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| ACTIVITY PLAN | | | | |
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| **THEME** | SUBTOPIC | Activity Title |
| Environmental Awareness and Conservation | Waste Management and Recycling | * Food waste culture - reduce the footprint you leave behind. * Transformation of food leftovers. |

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| INTRODUCTION PART (OR ACTIVITY OVERVIEW) |
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| **Introduction part (or activity overview)** | Students will learn the reasons for food wastage and ways to reduce food waste. By creatively using food leftovers to prepare dishes, students will contribute to reducing food wastage and a more environmentally friendly food supply chain. |
| **SETTING** | Technology (nutrition) classroom. |

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| MATERIALS NEEDED |
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| **Materials Needed** | Smart devices (computer, phone), video projector, note sheet, pen, recipes, kitchen equipment and tools, food products. |

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| **Learning Outcomes** | * Be able to explain the impact of food waste on the environment, develop critical thinking skills, and environmental awareness. * Understand that the consumption of food products and the amount of waste generated depend solely on human consumption habits. * Learn how we can creatively and efficiently use food leftovers in cooking, thus contributing to less food waste and a more environmentally friendly food supply chain. * Using various cooking technologies, they will prepare dishes from food leftovers, serve them, taste, and evaluate. |  |
| **Activity Contents** | **Activity 1. Food Waste Culture – Reduce Your Footprint.**  **Theoretical Part (Duration 15 min):** Introductory conversation. Discuss what food waste is, how the environment suffers due to food wastage, and talk about what unavoidable food waste is and what we can do at home to reduce the amount of food waste going to landfills.  **Information for the teacher:** Food wastage is a social, ecological, and economic problem. According to the United Nations, about a third of the food produced worldwide is wasted, which globally amounts to about 1.3 billion tons of food per year. According to data from the EU, over 50 million tons of fruits and vegetables are destroyed annually in Europe. According to EU statistics, 80% of the wasted food is avoidable food waste, i.e., the food that was fit for consumption before being discarded. Discarded food (waste) means not only that this food could have been used to feed more people, save money, but also that it is possible to reduce the negative impact on the environment related to food processing, storage, and production - climate change (plants and animals disappear, the weather becomes more extreme, sea levels rise, people migrate), enormous plots of land, labor, a lot of water, and energy are used in vain to grow and produce food for waste. In developed countries (where incomes are average or very high), most food is wasted at the consumption stage. This means that food is discarded, although it is still fit for consumption and could have been eaten. In low-income countries, less food is wasted at the consumption stage, with the greatest losses occurring in the initial stages of food production, processing, and handling. In Western Europe and North America, food waste amounts to 95–115 kg per person per year, while in Africa or Southeast Asia, it's only 6–11 kg per person. In Lithuania, almost a third of all food ends up in landfills. Each resident of Lithuania accounts for more than 50 kg of food waste per year.  Sorting food waste is important from an environmental, economic, and social point of view:   * By responsibly sorting waste, it won't end up in landfills. * By separately collecting and processing food waste, it can be turned into natural fertilizer, used to produce biogas, or compost. * Sorting food waste promotes an important social change - reducing the generation of such waste and food wastage.   Food preparation and storage habits can also contribute to reducing the impact on the environment. Changing habits can reduce the amount of food wasted and contribute to environmental conservation.  **Terms:**  **Food waste** – food produced for human consumption but not eaten and discarded. This concept includes food products that spoil before they are discarded and those that are still edible at the time of disposal.  **Food wastage (food waste)** – the discarding of food suitable for human consumption, both before and after its expiration date.  **Unavoidable food waste** – the discarding of food that is not edible under normal circumstances (bones, potato peels, eggshells, peels of fruits and vegetables, etc.).  **Avoidable food waste** – the wastage of food that was edible before being discarded.  **Food leftovers** – refers to edible parts or components of dishes that are not consumed immediately and are usually thrown away.  **Composting** = a regulated process in which organic material naturally decomposes and turns into a nutrient-rich product called compost.  **Task (Duration: 45 min):** It is explained how learning will occur through the jigsaw method. It is announced that at the end of the lesson, the teacher will ask about the most important aspects. It is emphasized that not the "experts" but other "home" group members will answer, so it is crucial to ensure that everyone has understood and remembered the key points. It is also explained how to evaluate the work of group members. Students will have to decide whether the information presented by others was clear and understandable.  Step 1. Small groups (of 3-4 students) are formed. These are called "home" groups.  Step 2. Each member of the "home" group receives a different task, which they must learn themselves and teach to other group members. (Appendix 1) Students analyze the given material individually and select the most important aspects, noting them down.  Step 3. Students re-group: they are divided into "expert" groups. Each group consists of students who have the same part of the learning material. They discuss the material together and plan how to teach their "home" group friends in a way that others would understand the information.  Step 4. Students return to their "home" groups and teach each other. The goal of the group is for everyone to learn all the material well.  **Task (Duration: 35 minutes):** To consolidate the material, students take a habits test, "Climate Change in the Kitchen." ( 20 min). https://www.vartotojai.lt/sincerelyfood/test/kitchen/  After completing the test, students are encouraged to reflect on what each of them individually could and would like to do to change the situation and what they could do in the near future.  **Activity 2 (Duration: 90 minutes):** **Transformation of Food Leftovers.**  Step 1. Preparation for the lesson: attire, hygiene requirements, necessary products, working tools, remembering the requirements for work safety.  Step 2. Working in groups, discussing the technological sequence of the dish, and dividing the work.  Step 3. While sorting waste, following technological and hygiene requirements, students prepare dishes according to their created recipes. They record the work stages and the final result.  Step 4. They serve the dishes, taste, and treat members of other groups, evaluate the quality of the prepared dishes according to the presented dish quality evaluation criteria (Appendix 3).  Step 5. They calculate the cost and nutritional value of the dish.  Reflection. Students record and summarize the quality of dishes determined during the tasting, observations made by friends, challenges encountered, advantages and disadvantages of the work process, identify successes and failures, and their reasons. |  |
| **Assessments** | In Activity 1, the evaluation of group work and self-assessment are carried out by the students themselves (Appendix 2).  In Activity 2, the evaluation is according to the provided criteria. |  |
| **Key Competences** | Creativity competence  Digital competence  Cognitive competence  Communication competence  Citizenship competence  Social, emotional and healthy living competences  Cultural competence |  |
| **Connections with Eco STEAM** | Eco – Gain ecological knowledge on methods to reduce the negative impact of food waste on the environment.  Science – Knowledge in biology, chemistry, economics, and environmental sciences.  Technology – Technology: reduce, reuse, recycle. Smart and creative use of digital technologies.  Engineering – Students can create a model: reduce, reuse, recycle, describing the movement of material among plants, animals, humans, and the environment. Cooking dishes from food leftovers.  Art – Creative solutions that encourage sustainable thinking and aesthetics.  Math – Application of mathematical calculations in product production, calculation of the cost of a dish. |  |
| **References** | <https://lt.wikipedia.org/wiki/Atliek%C5%B3_tvarkymas>  https://ec.europa.eu/food/safety/food\_waste\_en  http://www.fao.org/food-loss-and-food-waste/en/  https://www.vmvt.lt/node/3717?language=lt  Silver H. ir kt. Mokytojas strategas. Kaip kiekvienai pamokai pasirinkti tinkamą, tyrimais pagrįstą mokymo metodą, Vilniaus tarptautinė mokykla, UAB Rgrupė, 2012, 83-94 p.  https://kita-forma.lt/leidiniai/  https://zinauviska.lt/wp-content/uploads/2023/08/Tvarus-mobilumas.pdf  https://kita-forma.lt/wpcontent/uploads/2024/02/Zalioji\_knyga\_5\_2021.pdf  Ieva Brimerienė, Zita Čeponytė, Renata Dagiliūtė, Ilona Drulytė, Vita Gapšytė,Aušra Maldeikienė, Snieguolė Ščeponavičienė, Evelina Venckevič Atsakingas vartojimas. Mokytojo knyga <https://sodas.ugdome.lt/metodiniai-dokumentai/perziura/16551>  <https://www.linkejimaimaistas.lt/naudinga-knygele-apie-tai-ko-nesuvalgome/>  <https://data.kurklt.lt/wp-content/uploads/2023/05/MAISTO-SVAISTYMO-APZVALGA.pdf> |  |
| **Notes** |  |  |
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**Appendix 1. Tasks for students for the active learning method "Jigsaw".**

Task for student 1:

* Write down (6-7) main reasons for food wastage.
* Explain what the terms "best before..." and "use by..." mean?

Task for student 2:

* Write down ideas (5-6) on how to reduce the amount of food wasted.
* Which groups of products (5) are wasted the most worldwide?

Task for student 3:

* Write down (2-3) statements to identify the problem of food wastage.

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| **Food Wastage Problem** | **Statements** |
| Social |  |
| Economic |  |
| Ecological |  |

Task for student 4:

* Write down 5 food supply chains.
* Identify (4-5) reasons for food wastage in the public catering sector and (4-5) reasons for food wastage in households.

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| **Food Supply Chain** | **Percentage of Wasted Food** | **Reasons for Food Wastage** |
| 1. |  |  |
| 2. |  |  |
| 3. |  |  |
| 4. |  |  |
| 5. |  |  |

**Appendix 2. Evaluation Table**

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| **Group member** | **Explained well, understood everything.** | **Not very clear, didn't understand everything.** | **Explained poorly, hardly understood anything.** |
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**Appendix 3. Dish Quality Evaluation.**

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| **Quality Criteria** | **Description of the Dish** |
| **Aroma.** |  |
| **Appearance of the dish** (Color. Texture. Shape) |  |
| **Taste.** |  |
| **Technological execution.** Cooking method (baked, undercooked, burnt, risen, collapsed, etc.)  Cooking process - order of products, baking temperature, and duration.  Use of the dish recipe or created by myself. |  |
| **Presentation of the dish.**  Portion size on the plate.  Decoration of the dish.  Originality (in a classical way). |  |
| **Caloric content, nutritional value.** |  |
| **Value for money.** |  |
| **Eco-friendliness.** |  |