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LESSON PLAN

From waste to resource

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Disclamer

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1. TITLE

From waste to resource

2. GRADE LEVEL

- ISCED Level 3 – Upper Secondary Education (ages 15–18)

3. SUBJECT AREA

- Sciences
- Environmental Studies
- Geography
- Economics

4. TYPE

- Lesson Plan

5. DURATION

- 2 x 45-minute classes

6. LEARNING OBJECTIVES

O1- Identify the geographic origin of commonly used materials.

O2- Explain how waste impacts different world regions.

O3-Design a new product or function using old materials

7. Key Competences Developed

- Personal, social and learning to learn competence
- Citizenship competence

Entrepreneurship competence

8. Prior Knowledge / Prerequisites

Basic knowledge on different types of pollution.

9. Lesson/Project Outline

Phase 1 – Introduction (Engage & Contextualize)

Teacher demonstrates daily used objects such as plastic bottles, old clothes, carboards, glass jars etc.
Activities:
Discussion about questions:
Where do these materials come from? How are they produced?
Which countries produce the raw materials?
Can all these objects be recycled?
Where does waste such as these objects mostly end up?

Outputs: Initial ideas about waste and reuse, linking materials to natural resources and regions.

Resource (name)	Link (to the folder on Teams)

Phase 2 – Exploration (Investigate & Compare)

Students explore the global route of plastic production and pollution.
Activities:
Students examine maps, images, graphics, showing plastic production, consumption, pollution hotspots in different regions worldwide.
In groups students collaborate to analyze the connection between high consumption regions and areas which are most affected by plastic waste.

Students can focus on questions such as:
In which regions of the world is most plastic produced?
Which regions produce the highest amounts of plastic waste?
Why are some regions more affected by plastic pollution than others?

Outputs: Identify regions which produce and pollute plastic, linking consumption, geography and impact on environment.

Resource (name)	Link (to the folder on Teams)
Our world in data Plastic pollution **https://ourworldindata.org/plastic-pollution**	

Phase 3 – Application (Hands-On Practice)

Students apply their knowledge from phase 2 to brainstorm on creation on new products from plastic waste.
Activities:
Visit the site precious plastic, list 3 products made from recycled plastic that could inspire your group.

Explore the site upcyclely – creative reuse project and seek one simple project that your group could replicate in classroom environment.

In groups choose one type of plastic waste and brainstorm a new product or function for this material. Keep in mind these questions:
What was the material originally used for?
What is your new product?
How does it reduce environmental impact?

Prepare a simple prototype if materials are available, if not, sketch or diagram your product.

Outputs: designed plastic reuse concept, visual representation, connecting reuse to environmental benefits.

Resource (name)	Link (to the folder on Teams)
Precious plastic **https://www.preciousplastic.com/solutions/prods** **15 creative ways to teach kids to reduce, reuse, and recycle** **https://upcyclely.com**	

Phase 4 – Reflection & Consolidation (Present & Connect)

Activities:
Groups present their plastic reuse concept or product. Teacher facilitate discussion about questions such as:
How does plastic production and pollution affect different regions of the world?
How can reuse reduce these impacts?
What did you learn about the link between geography and sustainability?

Students reflect on paper notes writing:
One thing they learned about plastic and waste
One action they could take to reduce plastic impact in their daily life
How understanding geography helps solve environmental problems.

Outputs: completed group presentations, written reflections.

Resource (name)	Link (to the folder on Teams)

10. Assessment Criteria

Participation in discussions.
Creativity of the plastic reuse idea.
Clarity of group presentation or visual model.
Reflection on what they have learned.

Resource (name)	Link (to the folder on Teams)

11. Teaching Materials

Name	Type (Developed/Existing)	Link	Role in the lesson

12. External Resources and References

Resource (name)	Link (external or to the folder on Teams)