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| ACTIVITY PLAN | | | | |
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| **Theme** | **Subtopic** | **Activity Title** |
| STEAM Integration in Environmental Education | Mathematics in Environmental Modeling and Analysis | Electricity audit at home |

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| Introduction part (or activity overview) |
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| **Introduction part (or activity overview)** | This activity is aimed at analyzing household energy consumption, identifying inefficiencies, and proposing practical solutions. By thoroughly examining appliances, lighting, and habits, conclusions will be drawn regarding energy usage and potential savings methods. This enables households to make informed decisions, reduce their environmental impact, and contribute to broader sustainability goals. |
| **SETTING** | Classroom  Students' living environment |

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| Materials Needed |
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| **Materials Needed** | Notebooks and pens  Digital devices (tablets/laptops) |

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| **Learning Outcomes** | * Deepen the comprehensive understanding of how electricity is consumed in households. * Improve data collection and analysis skills. * Enhance critical thinking and problem-solving skills by evaluating energy usage methods and devising strategies to optimize efficiency and reduce overall electricity consumption. * Foster a sense of responsibility for sustainability by conserving resources. |  |
| **Activity Contents** | **Activity1: Electricity Audit at Home**  **Theoretical Part (Duration: 45 minutes):** Discuss the power of household electrical appliances and the amount of energy consumed. Analyze which appliances are high-power and which are low-power. Help understand energy consumption efficiency classes. Discuss various energy-saving methods.  **Videos:**  <https://www.youtube.com/watch?v=ziyslQq_eeA>  Overview: In this video, it shows how much electricity household appliances consume. The power indicators of appliances are analyzed.  Duration: Approx. 8.5 minutes  <https://www.youtube.com/watch?v=JX4FC6tJLlI>  Overview: This video discusses the new revised EU energy label that has been in effect since March 1, 2021. It explains how to easily choose the most energy-efficient product within your budget.  Duration: Approx.1.6 minutes  <https://www.youtube.com/watch?v=EB9I2Wp7stg>  Overview: In this video we will tell you 20 ways you can save electricity and money at home. Frugal living is the essence and requires we go over all expenses that can be avoided.  Duration: Approx.12 minutes  **Task 1 (Duration: 60 minutes):** Students conduct an electricity audit in their homes according to the provided (or self-created) plan. Annex No. 1 must be explained thoroughly.  **Task 2 (Duration: 30-45 minutes):** Discussion of the tasks. Each student presents one statement from the conclusions. Those who wish can present their work. |  |
| **Assessments** | Students' work is individually assessed by grade according to the assessment table (Annex No. 2). |  |
| **Key Competences** | Communication competence  Digital competence   Cultural competence   Social, emotional and healthy living competences    Creativity competence  Citizenship competence |  |
| **Connections with Eco STEAM** | Eco - Environmental sustainability is emphasized, promoting energy efficiency.  Science – Knowledge of physics and economics.  Technology - Examines energy-saving technologies and devices to optimize electricity consumption.  Engineering - Develops energy efficiency solutions by identifying areas of energy waste.  Art - Creativity and innovation in exploring aesthetic and functional designs for energy-saving lighting, devices, and home systems.  Math - Utilizes mathematical models, calculations, and data analysis. |  |
| **References** | <https://www.youtube.com/watch?v=Dk5wfKPx0q4>  <https://www.youtube.com/watch?v=qTaaErZJJHI>  <https://www.youtube.com/watch?v=x5iG9x6RjGA>  <https://www.whirlpool.lt/Innovation-Design/Naujos-energijos-vartojimo-efektyvumo-klases> |  |
| **Notes** |  |  |
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| **Annex No. 1**  **Electricity audit at home (Example)** |

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| Electricity energy audit goal (objectives): | | | | | | | | |
| Amount of electricity consumed per month (kWh): | | | | | | | | |
| Number of rooms: | | | | | | | | |
| Number of family members: | | | | | | | | |
| Appliance | **Power rating (in watts)** | **Age (years), condition** | **Efficiency class** | **Bulb type, (for bulb only)** | **Power consumption in standby mode (in watts)** | **Monthly usage schedule, consumed energy** | **Energy-saving features** | **Notes on reducing electricity consumption** |
| Example: Kettle | 1800 W | 5 years,  Contains lime | B | - | - | About 15 hours  27 kWh | - | Low efficiency class, contains lime, which absorbs energy |
| Example:  3 bulbs | 40x3=120W | 1-2 metai | G | Incandescent | - | About 90 hours  10,8 kWh | - | By replacing them with LED bulbs, we would consume about 1.2 kWh. |
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| Conclusions: | | | | | | | | |

**Annex No.2**

**Assessment Table**

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| Assessment Criteria | Points | Comments |
| Formulating the goal(s) | \_\_/1 |  |
| Filling out the table | \_\_/7 |  |
| Conclusions | \_\_/2 |  |
| Overall assessment | \_\_/10 |  |