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 4: Why keep forests alive?

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Lesson procedure:

Date:	__/__/____
Teaching staff:	Mr/Mss/Ms
Term:	2022-2023
Week:	1
Year Level:	Primary/low secondary
Time/length	Project day (one school day)
Key Learning Area:	Use of soft skills for climate change and blending interdisciplinary subjects, including science, math, art and social studies
Topic/focus:	Prevent air pollution

Lesson Name: Why keep forests alive?

Foreseen Outcomes:

At the end of this lesson, students will be able to:

- ✔ define types of forest and trees
- ✔ define animals that live in the forest
- ✔ describe forest management
- ✔ define wood industry
- ✔ describe common products made out of wood
- ✔ design posters and artwork, relevant to topic,
- ✔ improve their social skills, including group communication, interaction and discussion, improve their soft skills such as design thinking, critical thinking, decision making, efficient use of resources.

Lesson Description:

This lesson shall demonstrate:

- What type of forest and trees are there?
- Who are the inhabitants of the forest?
- What is considered as forest management?
- What is the wood industry?
- How do we process wood?
- What are common wood products in everyday life?
- What are the units of measurement used to measure wood?

Prerequisites to this lesson plan (not applicable):

Length (Lesson procedure):

This lesson is organized as a school project day and will take 6 hour, which also includes interdisciplinary learning.

Depending on how to implement the planned lesson, the teacher will need some ICT materials (computers, tablets, etc.). The teaching staff shall follow the following steps to implement the lesson successfully:

Step 1. Lead in:

Teacher greets the students, and asks them to think about the importance of forests in everyday life. After collecting the feedback from the students, the teacher asks for groping 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 understanding the importance of forests and how to prevent its disappearance.
- ✔ Through creating and performing, students will gain knowledge about how forests are important for human existence.
- ✔ Regarding this, it can be expected that understanding of the topic will lead students to work on taking more care to prevent forest cutting and disappearance.

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 curriculum.

Enduring Understandings:

The students will understand the core ideas and philosophy behind the prevention of protecting forests. Also they will find out what can be done to prevent forest cutting and disappearance. Students will understand their role of doing it in everyday life. The learning outcomes of the lesson shall be used by the students in their future life and incorporated in their local communities. 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 type of forest and trees are there?
- Who are the inhabitants of the forest?
- What is considered as forest management?
- What is the wood industry?
- How do we process wood?
- What are common wood products in everyday life?
- What are the units of measurement used to measure wood?

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

Case section:

The teacher shall follow the following steps:

1. Teacher writes Forest on the board and reads it to the students. Then he/she asks them to think and tell them how important it is to have forests.
2. Teacher asks students to brainstorm what would happen if all forests disappear. Students can give their answers freely by raising their hand.

'**Step 1. Lead in**''. Each question is asked to the students who are grouped from A to E. Each group should have a tablet or a computer.

Questions for group A (Science-mınded students):

- ✔ Look for the types of forest?
- ✔ What is the percentage of forests on the planet Earth?
- ✔ What types of trees do we have on our planet?
- ✔ Who are the inhabitants of the forests?

Questions for group B (Technology-minded students):

- ✔ Research basic information about forest management.
- ✔ Which part of the world has the most problems with cutting woods?
- ✔ What are the rules for forest maintenance?
- ✔ What kind of forest disease can occur and why?

Questions for group C (Engineering-minded students):

- ✔ Research basic information about the wood industry.
- ✔ How can we process wood?
- ✔ What are the ways of using wood processed leftovers?
- ✔ What are the most common wood products?

Questions for group D (Art-minded students):

- ✔ Can you design a poster and a slogan to prevent forest disappearance?
- ✔ Can you create a wooden photo frame?
- ✔ Research the internet and find a video about the biggest forest in the world.

Questions for group E (Math-minded students):

- ✔ Research the internet and find all volume units of measurement in your country.
- ✔ Search for volume units of measurement in other parts of the world.
- ✔ What are measuring instruments used for volume measures?
- ✔ Collect the data. Visit the school yard and try to calculate what is the volume of all trees in the school yard. How to measure tree volume?

When all groups are done each group presents their findings to the rest of the class. Students from other groups when each presentation is over are free to ask questions.

'**Step 2. Make it real**''

Students will create a book dedicated to the forest. There are three possible tasks students can work on: 1. Write haiku poems about the forest in different seasons (winter, spring, summer, autumn); 2. Write a poem - if they were a tree in a burning forest; 3. Write an eco story - I helped the forest). Students can also make illustrations that go with their literary works. All products will be put together in an eBook that will be published on the school website.

Skill focus:

During the lesson, Cognitive Skills, Decision Making, Problem solving, Creative Thinking and Interpersonal Skills will be the focus.

Content:

The content of the unit is based on the disciplinary or topic-area concepts.
Building Knowledge through learning by doing.

Assessments:

Describe the diagnostic, formative, and summative assessments employed in this lesson to gauge student learning.

Evidence of Student Learning:

Provide a list of the process documentation that you plan to acquire during the course of the lesson. These may include photographs of students engaged in learning, drafts of student work, quotes from students, interviews of students, video, etc.

Texts/Resources:

The collection of short and extended works aligned to the standards and content. Examples: materials for the eBook.

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 "**Why keep forests alive?"** and the essential questions defined under **Case section.**

Practice:

Teacher will deeply explain the roles and importance of the environmental impact of forest

disappearance. 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.

Presentation of Work

Suggested Extensions:

Organize Eco outdoor activity - students take a walking tour in the forest and learn how to orient themselves in the forest without using a compass.