area and its shallowing.

10. The installation of *dams* and the development of industry on the shores of the Amazon contributes to the flow of industrial water into the water area.

11. Here is the home of many people who have had a traditional way of life for several *millennia*

12. The *invasion* of Europeans has noticeably done harm not only to nature, but to human civilization as a whole.

13. The waters of this water area are home to many interesting fish and animals: bull shark, anaconda snake, pink dolphin, electric *eel.*

5. Replace the words in bold with their synonyms:

1. During periods of rains, the river floods vast *areas* of land.

2. This river has many *inflows*, so it has a huge amount of water.

3. Huge populations of fish are hiding in the Amazon, but in recent *decades*, due to intense human activity, the ecosystem's *biological variability* has undergone changes.

4. The prehistoric fish of Arapaim was on the verge of *disappearance*.

5. In order to maintain this *kind,* this fish began to be bred on farms.

6. Many people have hunted various species of fauna, and then boasted *booties*, and this also led to a *decrease* in populations.

7. All this affects the change in the chemical *structure* of water.

8. The *intervention* of Europeans has noticeably done harm not only to nature, but to human civilization as a whole.

7. Translate the following sentences from English into Russian:

1. Жизнь многих людей, животных и растений зависит от реки Амазонки.

2. Амазонка — самая длинная река в мире.

3. Амазонка относится к бассейну Атлантического океана.

4. У этой реки много притоков, поэтому в ней огромное количество воды.

5. В периоды дождей река затопляет обширные участки земли.

6. На берегах Амазонки сформировался удивительный мир флоры и фауны.

7. В Амазонке скрываются огромные популяции рыб, но за последние десятилетия биоразнообразие экосистемы претерпело изменения.

8. Доисторическая рыба арапаим была на грани исчезновения.

9. Чтобы сохранить этот вид, рыбу начали разводить на фермах.

10. Многие люди охотились на различные виды фауны, а затем хвастались трофеями, и это также привело к сокращению популяции.

8. Translate the following sentences from Russian into English:

1. All this affects the change in the chemical composition of water.

2. This leads to siltation of the water area and its shallowing.

3. The installation of dams and the development of industry on the shores of the Amazon contributes to the flow of industrial water into the water area.

4. Here is the home of many people who have had a traditional way of life for several millennia

5. The activity of foreigners, the development of the economy, leads to the crowding out of the local population from their usual habitats

6. Dirty water contributes to the spread of diseases, from which a lot of people die.

7. Scientists have discovered about 2.5 thousand freshwater fish in the Amazon.

8. In spite of all the power of the water area, modern environmental problems did not pass by it.

9. There are many ways to pollute the Amazon.

10. The soil is depleted and washed off into the river.

Unit 4

Before reading task

Discuss the following questions:

1. What pandemics were there in the history of humanity?

2. What illnesses are the biggest threats for humanity and individuals?

3. What can we do to improve and empower our immune system?

4. What are the most recent inventions and discoveries in the field of medicine and well-being?

Read the text:

Minamata Disease

The area around Minamata Bay in the Yatsushiro Sea of Kumamoto Prefecture was a beautiful and fertile sea blessed with a natural fish reef. It was also a spawning site for many species of fish. However, in the 1950s, strange phenomena appeared in the bay. Shellfish began to die, fish floated on the surface of the water, seaweed failed to grow, and cats died in strange ways.

A form of poisoning, Minamata disease is a disease of the central nervous system, caused by the consumption of fish and shellfish contaminated with methyl mercury compounds discharged into the environment as factory waste etc. and then accumulating in the marine life.

Along with clinical observation and autopsies, the Kumamoto University Study Group carried out field surveys in the epidemic area. They reported that the disease was not an infectious disease as had earlier been suspected, but a kind of heavy metal poisoning, and that the poison had entered the human body through consumption of fish and shellfish caught in the area.

Several hypotheses were proposed, in which manganese, selenium, thallium, or the multiple action of two or three of these might be the causative agent of Minamata disease. However, they could not be confirmed because discrepancies existed with clinical and pathological literature, and reproduction of Minamata disease was not successful in experimental animals.

On July 22, 1959, the Kumamoto University Study Group made a formal announcement that Minamata disease is a disease of the nervous system, which is caused by eating fish and shellfish of the local area (Minamata Bay). Mercury has come to our attention as a likely cause of pollution of the fish and shellfish.

The symptoms of Minamata disease include sensory disorders in the distal portion of the four extremities (loss of sensation in the hands and feet, difficulty coordinating movement of hands and feet, narrowing of the field of vision), hearing impairment, impairment of faculties for maintaining balance, speech becomes slurred and unclear, trembling of the hands and feet, eye movement becomes erratic. In very severe

cases, victims fall into a state of madness, lose consciousness, and may even die.

A fundamental cure for Minamata disease has not yet been found. Almost the whole village died. 50 years have passed since the outbreak of Minamata disease and 639 patients are alive now.

From 1932, effluent containing methyl mercury, created in the acetaldehyde manufacturing process of Chisso Minamata factory, was discharged into Minamata Bay.

The main measures taken regarding the contamination of fish and shellfish is that the Minamata Fisheries Co-op, with the guidance of Kumamoto Prefecture, once again enforced voluntary restrictions, by establishing restricted fishing areas, and organizing patrol boats.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– effluent — ...;
– bay — ...;
– restriction — ...;
– fertile — ...;
– to discharge — ...;
– marine — ...;
– autopsy — ...;
– survey — ...;
– consumption — ...;

– causative — ...;
– natural — ...;
– spawn — ...;
– seaweed — ...;
– mercury — ...;
– agent — ... .

2. Match the words from column A to the words in column B to make word combinations:

Column A	Column B
biological	peace
mercury	fish reef
to effect	surveys
spawning	factor
natural	column
fertile	sea
blessed	agent
causative	discharged into the sea
internal	life
field	seaweed on yield
autopsy	findings
marine	consumption
oil that	site

3. Explain in English what is meant by these words:
– effluent — ...;
– bay — ...;
– restriction — ...;

– fertile — ...;
– discharge — ...;
– marine — ...;
– autopsy — ...;
– survey — ...;
– consumption — ...;
– causative — ...;
– natural — ...;
– spawn — ...;
– seaweed — ...;
– mercury — ...;
– agent — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

effluents	restrictions	bay
discharged	marine	autopsies
surveyed	causative	natural
spawn	seaweed	mercury

1. _____ from local factories are finding their way into the river.

2. The main measures taken regarding the contamination of fish and shellfish is that the Minamata Fisheries Co-oponce again enforced voluntary_____, by establishing restricted fishing areas, and organizing patrol boats.

3. We sailed into a beautiful, secluded _____.

4. The oil that _____ into the sea seriously harmed a lot of birds and animals.

5. The oil slick seriously threatens _____ life around the islands.

6. Along with clinical observation and _____, the Study Group carried out field surveys in the epidemic area.

7. Before the new factory was built, its area was carefully _____.

8. Exhaust gases are a _____ factor of air pollution.

9. Floods and earthquakes are _____ disasters.

10. Salmon swim up rivers and streams to _____.

11. Shellfish began to die, fish floated on the surface of the water, _____ failed to grow, and cats died in strange ways.

12. A form of poisoning, caused by the consumption of fish and shellfish contaminated with _____ compounds.

5. Replace the words in bold with their synonyms:

1. Cheap **natural** food is still difficult to come by.

2. It was a whole long, **blessed** day of peace.

3. The soil was **fertile.**

4. For him I solved a small **internal** problem.

5. The main measures taken regarding the contamination of fish and shellfish is that the Minamata Fisheries Co-oponce again enforced voluntary **restriction**, by establishing restricted fishing areas, and organizing patrol boats.

6. The oil slick seriously threatens **marine** life around the islands.

7. Along with clinical observation and **autopsy**, the Study Group carried out field surveys in the epidemic area.

8. Before the new factory was built, its area was carefully **surveyed**.

9. Exhaust gases are a **causative** factor of air pollution.

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. Was the consumption of fish and shellfish contaminated with mercury compounds main cause of Minamata disease?

2. Do we have a fundamental cure for Minamata disease now?

3. Did a lot of fauna species live in Minamata Bay before the disaster?

4. Was the bay natural or man-made?

5. Who carried out field surveys in the epidemic area?

6. Why hypotheses put forward by scientists could not be reliable?

7. What are the symptoms of the Minamata disease?

8. What were the consequences of mercury discharged for the environment?

9. What measures have been taken regarding the contamination of fish and shellfish?

10. Why did people get sick with this disease?

7. Translate the following sentences from English into Russian:

1. Shellfish began to die, fish floated on the surface of the water, seaweed failed to grow, and cats died in strange ways.

2. Water is a liquid chemical substance, which is vital for life.

3. Seas, oceans, rivers and lakes have become a place into which factories pour poisonous chemicals and waste.

4. When manufacturers and factories are simply allowed to pour toxic chemicals into water bodies before treatment, the water becomes polluted.

5. By a process known as leaching, agricultural chemicals such as fertilizers and pesticides can wash into rivers and lakes, poisoning them.

6. Plastics are non-biodegradable. Mass plastics clog water bodies and contaminate water.

7. Urbanization is a key factor in increasing the amounts of water pollution.

8. Humans often carelessly dump their trash in the sea or near rivers.

9. Polluting gases in the air can dissolve into salt and fresh water and pollute the water.

10. Fossil fuels used in the shipping industry are one of the largest causes of both air and water pollution.

8. Translate the following sentences from Russian into English:

1. Эта бухта в Японии прекрасна: уникальная природа, естественный риф. Но озеро было сильно загрязнено.

2. Завод испортил качество воды, выбрасывая в озеро промышленные отходы.

3. Многие рыбы погибли, а те, что остались в живых, были отравлены вредными веществами.

4. Рыбалка была основным занятием в деревне.

5. Рыбаки продолжали вылавливать рыбу из загрязненного озера и продавать ее.

6. Обычные люди были отравлены этой рыбой.

7. Улов приносил прибыль, но наносил вред телам людей.

8. Через некоторое время ученые начали исследовать проблему местных жителей.

9. Во время исследований выявили новую болезнь. Она была названа именем деревни, где она возникла. Эта болезнь – заболевание центральной нервной системы.

10. Годы спустя вся деревня вымерла.

9. Retell the text “Minamata Disease”.

10. Give a summary of the text “Minamata Disease”.

11. Make up a dialogue on the topic of the Minamata disease dangers.

12. Render the text into English:

Испанка — пандемия гриппа 1918–1921 годов

К началу XX века во всех развитых странах появились национальные системы здравоохранения. Укрепился

авторитет медицинских работников. Было создано много разных вакцин. Началось быстрое искоренение опасных инфекций — чумы, холеры, оспы, «детских инфекций» и так далее. Произошло улучшение материального благополучия. Усилился санитарный порядок. Личная гигиена стала нормой.

В 1914 году начался глобальный мировой кризис — Первая мировая война. Повсеместно на территориях, где велись военные действия, происходили вспышки эпидемий — тиф, скарлатина, корь, даже чума. Но меры борьбы с ними были известны, поэтому так или иначе врачам удавалось с этим справляться.

Однако проблемой продолжали оставаться инфекционные болезни, передающиеся воздушным путем. Квинтэссенцией проблемы стал грипп. По правде говоря, это не была «новая болезнь». С гриппом сталкивались и раньше. Вспомним «английский пот» XVI века. Но появился новый фактор — глобальные транспортные сообщения. Окончание Первой мировой войны привело к передвижению огромных масс людей. Миллионы бывших солдат отправились домой. Грипп-испанка появился на всех континентах. Самый большой ущерб понесло население колониальных стран, особенно Индии и Африки, где службы здравоохранения, в сущности, отсутствовали. Но даже там, где они были, потери были большими. Особенно болезненно реагировала на «испанку» Европа и Северная Америка — наиболее развитые части мира, жертв эпидемии и там было очень много.

13. Render the text from English into Russian: Fatigue in Long COVID Patients Linked to Anxiety, Depression, and Apathy

The most common symptoms of the post-COVID-19 condition known as long COVID include fatigue, shortness of breath and cognitive dysfunction, according to the World Health Organization (WHO). To be considered symptoms of long COVID, they must be present for at least two months during the three months after the onset of the disease.

A recent study in Brain and Behavior showed that the disease had a generalized impact on attention skills, executive functions, learning and long-term memory. Furthermore, the scientific literature estimates that between 9% and 49% of patients present fatigue four weeks after the onset of symptoms, and it may even persist for a year in at least a third of patients.

Nevertheless, a possible link between fatigue and anxiety or depression in patients with long COVID had not been studied in laboratories. Now, a study by the Universitat Oberta de Catalunya (UOC), which has been published in open access format in the Journal of Neurology, has now shown that fatigue in long COVID patients is related to anxiety, depression, and apathy.

According to the author, now that we know the link between fatigue and depression, “clinicians should explore these aspects to provide a focus for therapeutic guidelines”. However, something that this research has not clarified is the

direction of the effect: “it's unclear whether fatigue leads to depression or vice versa”, he explained.

Scientists studied a sample of 136 patients with COVID-19 who were suffering from cognitive deficits eight months after contracting the virus. «We found that fatigue is linked to sustained attention, which we use to perform a task for a long period of time and which keeps us focused, and to executive functions, which enable us to temporarily store information in order to perform tasks such as calculating, or reproducing a phrase that we've heard», said Calabria.

14. Make a list of the most widespread diseases in Russia. Discuss some possible ways to fight with these diseases on federal level with your partner.

15. Make up and act out a dialogue on problems of healthcare systems of Russia.

16. Do a web search for rare genetic diseases. Choose one that seems to be mostly widespread in Russia, the UK, the USA, Australia, India, and New Zealand. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation of some ways to improve one’s health and well-being. Discuss it with your partner.

18. Read and translate the following extract from “Three Men in a Boat” by Jerome K. Jerome, and reproduce it to your partner:

We got out at Sonning, and went for a walk round the village. It is the most fairy-like little nook on the whole river. It is more like a stage village than one built of bricks and mortar. Every house is smothered in roses, and now, in early June, they were bursting forth in clouds of dainty splendour. If you stop at Sonning, put up at the "Bull," behind the church. It is a veritable picture of an old country inn, with green, square courtyard in front, where, on seats beneath the trees, the old men group of an evening to drink their ale and gossip over village politics; with low, quaint rooms and latticed windows, and awkward stairs and winding passages.

We roamed about sweet Sonning for an hour or so, and then, it being too late to push on past Reading, we decided to go back to one of the Shiplake islands, and put up there for the night. It was still early when we got settled, and George said that, as we had plenty of time, it would be a splendid opportunity to try a good, slap-up supper. He said he would show us what could be done up the river in the way of cooking, and suggested that, with the vegetables and the remains of the cold beef and general odds and ends, we should make an Irish stew.

19. What linguistic means does the author use for nature description (metaphors, similes, epithets, repetitions, alliterations etc.)?

20. Describe a camping trip you have been to or would like to go to using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– developing social awareness about diseases and ways to prevent and treat them in Russia;

– non-fictional style.

22. Questions for discussion:

1. What disease do you fear most and why?

2. Do you think vaccination should cover everyone or there can be some exclusions?

3. What do you do when you or your relative catches a cold?

4. Do you think people will be able to cure all existing diseases in the future?

Keys 4:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– effluent —[ˈeflʊənt] — сток, сточные воды, поток;

– bay — [beɪ] — бухта, залив;

– restriction — [rɪˈstrɪkʃ(ə)n] — ограничение;

– fertile — [ˈfɜːtaɪl] — плодородный, плодовитый

– to discharge — [dɪsˈtʃɑːdʒ] — сливать, выбрасывать;

– marine — [məˈriːn] — морской;

– autopsy — [ˈɔːtɒpsɪ] — вскрытие;

– survey — [ˈsɜːveɪ] — обзор, обследование;

– consumption — [kənˈsʌm(p)ʃ(ə)n] — потребление;

– causative — [ˈkɔːzətɪv] — причинный;

– natural — [ˈnætʃ(ə)r(ə)l] — природный, естественный;

– to spawn — [spɔːn] — плодиться;

– seaweed — [ˈsiːwiːd] — морская водоросль;

– mercury — [ˈmɜːkjərɪ] — ртуть;

– agent — [ˈeɪdʒ(ə)nt] — средство, вещество.

2. Match the words from column A to the words in column B to make word combinations:

– a biological agent;

– mercury column;

– to effect seaweed on yield;

– a spawning site;

– a natural fish reef;

– fertile sea;

– blessed peace;

– a causative factor;

– internal consumption;

– field surveys;

– autopsy findings;

– marine life;

– oil that discharged into the sea.

3. Explain in English what is meant by these words:

– effluent —liquid waste that is sent out from factories or places where sewage is dealt with, usually flowing into rivers, lakes, or the sea;

– bay — a part of the coast where the land curves in so that the sea is surrounded by land on three sides;

– restriction — an official limit on something;

– fertile — a large number of good quality crops;

– to discharge — to send out a substance, especially waste liquid or gas;

– marine — of or near the sea;

– autopsy — the cutting open and examination of a dead body in order to discover the cause of death;

– survey — the measuring and recording of the details of an area of land;

– consumption — the act of using, eating, or drinking something;

– causative — acting as the cause of something;

– natural — as found in nature and not involving anything made or done by people;

– spawn — the eggs of fish, frogs, etc.;

– seaweed — a green, brown, or dark red plant that grows in the sea or on land very close to the sea;

– mercury — a chemical element that is a heavy, silver-coloured metal, liquid at normal temperatures;

– agent — organism, or natural force that produces a particular effect by its action.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. *Effluents* from local factories are finding their way into the river.

2. The main measures taken regarding the contamination of fish and shellfish is that the Minamata Fisheries Co-oponce again enforced voluntary *restrictions*, by establishing restricted fishing areas, and organizing patrol boats.

3. We sailed into a beautiful, secluded *bay*.

4. The oil that *discharged* into the sea seriously harmed a lot of birds and animals.

5. The oil slick seriously threatens *marine* life around the islands.

6. Along with clinical observation and *autopsies*, the Study Group carried out field surveys in the epidemic area.

7. Before the new factory was built, its area was carefully *surveyed*.

8. Exhaust gases are a *causative* factor of air pollution.

9. Floods and earthquakes are *natural* disasters.

10. Salmon swim up rivers and streams to *spawn*.

11. Shellfish began to die, fish floated on the surface of the water, *seaweed* failed to grow, and cats died in strange ways.

12. A form of poisoning, caused by the consumption of fish and shellfish contaminated with *mercury* compounds.

5. Replace the words in bold with their synonyms:

1. Cheap *organic* food is still difficult to come by.

2. It was a whole, long, *blissful* day of peace.

3. The soil was *fruitful.*

4. For him I solve a small *domestic* problem.

5. The main measures taken regarding the contamination of fish and shellfish is that the Minamata Fisheries Co-oponce again enforced voluntary *limitation*, by establishing restricted fishing areas, and organizing patrol boats.

6. The oil slick seriously threatens *sea* life around the islands.

7. Along with clinical observation and *postmortem*, the Study Group carried out field surveys in the epidemic area.

8. Before the new factory was built, its area was carefully *examined*.

9. Exhaust gases are a *culprit* factor of air pollution.

7. Translate the following sentences from English into Russian:

1. Моллюски начали умирать, рыба плавала на поверхности воды, морские водоросли перестали расти, а кошки умирали странным образом.

2. Вода — это жидкое химическое вещество, очень важное для жизни.

3. Моря, океаны, реки и озера стали местами, куда заводы сливают ядовитые химикаты и отходы.

4. Когда производителям и фабрикам просто разрешают выливать токсичные химикаты в водоемы перед очисткой, вода становится загрязненной.

5. В результате процесса, известного как выщелачивание, сельскохозяйственные химикаты, такие как удобрения и пестициды, могут попадать в реки и озера, отравляя их.

6. Пластмассы не поддаются биологическому разложению. Большие объемы пластмассы засоряют водоемы и загрязняют воду.

7. Урбанизация является ключевым фактором увеличения объемов загрязнения воды.

8. Люди часто бездумно сбрасывают отходы в моря или вблизи рек.

9. Загрязняющие газы в воздухе могут растворяться в соленой и пресной воде и загрязнять ее.

10. Ископаемое топливо, используемое в судоходной отрасли, является одной из основных причин загрязнения как воздуха, так и воды.

8. Translate the following sentences from Russian into English:

1. This bay in Japan is beautiful, with its unique nature, a natural reef. But the lake was heavily polluted.

2. The plant spoiled the quality of the water by throwing its waste into it.

3. Many fish died, and those that remained alive were poisoned by harmful substances.

4. Fishing was the main business in the village.

5. Fishermen continued to catch fish from the polluted lake and sell it.

6. Ordinary people were poisoned by this fish.

7. The catch brought profit, but destroyed the body.

8. After a while, scientists began to study the problem of local residents.

9. During the studies, a new disease emerged. It was named after the village where it originated. This disease is a disease of the central nervous system.

10. Years later, the whole village died out.

Unit 5

Before reading task

Discuss the following questions:

1. Do you recycle plastic, glass, paper or anything else?

2. Are there any successful examples of federal recycling systems in other countries?

3. Is there any way to reduce the amount of plastic, paper etc. that we throw away immediately after using?

4. Can you call yourself an eco-friendly person? How about your relatives and friends?

Read the text:

Plastic Issues

Modern life is addicted to and dependent on plastic, which is found in everything from computers to medical equipment to food packaging. Unfortunately, more than 8.5 million metric tons of plastic waste ends up in our oceans every year. Much of this plastic comes from single-use packaging, such as soda bottles and bags, straws and diapers.

One study suggested that by the year 2050 there will be more plastic by weight in the oceans than fish!

Plastic pollution has a deadly and direct effect on wildlife. Many marine organisms get physically entangled in plastic trash and either drown or slowly starve to death. Others eat the plastics, mistaking it for food. Leatherback sea turtles often confuse plastic bags for their jellyfish prey and

asphyxiate. Seabirds, especially albatrosses, and other birds that scoop food from the sea have been found dead on their nests, their bellies too full of plastics to survive. A recent study found plastic trash in 90 percent of seabirds, with pieces ranging from bottle caps to rice-sized fragments that look like seeds.

Perhaps even more worrisome is microplastic pollution. The majority of plastic break down into smaller and smaller particles but never leave the environment entirely. Pieces smaller than 5 mm (0.2 inch) are classified as microplastics, and a significant portion of all plastic pollution in the oceans is now in this category. Microplastics also come from cosmetics, body washes, toothpastes and from items of synthetic clothing that shed minute fibers each time they are washed.

There is concern that these microplastics will bioaccumulate (become progressively more concentrated in the bodies of organisms up the food chain), since they are about the same size as plankton that serve as the base of the food chain. Many marine organisms have already been found with microplastics in their bodies. These tiny fragments could also contaminate humans directly, as microplastics have been found in sea salt sold for human consumption.

Disturbingly, global plastic production doubles every 11 years, meaning the amount of plastic pollution will only continue to increase without drastic changes. To help battle this problem, be aware of your consumption of single-use plastics—it will likely shock you to realize how seemingly

everything comes in plastic. Reduce your consumption of these products and reuse the containers whenever possible. Avoid health and beauty products that use plastic microbeads. Buy reusable bags, straws, and glass or metal beverage containers. Buy pantry basics, like rice and beans, in bulk, and avoid putting your produce in plastic bags for the short trip home. Recycle the plastic you do use, but be aware that not every plastic can be recycled. Participate in beach, river, or lake cleanups and help raise awareness of the problem. The challenge is huge, but, like plastics themselves, small actions accumulate.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– plastic — ...;
– pollution — ...;
– effect — ...;
– marine — ...;
– to asphyxiate — ...;
– scoop — ...;
– worrisome — ...;
– fragment — ...;
– consumption — ...;
– to reduce — ...;
– to recycle — ...;
– awareness — ...;

– challenge — ...;
– disturbingly — ...;
– concern — ... .

2. Match the words from column A to the words in column B to make word combinations:

Column A	Column B
modern	the environment
medical	packaging
single-use	clothing
deadly and direct	life
starve	organisms
leave	consumption
synthetic	aware
food	equipment
marine	the problem
human	cleanups
battle	effect
to be	to death
participate in	awareness
raise	pollution
plastic	chain

3. Explain in English what is meant by these words:
– plastic — ...;
– pollution — ...;
– marine — ...;
– to asphyxiate — ...;
– awareness — ...;

– consumption — ...;

– concern — ...;

– challenge — ...;

– worrisome — ...;

– to recycle — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

challenge	worrisome	addicted
recycle	majority	concern
environment	recycled	pollution
awareness	cleanups	scoop
production	consumption	marine
reduce	aware	

1. Modern life is _____ to and dependent on plastic.

2. Plastic_____ has a deadly and direct effect on wildlife.

3. Seabirds, especially albatrosses, and other birds that _____ food from the sea have been found dead on their nests.

4. Perhaps even more _____ is microplastic pollution.

5. The _____ of plastic break down into smaller and smaller particles but never leave the _____ entirely.

6. There is _____ that these microplastics will bioaccumulate.

7. Many _____ organisms have already been found with microplastics in their bodies.

8. Microplastics have been found in sea salt sold for human _____.

9. Global plastic _____ doubles every 11 years.

10. To help battle this problem, be _____ of your consumption of single-use plastics.

11. _____ your consumption of these products and reuse the containers whenever possible.

12. _____ the plastic you do use, but be aware that not every plastic can be _____.

13. Participate in beach, river, or lake _____.

14. Help raise _____ of the problem.

15. The _____ is huge, but, like plastics themselves, small actions accumulate.

5. Replace the words in bold with the synonyms from the text:

1. Plastic pollution has a deadly and direct **impact** on wildlife.

2. Many **sea creatures** have already been found with microplastics in their bodies.

3. **Use again** the plastic you do use.

4. Help raise **knowledge** of the problem.

5. Perhaps even more **confusing** is microplastic pollution.

6. Leatherback sea turtles often confuse plastic bags for their jellyfish prey and **stop breathing.**

7. These tiny **particles** could also contaminate humans directly.

8. The **problem** is huge, but, like plastics themselves, small actions accumulate.

9. Birds that **take** food from the sea have been found dead on their nests.

10. One **survey** suggested that by the year 2050 there will be more plastic by weight in the oceans than fish.

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. What is the size of microplastics?
2. Where do the microplastics come from?
3. Who suffers from plastic pollution the most?
4. How much metric tons of plastic waste end up in our oceans every year?
5. Will there be more plastic by weight in the oceans than fish by the year 2050?
6. How fast does global plastic production double?
7. What shall we do to reduce pollution?
8. Can every plastic be recycled?
9. What happens to many marine organisms due to plastic in the water?
10. Where have microplastics been found?

7. Translate the following sentences from English into Russian:

1. Perhaps even more worrisome is microplastic pollution.

2. The majority of plastic break down into smaller and smaller particles but never leave the environment entirely.

3. Pieces smaller than 5 mm (0.2 inch) are classified as microplastics.

4. There is concern that these microplastics will become progressively more concentrated in the bodies of organisms up the food chain.

5. Microplastics are about the same size as plankton that serve as the base of the food chain.

6. Many marine organisms have already been found with microplastics in their bodies.

7. These tiny fragments could also contaminate humans directly.

8. Microplastics have been found in sea salt sold for human consumption.

9. Global plastic production doubles every 11 years.

10. The amount of plastic pollution will only continue to increase without drastic changes.

8. Translate the following sentences from Russian into English:

1. Современная жизнь зависима от пластика.

2. Пластик встречается во всем: от компьютеров до медицинского оборудования и упаковки для пищевых продуктов.

3. К сожалению, ежегодно в наши океаны попадает более 8,5 миллионов тонн пластиковых отходов.

4. Большая часть этого пластика поступает из одноразовой упаковки, такой как бутылки из-под газировки и пакеты, соломинки и подгузники.

5. Исследование показало, что к 2050 году общий вес пластика в океанах превысит вес всей рыбы!

6. Вызывает тревогу тот факт, что глобальное производство пластика удваивается каждые 11 лет.

7. Имейте в виду, что не каждый пластик можно переработать.

8. Участвуйте в очистке пляжей, рек или озер.

9. Возможно, еще более тревожным является загрязнение микропластиком.

10. Покупайте основные продукты, такие как рис и фасоль, оптом и не кладите покупки в полиэтиленовые пакеты, чтобы просто довезти их до дома.

9. Retell the text “Plastic Issues”.

10. Give a summary of the text “Plastic Issues”.

11. Make up a dialogue on the topic of plastic in the ocean.

12. Render the text into English:

Пластик нашли в человеческой плаценте

В плаценте человека впервые обнаружили частицы микропластика, причем в тканях как со стороны матери, так и

стороны плода. Ранее в человеческом организме пластик обнаруживали только в пищеварительной системе. Результаты исследования опубликованы в журнале Environment International.

За последнее столетие мировое производство пластмасс достигло 320 миллионов тонн в год, и более 40 процентов этого объема приходится на одноразовую упаковку, что приводит к быстрому образованию пластикового мусора. Он накапливается в земле и в воде, переносится на большие расстояния ветрами и течениями, а под влиянием волн, бактерий и ультрафиолетового излучения разрушается до мельчайших частиц — микро- и нанопластика.

Микропластик — частицы до пяти миллиметров в диаметре — не только образуется в ходе разрушения более крупных кусков, но и изготавливается сразу в таком виде — например, микрогранулы для гелей, скрабов и другой косметики. Микрочастицы пластика способны попасть куда угодно: их уже находили в еде, чайных пакетиках, поваренной соли, пищеварительном тракте морских животных и человека.

13. Render the text from English into Russian:

China Bans Imports of Recyclables

Beginning in January, the world’s largest importer of recycled goods will no longer accept mixed plastic and paper, as well as other types of scrap. After years as the world’s biggest destination for recycled goods, China is getting sick of your scrap.

China imported about 2 million metric tons of aluminum, 10 million tons of plastic, and nearly 30 million tons of paper in 2015, according to industry figures. It's been about 20 percent of US plastic bottles, a quarter of its paper and a third of other plastics, along with nearly 90 percent of what's in Europe's recycling bins. Much of that material helped supply China's industrial boom or got turned back into consumer goods and shipped back to the West.

But after three decades of growth, the world's second-largest economy is struggling to manage its own trash and pollution problems. And Beijing has complained that much of the recyclables it takes in are mixed with ordinary garbage or other wastes that can sicken the people who process it. So in July, the government announced it would ban imports of mixed plastic and paper, as well as many other scrap materials.

The ban, which takes effect in January, is aimed at cracking down on what the Chinese call "large amounts of dirty wastes or even hazardous wastes" that are coming in from abroad. But it hass left recyclers in the West scrambling to figure out what to do with all that paper and plastic.

14. Make a list of products in your house that are packed in plastic. Discuss with your partner whether there are any ways to reduce or replace these products to cut out on plastic in your household.

15. Make up and act out a dialogue on a problem of plastic recycling in your region.

16. Do a web search for eco-friendly packaging and household products. Choose a strategy that looks interesting and applicable to your everyday life. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation of some recent discoveries and inventions in the fields of producing and recycling plastics and microplastics; discuss it with your partner.

18. Read and translate the following extract from "There Will Come Soft Rains" by Ray Bradbury, and reproduce it to your partner:

In the living room the voice-clock sang, *Tick-tock, seven o'clock, time to get up, time to get up, seven o 'clock!* as if it were afraid that nobody would. The morning house lay empty. The clock ticked on, repeating and repeating its sounds into the emptiness. *Seven-nine, breakfast time, seven-nine!*

In the kitchen the breakfast stove gave a hissing sigh and ejected from its warm interior eight pieces of perfectly browned toast, eight eggs sunny side up, sixteen slices of bacon, two coffees, and two cool glasses of milk.

"Today is August 4, 2026, said a second voice from the kitchen ceiling, *in the city of Allendale, California"*. It repeated the date three times for memory's sake. "*Today is Mr. Featherstone's birthday. Today is the anniversary of Tilita's marriage. Insurance is payable, as are the water, gas, and light bills*".

Somewhere in the walls, relays clicked, memory tapes glided under electric eyes.

Eight-one, tick-tock, eight-one o'clock, off to school, off to work, run, run, eight-one! But no doors slammed, no carpets took the soft tread of rubber heels. It was raining outside. The weather box on the front door sang quietly: "*Rain, rain, go away; umbrellas, raincoats for today…*" And the rain tapped on the empty house, echoing.

Outside, the garage chimed and lifted its door to reveal the waiting car. After a long wait the door swung down again.

At eight-thirty the eggs were shrivelled and the toast was like stone. An aluminium wedge scraped them into the sink, where hot water whirled them down a metal throat which digested and flushed them away to the distant sea. The dirty dishes were dropped into a hot washer and emerged twinkling dry.

Nine-fifteen, sang the clock, *time to clean*.

Out of warrens in the wall, tiny robot mice darted. The rooms were a crawl with the small cleaning animals, all rubber and metal. They thudded against chairs, whirling their moustached runners, kneading the rug nap, sucking gently at hidden dust. Then, like mysterious invaders, they popped into their burrows. Their pink electric eyes faded. The house was clean.

Ten o'clock. The sun came out from behind the rain. The house stood alone in a city of rubble and ashes. This was the one house left standing. At night the ruined city gave off a radioactive glow which could be seen for miles.

Ten-fifteen. The garden sprinklers whirled up in golden founts, filling the soft morning air with scatterings of brightness. The water pelted window panes, running down the charred west side where the house had been burned, evenly free of its white paint. The entire west face of the house was black, save for five places. Here the silhouette in paint of a man mowing a lawn. Here, as in a photograph, a woman bent to pick flowers. Still farther over, their images burned on wood in one titanic instant, a small boy, hands flung into the air; higher up, the image of a thrown ball, and opposite him a girl, hands raised to catch a ball which never came down.

The five spots of paint - the man, the woman, the children, the ball - remained. The rest was a thin charcoaled layer.

The gentle sprinkler rain filled the garden with falling light.

Until this day, how well the house had kept its peace. How carefully it had inquired, "*Who goes there? What's the password?"* and, getting no answer from lonely foxes and whining cats, it had shut up its windows and drawn shades in an old-maidenly preoccupation with self-protection which bordered on a mechanical paranoia.

It quivered at each sound, the house did. If a sparrow brushed a window, the shade snapped up. The bird, startled, flew off! No, not even a bird must touch the house!

19. What linguistic means does the author use for personification of the house and creating sad and

suspenseful atmosphere (metaphors, similes, epithets, repetitions, alliteration etc.)?

20. Describe an existing technology based on AI (artificial intelligence) and/or neural networks and try to personify it using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– concerning issues of reuse-reduce-recycle idea;

– non-fictional style.

22. Questions for discussion:

1. Is it easy to live an eco-friendly life?

2. Could microplastics be harmful for human's health?

3. What are other materials or products we should reduce and recycle?

4. Is it possible for our planet to recoup for damage we have caused with plastic and other kinds of wastes?

Keys 5:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– plastic — [ˈplæstɪk] — пластик;

– pollution — [pəˈluːʃn] — загрязнение;

– effect — [ɪˈfekt] — влияние;

– marine — [məˈriːn] — морской;

– to asphyxiate — [əsˈfɪksɪeɪt] — задыхаться;

– scoop — [skuːp] — собирают;

– worrisome — [ˈwʌrɪs(ə)m] — вызывающий тревогу, беспокойство, волнение;

– fragment — [ˈfrægment] — часть, фрагмент;

– consumption – [kənˈsʌmpʃn] — потребление;

– to reduce — [rɪˈdjuːs] — уменьшить, снизить;

– to recycle —[ˌriːˈsaɪkl] — перерабатывать;

– awareness — [əˈweənəs] — осведомлённость;

– challenge — [ˈtʃælɪndʒ] — вызов;

– disturbingly — [dɪˈstɜːbɪŋli] — волнующе, пугающе, тревожно;

– concern — [kənˈsɜːn] — беспокойство.

2. Match the words from column A to the words in column B to make word combinations:

– modern life;

– medical equipment;

– single-use packaging;

– deadly and direct effect;

– to starve to death;

– to leave the environment;

– synthetic clothing;

– food chain;

– marine organisms;

– human consumption;

– to battle the problem;

– to be aware;

– to participate in cleanups;

– to raise awareness;

– plastic pollution.

3. Explain in English what is meant by these words:

– plastic— a light, artificial substance that can be made into different shapes when it is soft and is used in a lot of different ways;

– pollution — damage caused to water, air, etc. by harmful substances or waste;

– marine — found in the sea, or relating to the sea;

– to asphyxiate — to die because you cannot breathe;

– awareness — knowledge that something exists, or having knowledge or experience of a particular thing;

– consumption — the amount of something that someone uses, eats, or drinks;

– concern — a worried or nervous feeling about something, or something that makes you feel worried;

– challenge ─ something that needs great mental or physical effort in order to be done successfully and therefore tests a person's ability;

– worrisome — making you feel unhappy and frightened;

– to recycle — to sort and collect rubbish in order to treat it and produce useful materials that can be used for other purposes.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. Modern life is *addicted* to and dependent on plastic.

2. Plastic *pollution* has a deadly and direct effect on wildlife.

3. Seabirds, especially albatrosses, and other birds that scoop food from the sea have been found dead on their nests.

4. Perhaps even more *worrisome* is microplastic pollution.

5. The *majority* of plastic break down into smaller and smaller particles but never leave the *environment* entirely.

6. There is *concern* that these microplastics will bioaccumulate.

7. Many *marine* organisms have already been found with microplastics in their bodies.

8. Microplastics have been found in sea salt sold for human *consumption.*

9. Global plastic *production* doubles every 11 years.

10. To help battle this problem, be *aware* of your consumption of single-use plastics.

11. *Reduce* your consumption of these products and reuse the containers whenever possible.

12. *Recycle* the plastic you do use, but be aware that not every plastic can be *recycled.*

13. Participate in beach, river, or lake *cleanups.*

14. Help raise *awareness* of the problem.

15. The *challenge* is huge, but, like plastics themselves, small actions accumulate.

5. Replace the words in bold with the synonyms from the text:

1. Plastic pollution has a deadly and direct *effect* on wildlife.

2. Many *marine organisms* have already been found with microplastics in their bodies.

3. *Recycle* the plastic you do use.

4. Help raise *awareness* of the problem.

5. Perhaps even more *worrisome* is microplastic pollution.

6. Leatherback sea turtles often confuse plastic bags for their jellyfish prey and *asphyxiate.*

7. These tiny *fragments* could also contaminate humans directly.

8. The *challenge* is huge, but, like plastics themselves, small actions accumulate.

9. Birds that *scoop* food from the sea have been found dead on their nests.

10. One *study* suggested that by the year 2050 there will be more plastic by weight in the oceans than fish.

7. Translate the following sentences from English into Russian:

1. Возможно, еще более тревожным является загрязнение микропластиком.

2. Большая часть пластика распадается на все более мелкие частицы, но никогда полностью не покидает окружающую среду.

3. Детали размером менее 5 мм классифицируются как микропластик.

4. Есть опасения, что микропластик будет все больше концентрироваться в телах организмов вверх по пищевой цепочке.

5. Микропластик примерно такого же размера, как планктон, который служит основой пищевой цепи.

6. У многих морских организмов уже обнаружен микропластик в организме.

7. Эти крошечные фрагменты также могут напрямую вредить людям.

8. Микропластик был обнаружен в морской соли, продаваемой для потребления человеком.

9. Мировое производство пластика удваивается каждые 11 лет.

10. Количество пластикового загрязнения будет только расти без резких изменений.

8. Translate the following sentences from Russian into English:

1. Modern life is addicted to plastic.

2. Plastic is found in everything from computers to medical equipment to food packaging.

3. Unfortunately, more than 8.5 million tons of plastic waste ends up in our oceans every year.

4. Much of this plastic comes from single-use packaging, such as soda bottles and bags, straws and diapers.

5. One study suggested that by the year 2050 there will be more plastic by weight in the oceans than fish!

6. Disturbingly, global plastic production doubles every 11 years.

7. Be aware that not every plastic can be recycled.

8. Participate in beach, river, or lake cleanups.

9. Perhaps even more worrisome is microplastic pollution.

10. Buy pantry basics, like rice and beans, in bulk, and avoid putting your produce in plastic bags for the short trip home.

Unit 6

Before reading task

Discuss the following questions:

1. What do you understand under the term “climate changes”?

2. Have you ever witnessed any extreme weather phenomena?

3. Where can we find active volcanoes?

4. What is the difference between the Himalayas and the Ural mountains?

Read the text:

The Tonga Tsunami

The Tonga tsunami saw its capital completely flooded and sent tidal waves across its Pacific neighbours: New Zealand, Japan, and the US Pacific coast.

An underwater volcano in the South Pacific erupted on January 15 and 16, causing tsunamis to hit the countries of Tonga, Hawaii, and Japan, where entire towns were flooded in the immediate aftermath.

Located about 30 km southeast of Tonga’s island, the Hunga-Tonga-Hunga-Ha’apai volcano eruption caused a severe tsunami towards the Pacific Island, with a plume of ash, steam and gas, which could be seen rising above the region. Satellite imagery has also shown the uninhabited

islands of Nuku and Tau to have completely eroded as a result.

Tsunami warnings were also issued in Japan, Hawaii, Alaska and the US Pacific coast. The US Geological Survey estimated the eruption caused the equivalent of a magnitude 5.8 earthquake, while scientists have noted that tsunamis generated by volcanoes instead of earthquakes are relatively rare.

Tonga, which is home to about 105,000 people, saw roads and properties flooded from the tsunami, but there have been no reports of fatalities or injuries, according to the prime minister of New Zealand Jacinda Ardern.

“Nuku’alofa Island is covered in thick plumes of volcanic dust but otherwise conditions are calm and stable”, Ardern said in a press conference on January 16. She added that, “communication with Tonga remains very limited”, as the eruption affected the island’s main undersea communications cable, cutting off power and internet.

As of Sunday, New Zealand has yet to send any military surveillance flight over Tonga due to the ash cloud, which rose up to 63,000 feet high, but aims to send supply planes as well as navy ships once the volcanic dust clears up.

Scientists warn that Tonga’s largest island of Tongatapu could be blanketed in volcanic ash in the coming days. The main concern for residents is water supplies as the ash and dust continues to contaminate the waters; people are encouraged to wear masks and drink bottled water in the meantime.

This was not the first time the region experienced a volcanic eruption in recent years: volcanic events in late 2014 and early 2015 created a small new island, which disrupted international air travel to the Pacific archipelago for several days. Tonga has also been heavily impacted by severe cyclones in 2020 and 2018.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– volcano — ...;
– eruption — ...;
– immediate — ...;
– aftermath — ...;
– severe — ...;
– ash — ...;
– steam — ...;
– uninhabited — ...;
– to estimate — ...;
– earthquake — ...;
– fatality — ...;
– injury — ...;
– to remain — ...;
– concern — ...;
– archipelago — ... .

2. Match the words from column A to the words in column B to make word combinations:

Column A	Column B
volcano	fatalities
immediate	is blanketed
underwater	concern
severe	tsunami
plume of	the waters
steam and	dust
uninhabited	water
estimated	volcano
reports of	aftermath
volcanic	gas
island	islands
main	the eruption
contaminate	eruption
bottled	archipelago
pacific	ash

3. Explain in English what is meant by these words:

– volcano — ...;
– eruption — ...;
– immediate — ...;
– aftermath — ...;
– severe — ...;
– ash — ...;
– steam — ...;
– earthquake — ...;

– injury — ...;

– archipelago — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

eruption affected immediate earthquakes estimated fatalities volcanic archipelago underwater steam injuries dust severe water concern uninhabited

1. An _____volcano in the South Pacific erupted on January 15 and 16.

2. Entire towns were flooded in the_____ aftermath.

3. Volcano eruption caused a _____ tsunami towards the Pacific Island.

4. _____ and gas can be seen rising above the region.

5. Satellite imagery has also shown the _____ islands of Nuku and Tau to have completely eroded as a result.

6. The US Geological Survey _____ the eruption caused the equivalent of a magnitude 5.8.

7. Scientists have noted that tsunamis generated by volcanoes instead of _____ are relatively rare.

8. There have been no reports of _____ or _____, according to the prime minister of New Zealand Jacinda Ardern.

9. Nuku'alofa Island is covered in thick plumes of volcanic _____.

10. The eruption _____ the island's main undersea communications cable.

11. Largest island of Tongatapu could be blanketed in_____ ash.

12. The main _____ for residents is water supplies as the ash and dust continues to contaminate the waters.

13. People are encouraged to wear masks and drink bottled _____ in the meantime.

14. This was not the first time the region experienced a volcanic _____ in recent years.

15. Volcanic events disrupted international air travel to the Pacific_____for several days.

5. Replace the words in bold with their synonyms from the text:

1. An **undersea** volcano in the South Pacific erupted on January 15 and 16.

2. This was not the first time the region experienced a volcanic **explosion** in recent years.

3. The main **disturb** for residents is water supplies as the ash and dust continues to contaminate the waters.

4. Entire towns were flooded in the **instant** aftermath.

5. Volcano eruption caused a **serious** tsunami towards the Pacific Island.

6. The eruption **influenced** the island's main undersea communications cable.

7. The US Geological Survey **rated** the eruption caused the equivalent of a magnitude 5.8 earthquake.

8. Nuku'alofa Island is covered in thick plumes of volcanic **dirt.**

9. Scientists have noted that tsunamis generated by volcanoes instead of **earth tremor** are relatively rare.

10. Satellite imagery has also shown the **unsettled** islands of Nuku and Tau to have completely eroded as a result.

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. Was there a tsunami in New Zealand?

2. Did it destroy the islands completely?

3. Were there any fatalities?

4. What water problem appeared for several next days?

5. Was the tsunami caused by the earthquake or by the volcano eruption?

6. Did the tsunami affect underwater or underground communication cable?

7. Which countries suffered the tsunami?

8. What could be seen rising above the region?

9. What was the main concern for the authorities?

20. How was the eruption estimated according to The US Geological Survey?

7. Translate the following sentences from English into Russian:

1. An underwater volcano in the South Pacific erupted on January 15 and 16, causing tsunamis to hit the countries of Tonga, Hawaii, and Japan.

2. The entire towns were flooded in the immediate aftermath.

3. Located about 30 km southeast of Tonga's island, the volcano eruption caused a severe tsunami towards the Pacific Island.

4. Steam and gas can be seen rising above our region.

5. Satellite imagery has also shown the uninhabited islands of Nuku and Tau to have completely destroyed as a result.

6. As of Sunday, New Zealand has yet to send any military forces flight over Tonga due to the ash cloud.

7. Tsunami warnings were also issued in Japan, Hawaii, Alaska and the US Pacific coast.

8. The US Geological Survey estimated the eruption caused the equivalent of a magnitude 5.8 earthquake.

9. Scientists have noted that tsunamis generated by volcanoes instead of earthquakes, are relatively rare.

10. Tonga, which is home to about 105,000 people, saw roads and properties flooded from the tsunami.

8. Translate the following sentences from Russian into English:

1. Сообщений о погибших или пострадавших не поступало.

2. Остров Нуку покрыт толстыми шлейфами вулканической пыли, но в остальном условия спокойные и стабильные.

3. Связь с Тонгой остается очень ограниченной.

4. Извержение затронуло основной подводный кабель связи острова, отключив электричество и интернет.

5. Новая Зеландия стремится отправить самолеты снабжения, а также военные корабли, как только рассеется вулканическая пыль.

6. Ученые предупреждают, что крупнейший остров Тонга Тонгатапу может быть покрыт вулканическим пеплом в будущем.

7. Главной проблемой для жителей является водоснабжение, так как пепел и пыль продолжают загрязнять воду.

8. Тем временем людей призывают носить маски и пить воду в бутылках.

9. Это не первое извержение вулкана в регионе за последние годы.

10. Вулканические явления в конце 2014 и начале 2015 годов создали небольшой новый остров.

9. Retell the text “The Tonga Tsunami”.

10. Give a summary of the text “The Tonga Tsunami”.

11. Make up a dialogue on the topic of The Tonga Tsunami consequences.

12. Render the text from Russian into English:

«Прекрасное дно»: как люди спустились в Марианскую впадину

23 января 1960 года люди впервые в истории спустились на дно Марианской впадины: глубина погружения составила чуть менее 11 км. Уникальное исследование проделали на батискафе «Триест» швейцарец Жак Пикар, сын создателя аппарата, и американец Дон Уолш.

Хронологию исторического спуска исследователи фиксировали в бортовом журнале. Отметки 100 м «Триест» достиг за 10 мин.

Пикар записал: «9.00. На глубине 1000 футов (304 м – «Газета.Ru»). Бесформенная масса планктона в потоке света создавала полную иллюзию снегопада, только «снег» падал вверх, а не вниз. Щель, в которую мы опускались, имела в ширину всего-навсего милю. Мы могли натолкнуться на стену желоба – одна мысль об этом леденила душу».

12.00. Глубина 31000 футов (9449 м). Какое под нами дно? Вполне возможно, что оно представляет илообразный слой. Не подстерегает ли нас опасность погрузиться в это вещество и навсегда в нем исчезнуть?

12.56. На сонаре появляется черная линия: дно.

13.00. На дне появляется неясное световое пятно, и вдруг мимо иллюминатора, извиваясь, проплывает маленькое животное (2-3 см в длину). Похоже, красная креветка.

Сели на прекрасное ровное дно, на твердый диатомовый ил. Дно чистое, светлое, табачного цвета. На глубинометре

37800 футов (11521,5 м). Время 13.06», — известно благодаря материалам, оставленным швейцарским ученым.

На дне Пикар и Уолш увидели рыбу, похожую на камбалу и креветку, и съели по шоколадке. Исследователи связались по ультразвуковому телефону с кораблем сопровождения и доложили о прибытии к месту назначения. Были проведены различные эксперименты: температура воды за бортом составляла 3,3°С. А после измерения внутреннего диаметра гондолы выяснилось, что она сжалась на 3 мм.

Настоящей сенсацией для участников рекордного погружения стал не только сам факт достижения неисследованных прежде глубин, но и встреча с проявлениями жизни в абсолютной темноте, отмечал Владислав Корякин в своей книге «Путешественники и первооткрыватели». Пикар и Уолш находились на дне 20 минут. Затем был сброшен балласт, и начался подъем, который занял 3 часа 27 минут. Общее время погружения составило 8 часов 25 минут.

13. Render the text from English into Russian:

Caribbean Reef Octopus

The Caribbean reef octopus is an absolute master of disguise and one of the most intelligent known invertebrates. Individuals of this species can completely change their color from one moment to the next using specialized color cells called chromatophores. In doing so, they often perfectly blend with their surroundings, even when settled on a surface with multiple colors. They also have such amazing control of their

skin and muscles that they can match the texture of their surroundings as well. A camouflaged Caribbean reef octopus can be nearly impossible to see.

This species is not fished commercially, but artisanal fishers certainly take the Caribbean reef octopus, and it has been depleted in some areas. Population trends across its entire range are not currently known, but it is likely that continued local fishing could put the species at risk. Furthermore, as this species lives on coral reefs, changes to that vulnerable ecosystem that result from climate change, overfishing, or other human activities could risk the Caribbean reef octopus as well.

Fun Facts about the Caribbean Reef Octopus

1. The Caribbean reef octopus is a warm-water species and can be found in the waters surrounding South Florida, the Caribbean Islands, and the northern coast of South America.1

2. The Caribbean reef octopus is a small species, with its mantle reaching only 5 to 12 cm in size.

3. These octopuses use their color-changing skin to camouflage themselves and communicate with other members of their species.

4. The Caribbean reef octopus is monogamous, and mates only once in its lifetime.

5. Caribbean reef octopuses use their web-like arms, seven rows of teeth, and suckers to catch prey.

14. Make a list of endangered ocean species and ways to save them. Discuss them with your partner.

15. Make up and act out a dialogue on a problem of ocean wildlife preservation.

16. Do a web search for discoveries in areas of ecology and medicine connected with oceans and wildlife. Choose one discovery or invention that looks interesting. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation of a famous ship of the past; discuss it with your partner.

18. Read and translate the following extract from "The Road" by Cormac McCarthy, and reproduce it to your partner:

There was a lake a mile from his uncle's farm where he and his uncle used to go in the fall for firewood. He sat in the back of the rowboat trailing his hand in the cold wake while his uncle bent to the oars. The old man's feet in their black kid shoes braced against the uprights. His straw hat. His cob pipe in his teeth and a thin drool swinging from the pipe bowl. He turned to take a sight on the far shore, cradling the oar handles, taking the pipe from his mouth to wipe his chin with the back of his hand. The shore was lined with birch trees that stood bone pale against the dark of the evergreens beyond. The edge of the lake a riprap of twisted stumps, gray and weathered, the windfall trees of a hurricane years past. The trees themselves had long been sawed for firewood and

carried away. His uncle turned the boat and shipped the oars and they drifted over the sandy shallows until the transom grated in the sand. A dead perch lolling belly up in the clear water. Yellow leaves. They left their shoes on the warm painted boards and dragged the boat up onto the beach and set out the anchor at the end of its rope. A lard can poured with concrete with an eyebolt in the center. They walked along the shore while his uncle studied the tree stumps, puffing at his pipe, a manila rope coiled over his shoulder. He picked one out and they turned it over, using the roots for leverage, until they got it half floating in the water. Trousers rolled to the knee but still they got wet. They tied the rope to a cleat at the rear of the boat and rowed back across the lake, jerking the stump slowly behind them. By then it was already evening. Just the slow periodic rack and shuffle of the oarlocks. The lake dark glass and window lights coming on along the shore. A radio somewhere. Neither of them had spoken a word. This was the perfect day of his childhood. This the day to shape the days upon.

19. What linguistic means does the author use for nature description (metaphors, similes, epithets, repetitions, alliteration etc.)?

20. Describe a coast of the sea, ocean or lake which you have visited using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– water pollution;

– non-fictional style.

22. Questions for discussion:

1. What initiatives and projects do you know that protect marine ecosystem?

2. Do you consider sea-related professions dangerous?

3. Would life on Earth have survived and developed if there had not been any fresh water?

4. Why are oceans and seas important for modern civilizations?

Keys 6:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– volcano — [vɒlˈkeɪnəʊ] — вулкан;

– eruption — [ɪˈrʌpʃn] — извержение;

– immediate — [ɪˈmiːdiət] — немедленный;

– aftermath — [ˈɑːftəmɑːθ] — последствия;

– severe — [sɪˈvɪə] — жестокий;

– ash — [æʃ] — пепел;

– steam — [stiːm] — пар;

– uninhabited — [ˌʌnɪnˈhæbɪtɪd] — необитаемый;

– to estimate — [ˈestɪmeɪt] — оценивать;

– earthquake — [ˈɜːθkweɪk] — землетрясение;
– fatality — [fəˈtæləti] — жертва;
– injury — [ˈɪndʒəri] — травма;
– to remain — [rɪˈmeɪn] — оставаться;
– concern — [kənˈsɜːn] — беспокойство;
– archipelago — [ˌɑːkɪˈpeləgəʊ] — архипелаг.

2. Match the words from column A to the words in column B to make word combinations:

– volcano eruption;
– immediate aftermath;
– underwater volcano;
– severe tsunami;
– plume of ash;
– steam and gas;
– uninhabited islands;
– estimated the eruption;
– reports of fatalities;
– volcanic dust;
– island is blanketed;
– main concern;
– to contaminate the waters;
– bottled water;
– pacific archipelago.

3. Explain in English what is meant by these words:

– volcano — a mountain with a large opening at the top through which gases and lava are forced out into the air;

– eruption — an occasion when a volcano suddenly throws out burning rocks, smoke, etc.;

– immediate — happening or done without delay;

– aftermath — the situation that exists as a result of an important event;

– severe — extremely bad or serious;

– ash — the grey or black powder that is left after tobacco, wood or coal burnt;

– steam — the hot gas that water changes into when it boils;

– earthquake — a sudden, violent shaking of the Earth's surface;

– injury — harm done to a person's or an animal's body, for example in an accident;

– archipelago — a group of islands and the sea surrounding them.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. An *underwater* volcano in the South Pacific erupted on January 15 and 16.

2. Entire towns were flooded in the *immediate* aftermath.

3. Volcano eruption caused a *severe* tsunami towards the Pacific Island.

4. *Steam* and gas can be seen rising above the region.

5. Satellite imagery has also shown the *uninhabited* islands of Nuku and Tau to have completely eroded as a result.

6. The US Geological Survey *estimated* the eruption caused the equivalent of a magnitude 5.8.

7. Scientists have noted that tsunamis generated by volcanoes instead of *earthquake*s are relatively rare.

8. There have been no reports of *fatalities* or *injuries*, according to New Zealand Jacinda Ardern.

9. Nuku'alofa Island is covered in thick plumes of volcanic *dust*.

10. The eruption *affected* the island's main undersea communications cable.

11. Largest island of Tongatapu could be blanketed in *volcanic* ash.

12. The main *concern* for residents is water supplies as the ash and dust continues to contaminate the waters.

13. People are encouraged to wear masks and drink bottled *water* in the meantime.

14. This was not the first time the region experienced a volcanic *eruption* in recent years.

15. Volcanic events disrupted international air travel to the Pacific *archipelago* for several days

5. Replace the words in bold with the synonyms from the box.

1. An *underwater* volcano in the South Pacific erupted on January 15 and 16.

2. This was not the first time the region experienced a volcanic *eruption* in recent years.

3. The main *concern* for residents is water supplies as the ash and dust continues to contaminate the waters.

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8. Nuku'alofa Island is covered in thick plumes of volcanic *dust.*

9. Scientists have noted that tsunamis generated by volcanoes instead of *earthquake* are relatively rare.

10. Satellite imagery has also shown the uninhabbited islands of Nuku and Tau to have completely eroded as a result.

7. Translate the following sentences from English into Russian:

1. Подводный вулкан в южной части Тихого океана извергался 15 и 16 января, вызвав цунами, обрушившиеся на страны Тонга, Гавайи и Японию.

2. Сразу после этого были затоплены целые города.

3. Расположенный примерно в 30 км к юго-востоку от острова Тонга, извержение вулкана вызвало сильное цунами в сторону Тихоокеанского острова.

4. Пар и газ поднимаются над регионом.

5. Спутниковые снимки также показали, что необитаемые острова Нуку и Тау в результате полностью разрушены.

6. По состоянию на воскресенье Новая Зеландия еще не отправила ни одного военного самолета над Тонгой из-за облака пепла.

7. Предупреждения о цунами были также выпущены в Японии, на Гавайях, на Аляске и на Тихоокеанском побережье США.

8. Геологическая служба США оценила, что извержение вызвало землетрясение магнитудой 5,8.

9. Ученые отметили, что цунами, вызванные вулканами вместо землетрясений, относительно редки.

10. В Тонге, где проживает около 105 000 человек, в результате цунами были затоплены дороги и имущество.

8. Translate the following sentences from Russian into English:

1. There have been no reports of fatalities or injuries.

2. Nuku Island is covered in thick plumes of volcanic dust but otherwise conditions are calm and stable.

3. Communication with Tonga remains very limited.

4. The eruption affected the island’s main undersea communications cable, cutting off power and internet.

5. New Zealand aims to send supply planes as well as navy ships once the volcanic dust clears up.

6. Scientists warn that Tonga's largest island of **Tongatapu** could be blanketed in volcanic ash in the coming days.

7. The main concern for residents is water supplies as the ash and dust continues to contaminate the waters.

8. People are encouraged to wear masks and drink bottled water in the meantime.

9. This was not the first time the region experienced a volcanic eruption in recent years.

10. Volcanic events in late 2014 and early 2015 created a small new island.

Unit 7

Before reading task

Discuss the following questions:

1. What sources of energy does humanity use?

2. Is ecological situation in your region healthy?

3. Can humanity recoup the harm that it has caused to the Earth?

4. What brings more harm to the environment – usage of plastic products or fossil fuels?

Read the text:

The California Oil Spill

The amount of crude oil spilled in an offshore pipeline leak in Southern California is believed to be close to 25,000 gallons, or only about one-fifth of what officials initially feared, a Coast Guard official said Thursday.

The leak off the coast of Orange County was previously estimated to be at least 25,000 gallons and no more than 132,000 gallons. The final count for the spill will likely be closer to the lower figure, which correlates with the amount of oiling seen on the California shore, Coast Guard Capt. Rebecca Ore said Thursday.

“We have a high degree of confidence that the spill amount is approximately 588 barrel”», she told reporters in Newport Beach. “That number may potentially adjust a small degree”.

The spill off Huntington Beach was confirmed on 2 October, a day after residents reported a petroleum smell in the area.

Coast Guard officials said it came from a leak in a pipeline owned by Houston-based Amplify Energy that shuttles crude from offshore platforms to the coast. Officials said the cause of the leak remains under investigation but the pipeline was likely damaged by a ship's anchor several months to a year before it ruptured.

The shorelines in Huntington Beach, which is known as “Surf City USA”, and neighboring Newport Beach were shut down until Monday.

Fishing also has been barred off the coast of Orange County. State officials are taking samples of fish from the area to assess whether they have been affected by the oil before allowing fishing to resume.

Workers in protective gear continue to comb the sand for tar balls washing ashore along more than 70 miles (113 kilometers) of coastline in Orange and San Diego counties. Roy Kim, an environmental scientist with California's Office of Spill Prevention and Response, said the size of tar balls being collected on beaches has diminished from the early days after the spill.

“They were seeing huge patties of oil in the beginning”, Kim said, adding that the oil slick has largely been broken up into tar balls by the tides and winds. “Now you're just kind of seeing the smaller stuff”.

Crews are also working to remove oil from rocky coastal habitat while being careful not to damage it, he said.

Some oil is naturally present off the coast of Southern California and residents are used to seeing some tar on beaches, said California Fish and Wildlife Lt. Christian Corbo. Tar samples collected in the clean-up will be sent to a state petroleum chemistry lab to determine whether they are from the spill, he said.

In the coming days, workers will likely start assessing beach conditions in specific areas to determine whether the clean-up is complete, Ore said.

While it's still possible tar balls will wash up from the spill after that point — and officials will continue to respond to reports that come in — “at some point, and we're evaluating this right now, we reach a point where we recommend no further treatment on segments of the beach”, she said.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– to diminish — ...;

– damage — ...;

– barrel — ...;

– oil extraction — ...;

– to throw away — ...;

– oil deposit — ...;

– to dump / to be dumped — ...;
– shortage — ...;
– propane — ...;
– petroleum — ...;
– filter /purifier — ...;
– bin — ...;
– to fine — ...;
– to recycle / to be recycled — ...;
– recyclable — ... .

2. Match the words from column A to their translation in column B:

Column A	Column B
oil extraction	контейнеры
damage	нехватка
oil deposit	пригодный к переработке
to dump	фильтр
a shortage	штрафовать
filter	нефть
petroleum	сбрасывать в большом количестве
to be dumped	залежь нефти
purifier	перерабатывать
to fine	баррель
bins	побочный продукт добычи нефти (пропан)
propane	добыча нефти
diminish	очиститель

to recycle	быть выброшенным
recyclable	выбрасывать
throw away	уменьшить
barrel	ущерб

3. Explain in English what is meant by these words:

– ecology — ...
– (to) influence — ...
– environmental — ...
– demolition — ...
– fragile — ...
– to take measures — ...
– calamity — ...
– welfare — ...
– fuel — ...
– to prevent — ...

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

propane	recyclable	diminish
barrels	filters	recycling
damage	fined	shortage
throwing away	dump	

1. You may think that one thrown candy wrapper does not harm nature but in no way does this _____ your responsibilities.

2. Pollution of water bodies with oil brings them great _____.

3. «We have a high degree of confidence that the spill amount is approximately 588 _____», she told reporters in Newport Beach.

4. There is an acute problem of _____ of machines for cleaning water.

5. This also requires special _____.

6. People should stop _____ and _____ing waste.

7. Hazardous waste _____ has proven to be difficult even in developed countries.

8. _____ is a by-product of oil extraction.

9. People should be _____ for polluting our planet.

10. We should use _____ and environmentally friendly materials to protect our environment.

5. Replace the given words with the synonyms:

– ecology — ...;

– (to) influence — ...;

– environmental — ...;

– demolition — ...;

– fragile — ...;

– calamity — ...;

– welfare — ...;

– fuel — ...;

– to prevent — ...;

– to take measures — ... .

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. What is the amount of crude oil spilled in an offshore pipeline leak in Southern California?

2. Was the leak off the coast of Orange County previously estimated to be at least 25,000 gallons or no more than it?

3. Where did it come from?

4. When was the spill off Huntington Beach confirmed?

5. Were the shorelines in Huntington Beach and neighboring Newport Beach shut down until Monday?

6. What did workers in protective gear do on the beach?

7. Who will likely start assessing beach conditions in specific areas to determine whether the clean-up is complete?

8. Was the California oil spill about 25,000 gallons or 28,000 gallons?

9. Would tar samples collected in the clean up be sent to a state petroleum chemistry lab?

10. Did this incident end well?

7. Translate the following sentences from English into Russian:

1. The amount of crude oil spilled in an offshore pipeline leak in Southern California is believed to be close to 25,000 gallons.

2. The spill off Huntington Beach was confirmed on Oct. 2, a day after residents reported a petroleum smell in the area.

3. Coast Guard officials said it came from a leak in a pipeline owned by Houston-based Amplify Energy that shuttles crude from offshore platforms to the coast.

4. Officials said the cause of the leak remains under investigation but the pipeline was likely damaged a year before it ruptured.

5. The shorelines in Huntington Beach, which is known as “Surf City USA”, and neighboring Newport Beach were shut down.

6. Fishing also was barred off the coast of Orange County.

7. State officials took samples of fish from the area to assess whether they have been affected by the oil before allowing fishing to resume.

8. Workers in protective gear continued to comb the sand for tar balls washing ashore along more than 70 miles (113 kilometers) of coastline in Orange and San Diego counties.

9. Roy Kim, an environmental scientist with California's Office of Spill Prevention and Response, said the size of tar balls being collected on beaches has diminished from the early days after the spill.

10. “They were seeing huge patties of oil in the beginning”, Kim said.

8. Translate the following sentences from Russian into English:

1. Некоторое количество нефти естественно присутствует у побережья Южной Калифорнии, и жители привыкли видеть немного смолы на пляжах.

2. Это сказал лейтенант Калифорнийского отдела рыболовства и дикой природы Кристиан Корбо.

3. По его словам, образцы смолы, собранные при очистке, будут отправлены в государственную нефтехимическую лабораторию.

4. Это будет сделано для того, чтобы определить, являются ли они результатом разлива.

5. В ближайшие дни рабочие, вероятно, начнут оценивать состояние пляжей в определенных районах, чтобы определить, завершена ли очистка.

6. Проблема в скором времени будет разрешена.

7. Загрязнение нефтью водоемов это катастрофа.

8. Учёные пытаются найти причину утечки нефти.

9. Одной из причин может быть недавно произошедший взрыв около завода.

10. Разлив нефти может причинить вред животным, которые живут в этой воде.

9. Retell the text “The California Oil Spill”.

10. Give a summary of the text “The California Oil Spill”.

11. Make up a dialogue on the topic of oil spill issues.

12. Render the text into English:

Почему нефть не закончится

Для мировой экономики нефть — один из базовых и самых динамичных рынков: здесь всегда есть активный спрос

и предложение, высокая конкуренция и продвинутые механизмы для регулирования. Страны, обладающие нефтяными месторождениями, строят долгосрочные стратегии и планируют бюджеты с опорой на рынок нефти. Исчезновение этой опоры чревато затяжными глобальными кризисами.

Артем Козинов называет 5 главных причин, почему это нам не грозит:

Мы до сих пор не знаем, как образуется нефть. На этот счет есть 2 теории: органическая и неорганическая. Сторонники первой считают, что углеводороды появились в древности из органического вещества и планктона под воздействием высоких температур и давления. Вторые полагают, что нефть образовалась на большой глубине в мантии Земли из-за сложных химических реакций. Но обе теории говорят о том, что нефть возобновляема;

Нефть не всегда зарождается там, где ее добывают. Это также следует из теорий ее происхождения и означает, что новейшие методы разработки позволят снова и снова добывать нефть в нужных количествах;

Человечество добывает меньше половины мировых запасов нефти. Даже при интенсивной добыче в нефтяных месторождениях мы извлекаем лишь меньшую часть углеводородов;

Нефть добывают далеко не из всех открытых месторождений. Многие из них пока плохо исследованы и не освоены;

Многие месторождения до сих пор не обнаружены.

Дополнительным фактором служит то, что добыча нефти ограничена международными организациями — такими, как ОПЕК и Международное энергетическое агентство.

13. Render the text from English into Russian: Environmental disaster, Gulf of Mexico

Deepwater Horizon oil spill, also called Gulf of Mexico oil spill, largest marine oil spill in history, caused by an April 20, 2010, explosion on the Deepwater Horizon oil rig — located in the Gulf of Mexico, approximately 41 miles (66 km) off the coast of Louisiana—and its subsequent sinking on April 22. Deepwater Horizon rig, owned and operated by offshore-oil-drilling company Transocean and leased by oil company BP, was situated in the Macondo oil prospect in the Mississippi Canyon, a valley in the continental shelf. The oil well over which it was positioned was located on the seabed 4,993 feet (1,522 metres) below the surface and extended approximately 18,000 feet (5,486 metres) into the rock. On the night of April 20 a surge of natural gas blasted through a concrete core recently installed by contractor Halliburton in order to seal the well for later use. It later emerged through documents released by Wikileaks that a similar incident had occurred on a BP-owned rig in the Caspian Sea in September 2008. Both cores were likely too weak to withstand the pressure because they were composed of a concrete mixture that used nitrogen gas to accelerate curing.

Once released by the fracture of the core, the natural gas traveled up the Deepwater rig’s riser to the platform, where it

ignited, killing 11 workers and injuring 17. The rig capsized and sank on the morning of April 22, rupturing the riser, through which drilling mud had been injected in order to counteract the upward pressure of oil and natural gas. Without any opposing force, oil began to discharge into the gulf. The volume of oil escaping the damaged well — originally estimated by BP to be about 1,000 barrels per day — was thought by U.S. government officials to have peaked at more than 60,000 barrels per day.

14. Make a list of fossil fuels and find out how wide they are used and how harmful for the environment they are. Discuss with your partner.

15. Make up and act out a dialogue on a problem of oil spills and ways to prevent and fight against them.

16. Do a web search on big oil corporations and read about their environmental projects and policies. Choose one that seems to be the most effective. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation of different usages of oil in everyday life apart from producing fuels; discuss it with your partner.

18. Read and translate the following extract from "Oil!" by Upton Sinclair, and reproduce it to your partner:

Each town consisted of some tens, or hundreds, or thousands of perfectly rectangular blocks, divided into perfectly rectangular lots, each containing a strictly modern bungalow, with a lawn and a housewife holding a hose. On the outskirts would be one or more "subdivisions", as they were called; "acreage" was being laid out into lots, and decorated with a row of red and yellow flags fluttering merrily in the breeze; also a row of red and yellow signs which asked questions and answered them with swift efficiency: "Gas? Yes". "Water? Best ever". "Lights? Right". "Restrictions? You bet". "Schools? Under construction". "Scenery? Beats the Alps" and so on. There would be an office or a tent by the roadside, and in front of it an alert young man with a writing pad and a fountain-pen, prepared to write you a contract of sale after two minutes conversation. These subdividers had bought the land for a thousand dollars an acre, and soon as they had set up the fluttering little flags and the tent it became worth $1675 per lot. This also Dad explained with amused tolerance. It was a great country!

They were coming to the outskirts of Angel City. Here were trolley tracks and railroads, and subdivisions with no "restrictions" — that is, you might build any kind of house you pleased, and rent it to people of any race or color; which meant an ugly slum, spreading like a great sore, with shanties of tin and tar-paper and unpainted boards. There were great

numbers of children playing here for some strange reason there seemed to be more of them where they were least apt to thrive.

19. What linguistic means does the author use for the description of a typical rural town? (metaphors, similes, epithets, repetitions, alliteration etc.)?

20. Describe a small town or village in your region using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– concerning the topic of industrial development and issues;

– non-fictional style.

22. Questions for discussion:

1. Is it possible to cut down on fossil fuels all over the world?

2. What would the world without fossil fuels be like?

3. What will future look like if we run out of oil completely?

4. If not gasoline, what could be used to power automobiles?

Keys 7:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– to diminish — [dɪˈmɪnɪʃ] — уменьшить;

– damage — [ˈdæmɪdʒ] — ущерб;

– barrel — [ˈbærəl] — баррель;

– oil extraction — [ɔɪl ɪkˈstrækʃən] — добыча нефти;

– to throw away — [θrəʊ əˈweɪ] — выбрасывать;

– oil deposit — [ɔɪl dɪˈpɒzɪt] — залежи нефти;

– to dump / to be dumped — [dʌmp] — сбрасывать в большом количестве / быть выброшенным;

– a shortage — [ˈʃɔːtɪdʒ] — нехватка;

– propane — [ˈprəʊpeɪn] — пропан (побочный продукт добычи нефти);

– petroleum — [pəˈtrəʊliəm] — нефть, нефть-сырец;

– filter / purifier — [ˈfɪltər] / [ˈpjʊərɪfaɪər] — фильтры / очиститель;

– bin — [bɪn] — контейнер;

– to fine — [faɪn] — штрафовать;

– to recycle / to be recycled – [ˌriːˈsaɪkl̩] – перерабатывать / перерабатываться;

– recyclable — [ˌriːˈsaɪkləbl̩] — пригодный к переработке.

2. Match the words from column A to their translation in column B:

– to diminish — уменьшить;

– damage — ущерб;

– barrel — баррель;

– oil extraction — добыча нефти;

– to throw away — выбрасывать;

– oil deposit — залежи нефти;

– to dump / to be dumped — сбрасывать в большом количестве / быть выброшенным;

– a shortage — нехватка;

– propane — пропан;

– petroleum — нефть, нефть-сырец;

– filter /purifier — фильтры / очиститель;

– bins — контейнеры;

– to fine — штрафовать;

– to recycle / to be recycled — перерабатывать / перерабатываться;

– recyclable — пригодный к переработке.

3. Explain in English what is meant by these words:

– ecology — the study of organisms and how they interact with the environment around them;

– (to) influence — the power or capacity of causing an effect in indirect or intangible ways;

– environmental — concerned with the protection of the natural world of land, sea, air, plants, and animals;

– demolition — the act of knocking something down or totally destroying it;

– fragile — easily damaged;

– to take measures — to take action, to do things to accomplish a purpose;

– calamity — a disastrous event marked by great loss and lasting distress and suffering calamities of nature an economic calamity;

– welfare — a range of government programs that provide financial or other aid to individuals or groups who cannot support themselves;

– fuel — any material that can be made to react with other substances so that it releases energy as thermal energy;

– to prevent — to keep from happening.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. You may think that one thrown candy wrapper does not harm nature, but in no way does this *diminish* your responsibilities.

2. Pollution of water bodies with oil brings them great *damage.*

3. “We have a high degree of confidence that the spill amount is approximately 588 *barrels”*, she told reporters in Newport Beach.

4. There is an acute problem of *shortage* of machines for cleaning water.

5. This also requires special *filters.*

6. People should stop *throwing away* and *dumping* waste.

7. Hazardous waste *recycling* has proven to be difficult even in developed countries.

8. *Propane* — is a by-product of oil extraction.

9. People should be *fined* for polluting our planet.

10. We should use *recyclable* and environmentally friendly materials to protect our environment.

5. Replace the given words with the synonyms:

– ecology — human environment;

– influence — an effect;

– environmental — ecological;

– demolition — destruction;

– fragile — breakable

– calamity — disaster;

– welfare — safety;

– fuel — material such as coal, gas, or oil that is burned to produce heat or power;

– to prevent — to stop;

– to take measures — to take actions.

7. Translate the following sentences from English into Russian:

1. Количество сырой нефти, разлитой в результате утечки на морском трубопроводе в Южной Калифорнии, оценивается примерно в 25 000 галлонов.

2. Разлив у Хантингтон-Бич был подтвержден 2 октября, на следующий день после того, как местные жители сообщили о запахе нефти в этом районе.

3. Представители береговой охраны заявили, что это произошло из-за утечки в трубопроводе, принадлежащем хьюстонской компании Amplify Energy, по которому нефть доставляется с морских платформ на побережье.

4. Официальные лица заявили, что причина утечки все еще расследуется, но трубопровод, вероятно, был поврежден корабельным якорем, прежде чем он разорвался.

5. Береговые линии в Хантингтон-Бич, известном как «Город серфинга в США», и соседнем Ньюпорт-Бич были закрыты.

6. Рыбалка также была запрещена у побережья округа Ориндж.

7. Государственные чиновники брали образцы рыбы в этом районе, чтобы оценить, не пострадали ли они от нефти, прежде чем разрешить возобновить лов рыбы.

8. Рабочие в защитном снаряжении продолжают расчесывать песок в поисках смолистых шариков, выброшенных на берег вдоль более 70 миль (113 километров) береговой линии в округах Ориндж и Сан-Диего.

9. Рой Ким, ученый-эколог из Калифорнийского управления по предотвращению и ликвидации разливов, сказал, что размер смолистых шариков, собираемых на пляжах, уменьшился с первых дней после разлива.

10. «Сначала они видели огромные пятна нефти», — сказал Ким.

8. Translate the following sentences from Russian into English:

1. Some oil is naturally present off the coast of Southern California and residents are used to seeing some tar on beaches.

2. California Fish and Wildlife Lt. Christian Corbo said it.

3. Tar samples collected in the clean-up will be sent to a state petroleum chemistry lab.

4. This will be done in order to determine whether they are from the spill, he said.

5. In the coming days, workers will likely start assessing beach conditions in specific areas to determine whether the clean-up is complete.

6. The problem will be resolved soon.

7. Oil pollution of water bodies is a disaster.

8. Scientists are trying to find the cause of the oil leak.

9. One of the reasons may be a recent explosion near the plant.

10. An oil spill can harm the animals that live in the water.

Unit 8

Before reading task

Discuss the following questions:

1. Is nuclear fission harmful or profitable for humanity?
2. What are “green” sources of energy?
3. What consequences does humanity have or will have due to extensive usage of fossil fuels?
4. Is it possible to create a «zero waste» factory or plant?

Read the text:

Chernobyl Disaster

The Chernobyl disaster was a nuclear accident that occurred on 26 April 1986 at the No. 4 reactor in the Chernobyl Nuclear Power Plant, near the city of Pripyat in the north of the Ukrainian SSR in the Soviet Union.

The accident occurred during a safety test on the steam turbine of an RBMK-type nuclear reactor. During a planned decrease of reactor power in preparation for the test, the power output unexpectedly dropped to near-zero. The operators were unable to restore the power level specified by the test program, which put the reactor in an unstable condition. This risk was not made evident in the operating instructions, so the operators proceeded with the test. Upon test completion, the operators triggered a reactor shutdown. But a combination of operator negligence and critical design flaws had made the reactor primed to explode. Instead of

shutting down, an uncontrolled nuclear chain reaction began, releasing enormous amounts of energy.

The core melted down and two or more explosions ruptured the reactor core and destroyed the reactor building. This was immediately followed by an open-air reactor core fire. It released considerable airborne radioactive contamination for about nine days that precipitated onto parts of the USSR and Western Europe, before finally ending on 4 May 1986. Some 70 % of fallout landed in Belarus, 16 kilometres (9.9 mi) away. The fire released about the same amount of contamination as the initial explosion. As a result of rising ambient radiation levels off-site, a 10-kilometre (6.2 mi) radius exclusion zone was created 36 hours after the accident. About 49,000 people were evacuated from the area, primarily from Pripyat. The exclusion zone was later increased to 30 kilometres (19 mi) when a further 68,000 people were evacuated from the wider area, and later it became the Chernobyl Exclusion Zone covering an area of approximately 2,600 km2 (1,000 sq mi).

The reactor explosion killed two engineers and severely burned two more. A massive emergency operation to put out the fire, stabilize the reactor, and clean up the ejected nuclear core began. During the immediate emergency response, 134 station staff and firefighters were hospitalized with acute radiation syndrome due to absorbing high doses of ionizing radiation. Of these 134 people, 28 died in the days to months afterward and approximately 14 suspected radiation-induced cancer deaths followed within the next 10 years.

The Chernobyl nuclear power plant is located next to the Pripyat River, which feeds into the Dnieper reservoir system, one of the largest surface water systems in Europe, which at the time supplied water to Kiev's 2.4 million residents, and was still in spring flood when the accident occurred. The radioactive contamination of aquatic systems therefore became a major problem in the immediate aftermath of the accident.

After the disaster, four square kilometres (1.5 sq mi) of pine forest directly downwind of the reactor turned reddish-brown and died, earning the name of the "Red Forest". Some animals in the worst-hit areas also died or stopped reproducing. Most domestic animals were removed from the exclusion zone, but horses left on an island in the Pripyat River 6 km (4 mi) from the power plant died when their thyroid glands were destroyed by radiation doses of 150–200 Sv. Some cattle on the same island died and those that survived were stunted because of thyroid damage. The next generation appeared to be normal.

Chernobyl's health effects to the general population are uncertain. An excess of 15 childhood thyroid cancer deaths were documented as of 2011. A United Nations committee found that to date fewer than 100 deaths have resulted from the fallout. Determining the total eventual number of exposure related deaths is uncertain based on the linear no-threshold model, a contested statistical model. Model predictions of the eventual total death toll in the coming decades vary. The most robust studies predict 4,000 fatalities

when solely assessing the three most contaminated former Soviet states, to about 9,000 to 16,000 fatalities when assessing the whole of Europe. Following the disaster, Pripyat was replaced by the new purpose built city of Slavutych.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– disaster — ...;
– nuclear — ...;
– accident — ...;
– turbine — ...;
– radioactive — ...;
– contamination — ...;
– explosion —. ..;
– ambient — ...;
– emergency — ...;
– acute — ...;
– aquatic — ...;
– domestic — ...;
– exclusion — ...;
– (to) decrease — ...;
– negligence — ... .

2. Match the words from column A to the words in column B to make word combinations:

Column A	Column B
the Chernobyl	reactor power
a nuclear	radiation syndrome
the steam turbine of	operation
decrease of	zone
a combination of	disaster
radioactive	contamination
the initial	operator negligence and critical design flaws
rising ambient	systems
emergency	accident
acute	explosion
aquatic	radiation
the exclusion	an nuclear reactor

3. Explain in English what is meant by these words:

– disaster — ...;
– accident — ...;
– contamination — ...;
– explosion — ...;
– exclusion — ...;
– (to) decrease — ...;
– negligence — ...;
– nuclear — ...;
– radioactive — ...;
– emergency — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

disaster	nuclear	accident	turbine	
radioactive	contamination	explosion		
ambient	emergency	acute	aquatic	
domestic	exclusion	decrease	negligence	

1. But a combination of operator _____ and critical design flaws had made the reactor primed to explode.

2. It released considerable airborne _____ _____ for about nine days that precipitated onto parts of the USSR and Western Europe, before finally ending on 4 May 1986.

3. The radioactive contamination of _____ systems therefore became a major problem in the immediate aftermath of the accident.

4. The Chernobyl _____ was a _____ _____ that occurred on 26 April 1986, near the city of Pripyat in the north of the Ukrainian.

5. During a planned _____ of reactor power in preparation for the test, the power output unexpectedly dropped to near-zero.

6. As a result of rising _____ radiation levels off-site, a 10-kilometre radius exclusion zone was created 36 hours after the accident.

7. The accident occurred during a safety test on the steam _____ of an RBMK-type nuclear reactor.

8. During the immediate emergency response 134 station staff and firefighters were hospitalized with _____ radiation syndrome due to absorbing high doses of ionizing radiation.

9. Most _____ animals were removed from the _____ zone, but horses left on an island in the Pripyat River 6 km from the power plant died when their thyroid glands were destroyed by radiation doses.

10. The fire released about the same amount of contamination as the initial _____.

11. A massive _____ operation to put out the fire, stabilize the reactor, and clean up the ejected nuclear core began.

5. Replace the words in bold with the synonyms from the given options.

1. They were warned of the ecological **catastrophe** to come:

a) disaster;

b) nuclear;

c) turbine;

d) decrease.

2. It was an **unforeseen** operation to save people:

a) acute;

b) aquatic;

c) domestic;

d) emergency.

3. A **fall** in the price of petrol is unlikely:

a) domestic;

b) decrease;

c) exclusion;

d) negligence.

4. Most road accidents are caused by **carelessness** on the part of motorists:

a) accident;

b) turbine;

c) negligence;

d) contamination.

5. She was in a control building at the time of **detonation:**

a) turbine;

b) radioactive;

c) contamination;

d) explosion.

6. The level of **pollution** in the air is rising:

a) ambient;

b) emergency;

c) contamination;

d) disaster.

7. The laser removes thin layers of skin without damaging **surrounding** tissue:

a) explosion;

b) ambient ;

c) emergency;

d) acute.

8. The **expulsion** of two diplomats from the embassy:

a) exclusion;

b) decrease;

c) negligence;

d) explosion.

10. Despite fears of violence, the demonstration passed off without **incident**:

a) disaster;

b) nuclear;

c) decrease;

d) accident.

11. There was a **poisonous** atmosphere in Chernobyl:

a) nuclear;

b) accident;

c) turbine;

d) radioactive.

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. Is the Chernobyl accident considered one of the largest in terms of consequences?

2. Did the negligence of the workers contribute to this incident?

3. When did the accident occur?

4. What was the main source of contamination – the fire or the initial explosion?

5. Is the Chernobyl nuclear power plant located next to the Pripyat River or near the Danube?

6. Did radioactive contamination of aquatic systems become a major or minor problem immediately after the accident?

7. What caused the death of two engineers and severe burns to two more?

8. Who found that to date fewer than 100 deaths have resulted from the fallout?

9. With what disease were 134 station staff and firefighters hospitalized due to absorbing high doses of ionizing radiation?

10. How much of contamination was released as a result of the fire?

7. Translate the following sentences from English into Russian:

1. The Chernobyl disaster was a nuclear accident that occurred on 26 April 1986, near the city of Pripyat.

2. During a planned decrease of reactor power in preparation for the test, the power output unexpectedly dropped to near-zero.

3. This risk was not made evident in the operating instructions, so the operators proceeded with the test.

4. The accident occurred during a safety test on the steam turbine of a nuclear reactor.

5. The operators were unable to restore the power level specified by the test program, which put the reactor in an unstable condition.

6. But a combination of operator negligence and critical design flaws had made the reactor primed to explode.

7. Upon test completion, the operators triggered a reactor shutdown.

8. Instead of shutting down, an uncontrolled nuclear chain reaction began, releasing enormous amounts of energy.

9. The fire released about the same amount of contamination as the initial explosion.

10. The core melted down and two or more explosions ruptured the reactor core and destroyed the reactor building.

8. Translate the following sentences from Russian into English:

1. Зона отчуждения позже была увеличена до 30 километров.

2. За этим сразу последовало возгорание активной зоны реактора под открытым небом.

3. Это привело к выбросу значительного количества радиоактивного загрязнения в воздух в течение примерно девяти дней.

4. Из-за повышения уровня радиации за пределами территории реактора через 36 часов после аварии была создана зона отчуждения радиусом 10 км.

5. Из района эвакуировано около 49 000 человек, в первую очередь из Припяти.

6. При взрыве реактора погибли двое инженеров и были значительно обожжены еще двое.

7. Началась масштабная аварийная операция по тушению пожара, стабилизации реактора и ликвидации разрушенной активной зоны.

8. В ходе экстренного реагирования 134 сотрудника станции и пожарной части были госпитализированы с острым радиационным синдромом в связи с поглощением высоких доз ионизирующего излучения.

9. Из этих 134 человек 28 умерли в ближайшие дни или месяцы.

10. В течение следующих 10 лет последовало примерно 14 смертей от рака, вызванного радиацией.

9. Retell the text “Chernobyl Disaster”.

10. Give a summary of the text “Chernobyl Disaster”.

11. Make up a dialogue on the topic of the Chernobyl nuclear reactor catastrophe.

12. Render the text into English:

Космические лучи и радиация в небе

Прежде, чем говорить о влиянии радиации на человека, задумайтесь на минутку — откуда идет излучение? Многие пассажиры в аэропорту часто твердят, что основная доза радиации идет от рентгенотелевизионных интроскопов (РТИ) и от стационарного металлодетектора (а ведь он вообще не излучает радиацию). Другие считают, что все дело в оборудовании на борту самолета. Однако причина кроется совсем в другом.

Космические лучи являются первым источником радиации в небе. Сильнее всего ее чувствуют астронавты,

когда они покидают атмосферу Земли. Тем не менее, простым землянам необязательно выходить на орбиту, чтобы почувствовать ее воздействие на организм. Газовая оболочка нашей планеты защищает нас от большинства лучей, но летая на большой высоте, пассажиры незаметно приближаются к ним.

С одной стороны, уровень воздействия все еще довольно мал. С другой стороны, пассажиры и экипаж подвергаются этой малой дозой излучения каждый раз, когда они летают на больших эшелонах.

Конечно, сама радиация вряд ли кажется чем-то специфическим для полетов. Ежедневно люди сталкиваются с ней, пользуясь электронными приборами: от микроволновок до смартфонов. И очень мало, кто страдает от последствий эксплуатации таких девайсов (по крайне мере, пока). Это потому, что недостаточно лишь однажды подвергнуться воздействию лучей. Этот процесс должен быть длительным и достаточным, чтобы получение критической дозы «засчиталось».

Присутствует ли радиация в самолете? - Да, но ее недостаточно, чтобы навредить организму человека

За некоторыми исключениями, ни один из вышеперечисленных пунктов не относится к непосредственному влиянию радиации. Полеты, которые мы совершаем, далеки от зоны поражения космических лучей. Их недостаточно на той высоте, на которой летают большие авиалайнеры.

13. Render the text into Russian:

Three Mile Island accident

Three Mile Island accident, accident in 1979 at the Three Mile Island nuclear power station that was the most serious in the history of the American nuclear power industry. The Three Mile Island power station was named after the island on which it was situated in the Susquehanna River near Harrisburg, Pa. At 4:00 AM on March 28, an automatically operated valve in the Unit 2 reactor mistakenly closed, shutting off the water supply to the main feedwater system (the system that transfers heat from the water actually circulating in the reactor core). This caused the reactor core to shut down automatically, but a series of equipment and instrument malfunctions, human errors in operating procedures, and mistaken decisions in the ensuing hours led to a serious loss of water coolant from the reactor core. As a result, the core was partially exposed, and the zirconium cladding of its fuel reacted with the surrounding superheated steam to form a large accumulation of hydrogen gas, some of which escaped from the core into the containment vessel of the reactor building. Very little of this and other radioactive gases actually escaped into the atmosphere, and they did not constitute a threat to the health of the surrounding population. In the following days adequate coolant water circulation in the core was restored.

The accident at Three Mile Island, though minuscule in its health consequences, had widespread and profound effects on the American nuclear power industry. It resulted in the immediate (though temporary) closing of seven operating

reactors like those at Three Mile Island. A moratorium on the licensing of all new reactors was also temporarily imposed, and the whole process of approval for new plants by the Nuclear Regulatory Commission was significantly slowed for years after the accident. No new reactors were ordered by utility companies in the United States from 1979 through the mid-1980s. The accident increased public fears about the safety of nuclear reactors and strengthened public opposition to the construction of new plants. The unharmed Unit 1 reactor at Three Mile Island did not resume operation until 1985. The cleanup of Unit 2 continued until 1990; damage to the unit was so severe, however (52 percent of the core melted down), that it remained unusable.

14. Make a list of problems that radiation causes for people and wildlife. Discuss with your partner some ways to avoid or alleviate those effects.

15. Make up and act out a dialogue on notorious accidents at factories or other facilities.

16. Do a web search for negligence of employees of factories and enterprises. Choose a strategy of on-site training that could help to avoid injuries and accidents. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation of some way to use radioactive materials in everyday life and in various industries; discuss it with your partner.

18. Read and translate the following extract from "Love of Life" by Jack London, and reproduce it to your partner:

"Bill!" he cried out.

It was the pleading cry of a strong man in distress, but Bill's head did not turn. The man watched him go, limping grotesquely and lurching forward with stammering gait up the slow slope toward the soft sky-line of the low-lying hill. He watched him go till he passed over the crest and disappeared. Then he turned his gaze and slowly took in the circle of the world that remained to him now that Bill was gone.

Near the horizon the sun was smouldering dimly, almost obscured by formless mists and vapors, which gave an impression of mass and density without outline or tangibility. The man pulled out his watch, the while resting his weight on one leg. It was four o'clock, and as the season was near the last of July or first of August, — he did not know the precise date within a week or two, — he knew that the sun roughly marked the northwest. He looked to the south and knew that somewhere beyond those bleak hills lay the Great Bear Lake; also, he knew that in that direction the Arctic Circle cut its forbidding way across the Canadian Barrens. This stream in which he stood was a feeder to the Coppermine River, which in turn flowed north and emptied into Coronation Gulf and the Arctic Ocean. He had never been there, but he had seen it, once, on a Hudson Bay Company chart.

Again his gaze completed the circle of the world about him. It was not a heartening spectacle. Everywhere was soft sky-line. The hills were all low-lying. There were no trees, no

shrubs, no grasses—naught but a tremendous and terrible desolation that sent fear swiftly dawning into his eyes.

"Bill!" he whispered, once and twice; "Bill!"

He cowered in the midst of the milky water, as though the vastness were pressing in upon him with overwhelming force, brutally crushing him with its complacent awfulness. He began to shake as with an ague-fit, till the gun fell from his hand with a splash. This served to rouse him. He fought with his fear and pulled himself together, groping in the water and recovering the weapon. He hitched his pack farther over on his left shoulder, so as to take a portion of its weight from off the injured ankle. Then he proceeded, slowly and carefully, wincing with pain, to the bank.

19. What linguistic means does the author use for description of a man in harsh environment (metaphors, similes, epithets, repetitions, alliteration etc.)?

20. Describe a dangerous event you or your acquaintances experienced using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on ecological issues in English following these guidelines:

– 200–400 words;

– consequences of industrial accidents for wildlife and human health;

– non-fictional style.

22. Questions for discussion:

1. What nuclear energy accidents influenced not only land, but also water bodies?

2. What is worse – possible nuclear explosions in nuclear industry or overall pollution from traditional industries based on fossil fuels?

3. What jobs are the most dangerous?

4. Is it possible to organize fully automated factories to work with harmful substances in order to save people's health?

Keys 8:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– disaster — [dɪˈzɑːstə] — бедствие, несчастье;

– nuclear — [ˈnjuːklɪə] — ядерный, атомный;

– accident — [ˈæksɪd(ə)nt] — авария;

– turbine — [ˈtɜːbaɪn] — турбина;

– radioactive — [ˌreɪdɪəʊˈæktɪv] — радиоактивный;

– contamination — [kənˌtæmɪˈneɪʃ(ə)n] — загрязнение, заражение;

– explosion — [ɪkˈspləʊʒ(ə)n] — взрыв, вспышка;

– ambient — [ˈæmbɪənt] — окружающий;

– emergency — [ɪˈmɜːdʒ(ə)nsɪ] — аварийный, экстренный;

– acute — [əˈkjuːt] — острый, резкий (acute radiation syndrome);

– aquatic — [əˈkwætɪk] — водный;

– domestic — [dəˈmestɪk] — внутренний, отечественный, домашний;

– exclusion — [ɪkˈskluːʒ(ə)n] — исключение;

– decrease — [ˈdiːkriːs] — уменьшение, понижение;

– negligence — [ˈneglɪdʒ(ə)ns] — халатность, небрежность.

2. Match the words from column A to the words in column B to make word combinations:

– the Chernobyl disaster;

– a nuclear accident;

– the steam turbine of a nuclear reactor;

– decrease of reactor power;

– a combination of operator negligence and critical design flaws;

– radioactive contamination;

– the initial explosion;

– rising ambient radiation;

– emergency operation;

– acute radiation syndrome;

– aquatic systems;

– the exclusion zone.

3. Explain in English what is meant by these words:

– disaster — a sudden accident or a natural catastrophe that causes great damage or loss of life;

– accident — an unfortunate incident that happens unexpectedly and unintentionally, typically resulting in damage or injury;

– contamination — the action or state of making or being made impure by polluting or poisoning;

– explosion — a sudden outburst of something such as violent emotion, especially anger;

– exclusion — the process of excluding or the state of being excluded;

– decrease — an instance or example of becoming smaller or fewer;

– negligence — failure to take proper care over something;

– nuclear — relating to the nucleus of an atom;

– radioactive — having or producing powerful and dangerous energy that comes from the breaking up of atoms;

– emergency — something dangerous or serious, such as an accident, that happens suddenly or unexpectedly and needs fast action in order to avoid harmful results.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. But a combination of operator *negligence* and critical design flaws had made the reactor primed to explode.

2. It released considerable airborne *radioactive contamination* for about nine days that precipitated onto parts of the USSR and Western Europe, before finally ending on 4 May 1986.

3. The radioactive contamination of *aquatic* systems therefore became a major problem in the immediate aftermath of the accident.

4. The Chernobyl *disaster* was a *nuclear accident* that occurred on 26 April 1986, near the city of Pripyat in the north of the Ukrainian.

5. During a planned *decrease* of reactor power in preparation for the test, the power output unexpectedly dropped to near-zero.

6. As a result of rising *ambient* radiation levels off-site, a 10-kilometre radius exclusion zone was created 36 hours after the accident.

7. The accident occurred during a safety test on the steam *turbine* of an RBMK-type nuclear reactor.

8. During the immediate emergency response 134 station staff and firefighters were hospitalized with *acute* radiation syndrome due to absorbing high doses of ionizing radiation.

9. Most *domestic* animals were removed from the *exclusion* zone, but horses left on an island in the Pripyat River 6 km from the power plant died when their thyroid glands were destroyed by radiation doses.

10. The fire released about the same amount of contamination as the initial *explosion.*

11. A massive *emergency* operation to put out the fire, stabilize the reactor, and clean up the ejected nuclear core began.

5. Replace the words in bold with the synonyms from the given options:

1) a;
2) d;
3) b;
4) c;
5) d;
6) c;
7) b;
8) a;
9) d;
10) d.

7. Translate the following sentences from English into Russian:

1. Чернобыльская катастрофа — ядерная авария, произошедшая 26 апреля 1986 года недалеко от города Припять.

2. Во время планового снижения мощности реактора при подготовке к испытаниям выходная мощность неожиданно упала почти до нуля.

3. Этот риск не был указан в инструкции по эксплуатации, поэтому операторы продолжили испытания.

4. Авария произошла во время проверки безопасности паровой турбины ядерного реактора.

5. Операторы не смогли восстановить заданный программой испытаний уровень мощности, что вывело реактор в неустойчивое состояние.

6. Но сочетание небрежности оператора и критических недостатков конструкции привели к повышенному риску взрыва реактора.

7. По окончании испытаний операторы заглушили реактор.

8. Вместо выключения началась неконтролируемая цепная ядерная реакция с выделением огромного количества энергии.

9. В результате пожара было высвобождено примерно такое же количество радиоактивного излучения, как и при первоначальном взрыве.

10. Активная зона реактора начала плавиться, затем два или более взрыва повредили активную зону, что привело к разрушению всего здания.

8. Translate the following sentences from Russian into English:

1. The exclusion zone was later increased to 30 kilometers.

2. This was immediately followed by an open-air reactor core fire.

3. It released considerable airborne radioactive contamination for about nine days.

4. As a result of rising ambient radiation levels off-site, a 10-kilometre radius exclusion zone was created 36 hours after the accident.

5. About 49,000 people were evacuated from the area, primarily from Pripyat.

6. The reactor explosion killed two engineers and severely burned two more.

7. A massive emergency operation to put out the fire, stabilize the reactor, and clean up the ejected nuclear core began.

8. During the immediate emergency response 134 station staff and firemen were hospitalized with acute radiation syndrome due to absorbing high doses of ionizing radiation.

9. Of these 134 people, 28 died in the days to months afterward.

10. Approximately 14 suspected radiation-induced cancer deaths followed within the next 10 years.

Unit 9

Before reading task

Discuss the following questions:

1. How do weather patterns influence humanity?
2. What human activities are harmful for the nature?
3. Do you consider vegetarianism an eco-friendly habit?
4. Who contributes more to nature pollution – regular citizens or big corporations?

Read the text:

How to prevent global warming from getting worse

Global warming is the product of the industrial revolution that is becoming more and more urgent in serious problems all over the world. As we know, the main reasons of global warming are releasing too much greenhouse gas, methane by eating meat and placing the organic waste into the landfills as well as melting the permafrost and CO2 into the atmosphere by burning too much fossil fuel. Now the urgent problems is to find out the solution to prevent global warming while it is becoming worse and worse. Many people think that finding out the solution for how to prevent global warming from getting worse is the task of governments. However, the governments' efforts are not enough to prevent it from getting worse. And we cannot wait for the effort from the government for this problem. It requires all the people's efforts, from

individual to collective efforts. There are just some of the solutions to prevent global warming from getting worse:

Green transportation. Green transportation is one of the good ways on how to prevent global warming from getting worse. You can consider using a hybrid or electric vehicle instead of a motorbike or car or at least you can drive less and find out more changes to ride a bike, walk or carpool as much as possible. Using public transport instead of the car or motorbike also contributes to limit the greenhouse gases on the air.

Save energy. All your daily activities can prevent the global warming if you pay much attention to. For example, one of them is to reduce electricity usage in your house. For example, you can use energy-efficient fluorescents in or around your home instead of using lightbulbs. And you also should choose energy-efficient appliances to minimize the negative effect on the environment. Another way to save energy is to unplug the electronics in case they are not in use to save money and electricity. Some other actions to save energy include making your clothes dry by using sunlight instead of using the dryer, limiting using the heater, reusing your shopping bag, switching to green power.

Reuse and recycle. Reusing or recycling can help to limit the non-recyclable waste, contribute to reducing the environmental pollution. See some following activities that you can do including using recycled paper products from the waste as much as possible, reusing shopping bags, recycling newspaper, plastic bags, bottles, cans if you can.

Eat vegetarian meals and locally produced foods. Nowadays, there are a lot of frozen and canned foods available in the supermarkets from all around the world. Approximately 10 percent of U.S. energy use goes into growing, processing, packaging, and shipping food—about 40 percent of which just winds up in the landfill. However, all these foods require plenty of greenhouse gases due to their transportation, package, and conservation. Or you can choose vegetarian foods for replacement. These foods don't require too much of greenhouse gases to produce. Moreover, eating vegetarian meals instead of canned foods is very good for your health, using locally produced foods also contributes to the development of your hometown.

Reduce water waste. Saving water reduces carbon pollution, too. That's because it takes a lot of energy to pump, heat, and treat your water. So take shorter showers, turn off the tap while brushing your teeth, etc.

Buy recycled products. You can help minimize cutting down of trees that help to balance the amount of greenhouse gasses in the atmosphere by buying recycled paper products. Also, order or buy products that require less packaging to cut down on the amount of waste that would find way to landfills causing massive environmental pollution. If there is no recycling plant in your area, make a point to start one. There is a wide range of materials in your neighborhood that need recycling such as paper, plastic, steel, aluminum just to name a few.

Planting trees. Trees play a critical role in maintaining greenhouse gas balance. If you have the resources to plant a tree, you better get down and start digging to save the planet. Abundance of trees would effectively counteract the emissions caused by factories, cars, and other human activities. According to research findings, one tree can absorb more than one ton of carbon dioxide within its lifetime.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– industrial revolution — ...;
– urgent — ...;
– methane — ...;
– fossil fuel — ...;
– individual — ...;
– hybrid — ...;
– to contribute — ...;
– appliance — ...;
– environment — ...;
– pollution — ...;
– available — ...;
– to recycle — ...;
– packaging — ...;
– amount — ...;
– balance —... .

2. Match the words from column A to the words in column B to make word combinations:

Column A	Column B
green	problem
hybrid/electric	usage
fossil	gas
global	efforts
shopping	revolution
serious	transportation
industrial	bag
individual/collective	warming
electricity	vehicle
greenhouse	fuel

3. Explain in English what is meant by these words:

– fuel — ...;
– solution — ...;
– effort — ...;
– to reduce — ...;
– waste — ...;
– to require — ...;
– to absorb — ...;
– health — ...;
– approximately — ...;
– to prevent — ...;
– to turn off — ...;
– pollution — ...;
– to consider — ...;

– atmosphere — ...;

– vegetarian — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

shopping environment warming collective electricity serious hybrid foods vegetarian individual foods recyclable packaging pollution appliances

1. Using public transport is one of the ways you personally can help the _____.

2. A lot of people put the responsibility entirely on the government, but the solution is dependent on effort.

3. _____ or electric vehicle is a good alternative for cars, but at the moment they are too expensive for common usage.

4. I am not a fan of frozen and canned , they taste pretty weird.

5. Would you expect Sara become a _____? She was such a meat-lover.

6. Our city once had trash bins for waste, but people ignored that and put everything in them.

7. _____ effort is not enough here. It is a group work, you shouldn't do it all alone.

8. Global _____ became a problem that requires urgent solution.

9. _____ damages not just you own health, but also health of the upcoming generations since they will have to live in a world full of polluted air and water.

10. Amount of _____ that the company uses is unbelievable. So much plastic just for a few apples.

11. You already would help the environment if you had turned off the _____ _____ in your house unless you use them.

12. You cannot find an instant solution for such a serious.

13. Even though I forgot my _____ bag, I will not use a plastic one, I did not buy that much.

14. Cut your _____ usage. You sit in your room all day, but the entire flat is lit up!

15. Using locally produced _____ also contributes to the development of your hometown.

5. Replace the given words with the synonyms from the text:

– the word — ...
– urgent — ...
– solution — ...
– pollution — ...
– effort — ...
– waste — ...
– individual — ...
– to prevent — ...
– to require — ...

– vehicle — ...
– negative — ...
– appliances — ...
– steel — ...
– amount — ...
– replacement — ...

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. What are the main reasons of global warming according to the text?

2. Is government's effort enough to prevent climate crisis from getting worse? Why?

3. What is the first solution? Name the given alternatives instead of riding a car.

4. What is the second solution? How can one save energy in their house, according to the text? Name your own ways to save energy, which you use in your daily life.

5. What is the third solution? What materials are possible to recycle, and what are not?

6. What is the fourth solution? What is the problem about canned and frozen foods?

7. What is the fifth solution text gives? Why using a lot of water is such a problem?

8. What is the sixth point? Do you buy recycled products in your daily life? Why?

9. What is the last point? How do trees help with reducing pollution?

10. What is your opinion on these points? Do you find them really useful, or do you think they do not make much sense?

11. Why, do you think, people do not care much about saving the planet? Why we spoil the place we live in?

12. Do you think it is possible for humanity to fully understand the amount of damage we do? Why?

7. Translate the following sentences from English into Russian:

1. Approximately 10 percent of U.S. energy use goes into growing, processing, packaging, and shipping food — about 40 percent of which just winds up in the landfill.

2. Global warming is the product of the industrial revolution that is becoming more and more urgent in serious problems all over the world.

3. Trees play a critical role in maintaining greenhouse gas balance.

4. Green transportation is one of the good ways on how to prevent global warming from getting worse.

5. Some other actions to save energy include making your clothes dry by using sunlight instead of using the dryer, limiting using the heater, reusing your shopping bag, switching to green power.

6. According to research findings, one tree can absorb more than one ton of carbon dioxide within its lifetime.

7. Moreover, eating vegetarian meals instead of canned foods is very good for your health.

8. You can help minimize cutting down of trees that help to balance the amount of greenhouse gasses in the atmosphere by buying recycled paper products.

9. Abundance of trees would effectively counteract the emissions caused by factories, cars, and other human activities.

10. Reusing or recycling can help to limit the non-recyclable waste, contribute to reducing the environmental pollution.

8. Translate the following sentences from Russian into English:

1. Как мы знаем, основной причиной глобального потепления является выброс слишком большого количества парниковых газов.

2. Сейчас насущная проблема состоит в том, чтобы найти решение для предотвращения глобального потепления, тем временем ситуация становится все хуже и хуже.

3. Вы можете рассмотреть возможность использования гибридного или электрического транспорта вместо мотоцикла или автомобиля, или, по крайней мере, вы можете рассмотреть возможность езды на велосипеде.

4. Использование общественного транспорта вместо автомобиля или мотоцикла также способствует ограничению выбросов парниковых газов в атмосферу.

5. Другой способ сэкономить энергию – отключить электронику от сети, если она не используется.

6. Требуется много энергии, чтобы перекачивать, нагревать и обрабатывать воду, которая поступает в наши квартиры.

7. Вы можете заказывать или покупать продукты, которые требуют меньше упаковки, чтобы сократить количество отходов, которые попадут на свалки.

8. В вашем районе, скорее всего, есть широкий спектр материалов, которые нуждаются в переработке, таких как бумага, пластик, сталь, алюминий.

9. Многие люди думают, что поиск решения того, как предотвратить ухудшение глобального потепления, является задачей правительства.

10. Любая ваша повседневная деятельность может предотвратить глобальное потепление, если вы будете уделять этому внимание.

9. Retell the text “How to prevent global warming from getting worse”.

10. Give a summary of the text “How to prevent global warming from getting worse”.

11. Make up a dialogue on the global warming issue.

12. Render the text into English:

Эксперт объяснила, почему «судный день» может прийти через несколько лет

Темпы таяния второго по размерам ледника в Антарктиде оказываются намного более высокими, чем ожидалось. Около 4% от ежегодного повышения уровня мирового океана происходит вследствие его таяния.

«Если таяние в столь огромных масштабах продолжится, то уровень мирового океана может подняться до критических отметок. В случае полного таяния ледника Туэйтс уровень воды поднимется на несколько метров», – заявила в эфире телеканала «МИР 24» доктор экономических наук, заместитель председателя общественного совета при Минприроды России Светлана Липина.

Такие последствия обусловлены гигантскими размерами находящегося в Западной Антарктиде Туэйтса. Он занимает площадь, сравнимую с территорией Великобритании или, например, территорией всей Центральной России. По словам эксперта, в последние годы он тает все быстрее, ежегодно теряя от 50 до 80 миллиардов тонн льда. Его полное таяние, которое может произойти за пять-десять лет, приведет к подтоплению значительного количества территорий, поэтому Туэйтс еще называют «ледником судного дня». Причем, при таянии он может стянуть за собой и соседние ледники.

Под водой могут оказаться территории, расположенные на уровне моря и ниже. И это не только Голландия, Лондон и некоторые другие территории Европы. Подтопление будет угрожать и таким российским землям, как Прикаспийская

низменность и низовья Волги, Нижненеманская низменность, на которой расположена Калининградская область, приморские города, такие как Санкт-Петербург, Махачкала, Таганрог, и другие территории.

«Проблема таяния льдов, увеличения уровня мирового океана может породить целую цепочку катастрофических событий. Это миграция огромного количества людей, уничтожение урожая, голод и так далее. Кроме того, как утверждают некоторые ученые, между Россией и Европой может возникнуть огромное море в результате слияния Балтийского, Карского, Каспийского и Черного морей», – заявила Светлана Липина.

13. Render the text into Russian:

How to reduce my carbon footprint?

What is a carbon footprint?

Greenhouse gases are emitted through the production and consumption of goods and services. Carbon footprint is a concept used to quantify the impact of an activity, a person or a country on climate change.

How much carbon is emitted to produce your T-shirt, meal or phone? The amount will depend on production and consumption choices. If we take the example of transport, taking the plane emits 285g of carbon per kilometre, compared to 104g for a car and 14g for a train. The same goes for the type of meat or fish you eat or the type of jeans you buy.

How to limit your carbon footprint?

Understanding your carbon footprint can help limit the impact of your consumption on the environment. There are different online solutions to help you estimate your carbon footprint.

Small changes can make a big difference in the long run, for example when it comes to transportation, food, clothing, waste, etc. Here are some tips:

Food:

– consume local and seasonal products (forget strawberries in winter);

– limit meat consumption, especially beef;

– select fish from sustainable fishing;

– bring reusable shopping bags and avoid products with excessive plastic packaging;

– make sure to buy only what you need, to avoid waste.

Clothing:

– take good care of your clothes;

– try swapping, borrowing, renting or buying second-hand;

– buy responsibly-made clothes, e.g. made from recycled material or with an eco-label.

Transport:

– cycle or use public transport;

– be smart about when and how you drive;

– try the train for your next holiday.

Energy and waste:

– turn down the heating by 1°, it will already make a difference;

– take short showers;

– turn off the water while you brush your teeth or clean the dishes;

– unplug your electronic equipment and do not leave your phone on charge when the battery is already full;

– do not store unnecessary data in the cloud (learn more about your digital footprint!);

– select energy efficient products with an “A” label (EU Energy Label);

– limit and recycle your waste.

14. Make a list of possible consequences of global warming that could have an impact on you personally. Discuss it with your partner.

15. Make up and act out a dialogue on a problem of reducing one’s carbon footprint.

16. Do a web search for anti-global warming initiatives in your country. Choose one you would like to join. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation of a global climate change in the past (e.g. Ice Age, etc.); discuss it with your partner.

18. Read and translate the following extract from "A Creed for the Third Millennium" by Colleen McCullough, and reproduce it to your partner:

The wind was particularly bitter, even for January in Holloman, Connecticut. When Dr Joshua Christian strode round the corner from Cedar Street onto Elm Street it hit him full in the face, a stream of arctic air with fangs and talons of ice chewing and clawing at the little sections of facial skin he had to expose to see where he was going. Oh, he knew where he was going; he just wished it wasn't necessary to see his way.

So different from the old days, when Elm Street had been the main drag of the black ghetto; parrot colours and proud people wearing them, laughter everywhere, lots of children spilling out of doorways on skate boards and roller skates… Such beautiful children, glossy and full of fun, and always so many because the street was the best place of all to play, the street was where it all was at.

Maybe one day Washington and the state capitals would find the money to do something about the northern inner cities, but right now there were much higher priorities than deciding what exactly to do with a hundred thousand streets of empty three-family houses in a thousand northern towns and cities. So in the meantime the grey-weathered plywood nailed across windows and doors rotted, and the grey paint peeled, and the grey tiles flapped off the roofs, and the stoops crumbled, and the grey sidings gaped. Thank God for the wind! It broke the silence. It screamed in the wires overhead,

it moaned through gaps narrow and stagnant, it sobbed a little in the back of its mighty throat drawing breath to wail again, it chattered as it swept frozen leaves and empty cans into heaps, it thundered against a hollow iron tank in the vacant lot next to the long-closed Abie's Liquor Store and Bar on the corner of Maple.

In the grey afternoon light everything was grey. Grey the rows of empty houses, grey the streets, grey the bark of leafless trees, grey the sky. *I have worked upon the world and it shall be grey.* The colour of no-colour. The epitome of grief. The form of loneliness. The quintessence of desolation.

There were no cars in Holloman and no bus route down Oak, so three feet of obdurately frozen snow humped itself unevenly all over the open space of the street, thrown there when the sidewalks were cleared.

19. What linguistic means does the author use for the description of harsh cold climate? (metaphors, similes, epithets, repetitions, alliteration etc.)

20. Describe a winter day in your region using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– covering the topic of global warming culprits;

– non-fictional style.

22. Questions for discussion:

1. Do you personally encounter any consequences of global climate change?

2. What organizations in your country deal with the problem of global warming?

3. Do you know any international agreements concerning climate change? What do they control?

4. Can countries work together to prevent climate change? Why (not)?

Keys 9:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– industrial revolution — [ɪnˈdʌstrɪəl ˌrevəˈluːʃn] — промышленная революция;

– urgent — [ˈɜːʤənt] — срочный, неотложный;

– methane — [ˈmiːθeɪn] — метан;

– fossil fuel — [fɒsl fjʊəl] — ископаемое топливо;

– individual — [ɪndɪˈvɪʤʊəl] — индивидуальный;

– hybrid — [ˈhaɪbrɪd] — гибридный, комбинированный;

– to contribute — [kənˈtrɪbjuːt] — способствовать;

– appliances — [əˈplaɪənsɪz] — приборы, устройства;

– environment — [ɪnˈvaɪərənmənt] — окружающая среда;

– pollution — [pəˈluːʃn] — загрязнение;

– available — [əˈveɪləbl] — доступный;
– to recycle — [riːˈsaɪkl] — перерабатывать;
– packaging — [ˈpækɪʤɪŋ] — упаковка;
– amount — [əˈmaʊnt] — количество;
– balance — [ˈbæləns] — баланс.

2. Match the words from column A to the words in column B to make word combinations:

– global warming;
– industrial revolution;
– serious problem;
– fossil fuel;
– greenhouse gas;
– individual/collective efforts;
– green transportation;
– hybrid/electric vehicle;
– electricity usage;
– shopping bag.

3. Explain in English what is meant by these words:

– fuel —a substance that is used to provide heat or power, usually by being burned;

– solution — a way to solve a problem or deal with a difficult situation;

– effort — physical or mental activity needed to achieve something, or an attempt to do something;

– to reduce — to become or to make something become smaller in size, amount, degree;

– waste — an unnecessary or wrong use of money, substances, time, energy, abilities, etc.;

– to require — to need something, or to make something necessary;

– to absorb — to take something in, especially gradually;

– health — the condition of the body and the degree to which it is free from illness, or the state of being well;

– approximately — close to a particular number or time although not exactly that number or time;

– to prevent — to stop something from happening or someone from doing something;

– to turn off — to make something stop working;

– pollution — damage caused to water, air, etc. by harmful substances or waste;

– to consider — to spend time thinking about a possibility or making a decision;

– atmosphere — a mixture of gases that surrounds any planet;

– vegetarian — not eating meat for health or religious reasons or to avoid harming animals.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. Using public transport is one of the ways you personally can help the *environment.*

2. A lot of people put the responsibility entirely on the government, but the solution is dependent on *collective* effort.

3._*Hybrid* or electric vehicle is a good alternative for cars, but at the moment they are too expensive for common usage.

4. I'm not a fan of frozen and canned *foods,* they taste pretty weird.

5. Would you expect Sara become a *vegetarian*? She was such a meat-lover.

6. Our city once had trash bins for *recyclable* waste, but people ignored that and put everything in them.

7. *Individual* effort is not enough here. It is a group work, you shouldn't do it all alone.

8. Global *warming* became a problem that requires urgent solution.

9. *Pollution* damages not just you own health, but also health of the upcoming generations since they will have to live in a world full of polluted air and water.

10. Amount of *packaging* that the company uses is unbelievable. So much plastic just for a few apples.

11. You already would help the environment if you had turned off the *appliances* in your house unless you use them.

12. You can't find an instant solution for such a *serious* problem.

13. Even though I forgot my *shopping*_bag, I won't use a plastic one, I didn't buy that much.

14. Cut your *electricity* usage. You sit in your room all day, but the entire flat is lit up!

15. Using locally produced *foods* also contributes to the development of your hometown.

5. Replace the given words with the synonyms from the text:

– urgent — immediate, insistent;
– solution — answer;
– pollution — dirtiness, damage;
– effort – attempt;
– waste — garbage, trash, litter;
– individual — personal;
– to prevent — to stop;
– to require — to ask, to need;
– vehicle — car, automobile, transport;
– negative — bad, unfavorable;
– appliances — devices, equipment, instuments;
– steel — iron;
– amount — sum, value;
– replacement — alternative.

7. Translate the following sentences from English into Russian:

1. Примерно 10 процентов потребляемой энергии в США уходит на выращивание, переработку, упаковку и доставку продуктов питания, около 40 процентов из которых просто попадают на свалку.

2. Глобальное потепление является следствием промышленной революции, которая становится все более актуальной наряду с другими серьезными всемирными проблемами.

3. Деревья играют решающую роль в поддержании баланса парниковых газов.

4. Экологичный транспорт — один из хороших способов предотвратить ускорение глобального потепления.

5. Некоторые другие действия по экономии энергии включают сушку одежды с помощью солнечного света вместо использования электрической сушилки, ограниченное использование обогревателей, повторное использование пакетов из супермаркетов, переход на «зеленую» энергию.

6. Согласно результатам исследований, одно дерево может поглотить более одной тонны углекислого газа за свою жизнь.

7. Кроме того, употребление вегетарианской пищи вместо консервированных продуктов очень полезно для вашего здоровья.

8. Вы можете помочь свести к минимуму вырубку деревьев, которые помогают сбалансировать количество парниковых газов в атмосфере, покупая изделия из переработанной бумаги.

9. Обилие деревьев эффективно противодействовало бы выбросам, вызванным фабриками, автомобилями и другой деятельностью человека.

10. Повторное использование или переработка могут помочь ограничить количество отходов, не подлежащих вторичной переработке, способствовать снижению загрязнения окружающей среды.

8. Translate the following sentences from Russian into English:

1. As we know, the main cause of global warming is the release of too many greenhouse gases.

2. Now the pressing problem is to find a solution to prevent global warming while it gets worse and worse.

3. You may consider using a hybrid or electric vehicle instead of a motorcycle or car, or at least you may consider riding, for example, a bicycle.

4. The use of public transport instead of a car or motorcycle also helps to limit greenhouse gas emissions into the atmosphere.

5. Another way to save energy is to disconnect the electronics from the mains if it is not in use.

6. It takes a lot of energy to pump, heat and process the water that enters our apartments.

7. You can order or buy products that require less packaging to reduce the amount of waste that will end up in landfills

8. In your area, most likely, there is a wide range of materials that need to be recycled, such as paper, plastic, steel, aluminum.

9. Many people think that finding a solution to how to prevent the deterioration of global warming is the task of the government.

10. Any of your daily activities can prevent global warming if you pay attention to it.

Unit 10

Before reading task

Discuss the following questions:

1. What endangered species of flora or fauna are there in your region?

2. What is the Red List of species?

3. Do you consider farming animals for food and other resources ethical? Why (not)?

4. Do you support vegetarian or vegan movements? For what reasons?

Read the text:

New Antarctic Penguin Colonies Discovered Farther South Than Normal

Scientists from Stony Brook University have discovered gentoo penguin colonies on Antarctica's Andersson Island and on an unexplored archipelago off the Antarctic Peninsula's northern tip. These are some of the southernmost records for gentoo breeding in the region, per a Greenpeace statement.

Until recently, these areas were too icy for the penguins, which prefer warmer temperatures to raise their chicks. But as climate change melts Antarctic ice, the penguins are expanding their habitat.

Stony Brook researchers were sailing on a Greenpeace expedition, carrying out counts of penguin colonies in remote

islands of the eastern Antarctic Peninsula, when they spotted a colony with 75 chicks living on Andersson Island, per Mongabay. The researchers are surveying parts of the peninsula where satellites had spotted penguin colonies but had never before been explored on foot.

“As expected, we are finding gentoo penguins nearly everywhere we look — more evidence that climate change is drastically changing the mix of species here on the Antarctic Peninsula”, says Lynch in a statement.

Gentoos are the only penguin species along the Antarctic Peninsula that is expanding its distribution and growing in numbers, per the Oceanwide Expeditions website.

“This is the climate crisis happening right in front of our eyes”, says Louisa Casson, who was aboard the vessel and is from Greenpeace’s Protect the Oceans campaign, in a statement. “In the Antarctic, one of the most remote places on Earth, we are seeing a process where this species of penguin is spreading into new habitat and breeding further south: a biological manifestation of sea ice loss”.

Temperatures on the Antarctic Peninsula are rising five times more than the global average annually, per Discovering Antarctica. In 2020, the continent hit a record high temperature of 64.9 degrees Fahrenheit.

While gentoos thrive under the warmer temperatures, Adélie penguins, which rely on sea ice, do not.

“When we find Adélie penguins, we typically know that sea ice is nearby”, Michael Wethington, a quantative ecologist at Stony Brook, tells Reuters’ Gloria Dickie and Natalie

Thomas. “And whenever we’ve seen sea ice declining or disappearing altogether, then we’re seeing corresponding Adelie penguin populations decline substantially”.

But during the expedition, scientists found that Adélie penguin numbers in the Weddell Sea have remained stable in the last decade, per a Stony Brook statement. The Weddell Sea is the site of a proposed Marine Protected Area, and this discovery provides more evidence that the Weddell Sea might be an important shelter for wildlife as climate change impacts increase.

“The Weddell Sea is hardly immune from climate change, but it appears that Adélie penguins breeding in this area remain buffered from the worst of the threats posed to those populations declining so rapidly on the warming western side of the Antarctic Peninsula”, Lynch says in a statement. “Our understanding of the biology in this inhospitable landscape continues to grow every year, but everything we learn points toward its value for conservation”.

While reading tasks

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– breeding — ...;
– remote — ...;
– habitat — ...;
– drastically — ...;
– species — ...;
– distribution — ...;

– manifestation — …;
– peninsula — ...;
– to thrive — ...;
– declining — ...;
– ecologist — ...;
– substantially — ...;
– immune — ...;
– wildlife — ...;
– conservation — … .

2. Match the words from column A to the words in column B to make word combinations:

Column A	Column B
warm	landscape
inhospitable	change
southernmost	temperature
growing	south
climate	habitat
quantative	islands
important	of the threats
new	records
remote	archipelago
further	manifestation
the worst	numbers
unexplored	areas
icy	shelter
biological	northern tip
Peninsula’s	ecologist

3. Explain in English what is meant by these words:

– researcher — ...;
– expedition — ...;
– island — ...;
– vessel — ...;
– habitat — ...;
– population — ...;
– to decline — ...;
– decade — ...;
– rapidly — ...;
– discovery — ...;
– annually — ...;
– corresponding — ...;
– inhospitable — ...;
– landscape — ...;
– conservation — ... .

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. Until recently, these areas were too _____ for the penguins.

2. This is the climate _____ happening right in front of our eyes.

3. We are seeing a process where this _____ of penguin is spreading into new habitat.

4. Temperatures on the Antarctic _____ are rising five times more than the global average annually.

5. While gentoos thrive under the warmer temperatures, Adélie penguins, which _____ sea ice, do not.

6. Stony Brook researchers were sailing on a Greenpeace _____.

7. Scientists found that Adélie penguin numbers in the Weddell Sea have remained _____ in the last decade.

8. This _____ provides more evidence that the Weddell Sea might be an important shelter.

9. Gentoos are the only penguin species that is _____ its distribution.

10. The Weddell Sea is hardly _____ from climate change.

11. Adélie penguins breeding in this _____ remain buffered.

12. Our _____ of the biology in this inhospitable landscape continues to grow every year.

13. Everything we learn points toward its _____ for conservation.

14. These are some of the southernmost records for gentoo _____ in the region.

15. The Weddell Sea is the _____ of a proposed Marine Protected Area.

5. Replace the words in bold with the synonyms from the text.

1. Stony Brook **scientists** were sailing on a Greenpeace expedition.

2. Temperatures on the Antarctic Peninsula are rising five times more than the global average **every year.**

3. This is the climate **meltdown** happening right in front of our eyes.

4. In the Antarctic, one of the most remote **regions** on Earth…

5. Gentoos **prosper** under the warmer temperatures.

6. She was aboard the **ship**.

7. Adélie penguin numbers in the Weddell Sea have remained stable in the last **10 years.**

8. Those populations declining so **quickly** on the warming western side.

9. Our **comprehension** of the biology in this inhospitable landscape continues to grow every year.

10. Everything we learn points toward its value for **preservation**.

After reading tasks

6. Answer the following questions. Discuss the answers with your partner:

1. What do gentoos rely on?

2. Are temperatures on the Antarctic Peninsula rising five or three times more than the global average annually?

3. When did the scientists find that Adélie penguin numbers in the Weddell Sea have remained stable in the last decade?

4. Who was sailing on a Greenpeace expedition?

5. Are the penguins expanding their habitat?

6. Why gentoos expanding their habitat?

7. Which temperatures do gentoos prefer?

8. Are the penguins expanding their habitat in the north or in the south? Why?

9. Are there other species of penguins along the Antarctic Peninsula that expanding its distribution and growing in numbers?

10. Are Adélie penguins expanding their habitat too?

11. Are Adélie penguins shrinking their territory or staying stable?

12. Why is the Weddell Sea an important shelter for wildlife?

13. Is The Weddell Sea immune from climate change?

14. Who was aboard the vessel and is from Greenpeace's Protect the Oceans campaign?

15. Are Adélie penguins at risk of extinction? Why?

16. Where did scientists find a colony with 75 chicks?

17. Has this species of penguin ever been in this area before?

7. Translate the following sentences from English into Russian:

1. Until recently, these areas were too icy for the penguins, which prefer warmer temperatures to raise their chicks.

2. As climate change melts Antarctic ice, the penguins are expanding their habitat.

3. The scientists spotted a penguin colony with 75 chicks living on Andersson Island.

4. The researchers are surveying parts of the peninsula where satellites had spotted penguin colonies but had never before been explored on foot.

5. The team is finding gentoo penguins nearly everywhere they look.

6. This is the evidence that climate change is drastically changing the mix of species.

7. Gentoos are the only penguin species along the Antarctic Peninsula that is expanding its distribution and growing in numbers.

8. This is the climate crisis happening right in front of our eyes.

9. The Antarctic is one of the most remote places on Earth.

10. This species of penguin is spreading into new habitat and breeding further south.

8. Translate the following sentences from Russian into English:

1. Это биологическое доказательство того, что морские льды тают.

2. Ежегодно температура на Антарктическом полуострове повышается в пять раз быстрее, чем в среднем по миру.

3. В 2020 году на континенте зарегистрирована рекордно высокая температура – 64,9 градусов по Фаренгейту.

4. С каждым годом мы всё лучше понимаем особенности фауны этого негостеприимного региона.

5. Когда мы находим пингвинов Адели, мы обычно уверены, что поблизости находится морской лед.

6. Если объём морского льда сокращается или он полностью исчезает, тогда мы закономерно наблюдаем существенное сокращение популяций пингвинов Адели.

7. Ученые обнаружили, что численность пингвинов Адели в море Уэдделла в последнее десятилетие оставалась стабильной.

8. Это открытие дает еще одно доказательство того, что море Уэдделла может быть важным убежищем для диких животных.

9. Море Уэдделла вряд ли защищено от изменения климата.

10. Пингвины Адели, размножающиеся в этом районе, пока ещё защищены от серьезных угроз, которым могут подвергаться эти популяции.

9. Retell the text “New Antarctic Penguin Colonies Discovered Farther South Than Normal”.

10. Give a summary of the text “New Antarctic Penguin Colonies Discovered Farther South Than Normal”.

11. Make up a dialogue on the topic of penguins and global warming.

12. Render the text into English:

Киты уменьшают эффект глобального потепления с помощью поглощения углекислого газа

«Киты жизненно необходимы для здоровья планеты. Один кит поглощает такой же объем углекислого газа как тысяча деревьев. Они работают как хранилища для CO2, а когда умирают, то оставляют этот газ на дне. Также киты удобряют океан, благодаря чему цветут водоросли, которые поглощают 40% мировых выбросов углекислого газа и выделяют более половины кислорода в мире», – объяснили ученые.

При этом морские млекопитающие своими вертикальными и горизонтальными движениями могут перемешивать фитопланктонов, способствуя его роста. Также киты способствуют сохранению пищевых цепочек в океане. Ученые отмечают, что это является предпосылкой для сохранения промышленного лова рыбы.

«Один большой кит может сохранить в своем теле примерно 33 тонны CO2-эквивалента. Восстановление численности китов поможет улучшить пищевые цепочки в океане и увеличить продуктивность океана в целом, включая поглощение углекислого газа», – отметили исследователи.

Однако WWF обращает внимание на то, что популяции китообразных в мире грозит больше всего прилов – это их попадание в рыболовные сети. Согласно исследованиям, более 300 тыс. китов и дельфинов ежегодно погибают таким образом.

Кроме того, популяции крупных китов находятся в угнетенном состоянии из-за китобойного промысла последних двух столетий. Для китов, как для долгожителей с замедленным циклом размножения, нужно несколько десятилетий для того, чтобы восстановить нанесенный популяции ущерб.

Отмечается, что есть группировки, которые насчитывают только лишь несколько сотен особей и остаются на грани исчезновения.

Ранее президент России Владимир Путин поддержал инициативу запретить вылов китообразных в культурно-развлекательных целях. Российский лидер отметил, что за 2021 год было выдано только 140 разрешений на вылов китообразных для обеспечения традиционного образа жизни. По другим основаниям было выдано только шесть разрешений.

13. Render the text into Russian:

Climate Stressors

Unfortunately, the changing climate increases stressors that weaken plant resilience, disrupting forest structure and ecosystem services. Rising temperatures lead to more frequent droughts, wildfires, and invasive pest outbreaks, leading to the loss of plant species. That has numerous detrimental effects including:

Lowered Productivity: Longer droughts and increased number of heat waves will stress plants, causing them to be less productive. That causes a ripple of problems because

plants are the primary producers of life on our planet, generating over 99.9% of the Earth's living material. Plant productivity supports wildlife and serves as the basis of a multitude of food chains. The decline of plants means there will be less food, which can further lead to declines in animal populations.

Spread of Invasive Plants: When environmental conditions change, native species can lose their natural advantages and invasive species have a greater opportunity to thrive and in extreme cases, take over landscapes. The invasive European weed, Purple Loosestrife, thrives in wetlands and chokes out native vegetation.

Vulnerability to Pests: Native plants can lose resiliency due to climate-change induced stressors, making them more vulnerable to invasive insect pests. As the weather warms, more destructive pests will survive the milder winters, have more reproductive success, and their growing populations will cause more damage to the native tree and plant species. The infamous Emerald Ash Borer for example has destroyed the ash trees in the DC region and across the US.

Saltwater Intrusion: As sea level rises, water from the surrounding areas will intrude into low-lying plant ecosystems. This means an increased risk of saltwater intrusion in fresh ground water or freshwater wells, which can be damaging to plants and disrupt wetland ecosystems.

Altered Ecosystem Structure: As temperatures increase and soil moisture changes, plant and vegetative zones are shifting in response. Trees are forced to migrate to higher

elevations to find cooler, more suitable climates for their survival. Plants experiencing a shift in their range will affect the ecosystem they are leaving and the system they are moving into.

14. Make a list of invasive species, which influenced the ecosphere of a particular area in a negative way. Discuss with your partner whether it is possible to stop their spreading.

15. Make up and act out a dialogue on a problem of modern mass extinction of species.

16. Do a web search for endangered species of Russia and the initiatives to preserve them. Choose an initiative that seems to be the most effective. Find out more about it on the Internet. Tell your partner what you learned.

17. Give a presentation on one of mass extinctions of the past, its causes and outcomes; discuss it with your partner.

18. Read and translate the following extract from "Oak and Ash and Thorn" by Peter Fiennes, and reproduce it to your partner:

It is early summer in the woods above Croft Castle in Herefordshire. The silver birch leaves are turning a deeper green, their bark a smooth, tender shade of white. Snug among the leaves, the pale green catkins are furled and ripening like a million caterpillars trembling on the brink of

release. There is only a narrow strip of birch here, by the edge of the path, a sprinkling of young trees standing at a crossroads in the heart of a gloomy expanse of conifer plantations, but enough light has reached the woodland floor at this point to mean that there is also grass, bracken, red campion and even a dash of bluebells. Butterflies waltz in the sunlight. And beyond the birch, the conifer plantations are spread far across the hillside, the forest floor dark in the midday sun, dead brown needles lying thick on the dismal ground. <…>

Over the decades, many of us have learned to hate conifer plantations. Even the Forestry Commission now seems to regard them with a glum and sheepish dissatisfaction, despite the fact that it was they who were responsible for most of the planting in the first place. Certainly, in the decades after 1919, when the commission was formed as a response to a wartime shortage of pit props and trench cladding, it was unstinting in its efforts to secure the national supply of timber. ‘Non-native’ conifers were selected – they are fast-growing and regular in their habits – and were spread with aggressive abandon across the country. Neglected farmland was chosen first, followed by remote expanses of peat and the thin-soiled uplands, before the commission finally turned its Sauron-like gaze on Britain’s last isolated remnants of broadleaved woodland. Nothing was safe (there was almost no legal protection), as ancient woods across the land were grubbed out, drenched in chemicals, uprooted and

replaced by orderly rows of Sitka and Norway spruce, Japanese larch and Corsican pine.

19. What linguistic means does the author use for the vivid description of indigenous and invasive plant species in the British forests? (metaphors, similes, epithets, repetitions, alliteration etc.)

20. Describe a classical painting of Russian forest using relevant linguistic means. You can be as poetic, funny or serious as you want to.

21. Write an essay on one of the ecological problems in English following these guidelines:

– 200–400 words;

– concerning an endangered species and measures to preserve it;

– non-fictional style.

22. Questions for discussion:

1. What species do you consider harmful for our region's ecosystem?

2. What extinct species would you like to see revived?

3. How many trees should a person plant to compensate current rates of deforestation? (look up the statistics on the Internet)

4. What do you personally do to protect and sustain flora and fauna of your region?

Keys 10:

1. Read, translate and transcribe the following words. Reproduce the sentences from the text in which these words are used:

– breeding — [ˈbriːdɪŋ] — разведение;
– remote — [rɪˈməʊt] — удалённый;
– habitat — [ˈhæbɪtæt] — среда обитания;
– drastically — [ˈdræstɪklɪ] — коренным образом;
– species — [ˈspiːʃiːz] — вид;
– distribution — [ˌdɪstrɪˈbjuːʃn] — распределение;
– manifestation — [ˌmænɪfesˈteɪʃn] — проявление;
– peninsula — [pɪˈnɪnsjʊlə] — полуостров;
– to thrive — [θraɪv] — процветать;
– declining — [dɪˈklaɪnɪŋ] — сокращающийся;
– ecologist — [ɪˈkɒlədʒɪst] — эколог;
– substantially — [səbˈstænʃəlɪ] — существенно;
– immune — [ɪˈmjuːn] — устойчивый;
– wildlife — [ˈwaɪldlaɪf] — дикая природа;
– conservation — [kɒnsəˈveɪʃn] — сохранение.

2. Match the words from column A to the words in column B to make word combinations:

– warm temperature;
– inhospitable landscape;
– southernmost records;
– growing numbers;
– climate change;
– quantitative ecologist;

– important shelter;
– new habitat;
– remote islands;
– further south;
– the worst of the treats;
– unexplored archipelago;
– icy areas;
– biological manifestation;
– Peninsula's northern tip.

3. Explain in English what is meant by these words:

– researcher — someone who conducts research, i.e., an organized and systematic investigation into something. Scientists are often described as researchers;

– expedition — an organized journey for a particular purpose;

– island — a piece of land surrounded by water;

– vessel — a ship or large boat;

– habitat — the natural home or environment of an animal, plant, or other organism;

– population — all the inhabitants of a particular place;

– to decline — to become smaller, fewer, or less; decrease;

– decade — a period of ten years;

– rapidly — very quickly; at a great rate;

– discovery — the process of finding information, a place, or an object, especially for the first time, or the thing that is found;

– annually — once a year; every year;

– corresponding — analogous or equivalent in character, form, or function; comparable;

– inhospitable — harsh and difficult to live in;

– landscape — all the visible features of an area of land, often considered in terms of their aesthetic appeal;

– conservation — prevention of wasteful use of a resource.

4. Fill in the gaps with the words from the box. Translate the sentences into Russian:

1. Until recently, these areas were too *icy* for the penguins.

2. This is the climate *crisis* happening right in front of our eyes.

3. We are seeing a process where this *species* of penguin is spreading into new habitat.

4. Temperatures on the Antarctic *Peninsula* are rising five times more than the global average annually.

5. While gentoos thrive under the warmer temperatures, Adélie penguins, which *rely on* sea ice, do not.

6. Stony Brook researchers were sailing on a Greenpeace *expedition*.

7. Scientists found that Adélie penguin numbers in the Weddell Sea have remained *stable* in the last decade.

8. This *discovery* provides more evidence that the Weddell Sea might be an important shelter.

9. Gentoos are the only penguin species that is *expanding* its distribution.

10. The Weddell Sea is hardly immune from climate change.

11. Adélie penguins breeding in this *area* remain buffered.

12. Our *understanding* of the biology in this inhospitable landscape continues to grow every year.

13. Everything we learn points toward its *value* for conservation.

14. These are some of the southernmost records for gentoo *breeding* in the region.

15. The Weddell Sea is the *site* of a proposed Marine Protected Area.

5. Replace the words in bold with the synonyms from the text:

1. Stony Brook *researchers* were sailing on a Greenpeace expedition.

2. Temperatures on the Antarctic Peninsula are rising five times more than the global average *annually.*

3. This is the climate *crisis* happening right in front of our eyes.

4. In the Antarctic, one of the most remote *places* on Earth …

5. Gentoos *thrive* under the warmer temperatures.

6. She was aboard the *vessel.*

7. Adélie penguin numbers in the Weddell Sea have remained stable in the last *decade*.

8. Those populations declining so *rapidly* on the warming western side.

9. Our *understandin*g of the biology in this inhospitable landscape continues to grow every year.

10. Everything we learn points toward its value for *conservation.*

7. Translate the following sentences from English into Russian:

1. До недавнего времени в этой местности было слишком много льда для пингвинов, которые предпочитают более высокие температуры для выращивания своих птенцов.

2. По мере таяния антарктических льдов из-за изменения климата пингвины расширяют свою среду обитания.

3. Ученые обнаружили на острове Андерсона колонию пингвинов с 75 птенцами.

4. Исследователи изучают части полуострова, где с помощью спутников были обнаружены колонии пингвинов, но которые никогда прежде не исследовались непосредственно на земле.

5. Команда находит пингвинов генту почти везде, куда бы они ни посмотрели.

6. Это свидетельствует о том, что изменение климата резко меняет состав видов.

7. Генту — единственный вид пингвинов на Антарктическом полуострове, который активно распространяется на новых территориях и наращивает численность.

8. Климатический кризис развивается на глазах.

9. Антарктика — одно из самых отдаленных мест на Земле.

10. Этот вид пингвинов распространяется в новые места обитания и размножается южнее.

8. Translate the following sentences from Russian into English:

1. This is the biological manifestation of sea ice loss.

2. Temperatures on the Antarctic Peninsula are rising five times more than the global average annually.

3. In 2020, the continent hit a record high temperature of 64.9 degrees Fahrenheit.

4. Our understanding of the biology in this inhospitable landscape continues to grow every year.

5. When we find Adélie penguins, we typically know that sea ice is nearby.

6. Sea ice declining or disappearing altogether, then we are seeing corresponding Adelie penguin populations decline substantially.

7. Scientists found that Adélie penguin numbers in the Weddell Sea have remained stable in the last decade.

8. This discovery provides more evidence that the Weddell Sea might be an important shelter for wildlife.

9. The Weddell Sea is hardly immune from climate change.

10. Adélie penguins breeding in this area remain buffered from the worst of the threats posed to those populations.

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Appendix A
(recommended)

Additional Vocabulary

General Words

1. Environment — окружающая среда:
– a healthy environment;
– to protect the environment;
– to spoil the environment.

2. Pollution — загрязнение:
– to reduce pollution;
– land pollution, air pollution, water pollution;
– many scientists think about serious changes in the climate because of the pollution of the atmosphere.

3. Protection — защита:
– protection of the environment.

4. Environmental — связанные с окружающей средой (=ecological):
– environmental problems;
– environmental protection;
– environmental pollution is becoming worse;
– pollution is among the main environmental problems.

5. To protect the environment — защищать окружающую среду:

– to protect the environment from pollution.

6. To pollute / to be polluted by — загрязнять / быть загрязненным чем-то:

– to pollute the environment;

– to pollute the water, air, atmosphere means to make it dirty and dangerous for people and animals to live in or to use;

– the air in the cities is polluted by car fumes (выхлопными газами).

7. An influence = an effect — влияние (воздействие):

– to have a strong influence (effect) on;

– TV has a strong influence on people;

– climate has a very important influence on plants, animals and humans.

8. To influence something (greatly) — влиять (сильно):

– what influenced his decision?

– his speech influenced me greatly;

– humans influence nature.

9. Human influence — влияние человека:

– human influence on nature is negative.

10. To destroy / to be destroyed — разрушить, уничтожить / быть уничтоженным:

– to destroy buildings, to destroy hopes;

– to destroy wildlife, countryside beauty;

– the house was destroyed;

– fires often destroy forests.

11. Destruction — разрушение:

– the destruction of environment;

– the destruction of wildlife and countryside beauty;

– destruction of ozone layer;

– destruction of rainforests;

– pouring oil into the water will cause pollution and the destruction of our seas and rivers.

12. Damage — ущерб.

13. To damage / to be damaged — нанести ущерб / быть поврежденным:

– to damage nature;

– to be damaged by fire;

– the house was so badly damaged.

14. Fragile — хрупкий:

– fragile health;

– our fragile planet needs protection.

15. To cause / to be caused — вызывать / вызван:

– to cause illness;
– to cause decease;
– to cause death;
– to cause destruction;
– to cause troubles;
– to cause pollution;
– a burning cigarette caused the fire;
– smoking causes lung decease.

16. A disaster — катастрофа:
– a terrible disaster;
– nuclear disaster;
– ecological disaster;
– fire is a disaster.

17. To survive — выжить:
– do you know that camels can survive for many days without eating?

18. Safe — безопасный:
– a safe place to live.

19. Safety — безопасность:
– be sure of safety.

20. Global — глобальный:
– global problems;
– global warming.

21. Crisis — кризис:

– ecological crisis;

– global crisis.

22. To prevent — предотвратить:

– to prevent an ecological disaster.

23. To take actions — принимать меры:

– to take actions to prevent an ecological disaster.

24. To prohibit / to be prohibited — запретить / запрещено:

– to be strictly prohibited;

– feeding animals in zoos is strictly prohibited.

Pollution

25. To produce — производить:

– to produce goods.

26. Energy — энергия:

– energy is the power from electricity, wind, etc. that helps machines work.

27. Nuclear — ядерный:

– nuclear energy;

– nuclear power stations;

– nuclear tests;

– nuclear weapons;

– a nuclear waste;

– nuclear waste endangers people’s lives;

– people all over the world protest against nuclear tests;

– nuclear power stations can go wrong and cause nuclear pollution.

28. A dump — свалка

– town dump;

– this town is a real dump;

– take all this litter to the town dump.

29. Litter — мелкий мусор:

– to drop litter;

– to clear litter away.

30. Cans of coke / beer — банки от колы, пива.

31. Packaging — упаковка.

32. Packed goods — упакованные товары.

33. Rubbish / garbage — крупный мусор:

– to throw rubbish.

34. Throw away — выбрасывать.

35. Waste — отходы:

– waste paper;

– nuclear waste;

– industrial waste;

– chemical waste;

– radioactive waste;

– a lot of waste from factories and plants goes in to the rivers;

– the scientists try to solve the problem of radioactive waste.

36. To dump / to be dumped — сбрасывать в большом количестве / быть выброшенным:

– they dumped a lot of rubbish in the river;

– all the countries protest against dumping acid wastes in the seas and oceans.

37. Poison — яд.

38. To poison / to be poisoned — отравлять / быть отравленным:

– people can be poisoned by industrial waste.

Destruction of the Environment, Nature and the Wildlife

39. Greenhouse effect — парниковый эффект:

– the problem of greenhouse effect;

– greenhouse effect is the problem of a rise in temperature in the earth’s atmosphere.

40. Source — источник:
– source of information;
– what are the main sourses of land pollution?

41. Resources — ресурсы:
– natural resources;
– the country is rich in natural resources.

42. To waste — тратить понапрасну:
– not to waste water, electricity.

43. A shortage — нехватка:
– a shortage of water;
– a shortage of natural resources (gas, oil, clean water);
– a shortage of food.

44. To run out of — заканчиваться:
– we will run out of oil.

45. Extinct — вымерший:
– extinct birds;
– what extinct animals do you know?
– dinosaurs are extinct animals.

46. To endanger / to be endangered — подвергать опасности / быть в опасности:
– to endanger animals;
– to endanger people’s lives.

47. Endangered animals — исчезающие животные:

– nowadays tigers have become endangered animals.

48. To die out — вымирать:

– endangered animals can easily die out;

– why do some animals die out? People kill animals for the sake of their skins and destroy their habitats, cutting down forests and polluting water.

49. A species (мн. ч. species) — вид (виды):

– plant species;

– insect species;

– a species of flowers, a species of animals, different species of trees;

– the Black Tulip is an unusual species of tulips.

50. A habitat — место обитания:

– a habitat of plants;

– a habitat of animals;

– a habitat is a place where a certain animal usually lives.

51. To include/to be included — включать/быть включенным:

– to include in the Red Book.

52. Disappearing (= rare) — исчезающие (редкие):

– disappearing species;

– rare species.

Environmental Protection

53. Filters / purifiers — фильтры / очистители:

– to use filters.

54. Bins — контейнеры:

– to provide special bins to separate waste.

55. To fine — штрафовать:

– the government should issue a law to fine plants and factories for all kinds of pollution.

56. To recycle / to be recycled — перерабатывать / перерабатываться:

– to recycle waste.

57. Recyclable — пригодный к переработке:

– to produce recycable packaging.

58. Recycling centers — центры переработки:

– there are no recycling centers in our city.

59. To reuse — использовать вторично.

60. To save — экономить.

61. To reduce — уменьшать.

Appendix B
(recommended)

Additional Texts

Task: develop a set of tasks for the following texts according to the model used in Units 1–10.

1 Tonga volcano eruption was a record explosion

A team of scientists has said the volcano that erupted under the sea near Tonga in January set a record. The Tonga-Hunga Ha'apai volcano erupted on January the 15th. It was the biggest explosion ever recorded using modern instruments and technology. It was also the biggest to happen in the past 150 years. The scientists said the blast may have been as large as the Krakatoa eruption that took place in Indonesia in 1883. Dr Robin Matoza from the University of California said: “Tonga was a truly global event, just as Krakatoa was. But we've now got all these geo-physical recording systems, and they recorded something that was really unmatched in the modern data”.

The volcanic eruption sent atmospheric shock waves and tsunami waves around the world. It also caused sonic booms that people heard 10,000km away in Alaska. The eruption even lifted clouds in the sky above the UK, which is 16,500km from Tonga. Scientists in the UK reported the

sudden disappearance of clouds as they moved higher into the atmosphere. UK scientist Professor Giles Harrison said the atmosphere was “a remarkably interconnected thing”. He said: “What happens on one side of the planet can spread around to the other side at the speed of sound”. NASA has said the volcano's effects also reached space and could have affected the weather in space.

2 Gardeners urged not to cut the grass

A charity in the U.K. is urging people not to cut the grass in their garden. When spring arrives, many gardeners mow their lawn. The call to not do this is part of a project called “No Mow May”. It is to help flowers grow wild and insects breed. No Mow May is a campaign to promote biodiversity. It is from the charity Plantlife. The charity is also asking people to count the types and number of wild flowers in their garden. Plantlife says leaving the grass uncut creates a habitat that will help “our bees, butterflies, wildlife and us”. Bees are an essential part of nature as they pollinate flowers. Cutting the grass means there are fewer flowers for bees to work their natural magic.

A spokesperson for Plantlife said garden lawns have the potential to be “biodiversity hotspots”. Last year, the charity found over 250 species of plants on people's lawns. These included wild strawberry and wild garlic. Plantlife wants people to value wild lawns more. It said people would get a nice, colourful surprise if they did not cut their grass. One gardener spoke to the BBC about the joy of wild gardens. He

said people care too much about having a neat garden and use too many chemicals. He believes not mowing the lawn lets people “reconnect with the natural world”. Plantlife agreed. It said a wild garden “makes you feel like you're somewhere tropical instead of your own garden”.

3 WHO says 99 % of people breathe unhealthy air

The World Health Organization (WHO) has announced a shocking finding about the air we breathe. It has found that almost everyone on Earth breathes unhealthy air. The WHO made its air quality update ahead of World Health Day on April 7. The update reported that 99 per cent of the world's population breathes air that exceeds WHO air quality limits. It looked at data from over 6,000 cities in 117 countries. People living in lower- and middle-income countries breathe the poorest-quality air. Millions of people die in these countries because of pollution-related diseases. The WHO said: “After surviving a pandemic, it is unacceptable to still have 7 million preventable deaths...due to air pollution”.

The WHO said its report highlighted the need to move away from fossil fuels. It asked governments to do more to reduce levels of air pollution. It said: “Current energy concerns highlight the importance of speeding up the transition to cleaner and healthier energy systems”. It added that high gas prices, energy security, the dangers of air pollution, and climate change mean the world must be less dependent on fossil fuels. The WHO report included many recommendations for change. Among these were, “the

exclusive use of clean household energy for cooking, heating and lighting," and to "build safe and affordable public transport systems and pedestrian- and cycle-friendly networks".

4 Fast fashion is harming the environment

Environmentalists are getting more worried about the effects of fast fashion on the environment. Fast fashion is the mass production of clothes at a low cost. They are put in shops and online quickly to create a high demand. Manufacturers make 100 billion items of clothing every year. This is expected to grow by 60 per cent by 2030. The fast fashion business model is having a negative effect on the environment. Many of the clothes end up in landfills and are not recycled. Another negative effect on the environment is caused by the chemicals used to make the clothes. These cause health problems for people working in clothes factories. There are reports children make many of these clothes.

The way people are buying clothes is adding to the problem of clothing waste. Many years ago, people went to stores and tried clothes on. People took more time and thought more carefully before they bought clothes. They also wore them for longer. Today, people order cheap clothes on the Internet and if they don't like them, they send them back. Some people say this is causing a throwaway society. Some people buy clothes and never even wear them. The German media company Deutsche Welle wrote: "Every year in Europe, four million tons of clothing ends up in the trash.

Less than one per cent of this is recycled". It seems the fashion industry is not so sustainable.

5 Jeff Bezos promises $2 billion to help nature

Many countries at the COP26 climate change conference are making promises to help Earth. They have signed agreements to end deforestation and cut methane emission levels by 30 per cent by 2030. Bosses of global companies are also at COP26. Jeff Bezos, the founder of Amazon, made a speech on Tuesday. He promised to give $2 billion to help nature. He said the money would restore landscapes to their more natural state. He also wants to transform food systems to make food production more sustainable. Mr Bezos also set up The Bezos Earth Fund in 2020. This is a $10-billion project to help fight climate change. In September, this fund gave $1 billion to help threatened indigenous peoples.

Jeff Bezos said he decided to give more money to protect the planet after going into space in July. He said that looking at Earth from space made him understand the importance of helping our planet. He said: "Looking back at Earth from up there, the atmosphere seems so thin, the world so...fragile". In his COP26 speech, he said his trip into space changed his feelings about our planet. He said: "I was told that seeing Earth from space changes the lens through which you see the world, but I was not prepared for how much that would be true". He said it was time for all countries and corporations to act. He said: "In this critical year...we must all stand together to protect our world".

6 Global timber shortage increases house prices

A shortage of timber worldwide is causing a dearth in supply and major problems for the housing and construction industry. The decrease in the availability of timber has caused a sharp spike in the prices of newly built homes around the world. In some countries, the price builders pay for timber has shot up by about 25 per cent. One of the reasons builders are struggling to get supplies is because people have been repairing or reforming their homes during lockdown. Another reason is that post-lockdown construction and additional DIY projects have created “extraordinary demand”. A timber trade federation said suppliers were “working around the clock” but are “struggling to keep up”.

Environmental scientists assert that a major reason for the shortage is climate change. Global warming is increasing the pressure on the sustainability of forests. An increase in the number of wildfires is causing great damage to large swathes of forest. Many have been completely razed to the ground. The warmer weather has also caused a proliferation in the number of pests that cause damage to trees and stunt tree growth. Sweden, which supplies almost half of the wood used in the UK, has recorded its lowest timber stocks for 20 years. A solution the UK has come up with is to plant more trees. It said it is “committed to trebling tree planting rates”. A builder joked that he did not have time for those trees to grow.

7 More young people suffering from 'eco-anxiety'

More and more children are suffering from “eco-anxiety”. This is a condition that causes people to worry a lot

about the future of Earth and the life on it. People worry about climate change, pollution and the loss of biodiversity. This has led education experts to call for more teaching in schools about climate change, wildlife and the environment. Many teachers say very little is taught in schools about climate change. Some teachers believe climate change should be taught to all year groups. The Teach the Future campaign group found that only four per cent of schoolchildren felt they knew enough about the climate crisis. The group said this is leading to more children suffering from eco-anxiety.

Another campaign group, Earth Rangers, has taken action to address the problem of eco-anxiety. It said: “Eco-anxiety is not an official diagnosable disorder. However, it does affect children in very real ways. This includes feelings of fear, hopelessness and despair”. It added: “It is important to research and understand the ways in which we can help children find effective strategies to cope with these feelings”. Earth Rangers said schools should create conservation activities and help children to teach their parents about how to protect nature. The Earth Rangers president said more needed to be done to help children. She said: “Children are on the front lines of climate change”.

8 Scientists make biodegradable plastic

Plastic has been a blight on the landscape and a deadly threat to wildlife for decades. Environmentalists have issued many pleas for us to reduce the amount of plastic we use or switch to biodegradable alternatives. One solution to this

problem may be at hand. Scientists have developed a form of biodegradable plastic. This means that the billions of plastic bags, cups, straws and utensils that we dispose of each day could be “compostable” — they could decompose and break down as naturally as organic waste. The scientists are from the University of California, Berkeley. They say they have invented a plastic that could break down within a few weeks, rather than centuries, using just heat and water.

The new, biodegradable product involves embedding polyester-eating enzymes into the plastic during the production process. When these enzymes are exposed to heat and water, they eat away at the plastic and reduce it to lactic acid. This provides nutrients for the soil when composted. Professor Ting Xu said up to 98 per cent of the plastic her team made degraded into small molecules. She said: “We are basically saying that we are on the right track. We can solve this continuing problem of single-use plastics”. She added: “Look at all the wasted stuff we throw away — clothing, shoes, electronics like cellphones and computers. We are taking things from the earth at a faster rate than we can return them”.

9 Scientists warn 'insect apocalypse' is coming

Scientists say that global warming isn't the only serious threat to humans. Another major threat is the falling numbers of insects and the extinction of many species. Scientists say that half of all insects worldwide have been declining since the 1970s. A new warning is that over 40 per cent of insect

species could die out in our lifetime. Researchers said the number of insects is decreasing by 2.5 per cent every year. The scientists are calling it an “insect apocalypse”. Many species of butterflies, bees and other bugs are now extinct. In the U.K. researchers say 23 bee and wasp species have gone extinct in the past century. Scientists say the apocalypse could trigger, “a catastrophic collapse of Earth's ecosystems”.

Lead researcher Professor Dave Goulson said a lot of insects are being killed by pesticides used for farming and gardening. He said fewer numbers of insects might mean we cannot feed people. He told reporters: “Three quarters of our crops depend on insect pollinators. Crops will begin to fail. We won't have things like strawberries. We can't feed 7.5 billion people without insects”. He said one of the most worrying trends is the decline of honeybees. In the USA, the number of honeybee colonies dropped from six million in 1947 to just 2.5 million in 2014. Professor Goulson warned people that: “We can't wait another 25 years before we do anything because it will be too late”.

10 TripAdvisor stops selling tickets for dolphin shows

One of the world's leading travel websites, TripAdvisor, has decided to stop selling tickets to attractions and aquariums that have marine creatures like dolphins, orcas, porpoises and whales. One top attraction that TripAdvisor will not sell tickets for is SeaWorld in Florida. A TripAdvisor spokesperson said the ban is a continuation of the company's 2016 policy that prohibited sales of tickets to attractions

where tourists come into physical contact with animals, like elephant rides. TripAdvisor halted ticket sales to “demeaning animal shows and performances” in 2018. The latest ban applies to any attractions that “contribute to the captivity” of dolphins, orcas, porpoises and whales.

A TripAdvisor spokesman elaborated on his company's new initiative. He said: “Whales and dolphins do not thrive in limited captive environments, and we hope to see a future where they live as they should — free and in the wild”. He added: “We believe the current generation of whales and dolphins in captivity should be the last, and we look forward to seeing this position adopted more widely throughout the travel industry”. A SeaWorld spokesman said: “We are disappointed by TripAdvisor's new position that ignores the educational value and conservation mission of professionally accredited zoos and aquariums ... SeaWorld maintains the highest standards of care for all animals”.

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