

Interreg VI – A Italia - Österreich  
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# Workshop Template – The Journey of a Juice Box

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Italia – Österreich



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# Index

1. Introduction .....	3
1.1 Learning Objectives.....	3
1.2 Required Knowledge .....	3
2. Workshop Structure .....	3
2.1 Workshop Agenda .....	4
2.2 Required Equipment.....	5
2.3 Evaluation Framework.....	5
3. Detailed Explanation .....	5

# 1. Introduction

The "Journey of a Juice Box: A Circular Economy Workshop" is a program specifically designed for students who are interested in sustainability, circular economy. The workshop focuses on recycling and upcycling aseptic cardboard containers (juice boxes) while exploring the 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 Circular Economy.
- Understand and apply the 9Rs to a real product challenge.
- Evaluate the environmental impact of a product through Life Cycle Assessment (LCA).

## 1.2 Required Knowledge

No specialized background is required. However, participants will benefit from an awareness of environmental issues like waste and pollution. The workshop is designed to be accessible and engaging.

The workshop is designed to be accessible and engaging for students aged 12–15.

# 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 & 9Rs with aseptic packaging examples, LCA introduction with juice box case study	Explain key concepts and link to activity.	Slides, Videos
Main Content	TBD	Student activity: LCA ,CE reflection & poster preparation.	Apply CE and LCA in product creation.	Slides Material required for student 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	Engage curiosity, set sustainability theme	Slides
Context Setting – Circular Economy (CE)	TBD	Mini talk on Circular Economy & 9Rs with juice box examples.	Build understanding of CE principles and waste valorization.	Slides
Context Setting – Life Cycle Assessment (LCA)	TBD	Introduction to LCA using a juice box case study.	Show how LCA measures environmental impacts across life stages.	Slides
Aseptic Materials	TBD	Introduction to the layers of an aseptic cardboard container	Provide an overview of activity with materials and their advantages	Slides, Videos
Student Activity	TBD	Teams watch recycled papers from juice boxes video	Apply CE by turning waste into useful products; think about LCA during making.	Videos
CE & LCA Reflection	TBD	Teams complete LCA tables and note ideas to improve sustainability	Apply LCA thinking to real-world products; connect theory to practice.	Poster paper, stationary items
Poster Preparation	TBD	Create posters showing LCA stages, and CE benefits.	Communicate sustainability reasoning visually.	Poster paper, stationary items
Team Presentations	TBD	Teams explain CE and LCA considerations.	Share ideas, practice public speaking, inspire peer learning.	Posters, judging sheets.
Review & Awards	TBD	CE innovation, LCA insight, and teamwork.	Celebrate achievement, encourage collaboration.	Certificates, small prizes.
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
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

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

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**Activity:** Welcome and Icebreaker Quiz on Juice Box Materials

**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 various materials that make up a juice box.

This will lead into the main workshop theme, "The Journey of a Juice Box," which focuses on exploring how everyday waste, like juice boxes, can be seen as a valuable resource within a circular economy.

**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 CE & the 9Rs Framework

**Description:**

The facilitator will present the Circular Economy model, explaining how it differs from the traditional Linear Economy (take-make-dispose). They will introduce the 9Rs framework (Refuse, Rethink, Reduce, Reuse, Remanufacture, Repurpose, Recycle, Recover), providing practical examples related to the juice box to help participants understand how these principles can be applied to a real product.

**Purpose:** To build a foundational understanding of the Circular Economy and the 9Rs framework, connecting these abstract concepts to a tangible, real-world product.

**Materials:** Slides, projector/whiteboard.

### 3.3. Context Setting – Life Cycle Assessment (LCA)

**Activity:** Introduction to LCA with a Juice Box Case Study.

**Description:**

Participants will learn about Life Cycle Assessment (LCA), a method for evaluating a product's environmental impacts throughout its entire life cycle. The five stages of LCA (Raw Material Extraction, Manufacturing, Transportation & Distribution, Use, and Disposal/Recycling) will be presented using a juice box as a case study to illustrate how environmental impact is measured at each step.

**Purpose:** To teach participants how to evaluate the environmental impact of products and processes, providing them with a systematic tool to analyze sustainability.

**Materials:** LCA stage posters, comparison charts, sample LCA data sheets, slides.

### 3.4. The Juice Box

**Activity:** Introduction to the layers of an aseptic cardboard container.

**Description:**

The facilitator will give an in-depth overview of the materials that make up an aseptic cardboard container (a juice box), showing how its multi-layer design keeps products fresh. This segment will

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use visuals to explain the role of each layer (e.g., paperboard for stability, plastic for liquid integrity, and aluminum foil for oxygen barriers) to prepare for the activity.

**Purpose:** To provide a material overview that serves as the foundation for the activity, making the scientific and engineering aspects of the product clear.

**Materials:** Slides

### 3.5. Aseptic Box Recycling Video

**Activity:** Teams watch the video about juice box layers to create recycled paper.

**Description:**

This process allows participants to apply the principles of the Circular Economy and LCA by turning waste into a new product.

**Purpose:** To provide an overview of circular economy and LCA application.

**Materials:** Videos, Slides

### 3.6. LCA Reflection

**Activity:** Teams complete LCA tables and note ideas to improve sustainability.

**Description:**

After watching the video, teams will complete LCA reflection tables. Teams will analyze the environmental impacts of their upcycling process and brainstorm ideas to further improve the sustainability of their new product.

**Purpose:** To connect theoretical knowledge (LCA), encouraging critical thinking and problem-solving related to sustainability.

**Materials:** Office supplies

### 3.7. Poster Preparation

**Activity:** Create posters showing product sketches, materials used, LCA stages, and CE benefits.

**Description:**

Each team will design a poster to visually communicate their project. The poster will include sketches of their final product, details about the materials used, their completed LCA tables, and a summary of how their project demonstrates the benefits of the Circular Economy.

**Purpose:** To facilitate the communication of complex ideas in a clear, visual format, helping teams synthesize their learning and prepare for their presentations.

**Materials:** Office Supplies

### 3.8. Team Presentations

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

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### **Description:**

Teams will present their posters. They will explain how they applied the concepts of the Circular Economy and Life Cycle Assessment to their project, sharing their insights and ideas.

**Purpose:** To encourage public speaking, teamwork, and the sharing of ideas, fostering a collaborative learning environment.

**Materials:** Posters, slides

### **3.9. Review & Awards**

**Activity:** Awards for CE innovation, LCA insight, and teamwork.

### **Description:**

The workshop concludes with a review and awards ceremony. Recognition is given for "Best LCA Reflection," "Best Team Collaboration," and "Most Innovative Circular Economy Idea." This celebrates participants' achievements, encourages collaboration, and reinforces the key learning outcomes.

**Purpose:** To celebrate participant achievements, recognize creative and insightful work, and reinforce key learning outcomes in a celebratory way.

**Materials:** Certificates, small awards.

### **3.10. Feedback & Wrap-Up**

**Activity:** Reflection worksheets, group discussion, closing remarks.

### **Description:**

Participants will complete feedback forms and engage in a final group discussion to share their key takeaways. The facilitator will provide closing remarks, consolidating the day's learning and encouraging participants to continue thinking about sustainability and their role as "Eco Designers."

**Purpose:** To consolidate learning, gather valuable feedback for future improvements, and provide a positive and reflective end to the session.

**Materials:** Feedback forms

## Equipment & Purchasing Links

1. Office Supplies
2. Poster Papers