

*Creating an ECO online Natural Fit Virtual Programs to Prepare Students for
boostIng 21st century Skills 4 the Future (UNITY)*

2021-1-SE01-KA220-SCH-000032448

*STE(A)M-focused PBL for transferring 2021st skills for fighting against
climate change*

LESSON PLAN 6:

Water Pollution - Climate pollution part II

Presented by Fthia in Action team

Lesson procedure:

Date:	__/__/__
Teaching staff:	Mr/Mss/Ms
Term:	2022-2023
Week:	1
Year Level:	Primary/low secondary (6-15 years old)
Time/length	1 hour.
Key Learning Area:	Use of soft skills for climate change and blending interdisciplinary subjects, including science, math, art and social studies
Topic/focus:	Understand how water pollution is created and what we can do to prevent it.
Lesson Name: Water pollution – effects and solutions.	
Foreseen Outcomes:	
At the end of this lesson, students will be able to:	
<ul style="list-style-type: none"> ✓ understand how water pollution affects our planet , ✓ communicate with public authorities, persuading them for water pollution solutions , ✓ run small-scale campaigns, relevant to water pollution, ✓ design posters and brochures, relevant to environment issues, ✓ improve their social skills, including group communication, interaction and discussion, 	
Lesson Description:	
This lesson shall demonstrate what water pollution is, how it is created, what species are affected by water pollution, how the future will be if water pollution doesn't stop, what we can do to prevent water pollution.	
Pre-requisites to this lesson plan (not applicable):	

Length (Lesson procedure):

This lesson will take 1-hour, which also includes interdisciplinary learning.

Depending on how to implement the planned lesson, the teaching shall need some materials, including videos, comics and papers. The teaching staff shall follow the following steps to implement the lesson successfully:

Step 1. Lead in:

Teacher greets the students, and asks what they know about water pollution. After collecting the feedback from the students, the teacher asks for grouping in accordance with the students' learning intelligence and or learning style. Here, teacher group students as:

- ✓ Group A: 2-3 students, having science learning interest/intelligence/capability/style
- ✓ Group B: 2-3 students, having technology learning interest/intelligence/capability/style.
- ✓ Group C: 2-3 students, having engineering (creativity) learning interest/intelligence/capability/style.
- ✓ Group D: 2-3 students, having art learning interest/intelligence/capability/style.
- ✓ Group E: 2-3 students, having math learning interest/intelligence/capability/style.

Note: As grouping the students, the number of students can change according to the class-size.

Lesson standard:

The lesson is standardized around STEAM-focused PBL for transferring 2021st skills for fighting against climate change. Here, we focus on the correlation of water pollution in climate change. Through creating and performing, the students will understand how water pollution is created and what we can do as individuals to help the environment. Regarding this, the students will share their solutions and knowledge with the local community.

Common Core State Standards:

The teacher shall connect and correlate the lesson with the national syllabus and or program, which shall incorporate the lesson with the national program.

Enduring Understandings:

The students will understand the reasons and the effects of water pollution. The learning outcomes of the lesson shall be used by the students in their future lives. Besides, the lesson is connected with following areas:

- ✓ soft skills development,
- ✓ interdisciplinary learning,
- ✓ blended/hybrid learning,

The lesson will also answer the following questions:

- ✓ Is the lesson transferable for skills development?
- ✓ Can it be teachable over and over again?
- ✓ Does it connect to real-life issues?

Essential Questions:

- ✓ What are the connections of water pollution with STEAM skills?
- ✓ What are the connections of water pollution with PBL?
- ✓ How can learning about water pollution lead to transferring soft skills?

Before the lesson implementation, the teaching staff shall brainstorm the above questions with the colloquies at the same school.

Case section:

The teacher shall follow the following steps:

Step 1. Creation of the case:

For over 1 billion people on the planet clean water is nearly impossible to get. As a demonstration lesson the teacher shall use visuals, posters, videos, etc. Then, the teacher asks the following questions to the students who are grouped in “**Step 1. Lead in**”. Each question is asked to the students who are grouped from A to E.

Questions for group A (Science-minded students):

- ✓ Have you seen a water source that was polluted? If not, how would it be?
- ✓ What can you do to reduce water pollution?
- ✓ Would you choose to buy eco-friendly products? Why?

Questions for group B (Technology-minded students):

- ✓ How would you add technology in cleaning a polluted sea/ lake?
- ✓ What alternative methods can you think of to reduce water pollution?
- ✓ What aspects of technology would you use to benefit in reducing water pollution?

Questions for group C (Engineering-minded students):

- ✓ How would you help the animals that live on a polluted beach?
- ✓ What kind of machine/technique would you build to clean a sea/lake?
- ✓ With whom would you work with to reduce water pollution?

Questions for group D (Art-minded students):

- ✓ Can you design a poster about water pollution to inform the local community?
- ✓ Can you compose a song for sharing it?
- ✓ What campaign would you run for increasing the awareness of water pollution?

Questions for group E (Math-minded students):

- ✓ How can you measure if a beach is polluted?
- ✓ What calculation would you use?

The teacher first elicits the answers and then leads to the students taking actions and making a plan for some local activities.

Skill focus:

During the lesson, Cognitive Skills, such as decision making, problem solving, creative thinking and interpersonal skills will be the focus.

Content:

Building knowledge on water pollution through STEAM-focused PBL approach.

Assessments:

The teacher will use summative assessments employed in this lesson to gauge student learning.

Evidence of Student Learning:

Students' learning evidence will be the quotes, graphics, pictures, prototype, song, posters etc. that they improved during the lesson.

Texts/Resources:

Teacher uses the needy sources for the implementation of this lesson: The resources/texts are to be created by the teacher (Please see the annex 1 attached under the lesson plan, which are to be used for this lesson).

Learning Activities:

A series of tasks the student will engage in over the lesson. The activities are based on what students need to understand and be able to do for the performance and are aligned to the defined standards ‘**Water Pollution – climate pollution part II**’ and the essential questions defined under ‘**Case section**’

Practice:

Teacher will deeply explain the negative effects of climate change because of water pollution. Here, the teacher shall elaborate or describe the lesson using these prompts provided).

The teachers shall create a flexible learning environment for the students. Here, the teacher uses:

Warm-up: ask about the questions and make the students ready for learning for the topic-specific subject.

Practice: The teacher sets-up demonstration/modeling (I do-we do-you do)
Studio/Rehearsal/Workshop (students engage in creating/planning/refining).

Clean-up: During the procedure, the teacher walks around the class and observes the students on what they need and control. If the students have questions, the teacher answers them.

Suggested Extensions:

- ✓ The teacher may arrange a beach cleaning.
- ✓ The teacher may call a specialist about water pollution.