the effects of human activity on ecosystem
the effects of human activity on the ecosystem exercises

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- Web References di approfondimento come input interattivi per test orali e scritti e per esercitazioni basate sul Problem Solving

Answer Sheets
1

**Strategies Before**

*Prerequisites*

- Environment, ecosystem;
- Environmental resources, nature conservation;
- Species, energy, wastes, pollution.
2

**Strategies Before**  
*Linking to Previous Knowledge and Predicting*

1. What is an ecosystem?  
2. Which are environmental resources?  
3. What does it mean “to conserve nature”?  
4. Which is the definition of wastes?  
5. Which are energy resources?  
6. What is pollution?
### Strategies Before

*Italian / English Glossary*

<table>
<thead>
<tr>
<th>Italian</th>
<th>English</th>
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<tbody>
<tr>
<td>Alluvione</td>
<td>Flood</td>
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<tr>
<td>Ambiente</td>
<td>Environment</td>
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<td>Animale</td>
<td>Animal</td>
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<td>Cibo</td>
<td>Food</td>
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<td>Ciclo dell’acqua</td>
<td>Water cycle</td>
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<td>Ecosistema</td>
<td>Ecosystem</td>
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<td>Energia</td>
<td>Energy</td>
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<td>Casalingo</td>
<td>Household</td>
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<td>Danno</td>
<td>Damage</td>
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<td>Inquinamento</td>
<td>Pollution</td>
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<td>Natura</td>
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<td>Pendio</td>
<td>Hillside</td>
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<td>Plante</td>
<td>Plants</td>
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<td>Sacchetto di sabbia</td>
<td>Sandbag</td>
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<tr>
<td>Vestiti</td>
<td>Clothes</td>
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Strategies During

Keywords

1) Circle which of the following components are included in the Earth:


2) Circle the main pollutants in the kitchen:

Match the illustrations that show the objects associated with a household effect that they have on the natural environment.

A)

- migrations of certain animals become difficult
- acid rain, which destroys vegetation
- transformation of aquatic ecosystems
- contamination with municipal sewage, which contains organic matter as well as phosphates, nitrates and nitrites
- development of species associated with humans, e.g. cockroaches, rats and feral pigeons
B)

- Changes in water ratio
- Contamination with organic compounds that contain chlorine (e.g. bleaches)
- Contamination with chemical wastes, e.g. plastic packaging, pesticides
- Contamination with ashes and dusts that come from the combustion of coal and petroleum products
- Contamination with petroleum products (petrol, grease) washed away and present in sewage
c)

- ground drainage
- increase in the temperature of water bodies into which warm water is dumped
- contamination of the environment with non-recyclable packaging
- destruction of ground for roads and railways
- contamination with carbon dioxide and monoxide, nitric oxides and sulfur dioxide
- increase in the temperature of water bodies into which warm water is dumped
D) Indicate the situations in where there is a low probability of flooding and where there is a high probability of flooding.

<table>
<thead>
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<th>Low</th>
<th>High</th>
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<tbody>
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<td><img src="..." alt="Image" /></td>
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Indicate which of the following sentences are true and which are false.

a) Solar radiation is the basic source of energy for organisms on Earth. T  F

b) The considerable increase in the emission of carbon dioxide in the last 50 years has had no effect on global climate changes. T  F

c) Acid rain, which results from the emission of nitric and sulphur oxides into the atmosphere, contributes to the deterioration of forested areas. T  F

d) Drainage of swamps and marshes has considerable benefits for the animals and plants that inhabit these ecosystems because it decreases the number of pathogenic microorganisms. T  F

e) The falling of large areas of forest leads to soil erosion. T  F
A flood is an overflow of an expanse of [1] that submerges land. The EU Floods Directive defines a [2] as a temporary covering by water of land not normally covered by [3] In the sense of "flowing water", the word may also be applied to the inflow of the [4]. Flooding may result from the volume of water within a body of water, such as a river or [5], which overflows or breaks levees, with the result that some of the water escapes its usual boundaries. Unexpected drainage obstructions such as landslides, [6], or debris can cause slow flooding upstream of the obstruction or flash [7] resulting from convective precipitation (intense thunderstorms) or sudden release from an upstream [8] created behind a dam, [9], or glacier.
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Strategies After
Think and Discuss

The following activity can be performed in a written or oral form. The teacher will choose the modality, depending on the ability (writing or speaking) that needs to be developed.

The contexts in which the task will be presented to the students are:
A) the student is writing an article about the effects of human activity on the ecosystem exercises
B) the student is preparing for an interview on a local TV about the effects of human activity on the ecosystem exercises

The student should:

1) Choose one of the following topics:
   - environmental protection
   - pollution
   - indoor air pollution

2) Prepare the article or the debate, outlining the main points of the argument, on the basis of what has been studied.

3) If the written activity is the modality chosen by the teacher, the student should provide a written article, indicating the target of readers to whom the article is addressed and the type of magazine / newspaper / school magazine where the article would be published.

4) If the oral activity is the modality chosen by the teacher, the student should present his point of view on the topics to the whole class and a debate could start at the end of his presentation.
Nature is an ever-changing system in which the organisms are connected with each other. An ecosystem is generally an open system in dynamic equilibrium. This equilibrium state persists until plants and animals compensate the need of energy and food. The balance is regulated by various biogeochemical cycles, paths taken by certain chemical elements or compounds in the ecosphere; among them the most important for humanity is the water cycle.

When considering the negative effects of humans on the natural environment, we usually think to the huge industrial plants, transport or the chemical industry. Few people realize that their own households also pollute the natural environment.

The normal household activities may increase exposure to tiny particles that can be harmful to health. In the climate and geographical conditions of Europe, the flooding of rivers is a natural phenomenon that occurs regularly every year. A flood is an overflow of an expanse of water that submerges land. Causes include heavy rains from monsoons, hurricanes and tropical depressions, foreign winds and warm rain affecting snow pack. Some methods of flood control have been practiced since ancient times. These methods include planting vegetation to retain extra water, terracing (used in farming to cultivate sloped land) hillsides to slow flow downhill, and the construction of floodways (man-made channels to divert floodwater). Other techniques include the construction of levees, dikes, dams, reservoirs or retention ponds to hold extra water during times of flooding.

Some ecosystems are best conserved by leaving them alone. This conservation is passive. However, other ecosystems are best protected and maintained by active conservation, which enables people to continue using the area in the same way. To ensure the effective protection of the environment as a functional system, a series of international commitments must be scheduled.
1) Answer the following questions. The questions could be answered in a written or oral form, depending on the teacher’s objectives.

A) Describe the effects of human actions on nature;
B) Discuss the association between the quality of human life and the degree of the conservation of nature;
C) Discuss on the transformation of ecosystems;
D) Discuss the need for ecosystem conservation and for the restoration of ecosystems destroyed by human actions.

2) Write a short abstract of the summary (max 150 words) highlighting the main points of the video.
Web References

*Articles about human effects on environment*

http://www.int-res.com/abstracts/meps/v123/p73-82/

http://www.sciencemag.org/content/277/5325/494.short


http://books.google.it/books?hl=it&lr=&id=TvTxhiRTeXoC&oi=fnd&pg=PR11&dq=the+effects+of+human+activities+on+the+environment&ots=9UW0gZu_4d&sig=PtE_v6AyTlpYodMfqz6dv00PSZ8#v=onepage&q=the%20effects%20of%20human%20activities%20on%20the%20environment&f=false

http://psycnet.apa.org/journals/dev/22/6/723/


http://www.precaution.org/lib/06/econ_growth_and_carrying_capacity.pdf

http://www.gigusa.org/hisg/resources/eg/32.pdf
Activities Based on Problem Solving

The following activities can be performed at school, if a computer room is available, or at home. Students are invited to use the web references listed above.

Individual activity.
Choose to impersonate one of the following characters and write your report.

a) You are a scientist writing an article titled: “Which are the effects of human activity on the ecosystem?”

b) You are at home. Write indoor air pollution.

c) You are a scientist writing an article on the floods.

2) Small group activity.
Choose one of the following topics related to ecosystem, use the web references listed above, prepare a powerpoint presentation and present it to your classmates.

Topics:

a) Choose some human effects on ecosystem

b) Choose some indoor air pollution

c) Explain the importance of the nature

3) Class project.
Elaborate a poster and a brochure indicating the principal types and causes of floods. You can pin up the poster in your school and distribute the brochures to your schoolmates and friends.
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Answer Sheets

Keywords:

1) biological, physical, chemical
2) irritating fumes, sulfur dioxide, harmful vapors, formaldehyde

Matching:

A)

- migrations of certain animals become difficult
- contamination with municipal sewage, which contains organic matter as well as phosphates, nitrates and nitrites
- acid rain, which destroys vegetation
- development of species associated with humans, e.g. cockroaches, rats and feral pigeons
- transformation of aquatic ecosystems
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B)

- changes in water ratio
- contamination with petroleum products (petrol, grease) washed away and present in sewage
- contamination with organic compounds that contain chlorine (e.g. bleaches)
- contamination with chemical wastes, e.g. plastic packaging, pesticides
- contamination with ashes and dusts that come from the combustion of coal and petroleum products

contamination with petroleum products (petrol, grease) washed away and present in sewage

contamination with organic compounds that contain chlorine (e.g. bleaches)

contamination with chemical wastes, e.g. plastic packaging, pesticides

contamination with ashes and dusts that come from the combustion of coal and petroleum products
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**c)**

- Ground drainage
- Contamination with carbon dioxide and monoxide, nitric oxides and sulfur dioxide
- Increase in the temperature of water bodies into which warm water is dumped
- Destruction of ground for roads and railways
- Contamination of the environment with non-recyclable packaging
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D)

high, high, low, low

True or False:

1 true, 2 false, 3 true, 4 false, 5 true

Cloze:


Materiale sviluppato da eniscuola nell’ambito del protocollo d’intesa con il MIUR