

THE ENVIRONMENT

A. LEAD-IN

Man's existence is not threatened by any species except his own.

1. **Food for thought:** Why is our Earth fragile?
2. **What are the main environmental problems of today? Make a list.**
3. **Describe one of the above problems in more detail. What are its causes and effects? Can you see a solution?**

Useful expressions:

environment, pollute, pollution, pollutant, contaminate, contaminant, emit, emission, poison, poisonous, global warming, measure, dump, dumping, discharge, waste, rubbish, garbage, disposal, leak, fossil fuel, efficiency, sewage, sewage treatment works/plant, exhaust fumes, ultraviolet rays, catalytic converter, autocatalyst, unleaded petrol, be disposed of, waste disposal, landfill, shred, compress, litter, litter bin, storage, store, radon, power generation, dispersant, recycle, recovery, compost, natural decay, flue gas desulphurisation plant

B. READING: The Environment

1. **Scan the paragraphs and put them under headlines**
2. **Read the text again and find words that mean the same:**
 - a) lack of rain
 - b) to become liquid, usually by heating
 - c) to catch in an animal-catching apparatus
 - d) to spoil, to make less usable
 - e) to set free
 - f) the upper layer of the earth, in which plants grow
 - g) no longer in existence
 - h) to melt by putting in a liquid
 - i) go round and round rapidly
 - j) to rise (of the tide)
 - k) a way of manufacturing things

The Environment

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Scientists say the temperature of the earth could rise by 3 degrees over the next 50 years. This may cause **drought** in some parts of the world, and **floods** in others, as ice at the North and South Poles begins to melt and sea levels rise.

Global warming is caused by the **greenhouse effect**. Normally, heat from the sun warms the earth and then escapes back into space. But **carbon dioxide** and other gases in the atmosphere trap the sun's heat, and this is slowly making the earth warmer.

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The **ozone layer** is a layer of gas high above the surface of the earth that helps to protect it from the sun's **ultraviolet radiation**, which can damage our skins and cause **cancer**. Scientists have recently discovered holes in the ozone layer, caused by substances called **CFCs** (chlorofluorocarbons).

CFCs are used in refrigerators, **aerosol cans** and in the manufacture of some plastic products. Some companies now make aerosols that do not contain CFCs, and these are often marked „**ozone-friendly**“.

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Rainforests help to control global warming because they absorb carbon dioxide. In recent years, large areas have been destroyed, as the trees are cut down for wood or burned to clear the land for farming. The burning releases large amounts of carbon dioxide into the atmosphere.

Many rainforests grow on poor soils, and when they are cut down or burned, the soil is washed away in the tropical rains, so that the area may turn to **desert**. Many plant and animal species that live there may become extinct.

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Factories, power stations and motor vehicles pump large quantities of carbon dioxide and other waste gases into the air. This is a major cause of the greenhouse effect. A lot of petrol contains **lead**, which is very poisonous and can cause brain damage in children. Many people now prefer to use the **unleaded petrol**.

Some poisonous gases dissolve in water in the atmosphere and then fall to the earth as **acid rain**. Acid rain damages trees and buildings, and can kill fish in lakes and rivers. Rivers can also be polluted by industrial waste from factories and chemical **fertilizers** and **pesticides** used by farmers.

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Most of the energy we use today comes from coal, oil and gas. But these will not last for ever, and burning them is slowly harming the atmosphere. We need to look for other ways of supplying energy.

Solar power is a way of using the sun's energy as heat to make electricity. We can also use **wind-power** by building modern windmills that spin in the wind. There are several types of water-power: river water in mountainous areas can be used to generate **hydroelectric power**, and we can also create electricity from sea water flowing in and out of the tides.

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Recycling is the processing of used objects and materials so that they can be used again. About 60 percent of rubbish from homes and factories contain materials that could be **recycled**. Recycling saves energy and raw materials, and also reduces damage to the countryside.

Glass, paper and aluminium cans can all be recycled very easily. Many towns now have **bottle banks** and **can banks** where people can leave their empty bottles and cans for recycling. A lot of paper bags, writing paper and greetings cards are now produced of **recycled paper**.

C. FOLLOW-UP

1. Supply the missing preposition:

The environment includes everything that we rely The state our environment is influenced our behaviour. Chemistry is applied the study of xenobiotics. identifying the presence chemicals in the environment, toxicologists can obtain the necessary information.

2. What are the main air pollutants and where do they come from?

Match the source with the pollutant: smoke, dust, smell, exhausts, soot, methane, chlorofluorocarbons

power plants , aerosols....., cars, lorries , by-product from raising cattle , refridgerators , households , factories burning fossil fuels , coal fire, cigarettes , quarries.....

3. We are much aware now of the need to look after our environment. But what can you personally do to protect it?

Make two lists of things we *should* do and things we *shouldn't* do if we want to protect the planet.

Use this grammar:

We should use recycled paper.

If we use recycled paper, we'll save trees.

If we don't use recycled paper, a lot of trees will be destroyed.

We should recycle paper.

If we don't, we'll destroy forests.

We shouldn't throw away things. *If we do,* we'll pollute the environment.

4. Points for discussion:

- How much has chemistry contributed to the world's environmental problems? How can chemists help fight against air pollution?
- Which is more important, increasing people's standard of living, or protecting the environment?
- Do you think cars should be banned from city centers?
- What environment would you like to live in?

5. Grammar focus: Prefixes

- a) The prefix „re-“ tells you that something is done a second time, e.g.: to rebuild a house means that you build it second time.

Use the following words in sentences of your own and translate them.

reconstruct, retell, relive, remarry, rewrite, reuse, reactivate, rearrange, recycle, reprocess

- b) Give the correct negative prefixes to the following words and use the negative form in a sentence.

1. natural
2. equal
3. certain
4. to lead
5. safe
6. fossil
7. organic
8. significant
9. to increase
10. ability
11. to use

- c) The prefix „eco-“ is often used to mean „environment“, e.g.: eco-audit, eco-products, eco-friendly, eco-label, eco-tourism, eco-system.

Fill in the words above in the following sentences.

1. Tourism that does not harm the environment is
2. Studying the environmental impact of company's activities is
3. Labels on products giving environmental information are
4. An activity or product which does not damage the environment is

6. The passive

The record has been broken.

FORM/TENSE	ACTIVE	PASSIVE
infinitive	to make it	to be made
present simple	she makes it	it is made
present continuous	he is making it	it is being made
present perfect simple	she has made it	it has been made
past simple	he made it	it was made
past continuous	she was making it	it was being made
past perfect simple	he has made it	it has been made
future (will)	she will make it	it will be made
future (going to)	they are going to make it	it is going to be made
future perfect	we will have made it	it will have been made
conditional	he would make it	it would be made
past conditional	she would have made it	it would have been made
modal (must, can etc.)	they must make it	it must be made
past modal	we may have made it	it may have been made

NOTES:

1. The *passive* form always has one more part than its *active* equivalent (*he makes* – 2, *it is made* – 3). The last part is always past participle (*-ed* form), and the second-last part always part of the verb *to be*.
2. Only *transitive* verbs (verbs which have an object) can be changed to passive. *Intransitive* verbs (*go, smile* etc.) can never be passive.
3. We use the passive when we are more concerned with the object of the action, and don't know, are not interested in or want to avoid mentioning the person or thing that did the action. If we wish to include this original subject, it follows the verb and by (*He was killed by a lion*).
4. When a verb has two objects (*He gave me a book*) either object can become subject (*I was given a book/ A book was given to me*). The first example is more common.

TASK: Re-write the first sentence so that the meaning is the same, but the active becomes passive.

Example: They are killing more rhinos these days.

More rhinos *are being killed these days*

1. They are destroying the rain forests in South America

The rain forests _____

2. Air pollution causes acid rain

Acid rain _____

3. Humans have hunted whales for thousand of years.

Whales _____

4. In 1986, the nuclear explosion in Chernobyl polluted the atmosphere with radiation.

In 1986, the atmosphere _____

5. This year, they have caught too many tuna fish in the Mediterranean Sea

This year, too many tuna fish _____

6. When we burn fossil fuels we produce CO2

CO2 _____

7. Global warming will soon affect poor countries

Poor countries _____

8. We can't stop global warming, but we can reduce its effects.

Global warming _____

9. We should make flying more expensive

Flying _____

10. We are going to lose many species of animal forever.

Many species of animal _____