



Clean Air 2 project

A concept – structure of curriculum

Intellectual Output: 01

The name of the partner: Krakow Smog Alert

Country: Poland

A General part

A.1 Program title

Clean Air interactive game as a tool for clean environment

A.2 The aim of the program

The aim is to form an attitude by which children taking part in the training program become conscious, active “messengers” of air pollution education. The main aim of the training is to provide knowledge to the children and to help them acquire a holistic understanding of the problem of air pollution. The program pays attention also to the teachers. It aims to empower teachers to use interactive methods (game) and employ them independently; in doing so, the ultimate aim of the program is to facilitate the teachers in developing the required skills to create effective lessons about air pollution. Clean Air 2 is complementary to Clean Air program and the idea behind it draws from teachers demand to use more interactive and innovative digital methods in learning process.

A.3 Target group

- Children from primary and secondary schools
- Teachers from primary and secondary schools
- Stakeholders (especially during the pilot testing) from educational institutions etc.
- Inhabitants/citizens and their potential for reducing the air pollution
- Online target users/visitors etc.

A.4 The goals of the program

Teachers will receive new products (game with introductory film and lesson scenario adapted to the game) which can improve the teaching/training vision on air pollution, health effects and citizenship awareness;

Teachers through training activities will be equipped teachers with innovative and interactive educational materials on air pollution to be further used with their pupils in the classroom;

Children will have higher motivation to study about air pollution/clean environment;

Children and teachers will be competent in critical questioning and analysis;

Children and teachers will increase their interest in and capacity to take part in air pollution decision making;

Children and teachers will change their behavior regarding air pollution issues.



A.5 Didactical principles

- **Interactive Teaching using Digital technologies:** Principles are related to following components: (1) scientific teaching - teaching involving science and new technologies, (2) purposefulness of new technologies – new technologies should be used with exact determined purposes, (3) contextual division – preparation of good content structure – sections and modules, (4) amplexness – it defines the content of the modules – theory, questions, examples, problems, exercises, (5) visualization – each module should combine text and visual elements suitable for context understanding, (6) active learning and educational teaching – students should be engaged in active learning, (7) adaptability of new technologies according to the students and teachers needs and learning goals, (8) easy operation – the focus should be on the task performance instead of on the management of technical problems.
- **Pedagogy of Work:** Learning is based on practical work and not driven by theory. Students learn by making useful products or providing useful services to others.
- **Co-operative Learning:** Learning takes place in a collaborative context and emerges from the interaction of students among each other and with the teacher. It is based on co-operation in the productive process.
- **Enquiry-based Learning:** Students learn empirically through personal experience in real life situations by a kind of rudimentary problem solving or experimental grouping. Learning is based on exploring a solution space for real-world problems experimentally by trial and error involving group work.
- **The Natural Method:** Learning is based on an inductive, global approach. It is always situated in the students' current living situation. Life here is conceived as a broad concept including nature, nature by itself, and the social and political aspects of contemporary life.
- **Centers of Interest:** Learning is based on students' learning interests and curiosity. Students within the context of the school and in alignment with others choose themselves what to work on and how to explore their topic of interest.

A.6 The admission requirements and assessments regulations

No

B Specific part

B.1 The organization of educational process

- Individual work in interactive environment
- Group work
- Extracurricular materials

B.2 Content

A title of content	Duration in minutes
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Module 1: Influence of the pollution on the health and quality of life	20 minutes
Module 2: Transport pollution	20 minutes
Module 3: Industrial pollution	20 minutes
Module 4: Low-stack emission	20 minutes
Module 5: Environment protection campaign	20 minutes
Module 6: Summary and evaluation	20 minutes

Description of learning outcomes for each module:

Module 1:

- Children have knowledge on the impact of air pollution on human health
- Children acquire data through senses
- Children communicate data and information in appropriate form

Module 2:

- Children describe the ways humans modifies the environment
- Children characterize gaseous pollution together with identification of sources
- Children listen and talk about experiences
- Children make contributions to small and large group discussions
- Children clearly understand, interpret and explain aspects regarding the air pollution and also are able to estimate, assess and come to conclusions
- Children are able to construct explanations

Module 3:

- Children describe the ways humans modifies the environment
- Children characterize industrial pollution
- Children listen and talk about experiences
- Children make contributions to small and large group discussions
- Children clearly understand, interpret and explain aspects regarding the air pollution and also are able to estimate, assess and come to conclusions
- Children are able to construct explanations



Module 4:

- Children describe the ways humans modifies the environment
- Children characterize pollution associated with low-stack emission
- Children listen and talk about experiences
- Children make contributions to small and large group discussions
- Children develop scientific inquiry and critical thinking
- Children clearly understand, interpret and explain aspects regarding the air pollution and also are able to estimate, assess and come to conclusions
- Children are able to construct explanations

Module 5:

- Children make wise choice in the use of natural resources and recycling of materials
- Children know safe, environmentally appropriate, and ethical practices
- Children know what actions can citizens take
- Children are able to communicate valid conclusions

Module 6:

- Children define air pollution and its effect.
- Children list effects of air pollution on human health.
- Children group and scale air pollution sources.
- Children define and use correctly all of the key words.
- Children describe some key principles that support pollution prevention and control.

Methods of learning outcomes verification

Evaluation test in module 6

Involvement in teamwork

Activity during classes

Key competencies:

Collecting, analysing and organising information

Communicating ideas and information

Planning and organising activities

Working with others in teams



Using mathematical ideas and techniques
Solving problems, and
Using technology.

Key literacy terms:

Air, air pollution, benzo(a)pyren, Best Environmental Practices (BEP's), burning, care, cars, changing, chimneys, clean, coal, conservation, ecosystem, emissions, energy, endangered, environment, environmental values, equipment, ethics, exhausts, factories, government, health, heaters, human-made, impacts, implementation, interest group, investigate, local, maintenance, particles, particle matter, permits, pollution, protect, rare, resource, restrictions, safety, smog, smoke, sources, technology, threatened, transport, water, wood, work.

B.3 Learning materials and readings

Materials for each module will be available at project's website.

B.4 Training providers

The program will be presented to teachers by the consortium partners during multiplier events.