

**Climate Wise Schools and Students  
(2024-1-ES01-KA220-SCH-000251082)**

**Topic: Energy Reduction (Complied by Greek partner)**



**Level: Secondary School / High School Freshman**

**Time: 40+40 minutes**

**Objectives: Students will be able to :**

- understand the importance of energy reduction
- distinguish the terms “energy efficiency” and “energy conservation”
- explore energy saving/reduction practices
- understand how to modify daily lifestyle for eco-friendly purposes

**Disciplines: Science and Technology, Social Science, Ecology**

**Materials: Tablet PC or Smart Board /Notebook**

**Activities and Practices:**

**Warm Up Activities:**

In the beginning, we present to the students the story of WALL-E and the mission to be accomplished by showing them the following video:

<https://youtu.be/Ayl9OdE3ILM>

Afterwards, students watch the next video related to energy waste in daily life and then a discussion follows about energy use in daily life and the importance of energy conservation and its impact on the environment.

[https://youtu.be/T9\\_DWOPF9t4](https://youtu.be/T9_DWOPF9t4)

## Main Activities:

### TASK 1

In order to choose the team leaders, students complete the following task individually.

“Identify and record daily habits that consume excessive energy” within three minutes. Each correct answer gets 5 pts. The top four ranking students will be the leaders of the four groups.

A discussion with the students about how changing these habits can significantly contribute to energy conservation and environmental protection can be held.

By the means of the wheel in the link, each leader gets a character for his/her team. Then the teams are formed (each student spins the wheel and the character in the wheel matches the leaders with their teams).

<https://wordwall.net/resource/86260455>



### TASK 2

By the means of the digital tool in the link, students find the terms related to the energy reduction in a Hidden Words Puzzle.

<https://wordwall.net/resource/86261205>



Review and discuss key concepts found in the puzzle.

The finishers gain a “5% energy saving” coupon for WALL-E. The fastest time gains another “5% energy saving” coupon for WALL-E.

### **TASK 3**

After watching a video in the following link <https://www.youtube.com/watch?v=lqJ3ckBncyY> , students group energy efficiency and conservation examples.

<https://wordwall.net/resource/87006964>

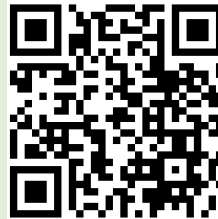


The finishers gain a “10% energy saving” coupon for WALL-E. The fastest time gains another “5% energy saving” coupon for WALL-E.

### **TASK 4**

By the means of the digital tool in the link, students characterize statements about energy reduction as true or false.

<https://wordwall.net/resource/86260784>



The finishers gain a “10% energy saving” coupon for WALL-E. The fastest time gains another “5% energy saving” coupon for WALL-E.

### **TASK 5**

By the means of the digital tool in the link, students are asked to solve a crossword with energy related terms.

<https://wordwall.net/resource/86259035>



The finishers gain a “10% energy saving” coupon for WALL-E. The fastest time gains another “10% energy saving” coupon for WALL-E.

*"5% energy saving" coupon*



*"10% energy saving" coupon*



## **TASK 6**

Each team will create a poster with energy saving tips. The best poster will be put on the school bulletin board as well as in the classrooms.

**Wrap Up:** Teacher summarizes the lesson. All teams will have a right to watch the WALL-E movie.

**Assessment:** Teacher assesses the comprehension of students orally and asks them to assess their performance with a self-assessment form.

**Assignment:** The students are assigned in charge for energy-saving practices in daily school life, such as turning off the lights in classrooms during breaks, switching off fans or air conditioners when not needed, closing taps that have been left running, etc.

**Players' Journey**    **On boarding:** Warm-Up Activities, Task 1  
                              **Scaffolding:** Task 2 -Task 5  
                              **Mastery:** Task 6 - Assignment - Extension

**Gamification Elements:** SAVE WALL-E mission, Group work in teams, Cooperation, Rewards (Energy saving coupons), Fun Elements ( digital activities, watching a movie)

**Intercultural Elements:** Teachers from each country will talk to their students about the energy reduction measures that other partner's countries take.

### **Extension for Differentiation (Especially for High School Students):**

The students form an energy team. The team's goal is to study the current situation at the school regarding energy, as well as to propose and implement energy-saving measures.

The students inspect the entire school building and assess various issues that affect energy consumption at the school, including:

- The condition of the building from a technical perspective.
- The heating system.
- The lighting.
- The use of electronic equipment.
- The use of water.

All areas of the school must be inspected (classrooms, hallways, staircases, gymnasiums, restrooms, teachers' lounge, storage rooms, etc.).

The energy team's tasks then involve:

1. Creating a long-term temperature profile of the school by measuring temperatures in all classrooms for two weeks and checking whether they meet the established standards.
2. Estimating energy usage based on:
  - Observing how other students, teachers, and other school building users influence energy consumption at school. Special attention should be given to behaviors such as classroom ventilation, heating adjustments, and the use of electrical and electronic devices.
  - Conducting surveys among students (outside the Energy Team) regarding their opinions on temperatures and air quality in the school, their habits related to the use of electrical and electronic devices, and other energy-related issues.

At this stage, the Energy Team discusses its findings and develops solution proposals, the implementation of which will reduce energy consumption at the school (behavioural changes and small investments). Finally, the Energy Team shares with the rest of the school what it has learned during its work, as well as how each energy user in the school can contribute to energy conservation.

## References:

- <https://www.iea.org/> - (Details on renewable energy usage in the World)
- <https://build-up.ec.europa.eu/en/news-and-events/news/greeces-programmes-sustainable-heating-and-energy-efficiency> – (Details for energy efficiency and renewable energy in buildings in Europe)
- <https://www.eurelectric.org/> - (Details on the electricity industry in Europe)
- [https://energy.ec.europa.eu/data-and-analysis/eu-energy-statistical-pocketbook-and-country-datasheets\\_en](https://energy.ec.europa.eu/data-and-analysis/eu-energy-statistical-pocketbook-and-country-datasheets_en) – (Details on EU energy statistical pocketbook and country datasheets)
- <https://www.energysage.com/energy-efficiency/ways-to-save-energy/> – (Details to save energy)
- <https://www.irena.org/Digital-content/Digital-Story/2019/Apr/How-To-Transform-Energy-System-And-Reduce-Carbon-Emissions> - (Details to reduce carbon emissions)
- [https://climate.ec.europa.eu/eu-action/climate-strategies-targets/2030-climate-targets\\_en](https://climate.ec.europa.eu/eu-action/climate-strategies-targets/2030-climate-targets_en) – (Details on climate and energy framework include EU-wide targets and policy objectives for the period from 2021 to 2030)
- <https://www.adene.pt/> - (Details on energy in Portugal)
- <https://dnevnik.hr/video/diljem-hrvatske-akcija-ciscenja-okolisa-imena-rezolucija-zemlja---62801447> - (Details on energy in Croatia)
- [https://www.lamoncloa.gob.es/lang/en/gobierno/councilministers/Paginas/2022/20221011\\_council.aspx](https://www.lamoncloa.gob.es/lang/en/gobierno/councilministers/Paginas/2022/20221011_council.aspx) – (Details on energy in Spain)
- [https://www.stat.gov.mk/OblastOpsto\\_en.aspx?id=21](https://www.stat.gov.mk/OblastOpsto_en.aspx?id=21) – (Details on energy in North Macedonia)
- <https://enerji.gov.tr/news-detail?id=21228> - (Details on energy and natural resources in Turkey)
- <https://www.haee.gr/publications/haee-publications/greek-energy-market-report/greek-energy-market-report-2023/> – (Details for energy economics in Greece)