

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

*2021-1-SE01-KA220-SCH-000032448*

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

**LESSON PLAN 7: Working with Wind Energy**

*Presented by Eurasia Team*

## Lesson procedure:

<b>Date:</b>	__/__/____
<b>Teaching staff:</b>	Mr/Mss/Ms
<b>Term:</b>	2022-2023
<b>Week:</b>	1
<b>Year Level:</b>	Primary/low secondary
<b>Time/length</b>	4-5 hour.
<b>Key Learning Area:</b>	Use of soft skills for climate change and blending interdisciplinary subjects, including science, maths, art and social studies
<b>Topic/focus:</b>	Working with Wind Energy
<b>Lesson Name:</b> Working with Wind Energy and transferring STEAM skills around PBL focused.	
<b>Foreseen Outcomes:</b>	
<p>At the end of this lesson, students will be able to:</p> <ul style="list-style-type: none"> <li>Gain knowledge about wind energy and turbines</li> <li>Learn about team work and problem solving</li> <li>Learn to be creative and innovative</li> <li>Identify the ways in which we use turbines in everyday life,</li> <li>Understand the importance of wind energy and turbines–</li> <li>Understand the difference between wind energy and turbines</li> <li>Realise that there is a personal responsibility for taking care of the environment</li> </ul> <p>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.</p>	
<b>Lesson Description:</b>	
<p>As a class, discuss pupils' experience with the disposal of wind energy and turbines for example;</p> <p>This lesson shall demonstrate</p> <ul style="list-style-type: none"> <li>What is Wind Energy?</li> <li>How did turbines work?</li> <li>How will the Students s develop an understanding of and be able to select and use energy and power technologies.</li> <li>How will the students develop an understanding of and be able to select and use construction technologies.</li> </ul>	

Pre-requisites to this lesson plan (not applicable):

### Length (Lesson procedure):

This lesson will take 4-5 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:

Inform pupils that you are going to discuss importance of wind energy and turbines in this lesson. Elicit pupils' knowledge about the following points, recording ideas on the board using a concept map. 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 implementing simple strategies to address the issue of working with wind energy. Ask students why it is important to wind energy and turbines. Give info about the following key points: Students explore the impact of how technology can positively impact the World by learning about wind energy and equipment used for both site testing and the conversion of wind to energy

Students explore the technology behind wind energy find out about site studies and work in teams to develop a windmill out of everyday items. They test their wind mill, evaluate their own designs and those of other students, and present their findings to the class.

### 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 national program.

### Enduring Understandings:

The students will understand the core ideas and philosophy behind side of the conversion of wind to energy and why it is important for human and universe. They realise that there is a personal responsibility for taking care of the environment and Identify, discuss and implement simple strategies to address the issue of

- ✓ 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:

As a class, discuss pupils' experience with the importance of wind energy and turbines–, for example: - What is Wind Energy?  
How did turbines work?

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:

Inform pupils that you are going to discuss the ways in which we use turbines in everyday life, Understand the importance of wind energy and turbines in this lesson. Elicit pupils' knowledge about the following points, recording ideas on the board using a concept map: The function of the wind turbines – wind energys and equipment used for both site testing and the conversion of wind to energy

'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):

- ✓ If you construct wind turbine how would it be?
- ✓ Think about what you can do to contribute to built wind turbine?
- ✓ Think about what other equipments used for conversion of wind to energy?
- ✓ How do the turbines work?

Questions for group B (Technology-minded students):

- ✓ How would you add technology in constructing wind turbines?
- ✓ What alternative methods can you think function of wind turbine or other things.
- ✓ What aspects technology would you use to contribution of the wind turbine?
- ✓ What technological design would you use, when you built wind turbine?

Questions for group C (Engineering-minded students):

- ✓ Which tools would you use ?
- ✓ How do you make wind turbine?
- ✓ What is the difference between wind energy and turbines?

Questions for group D (Art-minded students):

- ✓ Can you design a poster for increasing the importance of environmental wind turbine?
- ✓ Can you compose a song for sharing it?
- ✓ How can you design an advertisement for
- ✓ What campaign would you run for increasing the use of recycled battery your local community?

Questions for group E (Math-minded students):

- ✓ What kind of measurement tools would you use to measure products made of recycled batteries?
- ✓ How do you calculate its cost?

The teacher first, elicit the answers and then leads to the students take actions and leads to make sample designed, made of recycled batteries. (Materials can be brought by the students from their homes.

### 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: sheets, plastics, used materials, waste batteries.

all, etc.

### 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 of wind turbines and the essential questions defined under "Case section"

### Practice:

Teacher will deeply explain the the roles and importance of environmental impact of wind turbines.. 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:

Provide a bulleted list of potential next steps or subsequent learning activities that will extend the teaching and learning of arts content. Students could explore advanced topics in the area, research other artists and practitioners in the field, or develop either individual or group extensions, depending on the initial project.