KA220YOU ECO INNOVATORS
Next-Gen Sustainability through Science and Innovation
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GREENLINK HUB · LEARN · LESSON PLAN

Peer-to-Peer 3D Eco-Design Challenge

A 2.5-hour project-based session in which young people turn a real local problem into an AI-generated 3D design for a sustainable solution, and learn from each other while doing it.

AGE GROUP	DURATION	GROUP SIZE	LEVEL
14–19	2.5 hours	Teams of 3–4	No prior skills

01 Why this lesson works

Most sustainability lessons stop at awareness. This one ends with something the group has made. Young people pick a problem they can see around them, move through a short design-thinking cycle, and use a free AI 3D tool to give their solution a shape. Nobody needs drawing or modelling skills — the challenge is in describing the idea precisely enough for the tool to build it.

The session was first delivered by EuroLinks at the EcoInnovators training in Brussels (November 2025) and is published here so that teachers and youth workers can run it without further preparation.

02 Learning objectives

Knowledge

- Explains what eco-innovation is and why it matters locally.
- Recognises how AI can support — and mislead — sustainable design.

Skills

- Applies the design-thinking cycle: empathise, ideate, prototype, refine, present.
- Writes clear prompts for a 3D generation tool.
- Presents and defends an idea in five minutes.

Attitudes

- Takes responsibility for a problem in the local community.
- Gives and receives peer feedback constructively.
- Uses technology with a purpose.

Competence frameworks: GreenComp (envisioning sustainable futures, exploratory thinking) · EntreComp (creativity, valuing ideas) · DigComp 2.2 (digital content creation, collaboration).

03 Before the session

☐ Try the AI tools yourself with one example prompt — e.g. *"a solar-powered community library surrounded by gardens"*. Free options at the time of writing: Meshy.ai, Hyper3D.ai. Check the tool's age requirement for your group.

☐ One computer or tablet per team of 3–4, with a stable internet connection.

☐ Print the student worksheet (page 4) — one per team — and peer-feedback cards.

☐ Put the timetable on a board or slide so teams can track time themselves.

☐ Show the assessment criteria at the start, not at the end.

04 Session plan

Phase	Time	What happens	Facilitator role
1 · Context	10 min	Short introduction: what is eco-innovation, where can AI help? Quick brainstorm of problems the group sees around them.	Build curiosity; connect technology to real problems.
2 · Problem	25 min	Teams of 3–4. Each member names one local environmental or social problem; the team chooses one and shares it with another team for feedback.	Make sure every voice is heard; push for concrete problems.
3 · Design & AI	60 min	Empathise (10) — who is affected? · Ideate (10) — 5–6 solutions, choose one · Prompt & prototype (25) — write the prompt, generate the 3D model · Refine (15) — improve the prompt and regenerate.	Demonstrate prompt writing; ask "what would make this more sustainable?"; encourage critical reading of AI output.
4 · Eco-pitch	45 min	Five-minute pitch per team: problem · prompt · 3D model · environmental and social impact. Other teams fill in peer-feedback cards.	Keep time strictly; summarise the strongest feedback.
5 · Reflect	20 min	Individual reflection on the worksheet; teams upload screenshots to a shared digital gallery (Padlet, Miro or Canva).	Link outcomes back to the project themes.

Prompt bank to get teams started

- "A self-sufficient eco-school powered by solar panels with a rooftop vegetable garden."
- "A neighbourhood repair café built from reclaimed wood and recycled glass."
- "A low-carbon bus stop that collects rainwater and shelters pollinators."

05 Assessment rubric

Criterion	What we look for	Points
Creativity	Original idea and design	25
Sustainability impact	Relevance to the problem; realistic environmental and social effect	25
Prompt quality and AI use	Clear, specific prompt; critical, purposeful use of the tool	20
Collaboration	Everyone contributed; roles were clear	15
Presentation	Clear, convincing, within time	15
Total		**100**

FACILITATOR TIPS

Assign roles in every team — presenter, model operator, timekeeper, researcher. Hold the 60-minute prototype limit: an imperfect model with a good story beats a polished model with no time to pitch. Ask each participant to write down one new idea about sustainability before leaving.

06 Extensions

- **Poster** — a one-page visual summary of the model in Canva.
- **One-minute video** — the team tells the story of its solution.
- **School exhibition** — an "AI for Earth" display of all models.
- **Next step** — take the strongest idea into the *Problem to Playable Prototype* lesson (GreenLink Hub · Learn) or the Green Project Card (Apply).

STUDENT WORKSHEET · ONE PER TEAM

3D Eco-Design Challenge — team sheet

Team name	
Members and roles	

1 · Problem

Which environmental or social problem are you tackling? Who is affected, and why does it matter?

2 · Ideas

List your ideas, then circle the one you chose.

3 · Prompt

AI tool used: ☐ Meshy.ai ☐ Hyper3D.ai ☐ Other _____ — write your final prompt:

4 · Pitch in three lines

Problem:

Solution:

Impact:

5 · Reflection (individual)

What did I learn today? What was difficult about using AI? What would I improve with more time?

Self-assessment

Criterion	1	2	3	4	5
Creativity	☐	☐	☐	☐	☐
Sustainability impact	☐	☐	☐	☐	☐
Teamwork	☐	☐	☐	☐	☐
AI tool use	☐	☐	☐	☐	☐
Presentation	☐	☐	☐	☐	☐

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