**AUTHOR DETAILS**

|  |  |
| --- | --- |
| 1. Name/s
 | Milica Zvicer Vujković |
| 1. Country
 | Montenegro |
| 1. Institution/School
 |  Hihg school ‘’Stojan Cerović“ Nikšić |
| 1. Email
 | milica.vujkovic@gim-nk.edu.me |
| 1. Programmes the school is participating in (Eco-Schools/LEAF/YRE/other)
 | other |
| 1. Would you like to receive monthly updates through our Newsletter? Yes/No
 | yes |
| 1. Submission date (dd/mm/yyyy)
 | 28.08.2023. |

**THE LESSON PLAN**

**Theme:**

Invisible pollutants: types and how they affect human and environmental health?

**Introduction :**

This lesson has an aim to show to the students which are the invisible pollutants (in addition to the visible ones), how they can recognize them and how dangerous they are for the human and environmental health, and also direct the students to explore the possible way of reducing it.

**Age Group:**

Age group of 14 to 16 years.

**Objectives or Learning Outcomes:**

Students will be able to:

* Identify sources and different types of the invisible pollutants.
* Explain how the invisible pollutants affect human and environmental health.
* Define some possible practical solutions to reduce the emissions of gaseous pollutants.

**Time required to deliver the lesson plan:**

Classroom session: 45 minutes to introduce the theme, to discuss it and to explore the basic information.

Home assignment: one week to research and complete the task about exploring the specific types of invisible pollutants, how dangerous they are and how we can reduce their effect to the human and environmental health. Present all homeworks through Microsoft Teams.

**Remote preparation**:

Teacher needs to explore about the invisible pollutants and to bring some pictures of how they can be dangerous for the human health. (ex.:picture of healthy and ill lungs, etc.)

**Planning considerations:**

No such consideration.

**Resources required to deliver the lesson plan:**

Internet access required. 1 computer for teacher, projector (if it is possible interactive whiteboard), smartphones (one for each group of 4). Writing materials.

**Activity:**

**Classroom session:**

**Introduction:**

* The teacher introduces the theme telling the students of types of the pollutants (visible and invisible/gaseous ones).
* The teacher lets students know that they will be exploring the sources, types and their effects on human and environmental health.
* The teacher divides students in group of 4 and each group will have a task/small research on different topic and conducted by the teacher.

**Themes:**

**Team 1:** Define the types of invisible pollutants, mark those which are produced naturally and those produced through human actions.

**Team 2:** How invisible pollutants could affect the human health? (indoor and outdoor air pollution)

**Team 3:** How invisible pollutant could affect the environmental health?

**Team 4:** How the effects of invisible pollutants could be reduced in a most practical way?

**Development:**

* The students divided in groups will use a smarthphones (1 per each group) to make a research on topic given by the teacher. They will use the instructions the teacher gives.
* The students will be working through a series of data and they should be interactive in their groups.
* The students write down the collected information and they are conducted by the teacher how to organise them.
* After the researches are done, the students discuss their topics and the discussion is lead by the teacher who make focus on specific questions on the interactive whiteboard.
* The students write on the interactive whiteboard (or using the teacher’s computer and projector) the possible solutions how to reduce the emission of invisible pollutants in form of brainstorm so everyone can see and participate too.

**Conclusion:**

* The teacher asks the students to summarise and share their research work.
* The teacher now make the new groups of 4 giving them the homework task.

**Homework session:**

* Students work in groups and they search only for information related to their task.
* Precision and citing sources is required when collecting information such as dates, numbers, places and laws.
* Students will make PP presentations using also the photos because the visuals are very important. The PP presentation should also include the audio background in case there are students with the hearing impairment.
* The students will use Microsoft platform for posting the PP presentation.
* The homeworks will be presented in classroom too.

**Evaluation and Assessment**:

The teacher could evaluate the lesson plan based on the PP presentations made by students.

**Dissemination:**

The teacher could present the lesson plan and the PP presentations of the students in its own school so all other teachers could implement this topic during their lessons.

The PP presentations will be placed to the website of the school.

**Follow-up activity :**

Make an evaluation using Mentimeter or similar voting tool.

**Adaptations for students with learning difficulties**:

Working in groups.

**Extension for gifted students**:

The gifted students could furthermore write an article about invisible pollutants, in form of a brochure, printe it and distribute it.

**Background information for teachers**:

Teachers could provide the information about this topic at website links such: [www.bitmedic.org](http://www.bitmedic.org) [www.nationalgeographic.com](http://www.nationalgeographic.com) <https://www.nationalgeographic.com/science/article/how-breathing-wildfire-smoke-affects-the-body>

**References:**

[www.iqair.com](http://www.iqair.com) /Montenegro/

 [www.bitmedic.org](http://www.bitmedic.org)

[www.gov.me/clanak/kampanja-manje-otpada=litter=less=plus](http://www.gov.me/clanak/kampanja-manje-otpada%3Dlitter%3Dless%3Dplus)

[www.fee.global/litterlessplus-lesson-plan-competition](http://www.fee.global/litterlessplus-lesson-plan-competition)

[www.nationalgeographic.com](http://www.nationalgeographic.com)