1.2 Circular Innovation and Eco-Design

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ETHICS, FINANCE & DIGITAL EMPOWERMENT

WHAT IS CIRCULAR ECONOMY?

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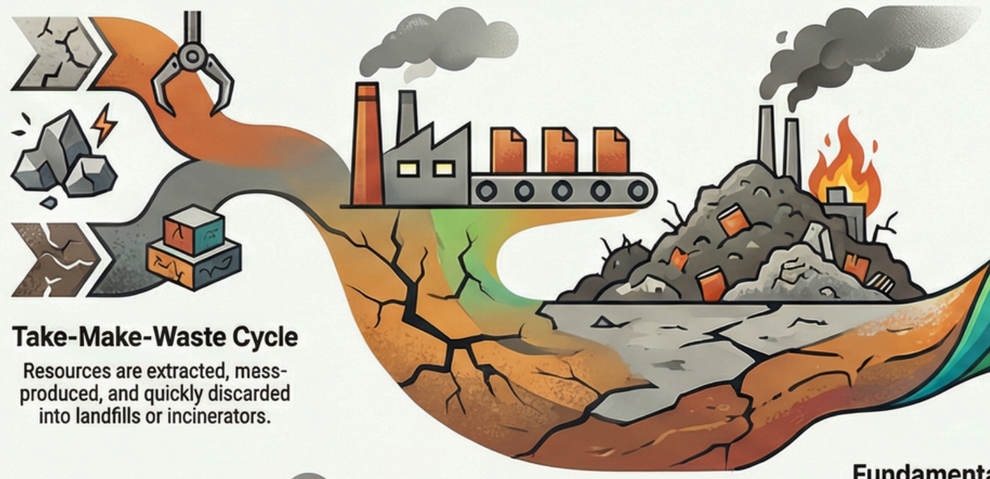
The New Design Paradigm: From Linear Waste to Circular Repair

The Linear Model: A Dead End



Take-Make-Waste Cycle

Resources are extracted, mass-produced, and quickly discarded into landfills or incinerators.

The Circular Future: Design for Life

Remaking as a Radical Act

Transforming discarded materials into new value, such as turning orange peals into clothing fiber.

40% of Global Carbon Footprint

Construction and design decisions contribute significantly to global environmental degradation.

Manufactured Roadblocks to Longevity

Manufacturers use proprietary screws and software locks to intentionally restrict independent repair.

Fundamental Shifts in Design Philosophy

Feature	Linear Economy	Circular Economy
Resource Use	Extractive & Finite	Regenerative & Renewable
Product End-Life	Landfill or Burned	Remade or Composted
Consumer Role	Temporary User	Long-term Maintainer

The Circular Economy

A nature-inspired system where products are reused, remade, and recycled indefinitely.

The Right to Repair Movement

New legislation in 58+ states requires manufacturers to provide tools, parts, and documentation.

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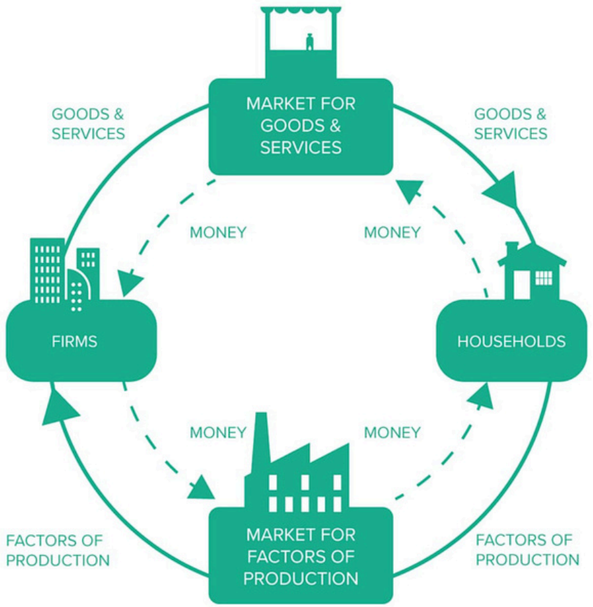
Introduction to circular innovation and ecodesign



Understanding the basics: butterfly diagram and core principles

The key reference point for the circular economy is the “butterfly diagram” created by the Ellen MacArthur Foundation. It illustrates the continuous flow of materials through two major loops: the technical and the biological cycle.

Read full article

Technical cycle:

Products and components remain in circulation thanks to processes such as reuse, repair, refurbishment, and recycling. The goal is to retain the highest possible value of materials and products for as long as possible.

Biological cycle:

Nutrients from biodegradable materials are safely returned to the earth to support the regeneration of natural systems.

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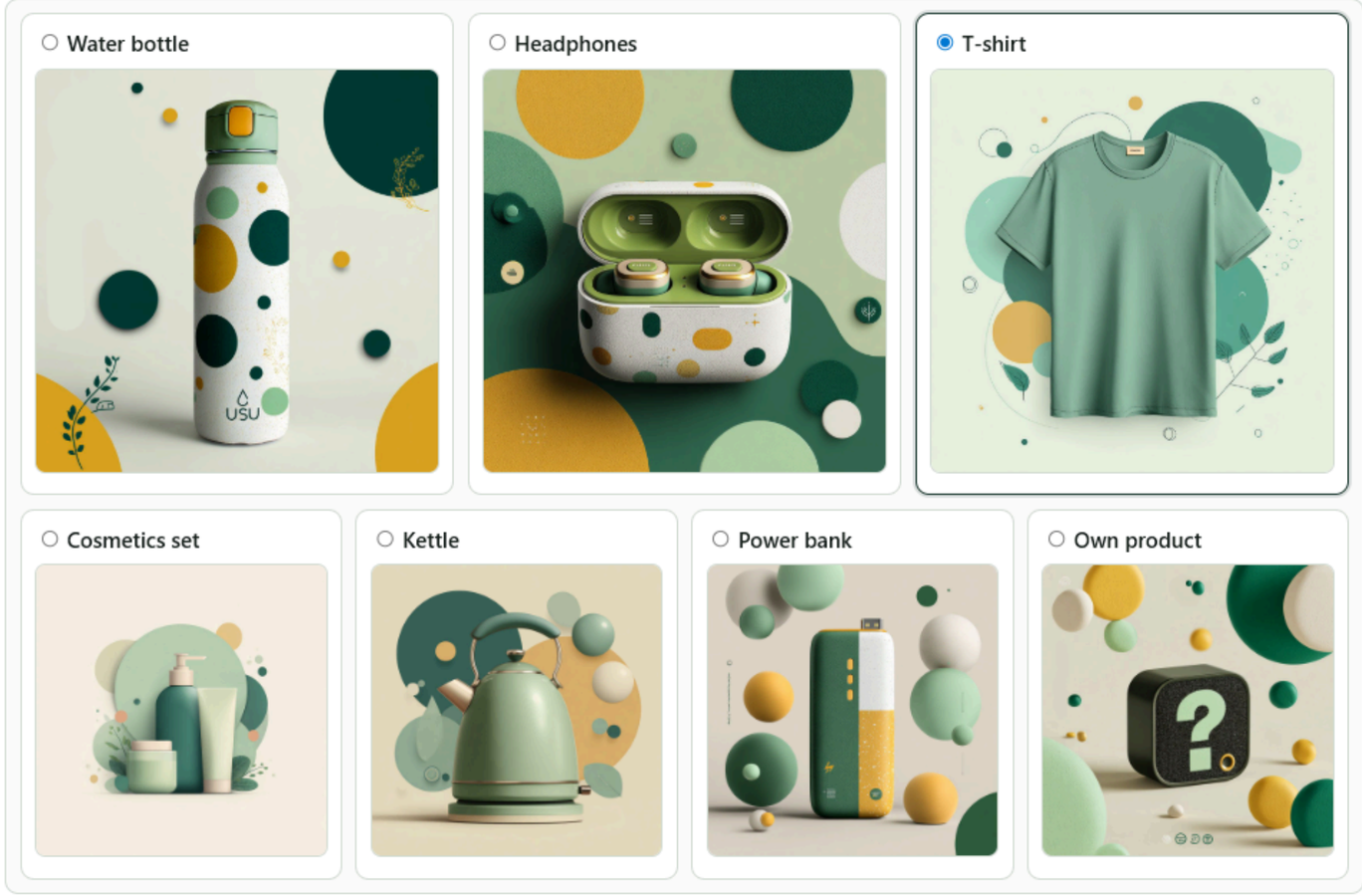
Eco-Design Quick Check

Select one product option

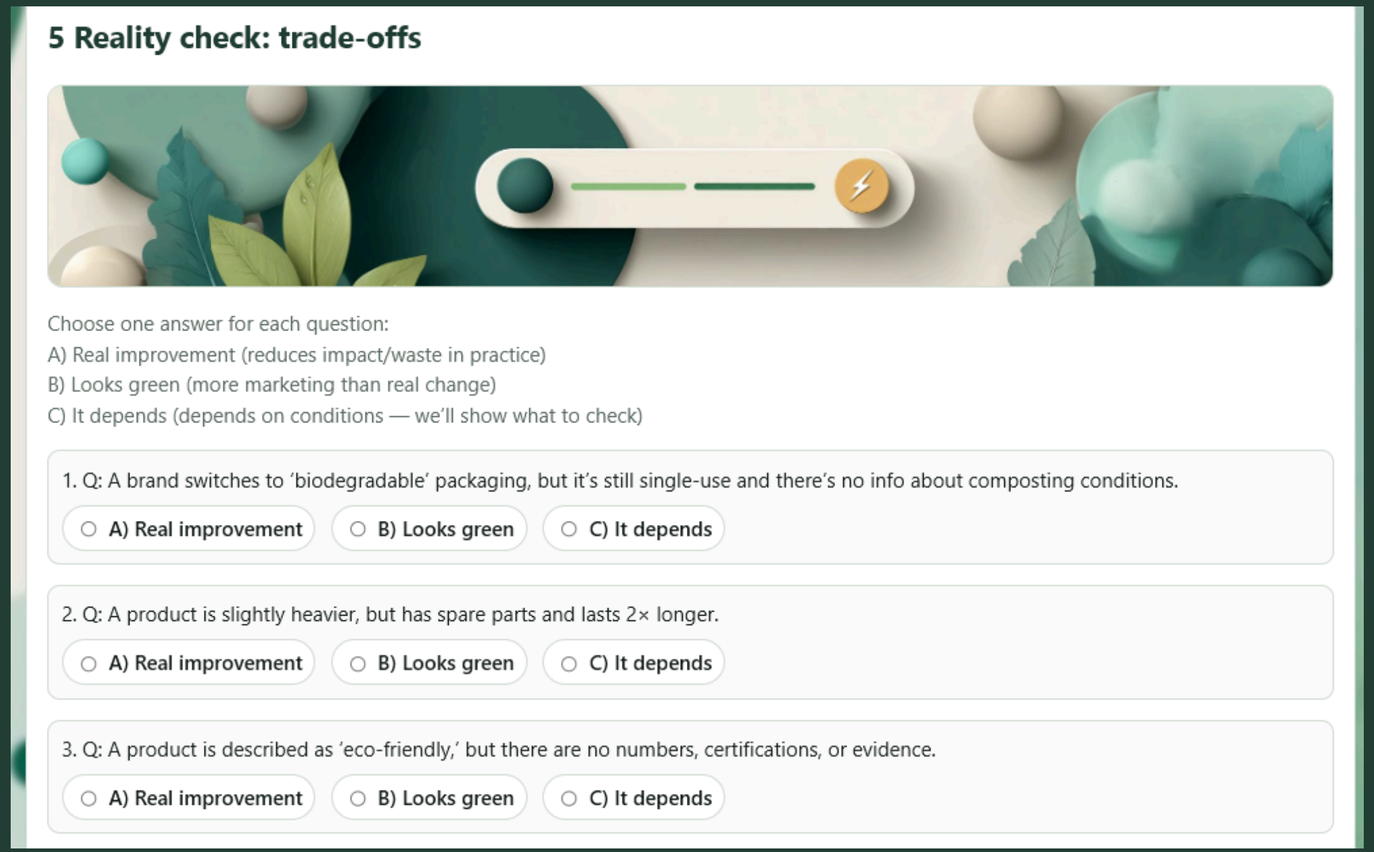


In this task, the participant evaluates an existing product through an eco-design and circularity lens. They select one product to analyse and complete a short “Eco-Design Quick Check” (yes/no/not sure), which produces an initial score and helps identify three key “red flags” — the main barriers to long use (e.g., poor repairability, short lifespan, problematic packaging). Next, they match feature/solution cards to problem categories (repairability, durability, packaging, recyclability) to connect specific design choices with real-world impacts and to better distinguish genuine improvements from greenwashing.

Play in quest

Step 5 - Reality check: trade-offs

Participants complete a short quiz designed to test realistic thinking about eco-design claims. They read everyday scenarios and classify each one as A: a real improvement, B: mostly “looks green” (marketing/greenwashing), or C: it depends. After submitting, the module shows the score and, for “it depends” cases, highlights what conditions should be checked (e.g., collection systems, composting requirements, repair options, lifetime vs efficiency). This step trains learners to spot trade-offs, ask the right verification questions, and avoid misleading sustainability claims.



Play in the game

Static quiz game about start-up development with Eco-Design elements:

In Circular City Quest, you'll learn eco-design by making real product decisions in a startup setting—then immediately seeing the consequences. Each choice reshapes a circular speaker concept across three pillars: Planet (environmental impact), People (user trust and repair culture), and Profit (business viability), showing why sustainable design is always about trade-offs and balance.

Play in the game

THANK YOU!

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