

# UNIT 1

## POLLUTION



### 1. WARMING UP

#### 1.1. Match the terms on the left with the statements on the right

1. ecosystem
2. pollution
3. point source pollution
4. biodegradable pollutants

- A. it comes from specific sources.
- B. the contamination of earth's environment
- C. they decompose by natural processes.
- D. living organisms and their physical surroundings.

1.....

2.....

3.....

4.....



### 2. DEVELOPING LANGUAGE : Pollution

Pollution is the contamination of Earth's environment with materials that interfere with human health, the quality of life, or **ecosystems** (living organisms and their physical surroundings). Although some environmental pollution is a result of natural causes, such as volcanic eruptions, human activities are the most common cause.

There are two main categories of polluting materials, or pollutants. **Biodegradable pollutants** are materials, such as sewage, that rapidly decompose by natural processes. These pollutants become a problem when they are added to the environment faster than they can decompose. **Non-degradable pollutants** are materials that either do not decompose or decompose slowly in the natural environment. When contamination occurs, it is difficult or impossible to remove these pollutants from the environment.

Non-degradable compounds such as dioxins, polychlorinated biphenyls (PCBs), and radioactive materials can reach dangerous levels of accumulation as they pass up the food chain into the bodies of larger animals. This process is known as **bioaccumulation**.

### Types of pollution

Pollution exists in many forms and affects many different aspects of Earth's environment. **Point-source pollution** comes from specific, localized, and identifiable sources, such as sewage pipelines or industrial smokestacks. **Non-point source pollution** comes from dispersed sources, such as contaminated water runoff from city areas or automobile emissions.

The effects of these pollutants may be immediate or delayed. **Primary** effects of pollution occur immediately after contamination. Secondary effects may be delayed or may persist in the environment into the future, perhaps going unnoticed for many years. DDT, a nondegradable compound, does not poisons birds immediately, but gradually accumulates in their bodies. Birds with high concentrations of this pesticide lay thin-shelled eggs that fail to hatch or produce deformed offspring.

[Source: "Pollution". Microsoft®; Encarta®; Online Encyclopedia 2001](http://encarta.msn.com)  
<http://encarta.msn.com>



### 3. SCANNING

**3.1. Read the text and check which of the statements below are TRUE and which FALSE.**

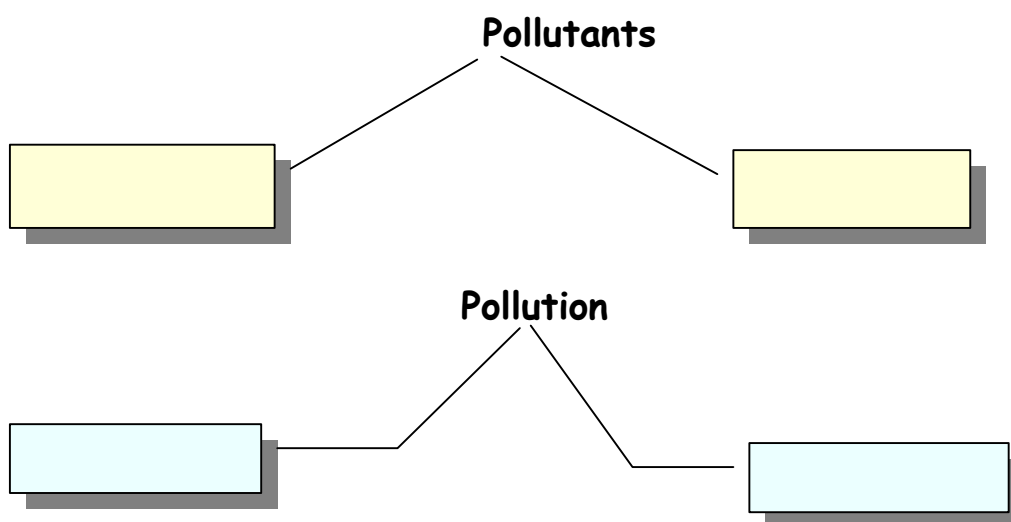
1. Environmental pollution results from natural causes not from human activities. ☐
2. Sewage is an example of non-degradable pollutants. ☐
3. Non-degradable pollutants are materials that, either do not decompose, or decompose slowly in the natural environment. ☐
4. Volcanic eruptions are one of the main causes of environmental pollution. ☐
5. Biodegradable pollutants decompose slowly in the natural environment. ☐

6. Bioaccumulation occurs when non-degradable compounds pass up the food chain of animals. ☐
7. The effects of non-point source pollution may be immediate or delayed. ☐
8. Primary effects of pollution occur immediately after contamination. ☐
9. Secondary effects of pollution may be delayed or may persist in the environment into the future. ☐
10. Secondary effects of pollution are dangerous because they cannot be easily noticed. ☐



#### 4. PRACTISING LANGUAGE

##### 4.1. Fill in the diagrams below.



##### 4.2. Fill in the missing words choosing from the list given below (15 points)

bioaccumulation	primary	secondary	non-point
biodegradable	non-degradable	point-source	non- point source

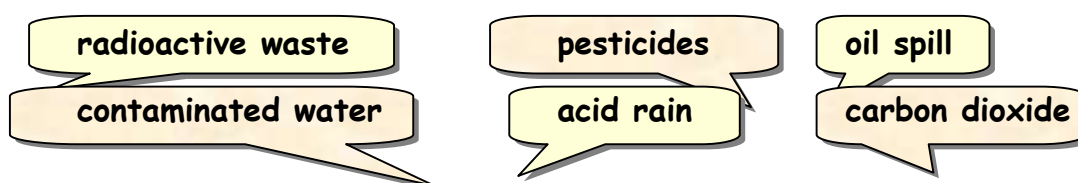
1. .... pollutants are materials that rapidly decompose by natural processes.
2. .... pollutants are materials that, either do not decompose, or decompose slowly in the natural environment.

3. .... pollution comes from specific, localized, and identifiable sources, such as sewage pipelines or industrial smokestacks.
4. ....pollution comes from dispersed or uncontained sources, such as contaminated water runoff from urban areas or automobile emissions.
5. The accumulation of non-degradable compounds in living organisms is called .....
6. Automobile emissions is an example of ..... pollution.
7. Oil spills at sea can cause a ..... effect of pollution.
8. Pesticides cause a ..... effect of pollution.

**4.3. Read the sentences below describing bioaccumulation and put them in the correct order.**

- ☐ Larger fish or other carnivores eat the small fish.
- ☐ Small fish graze on these plants.
- ☐ They accumulate even greater, and possibly life-threatening, concentrations of the compound.
- ☐ Toxic compounds collect on the surface of aquatic plants without doing much damage to them.
- ☐ They accumulate a high concentration of the toxin.

**4.4. Put the sources of pollution below under the appropriate heading, according to the type of effect they cause.**



PRIMARY EFFECTS	SECONDARY EFFECTS

#### 4.5. Match the sources with the possible effects they cause.

death of marine life

death of human beings or animals

destruction of vegetation

death of grazing animals

thin-shelled eggs

species extinction

cancer

Pollutant	Primary effects	Secondary effects
radioactive waste		
acid rain		
oil spill at sea		
pesticides		
carbon dioxide		
contaminated water		



### 5. EXPANDING LANGUAGE

#### 5.1 . Match the synonyms below.

1. persist
2. unnoticed
3. accumulate
4. lay
5. arouse
6. immediate

- A. done or occurring at once.
- B. produce
- C. continue to exist
- D. cause sb to become active
- E. not observed
- F. make or become greater in number or quantity

1.... 2.... 3..... 4..... 5..... 6.....

**5.2. Fill in the table below with derivatives of the words given.**

	NOUN	ADJECTIVE	ADVERB	VERB
contaminate				
volcano				
accumulate				
erupt				
progressive				
identify				
industry				
emit				
gradual				
second				
public				
survive				
process				


**6. PRACTISING STRUCTURES- REVISION OF TENSES**
**6.1. Write the correct tense of the verbs in brackets.**

- Higher education students.....(usually / take) exams in January and June.
- .....(you / work) in a power plant when you graduate?
- The measuring instruments are broken. They..... (not / work) at present .
- I ..... usually ..... (not / work) after 4 o'clock in the afternoon, but this week I ..... (work) until 6.00.
- ..... (they / study) Environmental Physics next year?
- He is very busy. He ..... (check) car emissions data at the moment.
- In the future all industries ..... (use) very advanced pollution control methods.

8. Non-degradable compounds ..... (poison) many birds in the past decades.
9. Pollution ..... (affect) many different aspects of the environment.
10. Many years ago pollution in the area ..... (be) the result of volcanic eruption.


**6.2. Choose the correct answer.**


1. .... modern equipment in the plant?
- A. Does they use      B. Do they uses      C. Do they use**
2. They ..... production by means of computers.
- A. control      B. controls      C. do control**
3. He ..... in the quality control department.
- A. don't work      B. doesn't works      C. doesn't work**
4. In the future all industries ..... non-polluting manufacturing methods.
- A. use      B. doesn't use      C. will use**
5. What will you do after work?- Perhaps I ..... for the exams.
- A. am going to study      B. will study      C. am studying**
5. If you ..... the switch, the light will come on.
- A. will press      B. are pressing      C. press**
6. All measuring equipment ..... a display and a control box.
- A. has got      B. don't have      C. have got**
7. **A. What do a biodegradable compound affect?**  
**B. What does a biodegradable compound affect?**  
**C. What does a biodegradable compound affects?**
8. They ..... the manual in order to fix the damage.
- A. are reading      B. read      C. reads**
9. We don't have the qualifications, we ..... a good job.
- A. will find      B. won't find      C. aren't finding**
10. **A. Who does measure accumulation levels?**  
**B. Who measures accumulation levels?**  
**C. Who do measure accumulation levels?**

**6.3. Underline the correct time expression in the sentences below.**

1. He is collecting samples of contaminated plants **(right now / every day)**.
2. Do you **(always / at the moment)** measure accumulation levels?
3. Secondary effects are threatening many species **(usually / this year)**.
4. What did high levels of pollution cause **(in the past / every morning)**?
5. Non-degradable materials do not **(presently / generally)** decompose in the environment .

**6.4. Write the correct form for the verbs in the two paragraphs below.**

 Claire Henderson ..... (work) as a pollution control engineer in a big company. She always ..... (get up) at 7.30 in the morning and ..... (start) work at 8.00. At work she .....(deal) with pollution measurements and .....(write) reports. She ..... (finish) work at 4.30 in the afternoon and usually ..... (have) lunch in a fast food restaurant.

 This morning Claire is ill and she ..... (not / work). She ..... (lie) in bed and ..... (read) a newspaper. She ..... (also / have) breakfast and she ..... (make) plans for a new job.





# Glossary

accumulate	μαζεύω/συγκεντρώνω/συσσωρεύω
accumulation	συσσώρευση/σωρός/συγκέντρωση
aquatic	υδάτινος/υδροβίος
arouse	αφυπνίζω/εξεγείρω
aspect	άποψη/όψη
bioaccumulation	βιοσυσσώρευση
biodegradable	βιοδιασπώμενος
carnivore	σαρκοβόρο
contaminate	μολύνω
decompose	διασπώ
deform	παραμορφώνω/καθιστώ δύσμορφο
delay	αναβάλλω/αργοπορώ/βραδύνω/ καθυστερώ
disperse	διασκορπίζω -ομαι
ecosystem	οικοσύστημα
effect	αποτέλεσμα/συνέπεια
emission	εκπομπή
eruption	έκρηξη
fail	αποτυγχάνω
food chain	διατροφική αλυσίδα
functioning	λειτουργία
graze	βοσκώ
hidden	κρυμμένος
identifiable	αναγνωρισμένος
immediate	άμεσος
interfere	ανακατεύομαι/επεμβαίνω/παρεμβαίνω
lay	απλώνω/γεννώ
localized	τοπικός/περιορισμένος
marine plants	θαλάσσια φυτά
molecule	μόριο
nondegradable	μη διασπώμενος

non-point source pollution	μη σημειακή ρύπανση
offspring	γόνος/βλαστός/νεοσσός
oil spill	πετρελαιοκηλίδα
persist	επιμένω/παραμένω σταθερός
pesticide	εντομοκτόνο
point-source pollution	σημειακή ρύπανση
poison	δηλητηριάζω/δηλητήριο
pollutant	κάτι που ρυπαίνει
primary	άμεσος/βασικός/θεμελιώδης
progressively	προοδευτικά
rapidly	γρήγορα
secondary	δευτερεύων
seldom	σπάνια
sewage	ακαθαρσίες υπονόμων
smokestack	καπνοδόχος
species	είδος
surroundings	περιβάλλον
survival	επιβίωση
thin-shelled	με λεπτό κέλυφος
threaten	απειλώ
unnoticed	απαρατήρητος
urban	αστικός
volcanic	ηφαιστειογενής
wildlife	άγρια πανίδα