

**Міністерство освіти і науки України  
Львівський національний університет імені Івана Франка**

**Н. О. Микитенко, Н. В. Рубель, М. Я. Саламаха**

## **ENGLISH FOR STUDENTS OF ECOLOGY**

**ПІДРУЧНИК**

Рекомендовано Міністерством освіти і науки України  
як підручник для студентів вищих навчальних закладів

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**Рецензенти:**

**О. Р. Валігура**, доктор філологічних наук, професор,  
професор кафедри германської і фіно-угорської філології  
Київського національного лінгвістичного університету;

**Л. І. Морська**, доктор педагогічних наук, професор,  
завідувач кафедри англійської філології  
Тернопільського національного педагогічного університету  
імені Володимира Гнатюка

**Н. В. Мукан**, доктор педагогічних наук, доцент,  
завідувач кафедри іноземних мов  
національного університету «Львівська політехніка»

**Автори:**

**Н. Микитенко**, доктор педагогічних наук, професор  
кафедри іноземних мов для природничих факультетів Львівського національного  
університету імені Івана Франка

**Н. Рубель**, кандидат педагогічних наук, доцент  
кафедри іноземних мов для природничих факультетів Львівського національного  
університету імені Івана Франка;

**М. Саламаха**, асистент кафедри іноземних мов для природничих факультетів Львівського  
національного університету імені Івана Франка

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Підручник призначений для використання у процесі іншомовної фахової підготовки студентів ВНЗ, що навчаються за напрямом «Екологія». Навчальні матеріали, структуровані за тематичним принципом у 10 розділах і 3 додатках, відображають основні проблеми сучасної екологічної науки. Система вправ і завдань, представлена у межах розділів за видами мовленнєвої діяльності, націлена на розвиток відповідних знань, умінь і навичок, що є компонентами іншомовної професійної компетентності студентів, зокрема – таких її субкатегорій, як іншомовна комунікативна, функціональна, стратегічна, лексична, граматична компетенції.

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Видавничий центр Львівського національного університету імені Івана Франка  
вул. Дорошенка, 41, м. Львів, 75000

# INTRODUCTION

This textbook is designed to help the 1<sup>st</sup> and 2<sup>nd</sup> year students majoring in Ecology at the Faculties of Sciences master their communicative competence in the professional field on the basis of important concepts presented in the textbook. It could be used both as a learning tool for students and as a teaching tool for professors. The need for these types of studying materials has emerged from the lack of specific studying materials for this target group of students. Our personal teaching experience has allowed to use these materials in practice and adjust them to students' needs.

The main objectives of the course is to improve basic language skills (mainly speaking, reading and writing based on knowledge of certain vocabulary items and grammar constructions) with pre-intermediate and intermediate students. The textbook offers tasks according to different levels of students' communicative competence.

Presented studying materials are designed to cover 3-4 semester course. It consists of 10 units with a special focus on the topics related to students' field of study. 3 appendices provide resources highlighting essential grammar structures, specially designed or adapted texts, tasks for self-studying and glossary.

The layout of each unit is typical. As we aimed to develop students' basic language skills, the structure of the course reflects this major goal. The topic of each unit is introduced with a small speaking task (usually some problem questions for discussion). The first stage is to elicit any ideas students might have about the topic dealt with and gradually concentrate on the vocabulary used with this topic. Again vocabulary appears in the reading part and vocabulary notes in order to familiarize students with new lexical units and present new learning material. Vocabulary-in-use and English-in-use activities are aimed at enhancing students' knowledge, improving their skills and abilities while working with new studying material. Each unit of the textbook contains grammar exercises incorporated in Grammar-in-use section and different written projects and tasks involving oral presentations.

Since we haven't been specially educated in ecology, our main resources were reliable internet websites dealing with urgent environmental problems, direct cooperation with professionals in the field, discussions and confrontation with students majoring in ecology.

At the end of the course students are to demonstrate intermediate and upper-intermediate level of communicative competence in speaking on ecological topics, writing summaries and reports, manipulating data, exploring different aspects of ecology in more detail, interpreting results from real experiments, analyzing simple model systems.

*Welcome to the world of ecology!*

# UNIT 3. Air Pollution



## Speaking

### Questions for discussion:

1. What is air pollution?
2. What are the causes of air pollution?
3. What can air pollution lead to?



## Reading

**Task 1. Reading Passage has seven paragraphs A-G. Which paragraph mentions the following (I- XII). There are 5 choices you do not need to use.**

### List of statements.

- I** Deposits of coal.
- II** Health of our children.
- III** Increase in lead levels.
- IV** Global climate change.
- V** People died because of weather anomaly.
- VI** Importance of carbon dioxide.
- VII** The formation of clouds.
- VIII** Official attention to the problems.
- IX** Too many deaths from smog.
- X** Composition of smog.
- XI** Industrial companies are in the blame for polluted air.
- XII** Efforts concerning coal burning failed.

|                |             |                 |
|----------------|-------------|-----------------|
|                | Paragraph A | .....           |
| <i>Example</i> | Paragraph B | <i>Answer V</i> |
|                | Paragraph C | .....           |
|                | Paragraph D | .....           |
|                | Paragraph E | .....           |
|                | Paragraph F | .....           |
|                | Paragraph G | .....           |

Read the text and do the following exercises. Pay attention to prepositions, word-forms and articles.

### Air Pollution

**A** \_\_

Human activity affects our atmosphere. Air pollution has become one of the main problems all over the world. The growth of population centres coupled with the switch from wood-burning to coal-burning fires created clouds of smoke over cities as early as the eleventh century. Air pollution regulations first appeared on England in 1273, but for the next several centuries, attempts at controlling the burning of coal met with notable failure. The problem was not confined to London, nor was it confined to England. As the Industrial Revolution swept across countries, and as coal became common in private residences, smoke and industrial pollution claimed more and more lives. In the United States, Donora, Pennsylvania, became famous for a tragedy that symbolized the dangers of industrial air pollution.

**B** \_\_

On October 26, 1946, a thick, malodorous fog enveloped the small industrial town. Unlike usual fogs, it did not burn off as the day progressed. Instead, it stayed on the ground for five days. Twenty people died in Donora and 7,000 were hospitalized with respiratory problems. The cause was a weather anomaly that trapped toxic waste emissions from the town's zinc smelting plant close to the

ground. The Donora disaster brought air pollution into focus in the United States, and paved the way for the Clean Air Act, enacted in 1963 and strengthened in 1970.

**C** \_\_

Between December 5 and 9, 1952, 4,000 people died in London as a result of smog in a thermal inversion (a condition when the air close to the ground is colder than the layer above it, and is therefore unable to rise above it).

**D** \_\_

Millions of chimneys, buses, cars, plants, factories and other industrial enterprises emit fumes and harmful substances into the atmosphere. Poisoned air is the main reason why it is hard to breathe in large cities with big amount of plants and transport.

**E** \_\_

Human activity has been increasing the concentration of such gases like carbon dioxide, methane, nitrous oxide and water vapor in the atmosphere. Scientists expect to see a doubling of carbon dioxide over pre-industrial levels around the year 2065.

Every year the atmosphere is polluted by about one thousand tons of industrial dust. Toxic wastes are made by enterprises of colour metallurgy, woodworking, pulp paper industry etc.

Various chemical elements are intensively absorbed by our organism during breathing, it is harmful to our health. Air pollution is especially harmful for quality of offsprings.

**F** \_\_

All around the world, the advent of the internal combustion engine-powered vehicles compounded air pollution, adding particulate and gaseous contamination to the air people breathe. The use of leaded gasoline raised lead levels in populations around the world. Leaded gasoline was phased out in the USA starting in 1976, but is still in use in many parts of the world.

**G** \_\_

In 1987, scientists discovered a hole in the ozone layer and recognized a serious threat to the layer that protects the earth from the sun's ultraviolet radiation. The Montreal Protocol, drafted in 1987, addressed the damage caused to the ozone layer by a chemical group as CFCs in consumer and industrial products. The global climate change accord signed in Rio de Janeiro, Brazil, in 1992 addressed the so-called "greenhouse gases", gases which trap heat in the atmosphere and lead to a global warming trend.

Scientists say that air pollution is the cause of acid rains, global warming and of greenhouse effect [11].





activity (n) – [æk'tɪvɪtɪ] – 1) діяльність; 2) активність; енергія, спритність  
coupled with – зв'язаний з  
switch (n) – перехід (від, до)  
coal (n) – вугілля  
regulation (n) – 1) регулювання; 2) правило; 3) pl. статут; інструкція; обов'язкові постанови  
attempt (n) – спроба  
notable (adj) – 1) видатний; визначний; 2) значний (за кількістю) ; помітний  
failure (n) – невдача, неуспіх; провал  
be confined – бути обмеженим, обмежуватися  
to sweep across country – пронестися по країні  
residence (n) – місце проживання; місцеперебування; резиденція  
to claim lives – забирати життя  
malodorous (adj) – [mæ'ləud(ə)rəs] – смердючий  
envelop (v) – [ɪn'veləp] – обгортати; обкутувати  
burn off (v) – палити, спалювати  
the day progressed – день просувався вперед  
hospitalize (v) – ['hɒspɪt(ə)laɪz] – госпіталізувати, покласти в лікарню  
respiratory problems – [rɪs'praɪ(ə)r(ə)trɪ] – респіраторні, дихальні проблеми  
trap (v) – 1) ставити капкани; ловити капканом; 2) заманювати; обманювати;  
3) поглинати, затримувати, відокремлювати (trap out)  
toxic waste – токсичні відходи  
emission (n) – випускання; виділення; випромінювання;  
bring into focus – привернути увагу (до чогось)  
pave the way for – прокласти шлях (чомусь)  
enact (v) – вводити в дію (закон) ; надавати чинності  
strengthen (v) – підсилювати(ся), посилювати(ся); зміцнювати  
thermal inversion – ['θɜ:m(ə)l] – теплова, термічна інверсія  
enterprise (n) – ['entəpraɪz] – 1) підприємство; 2) підприємливість;  
заповзятливість, ініціативність  
exhaust (v) – [ɪg'zɔ:st] – 1) виснажувати, стомлювати, зморювати; 2) викачувати,  
витягати; випускати (пару); 3) виштовхувати  
fume (n) – [fju:m] – 1) дим; кіптява; 2) пара; випар  
substance (n) – ['sʌbstəns] – 1) речовина; 2) матерія, речовина, субстанція  
poisoned (adj) – отруєний  
carbon dioxide (n) – вуглекислота; вуглекислий газ  
nitrous oxide (n) – ['naɪtrəs] – сміховий газ; закис азоту  
water vapour (n) – водяна пара  
doubling (n) – подвоєння  
industrial dust – промисловий пил  
pulp (n) – [pʌlp] – 1) м'якуш плоду; 2) м'яка безформна маса; кашка  
absorb (v) – [əb'sɔ:b] – вбирати; всмоктувати; абсорбувати; поглинати  
offspring (n) – нащадок

advent (n) – ['ædvənt] – прихід, прибуття  
internal combustion engine – двигун внутрішнього згоряння  
vehicle (n) – транспортний засіб  
compound (n) – ['kɒmpaʊnd] – суміш; сполучення, сполука  
particulate (adj) – [pɑː'tɪkjʊlət] – 1) частковий; 2) у формі часток  
gaseous (adj) – ['geɪzɪəs] – газовий; газоподібний  
contamination (n) – забруднення  
leaded gasoline – бензин з домішками свинцю  
phase out (v) – перестати використовувати  
recognize (v) – ['rekəɡnaɪz] – 1) упізнавати; 2) визнавати; 3) висловлювати схвалення; 4) усвідомлювати  
threat (n) – [θret] – загроза, погроза  
draft (v) – складати план (документ, законопроект тощо)  
CFCs – chlorofluorocarbon; хлор-фтор вуглеводень  
accord (n) – [ə'kɔːd] – згода, злагода; гармонія, відповідність, співзвучність  
greenhouse effect – парниковий ефект  
greenhouse gas – парниковий газ

## **READING COMPREHENSION**

### **Task 2. Answer the following questions.**

1. Do people influence our atmosphere?
2. What were the reasons for clouds of smoke in the past?
3. When and where were first air pollution regulations?
4. Was air pollution the problem only of London?
5. What tragedy happened in Donora, the USA?
6. What was unusual of this fog?
7. What was the cause for it?
8. How many people died in London in 1952 because of smog?
9. Why is it difficult to breathe in large cities?
10. What is expected in 2065?
11. How many tons of industrial dust pollute our atmosphere every year?
12. When was ozone hole discovered?
13. Why is ozone layer so important to people?
14. What are “greenhouse gases”?
15. Are acid rains, global warming and greenhouse effect caused by air pollution?

### **Task 3. Are the following statements true or false? If the statements are false correct them.**

1. First clouds of smoke from coal-burning fires appeared in the 9<sup>th</sup> century.
2. On October 26, 1946 Donora was covered by thick fog.
3. This fog stayed on the ground for five days.
4. The town's metallurgical plant caused that fog.
5. The Clean Air Act was enacted in 1963.

6. A condition when the air close to the ground is warmer than the layer above it is called a thermal inversion.
7. Many plants and vehicles in cities lead to respiratory problems because of poisoned air.
8. A doubling of carbon dioxide over pre-industrial levels is expected to be seen in 2050.
9. Enterprises of colour metallurgy, woodworking, pulp paper industry, etc. emit toxic wastes.
10. Leaded gasoline was introduced in the USA in 1976.
11. The ozone Layer doesn't protect the Earth from the Sun's ultraviolet radiation.
12. Greenhouse gases lead to global warming.

## ENGLISH-IN-USE

### Task 4. Match two halves of the sentences.

|  |  |
|--|--|
| 1. Zinc smelting plant ...   | a) still use leaded gasoline.                        |
| 2. Our organism absorbs ...  | b) by the ozone layer.                               |
| 3. Introduction of vehicles with internal combustion ...           | c) is unable to rise above warmer layer.             |
| 4. Many countries all over the world ...                           | d) chemical elements during breathing.               |
| 5. Particulate and gaseous contaminates ...                        | e) paved the way for the Clean Air Act.              |
| 6. The Earth is protected from the Sun's ultraviolet radiation ... | f) increasing the concentration of carbon dioxide.   |
| 7. Donora disaster ...   | g) is one of the main problems all around the world. |
| 8. The small industrial town ...                                   | h) was blamed for toxic waste emissions.             |
| 9. Human activity has been ..                                      | i) by air pollution.                                 |
| 10. Air pollution ...  | j) are added to the air we breathe.                  |
| 11. The air close to the ground ...                                | k) compounded air pollution.                         |
| 12. Global warming is caused ...                                   | l) was enveloped by fog.                             |

### Task 5. Choose the most appropriate item to complete the sentences (according to the text).

1. The Donora disaster \_\_\_\_
  - A saved many people.
  - B brought air pollution into the focus in the USA.
  - C helped people with respiratory problems.
2. For the next several centuries attempts \_\_\_\_
  - A claimed many lives.
  - B for control concerning coal burning met failures.
  - C at controlling coal burning failed.
3. When scientists discovered a hole in the ozone layer \_\_\_\_
  - A they reported that it was a serious threat to the layer.
  - B they didn't pay attention to it.

- C they were happy to solve this problem.
4. Smoke and industrial pollution claimed more and more lives \_\_\_\_  
 A before the introduction of coal.  
 B when Industrial Revolution swept roads.  
 C when people began to use coal at home.
5. Cars, plants and factories are blamed \_\_\_\_  
 A for polluting air by emissions.  
 B on pollution by exhaustions.  
 C to make the air cleaner.
6. London fog is known \_\_\_\_  
 A to kill many people.  
 B to have taken place on October 26, 1946.  
 C to have killed 4,000 people.
7. Scientists claim that \_\_\_\_  
 A acid rains are good to health.  
 B global warming, greenhouse effect and acid rains are caused by air pollution.  
 C air pollution is not responsible for respiratory problems.

## Vocabulary-in-Use

### Task 6. Choose one of the words (according to the text).

1. Tornado \_\_\_\_ everything on its way.  
 a) sustained b) swept c) swapped d) made e) sweeping
2. The use of this element was \_\_\_\_ in 1950.  
 a) brought into b) coupled c) phased out d) suffered e) phased on
3. Mist stayed on the \_\_\_\_ for several days.  
 a) ground b) place c) city d) village e) country
4. This event \_\_\_\_ the way for the Act.  
 a) made b) cobbled c) covered d) caused e) paved
5. Such problem was brought into \_\_\_\_ in Ukraine.  
 a) concentration b) pavement c) residence d) focus e) level
6. Tsunami \_\_\_\_ many lives.  
 a) gave b) reported c) claimed d) presented e) announced
7. These solar panels \_\_\_\_ the sun's heat.  
 a) trash b) trap c) discover d) carry e) fuel

### Task 7. Match synonyms.

- |             |  |
|-------------|--|
| 1. reside   | a) influence, have an impact               |
| 2. internal | b) coat, cover, veil, wrap                 |
| 3. activity | c) growth, rise, enlargement               |
| 4. envelop  | d) effort, endeavor, try                   |
| 5. absorb   | e) prominent, eminent, celebrated, popular |
| 6. discover | f) inner, inside, interior                 |
| 7. small    | g) catch, hold back, imprison              |
| 8. advent   | h) occupation, task                        |

- |                |                                     |
|----------------|-------------------------------------|
| 9. affect      | i) take in, draw in, soak up        |
| 10. attempt    | j) inhabit, live, dwell             |
| 11. malodorous | k) little, tiny                     |
| 12. disaster   | l) find out, come to know, detect   |
| 13. famous     | m) smelly, stinking, putrid, fetid  |
| 14. increase   | n) beginning, introduction, launch  |
| 15. trap       | o) catastrophe, tragedy, act of God |

**Task 8. Match antonyms.**

|               |              |
|---------------|--------------|
| 1. famous     | a) decrease  |
| 2. small      | b) useful    |
| 3. internal   | c) large     |
| 4. increase   | d) unpopular |
| 5. above      | e) weaken    |
| 6. strengthen | f) external  |
| 7. close      | g) below     |
| 8. harmful    | h) far       |

**Task 9. Match the word on the left with its correct definition on the right.**

|                        |  |
|------------------------|--|
| 1. to phase out        | a) to make a later event or development possible by producing the right conditions                 |
| 2. to burn off         | b) if one thing is ... with another, they happen to exist together and produce a particular result |
| 3. to pave the way for | c) to produce and discharge (something, especially gas or radiation)                               |
| 4. to claim            | d) e. x. wind, waves, storm; to move quickly and with a lot of force                               |
| 5. be confined to      | e) to make a difficult situation even worse by adding more problems                                |
| 6. to couple with      | f) to gradually stop using or providing something  |
| 7. to sweep across     | g) if a war, accident, etc. ... lives, people die because of it                                    |
| 8. to compound         | h) to remove something by burning it   |
| 9. to draft            | i) to make (something, especially something bad) happen  |
| 10. to sign            | j) to affect or happen to only one group of people, or in only one place or time                   |
| 11. to breathe         | k) to move from a lower position to a higher one; come or go up                                    |
| 12. to cause           | l) to take air into the lungs and then expel it, especially as a regular physiological process     |
| 13. to rise            | m) to catch (an animal) in a trap  |
| 14. to emit            | n) to prepare a preliminary version of (a document)  |

|             |  |
|-------------|--|
|             |  |
| 15. to trap | o) to authorize (a document or other written or printed material) by attaching a signature |

## Grammar-in-Use

### ADJECTIVE. COMPARATIVES AND SUPERLATIVES

**Task 10. Underline the correct degree of comparison in the sentences below.**

1. Sadly, New York City has the 4th *worse/worst* ozone levels across most of the nation.
2. Air pollution is one of *the most noticeable/more noticeable* and common complaints of people in an urban setting.
3. The incidence of murders and violent attacks in cities are *much high/higher* than the statistics from smaller towns.
4. What's the *cleaner/cleanest* big city in the U.S.?
5. Air is *the most essential/essentialer* element for all living organisms and yet, most humans play a big role on polluting this essential resource.
6. The atmospheric pollutants with *the greatest/greater* effect onto the environment are the carbon monoxide, carbon dioxide, hydrocarbons, sulfur dioxide, nitrogen oxides, dust particles, radioactive isotopes, and chlorofluorocarbons.
7. In fact, pollution is *older/the oldest* than most people realize.
8. China is the *biggest/bigger* CO<sub>2</sub> polluter.
9. Current situation with our planet is *more serious/the serious* than ever before in our history.
10. Air is as *important/more important* as water.

**Task 11. Choose the most appropriate item to complete the sentences.**

1. The air is \_\_\_\_ polluted in cities that it is difficult to breathe.  
A such      C too  
B so          D enough
2. We should have \_\_\_\_ money to reduce air pollution.  
A too          C enough  
B so          D such
3. It was \_\_\_\_ a dirty city that no one wanted to go there.  
A so          C enough  
B too         D such
4. It is \_\_\_\_ dangerous to live in areas full of radiation.  
A too          C such  
B enough     D so
5. We couldn't even believe that \_\_\_\_ many people died because of smog.  
A such        C so  
B much        D enough

**Task 12. Choose the most appropriate item to complete the sentences.**

1. The level of pollution is much \_\_\_\_ than it was in the past.  
a) high b) higher c) highest d) as high
2. It has become \_\_\_\_ to live with poisoned air and water.  
a) hardest b) the hardest c) hardly d) hard
3. Urban areas are \_\_\_\_ than rural areas.  
a) dirtier b) dirty c) the dirtiest d) more dirty
4. It is much \_\_\_\_ to cope with air pollution.  
a) difficult b) most difficult c) more difficult d) as difficult
5. Water pollution is as \_\_\_\_ as air pollution.  
a) more serious b) serious c) most serious d) much serious
6. The more the factories emit CO<sub>2</sub>, \_\_\_\_ our cities become.  
a) dirty b) the dirtier c) the dirtiest d) more dirtier
7. The problem of air pollution can become \_\_\_\_ in a hundred years.  
a) badder b) worst c) worse d) as bad
8. The more time we spend in ecologically clean areas, the \_\_\_\_ we are.  
a) healthy b) healthiest c) healthier d) much healthy
9. Is it possible to find the \_\_\_\_ place on the Earth?  
a) cleaner b) most clean c) more cleaner d) cleanest
10. The smog was as \_\_\_\_ as night.  
a) dark b) darker c) the darkest d) more darker

## PAST TENSES

### **Task 13. Choose the most appropriate item to complete the sentences.**

1. A thick fog \_\_\_\_ the small town in 1946.  
a) enveloping b) enveloped c) had enveloped
2. Air pollution regulations first \_\_\_\_ in 1273.  
a) appeared b) have appeared c) appearing
3. More than 50 years ago 4,000 people \_\_\_\_ in London because of smog.  
a) had died b) were dying c) died
4. Yesterday they \_\_\_\_ about the explosion at power station.  
a) was reported b) reporting c) reported
5. Scientists \_\_\_\_ a hole in the ozone layer in 1987.  
a) discovering b) discovered c) have discovered

### **Task 14. Choose the most appropriate item to complete the sentences.**

1. It is said that scientists \_\_\_\_ acid rain yesterday at 5 o'clock.  
a) had observed b) were observing c) had been observing
2. When the power station exploded many people \_\_\_\_ near it.  
a) walking b) had walked c) were walking
3. You could see that the factory \_\_\_\_ some harmful substances into the air yesterday all the morning.  
a) was emitting b) emitted c) had emitted
4. When I looked up at the sky I saw that black clouds of smoke \_\_\_\_ there.  
a) had floated b) have been floating c) were floating

5. When people saw that the company \_\_\_\_ garbage into the river, they began to protest.

- a) was dumping   b) dumped   c) has dumped

**Task 15. Choose the most appropriate item to complete the sentences.**

1. Air pollution \_\_\_\_ a problem by the 18<sup>th</sup> century.

- a) was   b) hadn't been   c) was being

2. Scientists \_\_\_\_ a hole in the ozone layer by 1990-s.

- a) had discovered   b) discovered   c) were discovering

3. When the scientists saw that the lake \_\_\_\_ up, they began to worry.

- a) has dried   b) drying   c) had dried

4. We \_\_\_\_ too many trees by the end of the 20<sup>th</sup> century.

- a) have cut   b) had cut   c) cutting

5. The Earth \_\_\_\_ by 0.5 degrees Celsius by the beginning of the 21<sup>st</sup> century.

- a) had warmed   b) was warming   c) will warm

**Task 16. Choose the most appropriate item to complete the sentences.**

1. People \_\_\_\_ wood fires for many years by the time they began to use coal.

- a) have been burning   b) had been burning   c) were burning

2. Strong wind \_\_\_\_ harmful pollutants for many miles by the time they settled down on buildings.

- a) had been blowing   b) was blowing   c) has blown

3. The use of leaded gasoline \_\_\_\_ lead levels in populations for many decades by the time it was phased out.

- a) were raising   b) have raised   c) had been raising

4. Human activity \_\_\_\_ the concentration of such gases like carbon dioxide, methane and nitrous oxide for a very long period of time by the time this concentration became a big problem.

- a) had been increasing   b) were increasing   c) increased

5. We \_\_\_\_ waste into our rivers, seas and oceans for so long that it became a real problem.

- a) dumped   b) have been dumping   c) had been dumping

**Task 17. Choose the most appropriate item to complete the sentences (all the Past tenses).**

1. Government \_\_\_\_ strict rules last year to settle the refuse problem.

- a) had introduced   b) introduced   c) has been introducing

2. When people understood that they \_\_\_\_ too much oil it was too late.

- a) was using   b) have been using   c) had used

3. When I saw my friends they \_\_\_\_ leaves into general rubbish.

- a) put   b) has been putting   c) were putting

4. They \_\_\_\_ pesticides for forty minutes by the time rain started.

- a) sprayed   b) were spraying   c) had been spraying

5. Farmers \_\_\_\_ the use of harsh chemicals and synthetic fertilizers by the end of last century.

- a) introduced   b) had introduced   c) was introducing

6. When I saw stray dogs they \_\_\_\_ towards me.



- a) had run b) were running c) have been running
7. Modern lighting in streets and buildings, together with advertising signs and other light sources \_\_\_\_\_ it increasingly difficult for astronomers to study the night sky with optical telescopes.
- a) made b) has made c) were made
8. Too many species of animals \_\_\_\_\_ by the time the scientists found the real reason.
- a) died b) had died c) have died
9. He \_\_\_\_\_ out experiments for a long period of time before he found out what was really going on.
- a) had been carrying b) was carrying c) carried
10. Two separate atom bombs \_\_\_\_\_ on Hiroshima and Nagasaki in 1945.
- a) had exploded b) exploded c) had been exploding

## English-in-Use

### Task 18. Fill in prepositions (from the text).

- There were too many clouds of smoke \_\_\_ the city.
- Our city is famous \_\_\_ beautiful architecture.
- During the disaster many children were hospitalized \_\_\_ respiratory problems.
- High velocity winds swept \_\_\_ the village.
- Emissions \_\_\_ factories do a lot of harm \_\_\_ city dwellers.
- Disaster brought air pollution \_\_\_ focus.
- Ann made an attempt \_\_\_ the world record.
- Pollution is harmful \_\_\_ our health.
- Scientists from all \_\_\_ the world will be present at the conference.
- Many employees tried to switch \_\_\_ work at office \_\_\_ teleworking.
- Chornobyl Catastrophe was confined not only \_\_\_ Ukraine.
- Leaded gas was phased \_\_\_ in the 1970s.
- The advent \_\_\_ computers facilitated people's lives.
- In the heatwave try to protect your skin \_\_\_ the sun.
- Water was absorbed \_\_\_ the soil.
- Ann's Birthday is \_\_\_ December 26.
- This decision paved the way \_\_\_ further legislation on civil rights.

### Task 19. Write an appropriate form of the word in bold.

- After the accident the driver was \_\_\_\_\_
- He understood that his \_\_\_\_\_ cost a lot.
- The Buckingham palace is the \_\_\_\_\_ of Queen Elizabeth.
- The \_\_\_\_\_ of prices was not taken into consideration.
- Air pollution leads to \_\_\_\_\_ problems.
- \_\_\_\_\_ tried to understand this unusual process.
- \_\_\_\_\_ substances cause much damage.
- \_\_\_\_\_ progress is blamed for so much pollution.
- It is difficult to \_\_\_\_\_ high in the mountains.
- Everyone knows the \_\_\_\_\_ of Romeo and Juliet.

**HOSPITAL**  
**FAIL**  
**RESIDE**  
**GROW**  
**RESPIRATION**  
**SCIENCE**  
**HARM**  
**INDUSTRY**  
**BREATH**  
**TRAGIC**

11. Human \_\_\_\_ is the cause of many ecological problems.
12. \_\_\_\_ from cars and buses pollute air.
13. The Clean Air Act was \_\_\_\_ in 1970. (verb)

**ACTIVE**  
**EMIT**  
**STRONG**

**Task 20. Fill in article the where it is necessary.**

1. \_\_\_\_ sun was shining brightly.
2. \_\_\_\_ Montreal Protocol was drafted in 1987.
3. She had always wanted to visit \_\_\_\_ England and finally she visited it last year.
4. There was emission of poisonous gases in \_\_\_\_ September.
5. Chernobyl disaster happened in \_\_\_\_ 20<sup>th</sup> century.
6. \_\_\_\_ Washington is the capital of \_\_\_\_ United States of America.
7. Nowadays people are able to travel all around \_\_\_\_ world.
8. \_\_\_\_ Industrial Revolution brought much pollution.



**Task 21. Give a short written summary of the text (150 words).**

Speaking

**Task 22. Retell the text above highlighting its main ideas.**

1. Do you know any facts concerning air pollution?  
Have a look at these facts:

**Here are a few facts about air pollution:**

Almost 232 million different types of vehicles are driven by U.S. citizens every day, adding greenhouse gases into the air.

U.S. vehicle emissions contribute 45% to global warming.

The average adult consumes 3,000 gallons of polluted air every day.

Vehicle exhaust contributes to 60% of carbon monoxide emissions in the U.S.A. and up to 95% in large cities.

Every year 335,000 Americans die of lung cancer, which is a direct result of air pollution.

2. Do you find these numbers striking?
3. How can we prevent air pollution? If you do not have many ideas, read the extract below.

## How to Prevent Air Pollution

The number one way to prevent air pollution is to walk or bike more and drive less. This will prevent fossil fuels from polluting the air. Here are some other ways to prevent air pollution:

- Carpool or join a ride share with friends and coworkers.
- Don't smoke.
- Keep your car maintenance up-to-date.
- If you have to drive, do your errands at one time.
- Don't buy products that come in aerosol spray cans.
- Avoid using lighter fluid when barbecuing outside.
- When you drive, accelerate slowly and use cruise control.
- Always replace your car's air filter.
- Use a push or electric lawnmower rather than a gas-powered one.
- Don't use harsh chemical cleaners that can emit fumes.
- Inspect your gas appliances and heaters regularly.

## Higher level

### Vocabulary-in-Use

**Task 23. Put each of the following words in its correct place in the passage below.**

*factory*                      *eruption*                      *cigarette*                      *step*                      *rise*  
*phenomena*                      *plants*                      *road*                      *cloud*

The moment you (1) \_\_\_\_\_ out of the house and are on the (2) \_\_\_\_\_ you can actually see the air getting polluted; a (3) \_\_\_\_\_ of smoke from the exhaust of a bus, car, or a scooter; smoke billowing from a (4) \_\_\_\_\_ chimney, fly ash generated by thermal power (5) \_\_\_\_\_, and speeding cars causing dust to (6) \_\_\_\_\_ from the roads. Natural (7) \_\_\_\_\_ such as the (8) \_\_\_\_\_ of a volcano and even someone smoking a (9) \_\_\_\_\_ can also cause air pollution.

### English-in-Use

**Task 24. Read the passage below. For gaps (1-10) choose the correct answer (A, B, C or D).**

Air pollution was first (1) \_\_\_\_\_ as problem of city (2) \_\_\_\_\_, poisoning themselves, but more recently, air pollution is (3) \_\_\_\_\_ as a problem of global (4) \_\_\_\_\_. The tolerance for environmental destruction is (5) \_\_\_\_\_ and human history is (6) \_\_\_\_\_ with civilizations that failed because humans (7) \_\_\_\_\_ natural

resources and spoiled their own nest. Humans adapt (8) \_\_\_\_\_ to deteriorating conditions and will (9) \_\_\_\_\_ in following daily routines even when air pollution is severe, traffic is congested, water and food supplies are at risk, and social order is (10) \_\_\_\_\_ .

|    | A            | B           | C               | D            |
|----|--------------|-------------|-----------------|--------------|
| 1  | notice       | noticeable  | noticed         | observes     |
| 2  | dwell        | dwellers    | humans          | people       |
| 3  | knew         | knowledge   | acknowledgement | acknowledged |
| 4  | significance | significant | important       | vitality     |
| 5  | new-brand    | modern      | ancient         | up-to-date   |
| 6  | wasted       | dusted      | littering       | littered     |
| 7  | exploitation | exploit     | exploited       | reused       |
| 8  | easily       | ease        | easy            | light        |
| 9  | persistently | persist     | persistence     | persistent   |
| 10 | stable       | stability   | unstable        | safe         |

**Task 25. Some parts of the text are missing. Choose the most appropriate part from the list (A-N) for each gap (1-7) in the text. There are 7 extra parts you do not need.**

Airborne chemicals contaminate food and (1) \_\_\_\_\_. Airborne chemicals are ingested; they collect (2) \_\_\_\_\_ and throat and are swallowed, often in mucus that (3) \_\_\_\_\_ protect exposed surfaces. Airborne chemicals (4) \_\_\_\_\_ the digestive system (5) \_\_\_\_\_ well-known toxins (6) \_\_\_\_\_ pesticides, organophosphate, dioxin, arsenic, cadmium, lead, and mercury. (7) \_\_\_\_\_, exposures to airborne pathogens can be intense and can cause cancer.

- |                 |                 |
|-----------------|-----------------|
| A make up       | H attempts in   |
| B attempts to   | I In addition   |
| C Although      | J water springs |
| D entering      | K on the eyes   |
| E water sources | L such as       |
| F so as         | M include       |
| G in the nose   | N entered       |

**Task 26. Find one extra word in each line.**

|  |          |
|--|----------|
| <p>The health of our lungs and entire the respiratory system is been affected by the quality of the air we breathe. In addition to oxygen, this air does contains other substances such as pollutants, which can be harmful. Exposure to much chemicals by inhalation can negatively have affect our lungs and other organs in the body. The respiratory system is being particularly sensitive to air pollutants so because much of it is made up of exposed membrane. Lungs are anatomically structured to have bring large quantities of air (on average, 400 million litres in whole</p> | 1. _____ |
|  | 2. _____ |
|  | 3. _____ |
|  | 4. _____ |
|  | 5. _____ |
|  | 6. _____ |
|  | 7. _____ |
|  | 8. _____ |
|  | 9. _____ |

|  |           |
|--|-----------|
| a lifetime) into intimate contact with the blood system in the order to facilitate the delivery of oxygen. | 10. _____ |
|--|-----------|

**Task 27. Write only one word in each gap.**

Lung tissue cells can (1) \_\_\_\_ injured directly by air pollutants such (2) \_\_\_\_ ozone, metals and free radicals. Ozone can damage the alveoli -- the individual air sacs (3) \_\_\_\_ the lung where oxygen and carbon dioxide (4) \_\_\_\_ exchanged. More specifically, airway tissues which are rich (5) \_\_\_\_ bioactivation enzymes can transform organic pollutants (6) \_\_\_\_ reactive metabolites and cause secondary lung injury. Lung tissue has an abundant blood supply (7) \_\_\_\_ can carry toxic substances and their metabolites (8) \_\_\_\_ distant organs. In response (9) \_\_\_\_ toxic insult, lung cells also release a variety (10) \_\_\_\_ potent chemical mediators that may critically affect the function of other organs (11) \_\_\_\_ as those of the cardiovascular system. This response may (12) \_\_\_\_ cause lung inflammation and impair lung function.

**Task 28. Circle the correct word.**

While ambient air pollution is a (1) *mayor/major* concern, indoor air can be (2) *more/much* polluted (3) *then/than* outdoor air. (4) *Built/Building* materials and furnishings are a (5) *source/reason* of volatile chemicals. A decrease in indoor air (6) *quantity/quality* is the result of reduced (7) *ventilating/ventilation* and efficient construction (8) *practices/practises*, sealing homes, stores and office buildings from the outdoor environment.

## Speaking

**Task 29. Read the quotation below.**

*We travel together, passengers on a little space ship, dependent upon its vulnerable reserves of air and soil. all committed for our safety to its security and peace; preserved from annihilation only by the care, the work, and I will saw the love that we give to our fragile craft.*

Adlai Stevenson

In a small group discuss its main idea with the focus on air pollution. Then make an oral presentation concentrating on its threats and possible ways to reduce it.



Writing

**Task30. Write an essay (using the words from the text) concerning air pollution in your country or city. While writing try to answer the following questions:**

1. Are there any plants or factories that emit poisonous gases into the air?
2. How do these poisonous gases influence people?
3. What actions are taken to reduce these emissions?
4. What would you offer to reduce such emissions?
5. What other things pollute the air in your city or country?

### **Task 31. Translate into English.**

Атмосферне повітря — один з найважливіших природних ресурсів, без якого життя на Землі було б абсолютно неможливим. Атмосферний кисень O<sub>2</sub>, необхідний для дихання людей, тварин, переважної більшості рослин і мікроорганізмів. Організму людини і тварин необхідний постійний приток кисню. Основне джерело утворення кисню — це фотосинтез зелених рослин. Підраховано, що рослини за рік виділяють в атмосферу близько 70 млрд т кисню. Близько 80% всього кисню в атмосферу постачає морський фітопланктон, 20% виробляє наземна рослинність.

### **Self-study**

**Look at the text bank (Appendix 2). Read the text and do the exercises.**