CASE STUDY Separating and waste-disposal -30 h

Outcomes of this case study

Integration into the curriculum

Reverse logistics where students discuss the collection, disposal and recycling of waste is included in the 3rd year of the subject (Logistics).

Collaborative Learning: group work

Commpetences/skills:

This learning scenario focuses on :

Aim of the lesson:

- **Pedagogical intention**

- It is necessary to make students aware of the amount of generated waste at the personal level, local and state level, and the need to separate and dispose of useful waste in as much as possible.

- **a) Critical thinking**

- - analyzing and comparing data

- - estimate how much waste is generated by each of them and compare it with the data in their municipalities and cities and the goals of waste separation and disposal

- **b) Practical thinking**

- - Proposal of their solutions on a personal level for a higher percentage of waste separation

- **c) Creative thinking**

- proposed measures and solutions for the utility company to open a higher percentage of separable usable waste.

Human dimension competencies: to behave responsibly, to collaborate, to communicate, to sustain, to take responsibility, to suggest, to resolve, to give feedback, to decide, to critically reflect, to work in a team learning methods

Collaboration: students will work in groups and distribute the tasks among themselves.

Communication: students will display and present their solutions.

Activities

The teacher divides the students into groups of four (randomly or according to certain criteria).

The teacher presents the tasks that each group and each participant will have to complete:

1.
Collect data on the amount of separated and mixed municipal waste in kilograms in your household on a monthly basis. Do this by weighing the waste by type before handing it over. Take a photo of how waste is separated in your household (bins, bags or some other solution).
Based on this data, calculate in kilograms the annual amount of municipal and useful waste produced and separated in your household.
Calculate how many kilograms are produced and classified per household member.
Calculate the percentage of useful waste that is separated in your household.

2.
In the attachment are the data of the local utility company for waste removal with the amount of collected waste by types, municipalities and cities. Based on the data, the following should be calculated:
a) what is the percentage of sorted waste in each municipality and city for 2021
b) how many kilograms of waste are generated per inhabitant in each municipality and city in 2021
c) compare 2020 and 2021 and write whether there was an increase in total waste in tons and whether there was an increase in separated, usable waste in percentages.

3.
List the goals that the Republic of Croatia should achieve in order to contribute to the circular economy of the European Union.

https://mingor.gov.hr/o-ministarstvu-1065/djelokrug/uprava-za-procjenu-utjecaja-na-okolis-i-odrzivo-gospodarenje-otpadom-1271/gospodarenje-otpadom/sustainable-waste-management-7591/7591

Compare your result of collected and sorted household waste with the specified goals and the result of your municipality or city and plot them in the graph.
If there is no data for your municipality or city, compare it with the nearest one for which there is data.
Present the solution.

Present the solution

4.
Think about and propose solutions as you can: increase the percentage of separated useful waste, reduce the amount of mixed municipal waste in your household, reduce the total amount of waste, and thus be more responsible towards the environment and thus contribute to reducing the burden on the environment.

5.
Each group reflects and proposes how the local municipal waste collection company can achieve a better result in collected separated and usable waste and approach and reach the set EU goals.

Groups exchange solutions with each other and make a list of all proposed solutions.

The solution is written on a Google document or Office365 (Word), which will be shared by the

student coordinator of the group. The teacher will also have access to doc