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SCENARIO OF EDUCATIONAL CLASS about IMPACT OF CHANGES of CLIMATE on the functioning of ecosystems -

CLASS III Junior High School

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TOPIC: "Pollution and protection of the atmosphere"

1. Objectives of education - general requirements:

III. The search, use and create information.

pupil uses a variety of sources and methods of obtaining information, including technology, information and communication.

pupil reads, analyzes, interprets and processes information text, graphic, numbers, understands and interprets biological terms.

pupil knows the basic biological terminology.

IV. Reasoning and argumentation.

pupil interprets the information and explains the cause-effect relationships between facts.

pupil draws conclusions.

pupil formulates and presents an opinion on the discussed biological topics.

2. content of the curriculum - specific requirements:

X Global and local environmental problems.

pupil presents the causes and analyze the effects of global warming.

3. Operational objectives:

pupil:

knows the sources and types of air pollutants,

knows the clean air,

describes the effects of air pollution,

can compare world of primitive man and modern,

assesses the changes occurring in the natural environment,

knows how is created acid rain, ozone depletion, smog and the greenhouse effect,

makes appropriate proposals for pollution prevention of the atmosphere to protect biodiversity,

knows the causes of global warming and its effects.

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4. Methods:

talk

work with the source text

Talk

manual

brainstorming

5. Forms of work:

Group

individual

6. Materials and Tools:

board with representation of diverse world of primitive man and of man

contemporary

figures of primitive and modern

strips of adhesive tape

manuals

foil with the composition of air

☐ word jigsaw on foil related to threats

☐ paper for groups

☐ crossword on film

☐ timesheets for groups

☐ source

☐ film with pictures and diagrams

☐ magnets

7. Course lessons:

Phase Class Actions teaching activities of students Comments

The initial phase of organisational and ordering operations.

Displaying a poster (Annex 1) and the human form original and contemporary (Annex 2). Questions for students:  
- Where would you like to live? Why?  
- Which is the world of primitive man?

Answer.

Teacher recommended attachment the form to the right place.

They attach.

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Questions for students:

- What is the composition of pure air?

Answer.

Teacher displays foil, recommends ordering component air to the corresponding space (Annex 3).

assign

However, the size liters

ingredients

100 l of air in the proper over the diagram.

Foil

N: He asks:

- Is the air really is

It is composed?

- How are strip bars,

which had hung in

the window? (Homework with the last lesson).

Answer.

show stripes tape

They attach to the

tables.

Phase IMPLEMENTATION Introduction to the subject.

The teacher carried a talk by introducing lesson topic:

"Pollution and Protection of atmosphere. "

They write about this.

Teacher: divides the class into groups, explains work rules. handing out sheets paper spelled out issue (Annex 4).

Group I - "Sources of pollutants of air"

Group II - "Types

pollutant "

Group III - "Effects

pollutant "

Group IV - "How to affect reducing pollutant "

Students work with manual in groups (p. 141, p. 144, p. 148)

Distribution of class into groups, each group gets sheet paper

Teacher: Checks correctness of problem's solution, helps students.

Group leader reads answers.

Teacher: puts on word jigsaw projector, recommends classifying given pollution shall classify pollutants on Natural and the resulting foil form word jigsaw.

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group, depending on how their formation: natural and Man-made (Annex 5).

as a result business human, approach projector, classify,

They put them on diagram. Scheme to prescribe to notebook.

Teacher: He explains that the consequences of pollutants are unpredictable. Today the effect of pollutants atmosphere which adversely impact on biodiversity species are: smog, acid rain, the greenhouse effect, ozone hole.

N: attaches to the scheme two worlds (poster) cartons inscribed with the consequences air pollution (Annex 6)

Teacher: Splits the class into 4 groups, giving away timesheets and source texts (Annex 7).

Group I - smog.

Group II - acid rain.

Group III - the greenhouse effect.

Group IV - the ozone hole.

complement card work, show given issue based on the analysis source text and manual. after developing subject leaders make a presentation wash.

Timesheets,

texts

source.

Teacher: explains how it comes to global warming.

Write to the notebook:

EFFECTS

pollutants:

- SMOG

- ACID RAIN

- EFFECT

GREENHOUSE

- OZONE HOLE

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Phase

summary

Teacher: Reads distributes students wklejki

(Annex 8) to the notebook.

Together they determine the authenticity of the listed. Students define or give a sentence is true or false, pasting a table to notebook.

Teacher: Deals homework.

The command for all:

Solve crossword and explain password (Annex 9).

Command for applications:

Follow the presentation multimedia on the subject: protection biodiversity of emphasis on areas

"Natura 2000" in Lublin. save job home in notebooks.

Teacher: Give away to the disciples 'faces'

(Annex 10), through which

The degree of satisfaction with the check (smiling, indifferent, sad).

Mark "smiley" according to their own feelings

The scenario developed by: Margaret Szpyrka

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ATTACHMENTS TO THE LESSON SCENARIO

Attachment 1

The following poster I have in a larger format.

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Annex 2

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Appendix 3

To insert the words:

NOBLE GASES

NITROGEN

OXYGEN

CARBON DIOXIDE

L ~ 0.03 -

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Annex 4

GROUP I

SOURCES pollutant AIR

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## GROUP II

### TYPES OF AIR pollutants

12

## GROUP III

### EFFECTS OF AIR pollutants

13

## GROUP IV

### HOW TO AFFECT THE REDUCTION pollutant AIR

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## Annex 5

### AIR POLLUTION

#### NATURAL ARISING

#### BUSINESS MAN

#### - NATURAL GAS EXPLOSIONS

#### - dust

#### - dust

#### - FOREST FIRES

#### - Volcanic eruptions

#### - CEMENT

#### - BURNING FUELS

#### (WOOD OIL, GAS)

#### - Combustion in CARS

#### - Sulfur and nitrogen oxides emitted by HUTY

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## Annex 6

### SMOG

### SOUR

### RAINS

### EFFECT

### GREENHOUSE

### HOLE

### OZONE

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## Annex 7

### GROUP I

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### GROUP I

### SMOG

Complete the sentences using the source text.

Smog is:

.....  
.....  
.....

Smog is made up of:

.....  
.....  
.....  
.....  
.....  
.....  
.....

The effects reside in an environment where there may be smog:

.....  
.....  
.....  
.....  
.....  
.....

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GROUP II

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GROUP II

ACID RAIN

Complete the sentences using the source text.

Acid rain is formed:

.....  
.....  
.....

Acid rain causes in Poland:

.....  
.....  
.....  
.....  
.....  
.....

Acid rain, fall to the ground when the cause:

.....  
.....  
.....  
.....  
.....  
.....

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GROUP III

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GROUP III

THE GREENHOUSE EFFECT

Complete the sentences using the source text.

The retention of heat by the Earth's surface play a significant role gases greenhouse. Belong to them:

.....  
.....  
.....

The effect of heat-retaining:

.....  
.....

The main gas that contributes to enhancing the greenhouse effect is:

.....

Consequences that can touch a land due to climate change are:

.....  
.....  
.....  
.....  
.....

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GROUP IV

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GROUP IV

OZONE HOLE

Complete the sentences using the source text.

..... The gas that creates the ozone layer. This layer absorbs  
....., Which are harmful to the human body, because

.....  
.....

The ozone hole is:

.....

.....

Most often occurs with:

..... and

.....

To the disappearance of the ozone layer contribute ..... which were used in ..... and

.....

Human activities have contributed to a reduction in production and ..... in 2002

It noted a marked reduction in the ozone hole over Antarctica.

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Annex 8

Oceodao the truth of the following:

L.P. The sentence P / F

1. Acid rain is formed when water vapor combine oxides non-metals, e.g.,. sulfur and nitrogen oxides.
2. Global warming is a decrease in the average annual temperature on Earth.
3. The ozone hole protects against excessive UV radiation.
4. Probably the cause of global warming is excessive However, the size of gases emissions.
5. The ozone hole contributes to the development of human cancers.
6. Smog is fog that formed over the major cities.

Oceodao the truth of the following:

L.P. The sentence P / F

7. Acid rain is formed when the steam merge oxides non-metals, e.g.,. sulfur and nitrogen oxides.
8. Global warming is a decrease in the average annual temperature on Earth.
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10. Probably the cause of global warming is excessive However, the size of gases emissions.
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Oceodao the truth of the following:

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13. Acid rain is formed when water vapor combine oxides non-metals, e.g.,. sulfur and nitrogen oxides.
14. Global warming is a decrease in the average annual temperature on Earth.
15. The ozone hole protects against excessive UV radiation.
16. Perhaps the cause of global warming is excessive However, the size of gases emissions.
17. The ozone hole contributes to the development of human cancers.
18. Smog is fog that is formed over the major cities.

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Annex 9

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Annex 10

Using the "smileys" select feelings after the lesson.

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The work submitted in the Competition for Teachers for the best lesson plan of educational activities about biodiversity, Nature 2000 sites, different forms of nature protection and influence of changes of climate on ecosystems. The contest organised within project "Under the wings of Nature 2000" - educational activities for protection of biodiversity and ecosystems in Lublin Voivodeship" conducted within Financial Mechanism of European Economic Area 2009-2014.