

Interreg VI – A Italia - Österreich
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Workshop Template – Re-Build the Future: Eco-Homes in a Circular World

Interreg
Italia – Österreich



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1. Introduction

The “Re-Build the Future: Eco-Homes in a Circular World” workshop is designed for students who are interested in sustainability, circular economy, and hands-on eco-design. The workshop focuses on building and experimenting with model Eco-Houses using the Kosmos Eco-Haus kit, while exploring the concepts of Life Cycle Assessment (LCA) and the 9Rs of the Circular Economy (CE).

1.1 Learning Objectives

By the end of the workshop, participants will be able to:

- Learn the principles of the Circular Economy (CE).
- Gain practical experience by constructing and testing an Eco-Haus model (solar, insulation, green roof, water system).
- Evaluate the environmental impact of housing design through Life Cycle Assessment (LCA).
- Reflect on how eco-homes can contribute to greener cities and communities.

1.2 Required Knowledge

No specialized background is required. However, participants will benefit from having an awareness of environmental issues such as climate change, waste, and energy use. The workshop is designed to be accessible, practical, and engaging.

The program is suitable for students aged 15–18, encouraging teamwork, problem-solving, and innovation in sustainable design.

2. Workshop Structure

Table 1 Workshop Structure

Phase	Duration	Activities	Purpose	Materials
Opening	10 min	Welcome participants, Introducing workshop themes	Engage curiosity, set sustainability theme	Slides
Context Setting	TBD	Mini talk: Circular Economy & LCA introduction with traditional vs eco house case study	Explain key concepts and link to activity.	Slides
Main Content	TBD	Hands-on activity: building an eco-house, LCA reflection & poster preparation.	Apply CE and LCA in product creation.	Slides Material required for hands on activity
Wrap-up	15 min	Team presentations & awards, feedback & closing.	Consolidate learning, celebrate achievements, gather feedback.	Certificates, feedback forms.

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2.1 Workshop Agenda

Table 2 Workshop Agenda

Phase	Duration	Activities	Purpose	Materials
Opening	10 min	Welcome participants, introducing workshop themes, Icebreaker quiz: “What happens to houses after 50 years?”	Engage curiosity, set sustainability theme	Slides
Context Setting – Circular Economy (CE)	TBD	Mini talk on Linear and Circular Economy.	Build understanding of CE principles.	Slides
Context Setting – Life Cycle Assessment (LCA)	TBD	Introduction to 5-stage LCA using Traditional vs. Eco-House case study.	Show how LCA measures environmental impacts across life stages.	Slides
Eco-Haus Kit Intro	TBD	Unbox Eco-Haus, explain components (solar, LED, pump, green roof, felt)	Familiarize students with toolkit, prepare for activity	Slides, Kit parts
Hands-On Assembly	TBD	Build base Eco-Haus structure (walls, roof, solar mount)	Collaborative start; set baseline model.	Eco-Haus kits
Specialized Team Titles and LCA mapping	TBD	Team selects one title 1. Solar & Lighting: connect panels + LED, measure efficiency 2. Cooling & Insulation: test bare vs. insulated roof 3. Rooftop Garden & Water: build green roof, simulate rain Each team will receive CE& LCA activity as per their title	Further develop eco house and apply CE & apply LCA through experiments.	Kits, soil, water, thermometer CE & LCA activity sheet
Poster Preparation	TBD	Create posters with results, CE strategies, LCA findings, innovations	Synthesize learning visually	Poster paper, stationary items
Team Presentations	TBD	Each team presents experiments, LCA insights, CE idea	Peer learning, public speaking	Posters
Review & Awards	TBD	CE innovation, LCA insight, and teamwork.	Celebrate achievement, encourage collaboration.	Certificates, small prizes.

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Feedback & Wrap-Up	TBD	Reflection worksheets, group discussion, closing remarks.	Consolidate learning, gather improvement ideas, close the session.	Feedback forms
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2.2 Required Equipment

Table 3 Required Equipment

Category	Item	Quantity	Purpose	Alternative Options
Technology	Projector & screen	1 set	Present slides and visuals	Large monitor, flip charts
	Laptop	1 unit	Run presentation and visuals	Tablet with HDMI adapter, shared desktop
	Speakers	1 set	Audio for videos or sound-supported content	Built-in laptop speakers, no-audio option
Materials	Eco House Kit	1 per team	Kit for hands-on activity	NA
	Thermometer	1 per team	Measure temperatures	NA
	Paper towels & cleaning materials	1 set/team	Clean-up during and after activity	Reusable cloths
Supplies	Markers, pens, pencils, erasers	1 set/team	Poster design, calculations, sketching, note-taking	N/A
	Scissors, glue, tape	1 set/team	Assembly of posters and model elements	N/A
	Poster paper	2 sheets/team	Visual presentation of team decisions, CE & LCA strategy	A3/A2 papers
Documentation	LCA reflection sheets	1 per participant	Recording environmental impact analysis	Digital form (Google Sheets/Forms)
	Evaluation sheets	1 per team	Peer review & judging of final products	Tablet, online survey
Other	Full Slide Deck	1 master set (digital)	Guide participants through the entire workshop visually and clearly	Available via shared drive, USB stick, or printout handouts

2.3 Evaluation Framework

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Table 4 Workshop Evaluation

Evaluation Type	Timing	Method	Key Metrics	Follow-up Actions
Immediate	End of workshop	Feedback forms	Satisfaction, objective achievement	Immediate improvements
Short-term	1-2 weeks later	Email survey	Knowledge retention, initial application	Provide additional resources
Long-term	3-6 months later	Interview/survey	Behaviour change, performance impact	Plan follow-up sessions

3. Detailed Explanation

3. Workshop Layout Explanation

3.1. Opening

Activity: Welcome & Icebreaker Quiz

Description:

The facilitator will welcome all participants and provide a brief overview of the day's structure. The session will begin with a short, engaging icebreaker quiz to introduce the central theme of the workshop.

The facilitator welcomes participants, explains the workshop goals, and introduces the central theme: how to “re-build the future” using sustainable design. Students take part in a short quiz: “What happens to houses after 100 years?” (reuse, landfill, demolition). This sets the stage for the workshop by showing why Circular Economy (CE) is important in construction.

The facilitator will set the stage by emphasizing the hands-on and creative nature of the workshop, highlighting its connection to sustainability and eco-design.

Purpose: To create an engaging start, spark curiosity, create a positive atmosphere, and introduce sustainability concepts in a relatable way.

Materials: Slides

3.2. Context Setting – Circular Economy (CE)

Activity: Mini talk on Linear vs Circular Economy

Description:

The facilitator will present the Circular Economy model, explaining how it differs from the traditional Linear Economy (take-make-dispose).

Purpose: Build foundational understanding of CE principles in a relatable way.

Materials: Slides

3.3. Context Setting – Life Cycle Assessment (LCA)

Activity: Introduction to 5-Stage LCA with case study.

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Description:

Students learn that Life Cycle Assessment (LCA) measures environmental impacts across the entire life of a product or building. The facilitator introduces the 5 stages: Raw Material Extraction, Material Processing, Manufacturing/Construction, Use, and End-of-Life.

A Traditional House vs. Eco-House comparison is shown at each stage to highlight differences in impact (cement vs. wood, fossil fuels vs. solar, landfill vs. reuse).

Purpose: Provide a structured framework for analyzing sustainability.

Materials: Slides, LCA charts.

3.4. Eco-Haus Kit Introduction

Activity: Unbox the Eco-Haus kit.

Description:

The facilitator introduces the Eco-Haus kit components: solar panel, LED, pump, felt roof, soil, and plants. Each item is briefly explained in terms of how it represents sustainable building solutions. Students are told this will be their “mini laboratory” for experimenting with CE and LCA principles.

Purpose: Familiarize students with tools and prepare for group activity.

Materials: Eco-Haus kit, slides

3.5. Hands-On Assembly

Activity: Build the Base Eco-Haus.

Description:

All groups assemble the basic structure of the Eco-Haus (walls, roof, solar mount). This ensures each group starts from the same baseline before specializing in different sustainability systems. The facilitator ensures safety and teamwork throughout.




Purpose: Encourage collaboration and provide a shared starting point.

Materials: Eco-Haus kits

3.6. Specialized Team Activities, CE & LCA Mapping

Activity: Teams work on assigned subsystem.

Description:

-  Team Solar & Lighting: Connect solar panel + LED, measure brightness in different conditions.
-  Team Cooling & Insulation: Test indoor temperature with bare vs. insulated roof.
-  Team Rooftop Garden & Water: Build green roof, simulate rain, test water absorption & insulation.

Each team records results, then maps findings onto a 5-stage LCA activity sheet, noting which CE strategies could improve each stage.

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Purpose: Develop deeper understanding of CE and LCA through hands-on experiments.

Materials: Eco-Haus kits, soil, water, thermometers, CE & LCA worksheets

3.7. Poster Preparation

Activity: Teams create posters.

Description:

Each team summarizes their experiment visually with a poster, including:

- Experiment setup & results
- LCA table
- CE strategies applied
- One innovation idea for future eco-houses

Purpose: Synthesize learning and prepare for sharing.

Materials: Poster paper, markers, pens

3.8. Team Presentations

Activity: Teams pitch their products and explain CE and LCA considerations.

Description:

Teams present their Eco-Haus results to the class, explaining how their subsystem reduces environmental impacts and improves circularity. Teams also share their chosen CE innovation. The facilitator encourages peer questions and discussion.

Purpose: Build communication skills, encourage peer-to-peer learning, and connect individual work into a whole-house concept.

Materials: Posters, slides

3.9. Review & Awards

Activity: Recognize team efforts.

Description:

Certificates or small prizes are awarded for:

- 🌱 Best Green Roof Design
- 💡 Most Innovative CE Idea
- ♻️ Best LCA Insight
- 🤝 Best Team Collaboration

Purpose: Motivate participants, celebrate teamwork and creativity.

Materials: Certificates, small awards.

3.10. Feedback & Wrap-Up



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Activity: Reflection worksheets, group discussion, closing remarks.

Description:

Students complete feedback forms and join a group reflection: “What is one eco-design idea you’d bring home?” The facilitator summarizes workshop outcomes: CE keeps materials in use, LCA shows hidden impacts, and Eco-Haus demonstrates how sustainable design works. Ends with: “You are now Eco-Designers—how will you re-build the future?”

Purpose: Consolidate learning, inspire action, and collect feedback.

Materials: Feedback forms

Equipment & Purchasing Links

1. Kosmos Eco House Kit [Link](#)
2. Lab Thermometer
3. Kitchen towels