



# P.B.L Lesson Plan

## Title

The Way of Waste

## School

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## Subjects involved/potentially involved

Subjects currently involved	Subjects potentially involved
Biology, Science, Chemistry, Maths, History and English	Chemistry, Business administration, Technology

## Description of how the lesson plan was designed and implemented

The background for the lesson plan is the enormous attention paid to climate change in recent years and the measures to be taken to ensure a more climate-friendly and sustainable world. The attention is directed towards all parts of society. So, the problem will be exposed from a wide range of perspectives (sociological, scientific, economical, moral, etc.). To achieve all these different points of view different subjects have been included in the project

The purpose of this PBL lesson goes through the problem of waste from our school to our continent Europe, from the closest to the farthest, trying to make our secondary rural Spanish students be aware of the necessity of taking measure right here and right now in order to minimize the impact and the subsequent consequences that waste can cause to our way of living in the long term. That's the reason why we have decided to structure our unit starting up from a local level, the closest and then follow the way of waste all the way through...PROVINCIAL...NATIONAL...EUROPEAN LEVEL

## Competencies and knowledge





### Development of prerequisite competencies and/or knowledge

1. Present and make clear to the students a complex real problem that we have to face and enable them to develop the students' learning and critical thinking skills in order to be able to find the appropriate tools to solve the problem.
2. Contribute to the students' awareness, individual and collective contribution to development and change in a global perspective.
3. Analyze information and select priority issues with regards to pollution, garbage, waste management and therefore be able to use this knowledge in order to identify problems and later look for solutions.
4. Investigate and assess the interaction between the way we live and the consequences it generates with regards to the environment
5. Formulate solutions which can lead their communities to be aware of the huge problem that waste is generating to our planet.

**PBL** methodology will be used throughout the unit in order to **promote teamwork** and enable students **to develop communicative skills** and **critical thinking**.

### Development of competencies and/or knowledge the experience aims to create

#### **Students will be able to:**

- apply and combine knowledge of sociology, ethics, economics and sciences to explain current challenges in our society
- examine local, provincial and national political decisions, considering the role of the EU
- analyze problems and selecting priority issues with regards to waste and waste management
- select information from authoritative sources (academic works/articles) to discuss about a problem
- understand why it is important to reduce waste and how to contribute





concretely to reduce the impact of waste changing one's own habits in everyday life

- investigate the interaction between technological development and the social development (science + technology)
- suggest possible solutions which can influence politics.

### Topics involved/potentially involved

#### Topics actually involved

Waste Prevention and Management Strategies

Waste Management Policies

Circular Economy

The 2030 Agenda for Sustainable Development

Global Partnership Against Climate Change

#### Topics additionally involved

Waste Prevention and Management Strategies

Waste Management Policies

Circular Economy Advantages

The 2030 Agenda for Sustainable Development

Global Partnership Against Climate Change

### Authors

Teachers who worked on the design and implementation

Name	Class	Subject
Raúl Peinado Fuentes	4th ESO-1st Bach	History
Noelia Denia Picazo	4th ESO-1st Bach	Maths
Cristina Cuartero Núñez	4th ESO-1st Bach	English





Anabel Alcantud Hidalgo	4th ESO-1st Bach	Economy
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### **PBL methodology: groupwork**

Start by explaining that the lesson plan is part of an Erasmus+ project and based on the **problem based learning** approach.

Start working with the PBL approach. Use the PP about PBL as part of the presentation. The students pay attention to the PowerPoint and ask doubts about the methodology.

Later on they put into practice this new methodology in a very simple way: they are split up into 3 groups of 5/6 and are given the following question: ***Do you think that we as a society have a problem with our waste?***

The target groups are secondary students aged from 15 to 17 from a Spanish rural area. Each group choose one leader and one secretary and spend 15 minutes debating about the question. All of them will share their conclusions and support their answers. Choose a way to present it. (Mind map, PowerPoint, Infographic...)

### **Tools and applications**

EX:

- *Learning Apps*
- *Canva*
- *Tiktok*
- *Genially*
- *Written Letters*
- *Inphographics*

### **Pedagogical Impact - Feedback**

Now they understand better all the real impact that concepts such as recycling, reusing, circular economy and so on have on our daily life and that all the waste we generate needs to be taken into account at all levels. In general, now they are much more conscious of the problem we have with the waste management and that if we don't take measures will become a huge challenge for future generations.

### **Student Involvement in Pathway Development**

The impact of the PBL "Way of Waste" lesson plan on the students has been important.

The students, generally speaking, have participated actively in groupwork and discussions and they were motivated to explore waste-related topics.





They have also discovered how many topics related to waste management are false and they have learned quite a lot in order to become active eco-friendly citizens.

They have worked together in order to understand better all the real impact that all related concepts have on our daily life. They have listened to their mates, respect turns, made agreements, etc

At the end they seemed much more comfortable with PBL methodology as they were gradually taking responsibilities on the tasks assigned. Most of them even enjoyed a lot and showed interest on the topic and the activities proposed.

The experience can be regarded as highly positive.

### Critical elements

It has been hard at times for the students to get time to work on the unit. They have been learning at working sometimes out of the classes timetable, evenings, breaks and so on. This has happened mainly when they have received lectures from technicians from out of school, excursions and so on. They had to reorganize extra-curricular classes in the evenings, etc.

There have also been difficulties when working with PBL, as they aren't used to this methodology. The roles weren't clear, some students took more responsibilities than others, some others worked harder than the rest of their group, etc

### Produced materials

Type of produced material			
x	<i>Povs (Tiktok)</i>	X	<i>Mindmaps</i>
X	<i>PowerPoints</i>	X	<i>Inphographics</i>
X	Letters	X	Podcasts
X	Genially		
X	Graphics		

Other .....

### Links to the resource(s)

*Lesson plans in pdf format + any useful material ( ex: worksheets)*





## Evaluation method and tools ( grading rubrics etc)

- Direct Observation all throughout the process
- Grading Rubrics
- Self-reflection about their own ideas and productions
- Kahoot to be able to see to what extent they have picked up the concepts

