

Europeana Learning Scenario

(Teachers)

Title

The impact of pollution on human health

Author(s)

Carla Teixeira and Marina Freitas

Abstract

Environmental pollution represents one of the greatest global threats to public health in the 21st century. Exposure to contaminated air, water and soil is directly linked to severe medical conditions. Thus, this lesson aims to make the students reflect upon the influence of the environment on human health.

Keywords

Pollution; water; soil; noise pollution; environment; atmosphere

Table of summary

<i>Table of summary</i>	
Subject	<i>Science, English and Citizenship</i>
Topic	<i>The influence of environmental pollution on human health</i>
Age of students	<i>11-12 years old</i>
Preparation time	<i>A day</i>
Teaching time	<i>Two lessons (100 mn)</i>
Online teaching material	<i>Padlet, Europeana resource</i>
Offline teaching material	<i>Photos, laptops, pencils, pens, notebooks</i>
Europeana resources used	<i>https://www.europeana.eu/pt/item/2051938/data_euscreenXL_EUS_E29E6C901248A2738FDE4A1BF203F695</i>

Licenses

Please indicate below which license you attribute your work with by picking one of the options below. The Teaching with Europeana blog publishes under Attribution CC BY. If you include images in the learning scenario, please make sure to add the source and licenses under the pictures themselves.

X Attribution CC BY. This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.

- ☐ **Attribution ShareAlike CC BY-SA.** This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This is the license used by Wikipedia, and is recommended for materials that would benefit from incorporating content from Wikipedia and similarly licensed projects.

Integration into the curriculum

The teaching of Science implies the contextualization of the topics addressed in real and current situations, promoting the development of Essential Learnings (EL), integrating knowledge, skills, attitudes, and values that are in line with the Profile of Students Leaving Compulsory Schooling (SP). Thus, it is important for students to better understand the contexts in which they are inserted, identifying problematic situations within them from which guiding question-problems for learning can emerge. The topics covered in the Science subject also serve as a field for the application of interdisciplinary learning.

Aim of the lesson

The approach of this subject intends to lead students to recognize the direct link between environmental health and human well-being, motivating them to adopt eco-friendly daily habits. Ultimately, these lessons want them to understand that protecting our ecosystems is an essential, actionable responsibility to safeguard public health for future generations.

Outcome of the lesson

Students will elaborate a Padlet presentation with thoughts about the importance of not polluting the environment to preserve human health. The ultimate outcome is for them to adopt attitudes and values that advocate for the implementation of measures aimed at promoting the sustainability of living beings.

Trends

Project-based Learning; Collaborative Learning; STEM Learning, Outdoor Education

Key competences

Green competence: Students do practical exercises, lesson designed to build sustainability-focused mindsets and environmental skills. These activities encompass critical thinking, systems analysis, and hands-on environmental action.

Literacy Competence: Students read and understand the information about pollution and its health impacts, they explain pollution types and health effects in their own words and communicate findings clearly in discussions and written work (padlet).

Multilingual Competence: Students use vocabulary related to pollution and health in more than one language (e.g., English + mother tongue) and they compare how environmental issues are discussed in different languages/cultures.

Mathematical Competence & Competence in Science, Technology, Engineering: Students interpret data on air quality, water contamination, or noise levels, they understand cause-and-effect connections between pollutants and human health (e.g., asthma, waterborne diseases) and they explore how technology can reduce pollution (filters, renewable energy, recycling systems).

Digital Competence: Students use digital tools to research pollution and health safely and responsibly, evaluate the reliability of online environmental information and create a short digital presentation about pollution impacts.

Personal, Social & Learning to Learn Competence: Students reflect on their own behaviour and how it contributes to pollution (waste, transport, energy use), build responsibility for choices that affect health and the environment, they work collaboratively during group tasks to solve environmental problems and they identify strategies to improve their own learning about sustainability.

Citizenship Competence: Students understand their role as citizens in protecting the environment and public health, they learn about community rules or local environmental protection actions, they discuss fairness: how pollution affects people differently (social/environmental justice) and they participate in class or school initiatives (cleanup day, recycling – as a follow-up).

Entrepreneurship Competence: Students propose ideas or small projects to reduce pollution in school or community, design simple solutions (e.g., waste-sorting system, awareness campaign) and they show creativity in addressing real-world environmental challenges.

Activities

Name of activity	Procedure	Time
Introduction	Explain that pollution is anything harmful to the environment, and that it can impact human health in different ways.	10 mn
Direct Instruction	Introduce the four major types of pollution: air pollution (smoke, car exhaust, factory emissions), water pollution (sewage, chemicals, trash in rivers/oceans), soil pollution (pesticides, waste dumped on land) and noise pollution (loud traffic machines, construction)	
	Describe how each pollution type affects health, using age-appropriate examples: air pollution (causes asthma, coughing, breathing problems, smoke from fires or vehicles irritates lungs), water pollution (drinking contaminated water causes stomach illnesses and infections, polluted water kills fish - affects food sources), soil pollution (harmful chemicals enter crops - affect our food, touching polluted soil may cause skin irritation), noise pollution (leads to headaches, trouble sleeping and stress, can harm hearing over time)	
	Use simple visuals to support understanding (Europeana resource - video)	30 mn
Group Activity: "Pollution Detectives"	Give each group a scenario card (such as playground next to a busy highway, a river full of plastic bottles, a farm using too many chemicals, a neighborhood with constant construction noise)	
	Students identify what type of pollution it is, how it affects health, and ways to reduce or prevent the problem	
	Groups present briefly.	30 mn
Reflection and discussion	Ask: "Which type of pollution do you think affects your community the most?" / "What small actions can we take every day to reduce pollution?" / "Connect to students' lives and local context."	
Assessment	Students create a padlet: "The impact of pollution on human health".	15 mn
	They do a quiz about the subject (as a follow-up).	15 mn

Assessment

Padlet: "The impact of pollution on human health".

Pollution and Human Health Quiz (6th Grade Level)

Multiple-Choice Questions

1. **What is pollution?**
 - a) Clean air and water
 - b) Harmful substances in the environment
 - c) Recycling materials
 - d) Planting trees
2. **Which type of pollution can damage our lungs the most?**
 - a) Noise pollution
 - b) Air pollution
 - c) Light pollution
 - d) Soil pollution
3. **Breathing in polluted air can cause...**
 - a) Better sports performance
 - b) Stronger bones
 - c) Asthma and breathing problems
 - d) Faster growth
4. **Drinking polluted water can lead to...**
 - a) Dehydration only
 - b) Stomach illnesses
 - c) Clearer skin
 - d) More energy
5. **Noise pollution can affect people by...**
 - a) Improving hearing
 - b) Making it easier to sleep
 - c) Causing stress and headaches
 - d) Making food taste better
6. **Which group is most sensitive to pollution?**
 - a) Robots
 - b) Young children and older adults
 - c) Athletes only
 - d) Pets only

True or False

7. **Air pollution can make it harder for people to breathe.**
True / False
 8. **Polluted water is safe to drink if it looks clean.**
True / False
 9. **Noise pollution can affect concentration in school.**
True / False
 10. **Keeping the environment clean can help protect our health.**
True / False
-

Short-Answer Questions

11. Name one health problem caused by air pollution.
12. How can polluted water harm the human body?
13. Give one example of how we can help reduce pollution.
14. Why is it important to keep our environment clean?
15. What is one type of pollution you have learned about, and how does it affect humans?

Specific Criteria

- Identifies different types of pollution, sources of pollution, and effects on human health;
- Formulates critical opinions on human actions that compromise the environment and human health;
- Presents solutions that contribute to combating/reducing the effects of pollution, protecting the planet and human health.

Transversal Criteria

- Synthesis skills (language and text)
- Reasoning and problem-solving skills
- Information and communication skills (oral and digital)
- Collaboration
- Originality/Creativity

***** AFTER IMPLEMENTATION *****

Student feedback

Students will present a padlet with conclusions.

Teacher's remarks

Assessment rubric

Assessment criteria	Excellent (5)	Sufficient (3)	Insufficient (1)
Identifying the type of pollution	He/ she identifies all the types of pollution in the pictures correctly	Identifies most types of pollution with minor errors.	He/ she struggles to identify the basic types of pollution.
Effects on health	He/ she describes in a clear and strict way the impacts on human health.	He/ she mentions the effects, but they are not very detailed or scientifically precise.	He/ she doesn't associate pollution to its effects on health.
Solution proposals	He/ she presents creative, substantiated and doable solutions.	He/ she presents generic solutions, but that are applicable.	The solutions are irrelevant or they don't exist.
Padlet organisation	Well organised, visually appealing and easy to follow content.	Organised content, but aesthetically unappealing.	Disorganised, confuse or difficult to read content.

Assessment criteria	Excellent (5)	Sufficient (3)	Insufficient (1)
Use of the tool (Padlet)	He/ she uses the Padlet resources well (links, pictures, comments, layout).	He/ she uses a basic padlet.	He/ she struggles to use this tool effectively.

About the Europeana DS project

[Europeana](#) is Europe's digital platform for cultural heritage, providing free online access to over millions of digitised items drawn from Europe's museums, archives, libraries, and galleries. The Deployment of a common European data space (DS) for cultural heritage project builds on and expands the existing functionalities and services of the Europeana Digital Service Infrastructure (Europeana DSI). This initiative works towards the development and operation of the data space infrastructure, the integration and of high-quality data in the data space, the capacity building of professionals, the reuse of existing resources and the improvement of the digital services for the public. .

[European Schoolnet](#) (EUN) is the network of more than 30 European Ministries of Education, based in Brussels. As a not-for-profit organisation, EUN aims to bring innovation in teaching and learning to its key stakeholders: Ministries of Education, schools, teachers, researchers, and industry partners. European Schoolnet's task in the Europeana DS project is to facilitate the reuse of high-quality data and expand the community of users of Europeana for education.

Annex

Padlet link:

<https://padlet.com/marinafreitas8/the-impact-of-pollution-on-human-health-safe-project-erasmus-ff9zneklcdv2v0qj>