Escape Rooms for Green Entrepreneurship

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Introduction

This educator's guide provides a comprehensive approach to using game-based learning as a tool to introduce and explore green entrepreneurship with young people. By fostering an interactive learning environment, it equips students with entrepreneurial skills, sustainability awareness, and innovative thinking. As the world moves toward a greener economy, understanding sustainable business practices is becoming essential. Through immersive game-based learning, students can engage deeply with environmental challenges and business concepts, enhancing creativity, problem-solving, and teamwork. Moreover, to make learning more relatable and impactful, the guide features case studies and real-world examples, demonstrating how game scenarios can be tied to real-world business concepts and environmental issues. It also provides step-by-step guidance on designing and implementing educational games that effectively convey green entrepreneurship principles.

For game-based learning to be truly effective, educators must embrace interactivity, collaboration, and sustainability-focused teaching. This guide offers practical strategies to support this interdisciplinary approach, ensuring that students not only develop entrepreneurial mindsets but also think critically about sustainability and their role in shaping a more sustainable and environmentally conscious future.

This guide is divided into two interconnected parts, each designed to support educators in different ways. The first part lays the groundwork for green entrepreneurship and introduces tools like sustainable business model canvas, regenerative thinking methodologies, and systemic thinking approaches, to equip students with a structured framework for green entrepreneurship. Building on this foundation, the second part provides practical resources, including worksheets and workshop scenarios, to help educators implement these concepts in interactive and impactful ways. It shows how to integrate game-based learning in sustainability education, covering problem-solving, critical thinking, narrative-driven learning, collaboration, and hands-on interaction. Educators will discover methods such as role-based play, multi-step challenges, and immersive storytelling, all aimed at engaging students in real-world sustainability and business scenarios.

Through the combination of game-based learning and green entrepreneurship, this guide empowers educators to inspire the next generation of changemakers. Youngsters will not only acquire essential entrepreneurial and sustainability skills but they will also develop a deep understanding of environmental issues preparing them to make meaningful contributions to a greener and more sustainable future.

Escape Rooms for Green Entrepreneurship

Foundations of Green Entrepreneurship

Understanding Green Entrepreneurship

Green entrepreneurship puts sustainability at the centre of business. It’s about building ventures that not only make a profit but also tackle environmental and social challenges. Unlike traditional business models focused on short-term gains, green entrepreneurship aims for long-term impact—combining economic success with care for people and the planet.
Green entrepreneurs work to replace harmful “take-make-dispose” systems with solutions that reduce waste, restore ecosystems, and promote circular thinking. Whether it’s through sustainable products, low-carbon technologies, or fair supply chains, it’s about rethinking what it means to create value in today’s world. As we face growing challenges like climate change, biodiversity loss, and inequality, green entrepreneurship offers a hopeful and necessary response. These businesses help build stronger communities and healthier ecosystems, showing that profit and impact don’t have to be opposites—they can go hand in hand.

What sets green entrepreneurs apart is their mindset. They’re guided by purpose, creativity, and systems thinking. Often motivated by a personal connection to the issues they address, they stay resilient and curious, thinking critically about how to create real change. Empathy helps them design solutions that serve both people and the planet.

For instance, green entrepreneurs like Nzambi Matee, founder of Gjenge Makers in Kenya, started her company out of frustration with the plastic pollution she saw daily in Nairobi. Her enterprise transforms waste plastic into durable paving bricks, creating local jobs while addressing a major environmental challenge. Another example is Vinisha Umashankar, a teenage innovator from India who developed a solar-powered ironing cart after noticing how traditional coal-fired carts polluted her neighborhood. Her invention supports cleaner air and greener livelihoods. Similarly, Boyan Slat, founder of The Ocean Cleanup, was personally struck by the scale of ocean plastic pollution he encountered while diving, which led him to engineer one of the world’s most ambitious clean-up systems.

This mindset can be developed through hands-on learning. When young people engage in real projects, use tools like design thinking or systems mapping, and reflect on their work in teams, they begin to see themselves as capable of making a difference. Learning in this way builds both skills and confidence.

Importantly, green entrepreneurship has the potential to inspire young people to see themselves as active agents of change. It connects big global issues—like climate change or social inequality—with tangible, local actions. By working on real-world sustainability challenges, youth can experience how entrepreneurial thinking allows them to take ownership, apply their creativity, and make a meaningful impact in their own communities. This connection between purpose and practice can help build a generation of innovators who are not only aware of global issues but are also empowered to respond with practical, regenerative solutions.

Tools & Frameworks for Green Business

Sustainable Business Model Canvas

A sustainable business model is one that creates value not just for shareholders, but also for society and the environment. It takes into account the long-term consequences of business decisions and aims to create systems that support ecological balance, social equity, and financial resilience. In the context of green entrepreneurship, sustainable business models are a core component—shaping how an idea becomes a lasting force for positive change.
Traditional business models often focus on maximizing short-term profit, with little consideration for environmental degradation or social harm. In contrast, sustainable business models are built around the idea that businesses can be regenerative: restoring natural systems, supporting local communities, and creating inclusive economic opportunities. This shift is essential in a world facing complex global challenges, such as climate change, inequality, and resource scarcity.

The Sustainable Business Model Canvas (SBMC) is a practical tool to help entrepreneurs design businesses that are both impactful and financially sound. It builds on the classic Business Model Canvas but integrates sustainability into every component. Here's how each part can be approached through a green lens:

- Value Proposition: What environmental or social problem are you solving? How does your solution make the world better?

- Customer Segments: Who benefits from your work? Are there underserved or marginalized communities involved?

- Channels & Relationships: How do you reach your customers while minimizing your environmental impact? Are your communications transparent and ethical?

- Revenue Streams: How does the business generate income? Are there opportunities for diverse and inclusive pricing models, or reinvestment in impact initiatives?

- Cost Structure: What are the main costs involved in delivering your product or service? Are there hidden environmental or social costs? Can you reduce or internalize these?

- Key Resources & Activities: What materials, people, and systems are essential? Are they sourced and managed responsibly to minimize harm and maximize positive outcomes?

- Key Partnerships: Who can help you achieve greater sustainability? This could include NGOs, local governments, universities, or ethical suppliers.

- Positive Externalities: What unintended benefits does your business create for the community or environment? For example, creating green jobs or enhancing biodiversity.

- Negative Externalities: What unintended harm might your operations cause? For example, emissions from transportation or digital energy use. How can these be measured, reduced, or offset?

Using the SBMC helps clarify not only how a business works, but how it contributes to a better future. It allows entrepreneurs to align their operations with their values and to communicate clearly with customers, investors, and collaborators about the impact they want to create.

For example, a sustainable food delivery service might use the SBMC to plan everything from compostable packaging and bike-based logistics, to inclusive hiring practices and community-supported agriculture. The canvas can also serve as a living document—something that evolves with new insights, experiments, and feedback.

Importantly, this approach is not limited to high-tech startups or large companies. Small-scale, grassroots ventures can also use the sustainable business model canvas to design projects that are rooted in their local contexts. In fact, being embedded in a community often gives small entrepreneurs an advantage when it comes to understanding real needs and co-creating meaningful solutions.

Educators can support learners in applying the SBMC by turning it into a workshop or group activity. Learners can work in teams to design their own green business ideas, filling out the canvas and presenting their models. This activity strengthens both entrepreneurial and sustainability competencies, including creativity, systems thinking, collaboration, and ethical reflection.

In short, sustainable business models provide a foundation for meaningful, long-term impact. They help entrepreneurs think beyond profit and toward regeneration, inclusion, and resilience. Through tools like the SBMC, young changemakers can turn their visions for a better world into actionable and scalable ventures.

Regenerative Thinking Tools & Methodologies

Regenerative thinking goes beyond sustainability. While sustainable practices aim to minimize harm, regenerative approaches actively seek to restore and revitalize ecosystems, communities, and economies. In green entrepreneurship, this means designing businesses not just to “do less bad” but to “do more good”—to become part of living systems that grow stronger through their interactions.
At the core of regenerative thinking is the belief that everything is connected. Every business decision has ripple effects—ecologically, socially, and economically. By shifting perspective from isolated problems to whole systems, entrepreneurs can unlock new forms of value creation. This shift can be supported by a variety of tools and methodologies designed to help entrepreneurs think in cycles, relationships, and feedback rather than in straight lines and silos.

Living Systems Mapping

One of the most accessible regenerative tools is living systems mapping. This involves visually mapping out the different relationships, actors, and resources that interact within a given system—be it a community, a value chain, or a business model. Unlike traditional stakeholder maps, living systems maps include non-human elements like soil health, water flows, or biodiversity, alongside customers and suppliers.

For example: A regenerative farm-to-table restaurant might map how food scraps are returned to a nearby compost system, which supports a local farm that grows organic produce used in the restaurant’s kitchen. Mapping this loop can help the entrepreneur strengthen partnerships, reduce waste, and increase resilience in the face of supply chain disruptions.

How to implement it: Start by identifying key resources (people, materials, flows) your business depends on. Use sticky notes or drawing tools to show how these interact—where value is created or lost, where relationships are extractive or regenerative. Ask: What connections are missing? What can be reimagined?

Biomimicry

Biomimicry is the practice of learning from nature's time-tested strategies to solve human challenges. Rather than imposing control over nature, biomimicry invites entrepreneurs to observe how living systems manage energy, recycle materials, build resilience, and adapt over time.

For example: A green packaging company might study how leaves protect fruit or how spider silk offers strength with minimal material use. These insights could inform new packaging designs that are compostable, resource-efficient, and durable.

How to implement it: Choose a design or process challenge and ask: How would nature solve this? Resources like AskNature.org can offer biological strategies. Try inviting a biologist into your team's design session, or spend time observing natural systems that mirror your business functions.

Circular Economy Thinking

The circular economy is a foundational methodology in regenerative business. It aims to eliminate waste by keeping materials in continuous use—through recycling, reuse, repair, or redesign. But regenerative circularity goes further: it designs products and systems that restore ecosystems, not just reduce harm.

For example: A green fashion brand might shift from linear production to a model where clothes are made from recycled fibers, designed for disassembly, and collected at end-of-life for remanufacturing. They may even partner with local artisans to upcycle unsold inventory into new designs.

How to implement it: Conduct a materials audit to identify where waste occurs. Rethink your product's lifecycle: How can its value be extended or repurposed? Start small—perhaps by introducing a take-back scheme or switching to modular designs. Think in loops, not lines.

You could also coordinate a hands-on upcycling workshop, or organize a student-led flea market where underused clothes are sold, swapped, or redesigned. These activities help bring circular principles to life and empower young people to explore entrepreneurship through creativity and reuse.

Holistic Decision-Making

Regenerative entrepreneurs practice holistic decision-making, weighing each choice not only by short-term financial gain but also by its long-term impact on ecosystems, workers, and communities. This requires slowing down, involving multiple voices, and staying open to feedback.

For example: A regenerative tourism company might decide not to expand into a fragile ecosystem, despite economic incentive, after consulting with local residents and ecologists. Instead, they invest in improving the quality and sustainability of existing offerings. A real-world example is EcoCamp Patagonia in Chile, which provides low-impact accommodation using renewable energy and composting toilets. Their model emphasizes connection with nature, community engagement, and ecosystem protection—demonstrating that tourism can thrive without extraction.

How to implement it: Use "decision canvases" or team reflections to ask: Who and what is affected by this decision? What are the consequences in 10, 20, 100 years? Involve stakeholders early and often, especially those typically excluded.

Bringing Regeneration Into Everyday Business

Regenerative methods aren't just for niche eco-businesses—they can be embedded into daily routines, small decisions, and strategic planning. Here are a few simple starting points:

- Daily practice: Begin meetings with a systems check-in—what's happening in the world, your community, or supply chain that might affect your work today?
- Design phase: Use a regenerative checklist when designing new products: "Is this recyclable, compostable, or repairable? Does it restore something that has been lost?"
- Hiring: Consider "cultural and ecological fit" when hiring. Ask candidates how they think about their work in relation to people and planet.
- Partnerships: Collaborate with organizations outside your usual industry—like environmental NGOs, urban gardens, or local schools—to co-create regenerative initiatives.
- Learning by doing: Facilitate student-driven actions like clothing swaps, composting setups, or school-based repair cafés to embed regenerative thinking into education.

Incorporating regenerative thinking is a mindset shift as much as a strategy. It invites businesses to view themselves as part of living systems—interconnected, adaptive, and full of potential. Green entrepreneurs who apply these tools not only build stronger, more resilient ventures—they become agents of restoration in a world that urgently needs renewal.

The Ecomodel & Systemic Thinking

Systemic thinking is a way of understanding the world as a set of interconnected systems—where economic, ecological, and social elements constantly influence one another. Rather than isolating problems or focusing on individual components, systemic thinking helps us see patterns, relationships, and feedback loops. In the context of green entrepreneurship, this approach is crucial. It reminds us that a business does not operate in a vacuum, but within a living system that includes natural resources, communities, policies, and cultures. By adopting a systemic lens, entrepreneurs can better understand the root causes of sustainability challenges and identify opportunities for meaningful, long-term change. It helps shift the focus from quick fixes to regenerative strategies that support the health of the whole system. This is where tools like the Ecomodel come into play.

The Ecomodel encourages entrepreneurs to design ventures that align with the principles of regeneration, resilience, and circularity. It emphasizes inclusive decision-making, responsiveness to change, and long-term impact. Stakeholders—including local communities, workers, and ecological actors—are seen as co-creators rather than bystanders. The Ecomodel pushes businesses to ask not only “What value do we create?” but also “What systems are we part of—and how do we affect them?”

To bring this to life, we can apply the Eco-Cycle Model—a framework inspired by natural cycles that helps us reflect on how systems grow, evolve, and renew themselves. The model includes four phases:

- Birth (Exploration): New ideas emerge—student-led startups, food collectives, or innovation labs testing fresh approaches. This phase is defined by creativity and experimentation.

- Growth (Exploitation): Viable ventures scale and refine their business models. Entrepreneurs face the challenge of growing while staying true to their values.

- Maturity (Conservation): Businesses stabilize, institutionalize sustainable practices, and reach broader markets. But maturity can also bring rigidity, requiring vigilance to stay adaptive.

- Release (Creative Destruction): Outdated models are discarded, making space for new ones. Green entrepreneurs disrupt harmful norms and propose regenerative alternatives.

This cycle reflects the reality of green entrepreneurship: it is dynamic, non-linear, and deeply contextual. Entrepreneurs navigate constant change, and their ability to adapt, collaborate, and reflect is as important as their initial idea.

In a time marked by environmental collapse and social fragmentation, the Ecomodel offers more than a framework—it offers hope. Green entrepreneurs are showing that transformation is possible. They are building businesses that heal rather than harm, regenerate rather than extract, and connect rather than isolate.

Supporting green entrepreneurship means engaging in systems change. It calls for bold shifts in how we educate, fund, and govern business—recognizing that regenerative ventures don't grow in isolation, but within rich and complex ecosystems.

To truly cultivate this change, we need to seed new ideas, accompany entrepreneurs through uncertainty, and remain open to renewal—both in business models and in mindsets.

The eco-cycle reminds us that evolution is not linear. It's cyclical, dynamic, and often messy. But it's also full of possibility. Every ending makes space for something new. Every disruption holds the potential for reimagining.

In a world urgently in need of transformation, green entrepreneurship offers not just solutions—but a way forward. Let’s continue to support those who dare to build what doesn’t yet exist.

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Practical Applications - Game-based learning for Green Entrepreneurship

Method 1: Problem-Solving & Critical Thinking

Method:

This method will help learners develop problem-solving and critical thinking skills through the analysis of data, logical reasoning, pattern recognition, and decision-making. The activity begins with participants investigating a local environmental issue, followed by brainstorming sessions to integrate these challenges into an action plan. Over six weeks, learners move from problem identification to solution development. They analyze data, brainstorm creative interventions, and propose targeted strategies. They visualize their ideas through tools like maps, infographics, and revise it based on constructive feedback from peers or local experts. Through the iterative development of deliverables, youths build practical solutions that drive individual action to green entrepreneurship. The method ends with a reflection on the project and its measurable impact.

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Title: Identifying Climate Issues and Designing Impactful Solutions	
Duration:	6 weeks (2 hours per week)
Age:	18 - 26 years
Group size:	4 - 6 participants per team
Aim:	To equip learners with skills to address climate challenges through real-world data analysis, connecting theoretical concepts and research with logical reasoning.
Objectives:	• Identify and investigate a local climate or sustainability challenge using research and interviews. • Apply data and stakeholder feedback to design adaptable solutions. • Use critical thinking and problem-solving strategies to prioritize decisions and interventions. • Communicate proposals clearly and adapt them based on peer and expert feedback. • Reflect on the impact of their work in the context of community, environment, and entrepreneurship.
Material needed:	Access to research databases (e.g., local government open data portals, expert's interviews, etc.) Online survey tools (e.g., Google Forms) Mapping tools (e.g., Google My Maps, ArcGIS) Spreadsheets for data analysis and collection Presentation software (e.g., Canva, PowerPoint, etc.)

Method Outline:

Week 1:

In the first week, participants form groups and are required to research a climate issue within their local environment. This research can be completed online (on social media or otherwise) or by consulting local newspapers. Once the learners have chosen an issue, they investigate the barriers to its solutions through online research and contact the relevant stakeholders. By engaging with stakeholders, they gain an in-depth understanding of the problem.

For example, participants might aim to reduce CO2 emissions in their city. By walking around, interacting with citizens and municipal representatives, they might identify several contributing factors:

1. Due to limited public transportation options or lack of safe bike lanes, people depend highly on cars and use it even for short-distance travel.
2. Rising emissions in central areas, largely due to poor traffic management and persistent congestion.
3. Low public awareness or willingness to adopt alternative transport modes, due to safety concerns and/or cultural habits.

To unlock challenge 1 and complete week 1, participants need to submit a problem statement backed by 3 data points (e.g., % of total emissions from car use, number of bike lanes per km^2, percentage of commuters using bicycles to go to work, etc.). By doing this, participants unlock access to Week 2's challenge (planning phase).

Week 2:

Once the participants have clearly defined the climate issue, they now switch to problem-solving mode. Week 2 begins with a brainstorming session where each group discusses their findings from research, interviews and “fieldwork”. They reflect on all their collective data and ask themselves the “Why/What If/How questions”, in that sequence. For example, if participants are trying to understand how to reduce CO2 emissions by promoting the use of bicycle they could ask themselves:

1. Why do so few people choose to cycle in our city?
2. What if my neighborhood had a safe cycle route connected to major points?
3. How can we convince people to use their bikes more ?

Following this brainstorming process, participants are also (if needed) introduced to real or publicly available additional datasets (related to their research topics). For encouraging cycling and reducing CO2 in big city, the dataset could be on “urban transportation habits, road safety incidents, emission levels by district, and existing cycling infrastructure”.

Using these insights, each group must identify and prioritize the area in their city where their proposed intervention (e.g., a cycle plan) would have the most significant climate and community impact. Thus, to unlock challenge 2, they submit a prioritisation map that highlights where their solution will be implemented and support their decision with evidence (need to prove that their decision is a data-driven one).

This stage strengthens data literacy, logical reasoning, and decision-making skills. Skills that are essential to launch a business and to target climate issue.

Week 3 & 4 :

In the following two weeks, the learners focus on turning their research and data insights (e.g., prioritisation map) into a concrete action plan. They keep refining their understanding of the problem while developing an intervention strategy. This task can be adapted to the local context and the group's skill level.

For example, if we take the issue of CO2 emissions in big city,

- Beginners could focus on creating a visual campaign (e.g., posters, infographics, or social media posts using tools like Canva) that promotes safe cycling and highlights the environmental impact of switching from cars to bikes.
- More advanced participants could build an interactive map or dashboard visualizing proposed bike routes, usage projections, and CO2 savings.

In this phase, participants develop their creative and analytical thinking. They connect actions to outcomes, think critically about implementation, and prepare themselves for feedback and iteration in Week 5.

Week 5:

One of the final steps is to present their action plan and designs to classmates and/or local experts. The aim here is for learners to gain feedback on their productions. For example, in the case of promoting bicycle, they might present their work to urban planners or a local community cyclists group. The feedback they gather will focus on the effectiveness and impact of their action plan and deliverables. To unlock the last challenge (Week 6), they need to use feedback to revise their designs, their action plan and recalculate its impact (e.g., lower budget, different target group, different districts for implementation, etc.). This could involve adjusting their message, refining their target audience, or shifting implementation strategies. What is important here is to enable participants to improve their work, understand their "weaknesses" but above all continue applying their strengths while carrying out their responsibilities. Thus, the focus should be on providing positive feedback.

Week 6:

The last week centres around refining the action plan and its deliverables based on the feedback from week 5. Once the design has been finalised, participants can reflect on the process by writing a piece on:

- The climate issue they chose;
- How they used data and logic to guide their decisions;
- How their final proposal addresses the issue;
- The way their work would be able to inspire real-world change and how it supports green entrepreneurship.

A project about reducing CO2 emissions through cycling could educate participants on how to critically engage with real-world transportation challenges, identify data-driven solutions, and advocate for sustainable urban mobility. This work could raise awareness, support community engagement, and influence policy changes that promote greener, healthier cities.

Method 2: Narrative-Driven Learning

Method:

This method aims to help learners understand the stakes of climate injustice and the importance of global cooperation. Through a collaborative storytelling approach and interactive decision-making sheets, students negotiate and reflect. As leaders of two fictional regions (Northlandia vs Sudelia), they navigate real-world inspired climate crises and face moral, strategic dilemmas that will shape the story and “the future of their planet”. Through this narrative-driven learning method, participants build strong emotional connection and long-term knowledge retention.

Title: Exploring Climate Inequalities Through a Narrative-Driven Game	
Duration:	80 – 120 minutes (can be split into 2 sessions)
Age:	14+ years
Group size:	10 – 30 students divided into two different groups
Aim:	To raise awareness about climate inequalities and encourage to take actions against these inequalities
Objectives:	• To help participants in understanding how climate change affects countries differently • To foster collaboration on finding fair climate solutions • To reflect on real-world systems of power, justice and cooperation • To consider and recognize these systems and their role in historical emissions and wealth inequality
Material needed:	Printed story chapters Student's Narrative Worksheet as decision tracker and reflection enhance (provided below) Projector (optional for visual representation and immersive content) Whiteboard to track time and decisions (see annex)

Game Structure:

1. Icebreaker and energiser game (5 - 10 minutes):

Begin with an interactive activity to energise participants, encourage collaboration, and introduce the topic. For example, students could move to opposite parts of the room if they “agree”, “disagree” to statements like:

- "I think climate change is the biggest threat to humanity."
- "Technology will solve everything."
- "Every country is equally responsible for climate change."

2. Contextualization and Game setup (10-15 minutes)

Instructions:

- Inspired by real-world dynamics, divide class into two region-based groups:

Northlandia: Inspired by high-income Global North countries (e.g., US, Germany, Japan). This region is wealthy, technologically advanced, but historically responsible for high carbon emissions. In the future, they might face global warming consequences but remains relatively insulated (for now).

Sudelia: Inspired by Global South countries that are vulnerable to climate change (e.g., Bangladesh, Kenya, Bolivia). Despite contributing the least to global emissions, this region has already experienced severe consequences from climate change (floods, droughts, food insecurity).

- Hand out Narrative Decision Sheets for taking notes and tracking decisions (see annex)

- Read the Prologue aloud

Prologue:

“In the year 2050, the world is no longer just changing (it is unravelling). Storms now have names like countries. Droughts stretch for years. Floods swallow cities whole. Crops die, power grids fail, families flee.

From the ashes of a warming world, two blocs have emerged:

To the towering north lies Northlandia, a shimmering metropolis powered by clean energy, advanced technology, and insulated privilege. Its people live in comfort (cool homes, full markets, and stable institutions). They speak of climate change as a future risk, something to prepare for… someday.
Far to the south, beneath poisoned skies and rising seas, lies Sudelia. Once lush and thriving, the city now chokes on smoke and salt. Droughts, storms, and floods ravage homes. Families flee burning forests. Crops vanish beneath boiling sun and drowned soil. Yet the world blames Sudelia for asking for help.

The two cities were once connected: trade, science, culture. They shared everything. But as temperatures rose, so did walls.
Now trust is no more.
North blames South.
South demands accounts.
And both feel the ground slipping beneath their feet.
They must decide: Will they unite before collapse? Or cling to power, even as the skies fall?

Our planet is at a tipping point and, as the next generation of leaders, you are at the centre of this fragile future: Will you fight for your own people or for the planet?”

NB: In this game, you are the voice of your region. The choices you make can heal or divide. Every decision is a story. Every story leaves a legacy.

Tips: to make the entire experience even more immersive, consider generating visuals of the two regions portraying contrasting imagery: luxury city vs overpopulated and crumbled one. You can try collaborative drawings, image search to create mood boards, or let students sketch them after setup (20 minutes). After the prologue, you can start introducing the story chapter by chapter. It is important to give students a moment to pause and reflect between each chapter (5 min). This will help them process the stakes and consider their next choices carefully.

3. Chapter 1 (10 - 15 minutes): “The exodus after the storm”

Setting the Scene: Tornadoes tears through southern Sudelia. Winds tear homes from foundations. Hospitals are overwhelmed. Entire rural communities vanish overnight. Sudelia’s leaders call for help.

Crisis Prompt for Students: Sudelia has just suffered its third Category 5 cyclone this year. 500,000 people are displaced. The Sudelia Alliance asks Northlandia for emergency funds and temporary shelter for climate refugees.

Decision Time:

Northlandia choose one action:

- Send Full Emergency Aid & Welcome Refugees → +2 Trust, -1 Resources
- Send Aid, No Refugees → +1 Trust, -1 Global Stability
- Give Loans Through Private Companies → -1 Trust, +1 Resource
- Propose Trade Deal in Exchange for Aid (before helping) → +1 Resources, -1 Time

Sudelia choose one action:

- Publicly Thank Northlandia, Accept Aid → +1 Trust, +1 Global Stability
- Ask for Climate Reparations → -1 Trust, +2 Resources
- Launch Climate Justice Campaign Online → +1 Trust, +1 Time
- Blame Northlandia in World Media → -1 Trust

4. Chapter 2 (10 - 15 minutes): “Fire on the Horizon”

Setting the Scene: Wildfires scorch Northern forests. Crops perish. Power grids flicker. For the first time, Northlandia feels nature’s bite. Sudelia offers forest protection in exchange for tech aid.

Crisis Prompt for Students: Northlandia faces rolling blackouts and economic panic. Sudelia suggests: “We’ll protect what’s left of our rainforests if you share clean energy tech.”

Decision Time:

Northlandia choose one action:

- Share Solar Tech in exchange of Forest Protections → +2 Trust, -1 Resources
- Launch Emergency Fire Response Alone → -1 Global Stability, +1 Time

Sudelia choose one action:

- Agree to forest-tech deal → +1 Trust, +1 Global Stability
- Send public message of support → +1 Trust, +1 Global Stability
- Ask for tech with no trade → -1 Trust, + 1 Resources

5. Chapter 3 (10 - 15 minutes) : “The Water Divide”

Setting the Scene: A drought leaves rivers bone dry. Countries fight over water access. Sudelia pleads for global water-sharing. Northlandia debates intervention: diplomacy or defense?

Crisis Prompt for Students: Drought causes fighting over rivers. The UN urges water-sharing.

Decision Time:

Northlandia choose one action:

- Call for a water treaty → +1 Global Stability, +1 Time
- Join treaty talks → +1 Trust, +1 Stability
- Stay out of it → -1 Trust, + 1 Resource
- Fund new clean water project for Sudelia → +2 Trust, -1 Resource

Sudelia choose one action:

- Call for a water treaty → +1 Global Stability, +1 Time
- Take water by force → -1 Trust, +2 Resources
- Gather support in UN → +1 Time
- Blame Northlandia in the media → -1 Trust

6. Debriefing and reflection (10 - 15 minutes): “The Final Summit”

Debriefing : At the end of Chapter 3, calculate the final scores for each variable and generate a quick matching conclusion based on the results. For example, If Trust is high (6+ total) and Global Stability is high (6+), you could say that "despite the odds, your leadership sparked global cooperation. Northlandia and Sudelia formed a fragile but real alliance. Climate justice feels possible and the planet has a fighting chance."

Discussion points:

1. Unity of groups & Fairness:

-How did your group make decisions? Was there conflict?
-Were your actions more focused on protecting your own group or helping others?

2. Real-World Dynamics

-Discuss how this game reflects real global dynamics between the Global North and South.
-Ask participants if they notice similarities with climate negotiations and introduce them to contemporary climate meetings like COP.
-Ask participants “what does justice mean in a warming world?”, altogether define “climate justice” and provide concrete examples to illustrate the definition.

3. Ethical Dilemmas

-Is it fair to expect countries like Sudelia to sacrifice when they contributed the least to the problem?
-Should nations most responsible for emissions be required to help those affected?

7. Implementation tips for teacher:

- Encourage real-world comparisons at every step.
- Pair the game with a lesson on: COP conferences, Climate Justice, Fair Trade, etc.

Annex

Narrative Decision Sheet

Student Name: _____

Group: □ Northlandia (Global North) □ Sudelia (Global South)

Chapter 1: The exodus after the Storm

Crisis Summary: A massive cyclone hits Sudelia. Refugees flee. Emergency aid is needed.

- What choice did your team make?

Northlandia
□ Provided full emergency aid and accepted refugees (+2 Trust, -1 Resources)
□ Sent aid but refused refugees (+1 Trust, -1 Global Stability)
□ Provided loans through private companies (-1 Trust, +1 Resource)
□ Proposed a trade deal before offering aid (+1 Resources, -1 Time)

Sudelia
□ Publicly thanked Northlandia and accepted the aid (+1 Trust, +1 Global Stability)
□ Demanded climate reparations (-1 Trust, +2 Resources)
□ Launched an online climate justice campaign (+1 Trust, +1 Time)
□ Blamed Northlandia in global media (-1 Trust)

Group Reflection:

- What motivated your group's decision? Was this choice about justice, survival, or strategy? Explain your choice and use examples from your region's situation.
- What about your decision :

□ It was fair □ It was realistic □ It was unjust □ I had no say

Narrative Decision Sheet

Student Name: _____

Group: □ Northlandia (Global North) □ Sudelia (Global South)

Chapter 2: Fire on the Horizon

Crisis Summary: Wildfires strike Northlandia. Sudelia offers forest protection in exchange for clean energy technology.

- What choice did your team make?

Northlandia

□ Shared solar/clean energy tech (+2 Trust, -1 Resource)

□ Handled crisis alone without external deals (-1 Global Stability, +1 Time)

Sudelia

□ Accepted forest-tech deal (+1 Trust, +1 Global Stability)

□ Sent a public message of solidarity (+1 Trust, +1 Global Stability)

□ Asked for tech without offering forest protection (-1 Trust, +1 Resource)

Group Reflection:

Do you think the other side cooperated fairly?

□ Yes □ No □ Partly

Short reflection: What would you have done differently?

Narrative Decision Sheet

Student Name: _____
Group: □ Northlandia (Global North) □ Sudelia (Global South)

Chapter 3: The water divide

Crisis Summary: A megadrought causes widespread water shortages. Sudelia proposes global water-sharing. Northlandia must choose between diplomacy and isolation.

- What choice did your team make?

Northlandia
□ Called for a global water-sharing treaty (+1 Global Stability, +1 Time)
□ Joined water-sharing talks (+1 Trust, +1 Stability)
□ Stayed out of the conflict (-1 Trust, +1 Resource)
□ Funded clean water projects in Sudelia (+2 Trust, -1 Resource)
Sudelia
□ Called for a global water treaty (+1 Global Stability, +1 Time)
□ Took water access by force (-1 Trust, +2 Resources)
□ Gathered support in the UN (+1 Time)
□ Blamed Northlandia in international media (-1 Trust)

Group Reflection:
Key proposal from your group:
“We will _____,
if the other side _____.”

- Did both sides agree on a deal?

□ Yes, mostly □ Partly □ No

- Was the solution just for both sides? Why or why not?
- Did your solution promote justice or deepen divides?
- How did your position (powerful vs vulnerable) affect your options?

Final Personal Reflection
“One thing I learned_____.
_____.
_____”.
(write 2–3 sentences)

Whiteboard tracker

Variable	Starting Value	Current Value
Trust	5	X
Resources	5 per region	X / X
Global Stability	5	X
Time	3	X

Each decision in a chapter adds or subtracts points (e.g. +1 Trust, -2 Resources). Trust, Global Stability, and Time are shared variables. Resources are tracked per region.

NB: the number of variables could impact the game. For example, If Trust is more than 8 (Trust > 8), more collaboration is possible and thus global stability improves by 2 (+2 Global Stability). If Time reaches 0 (Time = 0), the game is over.

Method 3: Collaborative & role-based play

Method:

In this interactive workshop, students take on the roles of various stakeholders in the green entrepreneurship ecosystem to collaboratively develop a sustainable start-up. The simulation mirrors real-world dynamics, promoting systems thinking, communication and entrepreneurial mindsets.

Title: GreenQuest, co-creating a sustainable start-up	
Duration:	5 - 6 hours (can be divided into two 2.5 – 3 hour sessions or one full-day workshop)
Age:	13 - 16 years old (adaptable for other age groups)
Group size:	20 - 30 students (flexible)
Aim:	To deepen students' understanding of sustainable entrepreneurship and empower them to think critically, collaborate across disciplines and become proactive changemakers in their communities.
Objectives:	• Understand the roles of different stakeholders in green entrepreneurship • Apply sustainability principles in business planning • Practice collaboration, negotiation and problem-solving • Develop and present a green start-up pitch
Material needed:	Role cards with descriptions and objectives Sustainable business plan templates Worksheets for idea brainstorming, SWOT analysis, budgeting Presentation tools (poster boards, slides, markers, etc.) Evaluation rubrics

Method Outline:

Assign students to one of the following roles. Each role has a mission, unique knowledge and specific contributions to the start-up project.

1. Green entrepreneur – leads the team in developing a business idea focused on environmental impact.
2. Environmental scientist – provides data on ecological issues and sustainable practices.
3. Policy maker – advises on regulations, incentives and environmental policy.
4. Finance manager – handles budget planning and funding strategies.
5. Marketing specialist – develops branding, outreach and customer engagement plans.
6. Community liaison – represents local concerns and ensures the solution addresses community needs.

Part 1: kick-off & role assignment (30 minutes)

Welcome session (10 min)

- Brief talk: “What is Green Entrepreneurship?”
- Show a short video on a real-world eco-start-up.

Role cards distribution & team formation (10 min)

- Distribute printed role cards.
- Assign or let students choose roles.
- Form diverse teams of 6 with each role represented.

Icebreaker activity: climate invention (10 min)

- “If you could invent one product to fight climate change, what would it be?”
- Quick sharing within teams.

Part 2: ideation & planning (1.5 hours)

Identify an environmental issue (15 min)

- Each team chooses a real-world environmental problem (e.g., plastic waste, food waste, air pollution, energy use).

Brainstorm sustainable business ideas (25 min)

- Use prompt cards and a guided worksheet.
- Each role must weigh in on initial feasibility.

Draft business plan (50 min)

Use a business plan template with sections:

- Problem & target market
- Product/service
- Sustainability impact
- Budget & revenue model
- Policy & legal factors
- Community impact
- Marketing strategy

Part 3: development & strategy (1.5 hours)

SWOT Analysis (20 min)

Strengths, Weaknesses, Opportunities, Threats – led by Finance Manager and Green Entrepreneur.

Budgeting and marketing plan (30 min)

- The Finance Manager drafts costs and funding.
- Marketing Specialist maps out branding and campaign.

Create visuals (30 min)

- Use Canva, Google Slides, or poster paper to prepare visual aids.
- Aim for clarity, creativity and impact.

Peer Review (10 min)

- Teams rotate for 1 round of peer feedback using a checklist.

Part 4: final pitch preparation (1,5 hours)

Review peer feedback (20 min)
Each team starts by reviewing notes and suggestions from the peer review session. Prioritize critical points such as:

- Confusing business elements
- Unclear sustainability benefits
- Incomplete visuals or missing data

Revise key sections of business plan (20 min)
Make adjustments to:

- Problem statement (ensure clarity and specificity)
- Solution and unique value proposition
- Financial assumptions or budgets (simplify if too complex)
- Sustainability and community impact statements

Update visual aids (20 min)
Enhance posters or slide decks by:

- Ensuring a clean, logical flow
- Adding icons, charts or visuals (Canva or similar tools)
- Making key numbers or messages bold or larger
- Correcting any spelling/grammar issues

Rehearse delivery (30 min)
Practice the pitch in full with all visuals, emphasizing:

- Clear voice and pace
- Smooth transitions between speakers
- Eye contact and audience engagement
- Adjust transitions, clarify confusing parts or reduce content if over time.
- Practice difficult segments again as needed.

Part 5: pitch presentations & reflection (1 – 1.5 hours)

Pitch presentations (5 – 7 minutes/team)

- Delivered to a panel of judges (teachers, community members, entrepreneurs).

Q&A + feedback (2 – 3 minutes/team)

- Judges ask role-specific questions and provide insights.

Student reflection (15 minutes)
Individual form prompts:

- What did you learn about sustainability?
- How did your role contribute?
- What challenges did your team overcome?

Group debrief (optional)

- Guided discussion: “What makes an idea truly sustainable and inclusive?”

Assessment suggestions

Criteria	Score (1 - 5)
Creativity & innovation	...
Feasibility	
Environmental impact	
Teamwork & role balance	
Presentation skills	

Role performance (by facilitator or peers)

- Fulfilled responsibilities
- Contributed unique knowledge
- Engaged in collaboration

Reflection assessment

- Personal insight
- Understanding of sustainability concepts
- Clarity and thoughtfulness

Extension ideas

Mentorship integration

- Invite local eco-start-up founders or scientists to give advice.

Public exhibition

- Turn it into a “Green Expo” with booths or video showcases.
- Showcase ideas at a school exhibition or local community event.

Digital delivery

- Use tools like Miro (for planning), Canva (for visuals), and Jamboard (for brainstorming).

Thematic days

- Focus on one issue (e.g., Ocean Plastic Day) to streamline problem selection.

Tips for success

- Encourage role play immersion – students may dress or speak like their character.
- Promote role flexibility: allow switching if needed to match learning styles.
- Incorporate real-world case studies for each role to deepen context.
- Provide scaffolding tools such as brainstorming prompts and checklists.
- Use graphic organizers, checklists and timelines for structure.
- Foster inclusivity by allowing students to choose or swap roles that suit their strengths.

Conclusion

This workshop scenario deepens students' understanding of sustainable entrepreneurship and empowers them to think critically, collaborate across disciplines and become proactive changemakers in their communities.

Method 4: Multilayered-step & layered challenges

Method:

This immersive workshop challenges students to tackle environmental problems through a series of layered tasks, a sequence of interconnected challenges where each builds on the previous toward designing a circular economy strategy. The experience encourages critical thinking, systems design and entrepreneurial action with a sustainability lens.

Title: GreenQuest EcoLoop – from Waste to Wealth	
Duration:	5 - 6 hours (single workshop or two-part session)
Age:	13 - 16 years old (adaptable for other age groups)
Group size:	20 - 30 students (flexible)
Aim:	To enable students to experience layered problem-solving in action, gradually building from understanding waste to proposing sustainable business ideas.
Objectives:	• Discover the principles of a circular economy • Define different types of waste and their impacts • Design sustainable solutions using multi-step problem-solving • Develop an eco-innovation concept based on real-world environmental challenges
Material needed:	Waste type cards or real-world samples (cleaned/ reusable) Case study handouts Visual mapping templates (fishbone diagram, journey map) Challenge layer worksheets Prototyping materials (paper, cardboard, markers, etc.) Presentation tools (poster boards or digital slides) Evaluation rubrics and reflection sheets

Method Outline:

Part 1: introduction & warm-up challenge (30 minutes)

Brief introduction (10 min)
Use visuals or a short video to explain:

- What is a circular economy?
- Why is “waste” a design flaw in linear systems?
- Key principles: Design out waste, keep materials in use, regenerate natural systems

Game: Trash sort showdown (15 min)

- Teams are given cards or real-world waste items.
- Race to sort items into categories: Organic, Recyclable, Hazardous, Non-recyclable, etc.
- Use a timer and points for speed and accuracy.
- Winner gets eco-themed badges or prizes.

Debrief (5 min)

- Discuss the consequences of poor sorting (pollution, health risks, economic costs).
- Link this to broader systems thinking: how waste reflects our economic and design choices.

Part 2: problem exploration (1 hour)

Case study analysis (15 min)
Choose a relevant local or global waste issue:

- e.g., food waste in school cafeterias, single-use plastics, fast fashion
- Provide short articles, photos or infographics

Root cause mapping (25 min)
Teams use a fishbone diagram or problem tree to break down causes:

- Economic
- Social behavior
- Policy gaps
- Design flaws

Problem statement (20 min)
Teams formulate a clear, challenge-based statement:
“How might we reduce [waste type] in a way that benefits both the environment and the economy?”

Part 3: innovation sprint (1.5 hours)

Each team generates solution ideas that apply circular economy principles (reuse, redesign, remanufacture, recycle) using a "layered challenge" structure:

Layer 1: Redesign the product for sustainability (20 min)

- Rethink the original product/material to reduce waste at the source.
- Example: Replace plastic cutlery with edible or compostable alternatives.

Layer 2: Develop a reuse or recycling loop (30 min)

- How can the material be reused, collected, or repurposed?
- Design a system for collection, sorting, or product return.

Layer 3: Identify business value (20 min)

Identify how the idea creates economic and social value:

- Cost savings
- Green jobs
- Community well-being

Outline a pitch that explains proposed solution (20 min)

Teams begin outlining their EcoLoop Business Pitch, describing:

- The problem
- Their circular solution
- Its value for people, planet, and profit

Use a worksheet or digital template to structure the pitch.

Part 4: solution development & prototyping (1 hour)

Create a prototype or visual concept (30 – 40 min)

- Poster, infographic, simple physical model, or digital mockup (e.g., Canva, 3D tool, slideshow)

Peer walkabout & feedback (20 – 30 min)

- Teams display their work gallery-style.
- Peers leave sticky notes with “I like…” and “I wonder…” feedback.
- Facilitators provide guiding prompts to encourage constructive critique.

Part 5: final pitches & reflection (1–1.5 hours)

Team presentations (5 – 7 minutes per team)
-Include visuals, all team members contribute.
-Judges or teachers ask questions focused on:

- Environmental impact
- Feasibility
- Innovation

Reflection sheets (15 min)
Students write about:

- What they learned about circular thinking
- What they would improve in their solution
- What they might do differently next time

Assessment suggestions: Rubric-based evaluation

Component	Criteria
Pitch Evaluation	Innovation, clarity, visual presentation, alignment with circular economy
Team Workbook	Completion, depth of analysis and ideation in each layer
Individual Reflection	Personal insight, growth in systems thinking and future vision
...	..
...	..

Extension ideas

- Partner with a local recycling center or environmental NGO for real-world context.
- Link outputs to a broader sustainability project or school initiative.
- Introduce digital prototyping (e.g., Canva, 3D design tools) for more advanced groups.

Tips for success

- Prepare waste sorting materials or visuals in advance.
- Encourage iteration and "fail-forward" mindset during prototyping.
- Assign roles within each team to ensure all voices are heard (e.g., designer, researcher, presenter).

Conclusion

EcoLoop enables students to experience layered problem-solving in action, gradually building from understanding waste to proposing sustainable business ideas. This workshop helps learners reframe environmental challenges as creative opportunities for innovation and positive change.

Method 5: Hands-On Interaction & Digital Tools

Method:

"Experience as the source of learning and development" David Kolb

Keywords:

Serious games, Pedagogical strategies, Game design, Game-based learning, Technology Enhanced learning, virtual worlds, Kahoot.

Why It Matters

Incorporating hands-on interaction and digital tools into teaching enables students to experience learning in a tangible, immersive way. It connects abstract concepts—such as sustainability, entrepreneurship, or systemic thinking—to real-world applications through interactive technology, physical tools, and experiential learning strategies. For young learners growing up in a digital world, these approaches are not only engaging, but also deeply relevant.

This method is grounded in experiential learning theory, which emphasizes learning through doing. When students physically engage with content—whether by manipulating real objects or interacting with digital simulations—they activate a deeper level of cognitive and emotional involvement. The goal is not simply to understand what sustainability is, but to explore how sustainable systems function and why they matter.

The Role of Serious Games in Education

A cornerstone of this method is the use of serious games—In education, the term is referred to games designed not mainly for entertainment but to improve learning, training, or educational outcomes. These games utilize gaming principles, such as challenges, to engage players thus to achieve specific educational or behavioral outcomes.

Unlike traditional games, serious games are built around clear learning objectives and often simulate real-life challenges. They immerse students in environments where they must make decisions, collaborate, and analyze consequences, all while engaging with subject matter in an intuitive and emotionally resonant way.

Serious games support the development of:

- Critical thinking and problem-solving,
- Empathy and ethical reflection,
- Systems thinking, especially in contexts like circular economy, renewable energy, or environmental impact.

Importantly, they promote behavioral change through experience and reflection—key to encouraging sustainable thinking in future entrepreneurs and decision-makers.

Example: Interactive Quizzes

Escape Rooms for Green Entrepreneurship

Title: Eco Quiz: understanding climate change	
Duration:	1 hour
Age:	16 - 26 years
Group size:	4 participants per team
Aim:	To educate participants about climate change, its causes, effects, and solutions, while fostering awareness and engagement on environmental issues.
Objectives:	• Raise awareness about the impacts of climate change on ecosystems, economies, and communities. • Inspire participants to adopt more sustainable practices in their daily lives to combat climate change. • Foster a sense of community and collaboration among participants as they discuss and learn about climate issues together. • Provide an enjoyable and interactive way to learn about a serious topic, making education more engaging through gamification. • Assess through an “Hands-on activity” how urbanization affects local temperatures
Material needed:	Access to internet. Devices (smartphones, tablets, or laptops) for online quizzes. An online platform (like Kahoot, Gimkit) A set of well-researched questions and answers related to climate change, covering various topics such as causes, effects, statistics, and solutions. (please find EN examples in the following booklet “WTF is Climate Change?”) A projector or screen to display questions

Game structure – How to create it

Quizzes are a key tool to test knowledge and foster learner engagement. Furthermore, creating customised quizzes allows you to monitor their progress and can help you understand which notions have been learnt during training and which are missing. Making quality quizzes does not take much time with a digital tool. It is well-established that people tend to forget a significant portion of what they learn. Studies have shown that on average, people forget around 70% of the information they learn within 24 hours. One effective strategy to enhance information retention and strengthen long-term memory is the use of multiple-choice tests. One of the best tools for generating quizzes is Kahoot! platform that allows you to play the quizzes simply by entering the quiz reference code in the appropriate section of the site, without requiring any registration.

To create a quiz on Kahoot!, you first need to register on the platform. Registration is free and enables you to create quizzes, but it does not provide access to all the features available with a subscription. For example, the basic version allows you to use true/false and multiple choice answer modes, while access to additional options requires an upgrade.

Once inside the user area, by clicking on the 'Create' button at the top right takes you to the section dedicated to creating quizzes. To insert questions, select the "Add Question" area from the column on the left of the page. For each question, it is possible to choose the time for the answer: the platform provides different timers, from 5 up to 240 seconds.

In addition, images or videos can be inserted to illustrate the question by dragging the file from the computer desktop to the indicated area. The platform also provides an entire library of multimedia files to choose from.

Game structure – How to choose the type of questions

With Kahoot! It's possible to use different types of questions with rating or scoring. It should be noted that for each question it is possible to choose the time limit for the answer, the type of score that can be awarded: Standard, Double Points and No Points.

- True or False
- Multiple choice
- Short answer
- Scrolling
- Answer with pointer
- Sequences

An online quiz, to be balanced and accurate, should follow the "30/40/30" rule, i.e. 30% should consist of open questions requiring answers with more than one word, 40% should consist of alternative questions, i.e. questions with several answer options from which one or two correct answers can be found and finally, 30% of closed questions that can be answered with "yes/no" or "true/false".

<u>Game structure – How to formulate good questions</u>

The effectiveness of all types of online quiz models depends largely on how the questions are formulated. If people do not understand the questions in a quiz, they will have little choice but to give random answers instead of relying on their own knowledge and skills acquired during lessons. Here are some tips for formulating good questions:

- Select simple and clear questions to be included in the quiz maker, avoiding complex and long sentences, and favouring the use of simple expressions: each quiz sentence should contain no more than 20 words, regardless of the pattern and type of scoring.
- Avoid using negatives in quiz questions and answers: this type of information often leads to confusion for participants. However, if you use this approach and manner wisely in your quiz models, you can keep the participants on their toes: if you use this type of question in a quiz, it is best to write the negative particle in block letters or boldface so that it does not escape the student.
- Avoid using description words in questions such as 'approximately', 'some', 'at least', etc. Asking inaccurate questions in a test increases the likelihood of receiving inaccurate answers. Instead, well-written questions should stimulate well-written answers. Open-ended quiz questions should start with "what," "how much," "when," "how" and "why."
- Avoid the use of unnecessary hints in test questions, which allow the student to deduce the correct answer from the context. If this happens, it is an indication of mental agility, and it is good, but it does not help to assess the users' knowledge of the subject.

In conclusion, Kahoot! proves to be an extremely versatile and intuitive tool for creating online quizzes, offering teachers and trainers an effective tool for testing knowledge and actively engaging players

Example: Hands-on activity structure after the “Eco quiz”

Escape Rooms for Green Entrepreneurship

Title: Urban Heat: Exploring Temperature Variations Across Different Environments	
Duration:	15 minutes temperature collection + 1 hour group discussion
Age:	16 - 26 years
Group size:	3 different teams for different areas: urban, suburban, and rural. The size of each team depends on the participants area of origin
Aim:	To investigate the impact of urbanization on local temperatures by measuring and comparing temperature readings in urban, suburban, and rural areas.
Objectives:	• To observe and document environmental conditions (e.g., vegetation, building materials) that may influence temperature variations in different areas. • To encourage students to engage in critical thinking by analyzing how urbanization contributes to temperature differences and discussing the underlying reasons • To facilitate a discussion on the implications of temperature differences for local ecosystems, human health, and urban planning • To develop students' scientific skills in measurement, data recording, and analysis through hands-on experience.
Material needed:	Digital Thermometers or Infrared Thermometers Data Recording Sheets (Excel sheet) Maps of the Local Area Stopwatch Smartphone or Camera Weather App or Website Measuring Tape

Hands-on activity – How to proceed step by step

1. Select Locations by choosing three different types of areas to measure temperature:
   - Urban Area: A densely populated city block with buildings, roads, and minimal greenery.
   - Suburban Area: A residential neighborhood with some green spaces and lower density.
   - Rural Area: An open area with fields, farms, or forests, far from urban influences.

2. Schedule a day for the activity, ideally during the same time of day to ensure consistent conditions (e.g., mid-afternoon when temperatures are usually highest).

3. Conduct temperature measurements at each location, using the thermometer to measure the air temperature at a height of about 1.5 meters above the ground. For best accuracy take 3 readings at each site and record the average temperature for accuracy.

4. Note the weather conditions (e.g., sunny, cloudy, windy) and any other relevant observations (e.g., presence of vegetation, materials of buildings).

5. Discussion in group and restitution in plenary

-After collecting temperature data, compare the average temperatures from each area and discuss in groups how urbanization may contribute to higher temperatures in urban areas due to factors like heat absorption by buildings, reduced vegetation, and increased human activity.

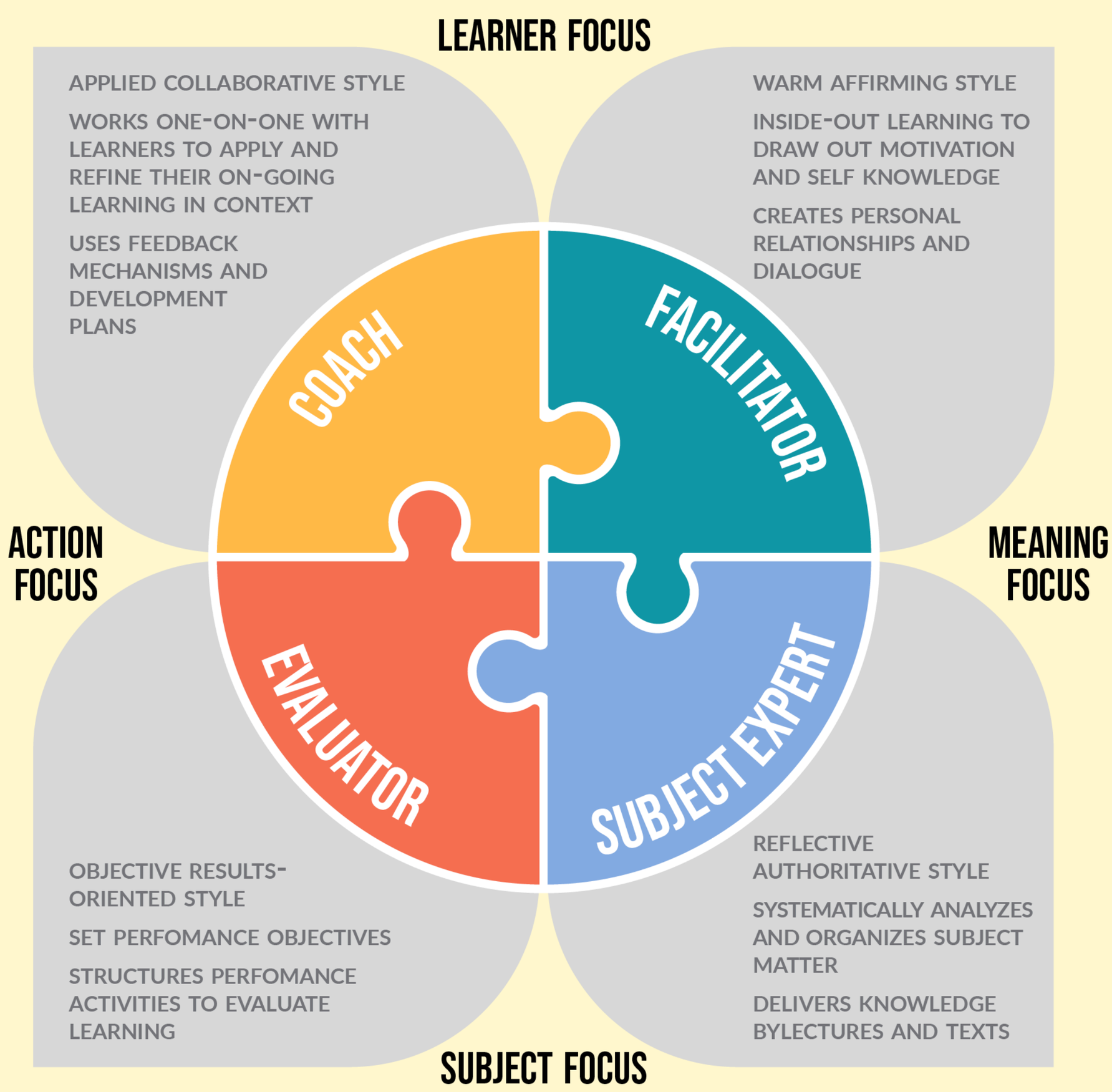
-Here you can find some questions to consider for the discussion:

- Why do urban areas tend to be warmer than rural areas?
- How does this temperature difference affect local ecosystems and human health?
- What strategies can be implemented to mitigate the urban heat island effect?

Why the quiz methodology and the hands-on activity work

This combined methodology harnesses the strengths of both hands-on learning and interactive quizzes, resulting in an engaging, effective, and comprehensive educational experience. It not only captures students' attention but also promotes a deeper understanding of the subject matter, fostering curiosity and a passion for learning.

Quizzes are inherently interactive and competitive, which makes learning enjoyable and stimulating. They provide instant feedback on answers, allowing participants to learn from their mistakes, reinforce their knowledge, and ignite their curiosity. By encouraging active participation, quizzes enhance critical thinking and information retention. Specifically, group quizzes promote collaboration and discussion, enriching understanding through peer learning. The competitive aspect of quizzes motivates students to engage more deeply with the content. Furthermore, by integrating various learning styles, including hands-on experiences, this approach effectively engages diverse learners and improves their retention of information.



Escape Rooms for Green Entrepreneurship

The integration of digital tools and hands-on activities, framed through experiential learning, offers educators a powerful method to engage students in both sustainability challenges and entrepreneurial thinking. Serious games, in particular, allow students to explore future scenarios, test strategies, and experience the consequences of their choices in ways that traditional methods cannot replicate.

By combining interactive technology, serious game mechanics, and reflective pedagogy, educators can create learning environments that are inclusive, inspiring, and impactful.

“Educators are no longer just transmitters of information, but designers of experiences that empower learners to shape the future.”

Method 6: Reflection and Debriefing: A Cross-Cutting Guide

Method:

Keywords:
critical thinking, debriefing, experiential learning experience

Reflection is a fundamental component of experiential learning, serving as the bridge between action and understanding. In the context of game-based learning, reflection plays a strategic role by transforming dynamic, immersive experiences into opportunities for deep learning. Games can simulate complex systems, challenge players with real-world dilemmas, and prompt strategic thinking. However, it is through structured reflection—particularly during the debriefing phase—that learners consolidate meaning, analyze their decisions critically, and transfer insights to authentic contexts. Debriefing allows learners not only to revisit their in-game experiences but also to connect those experiences with ethical, environmental, and social dimensions relevant to sustainable development and entrepreneurship.

The use of serious games in education, especially those that explore sustainability, introduces learners to the complexities of balancing economic viability, environmental responsibility, and social equity. These simulations replicate real-life scenarios where trade-offs and conflicting priorities are inevitable. Without reflection, these experiences may remain superficial. Debriefing helps learners process what they encountered in the game, examine the motivations and consequences of their actions, and apply these lessons to real-world challenges. This meta-cognitive process is vital in developing critical thinking and ethical reasoning, especially in the context of sustainability education.

A Useful Framework: Kolb's Experiential Learning Cycle

One of the most influential and widely used models for structuring reflection is David Kolb's Experiential Learning Cycle. The model conceptualizes learning as a continuous process of transformation through experience, built around four interconnected stages. The first is Concrete Experience, in which the learner actively engages in a task or situation, such as participating in a game or simulation. This is followed by Reflective Observation, where the learner looks back on what occurred, assessing reactions, outcomes, and behaviors. The third stage, Abstract Conceptualization, involves deriving general principles or theoretical insights from the experience. Finally, Active Experimentation enables the learner to apply these lessons to new situations, refining future decision-making and behavior.

Kolb's cycle is particularly effective in sustainability-oriented activities because it encourages learners to reflect on real-world issues in a structured yet flexible way. It moves learners beyond intuition or trial-and-error toward analytical and purposeful action. Educators can use this model to craft targeted reflection prompts that facilitate deeper processing. For example: What choices did you make during the game, and why? What obstacles emerged, and how did you respond to them? What sustainability-related insights can be applied to your own life or future projects?

Digital tools such as Miro and Canva offer editable visual representations of Kolb's cycle, which can be adapted to specific learning scenarios. These can serve as valuable visual aids during debriefing sessions, helping learners situate their reflections within a coherent framework.

Embedding Debriefing in Each Activity

Rather than addressing debriefing as a separate method or standalone practice, this guide proposes embedding it directly at the conclusion of each activity or learning unit. This approach ensures that reflection remains context-specific and relevant to the content, structure, and goals of the experience. By aligning the debriefing process with the specific themes and challenges addressed in each game or task, educators can guide learners toward meaningful insights that are not only theoretically grounded but also personally resonant.

Each method in this guide will be accompanied by a concise, focused debriefing section. This section will include suggested reflection questions tailored to the learning objectives, themes, and competencies emphasized in the activity. For example, in a simulation about eco-innovation, debriefing might explore how participants balanced environmental concerns with market demands. In an activity about community development, it might focus on equity, stakeholder inclusion, or ethical leadership. The structure allows for flexibility: reflection can be facilitated through discussion, journaling, visual mapping, or even asynchronous digital input depending on the learners' needs and contexts.

Fostering an Inclusive and Reflective Environment

For debriefing to be effective, the environment in which it occurs must be psychologically safe, respectful, and inclusive. Learners must feel empowered to express themselves freely, including sharing mistakes, doubts, and divergent perspectives. Creating such an environment involves both pedagogical choices and interpersonal sensitivity. Educators can begin with a simple defusing activity to lower stress or social barriers, allowing participants to ease into the reflective mindset. Encouraging nonjudgmental listening and affirming the value of each perspective reinforces trust and openness.

In addition, offering varied modalities for expression—oral dialogue, written reflection, visual representation—can make the process more accessible, particularly for neurodiverse learners or those with different linguistic or cultural backgrounds. Technologies such as Padlet and Google Jamboard facilitate asynchronous, multimodal participation, expanding opportunities for engagement beyond traditional classroom discussions. In diverse learning settings, inclusivity during debriefing not only supports equity but enriches the collective learning experience by surfacing a broader range of viewpoints, insights, and problem-solving approaches.

To sum up, by integrating debriefing into the structure of each method, educators ensure that reflection is grounded in learners' direct experiences. This embedded approach strengthens educational impact by aligning reflective prompts with the specific goals and content of each activity. Furthermore, by fostering an inclusive, learner-centered environment, the debriefing process becomes a powerful tool for developing critical awareness, ethical reasoning, and systems thinking—skills essential for navigating the challenges of sustainability.

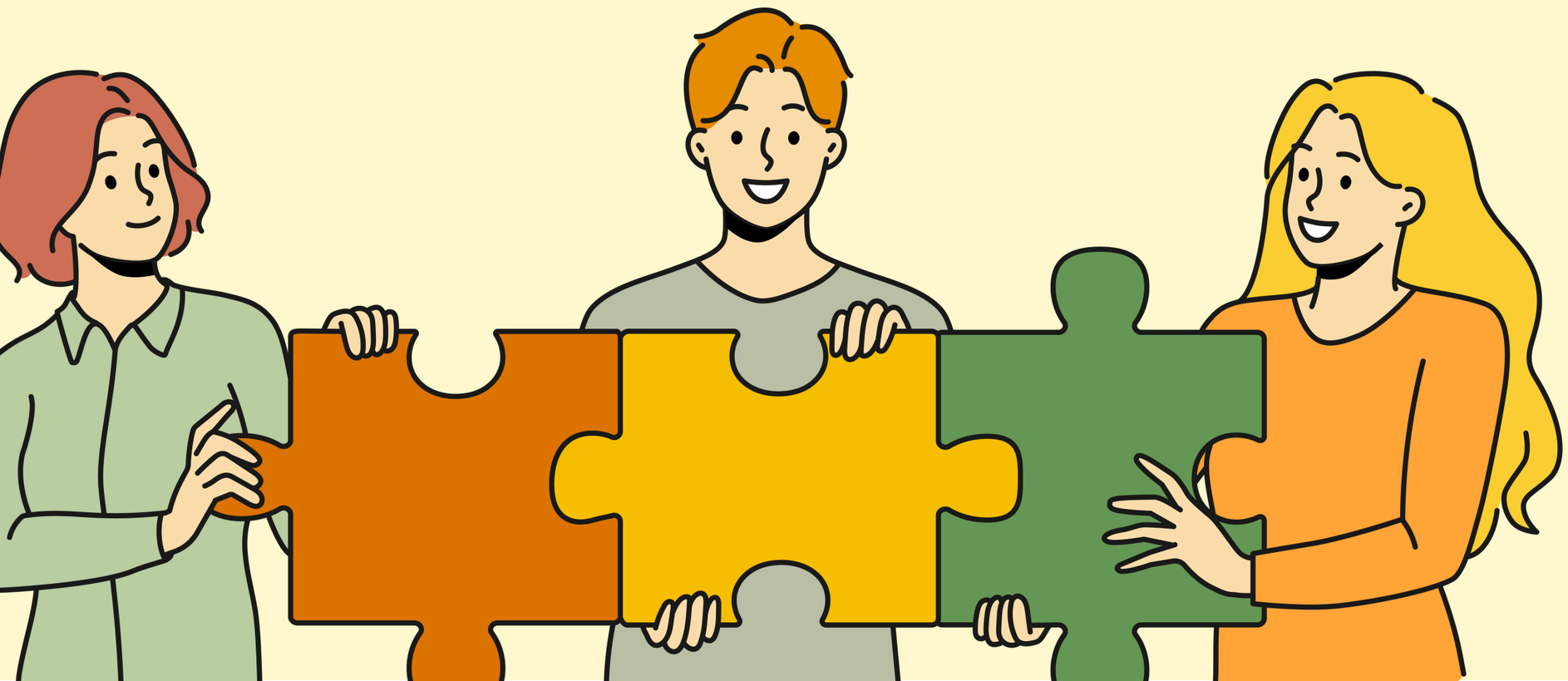
Debriefing is thus much more than a summary exercise. It is the vital moment when learning deepens, perspectives shift, and new possibilities emerge. As a bridge between game and reality, between knowledge and action, and between self-awareness and social engagement, debriefing transforms playful experiences into platforms for real-world change.

Conclusion

This guide has shown that game-based learning, when thoughtfully applied to green entrepreneurship, can be a powerful tool that fosters fundamental skills like creative engagement and systems thinking. The combination of storytelling, critical reflection, and hands-on design, enables educators to guide learners through meaningful activities connected to sustainability and innovation. Participants are not only encouraged to imagine better futures. They are given the tools to help build them.

Through immersive methods like role play, narrative-driven decision-making, and practical action planning, young people gain a deep understanding of complex climate challenges while developing entrepreneurial mindsets rooted in regeneration, equity, and collaboration. These learning experiences cultivate curiosity, empathy, and agency. Soft skills that are essential for a generation forced to navigate a future that's uncertain but also full of opportunities.

As the second part of this guide offered practical tools, workshop templates, and ready-to-use resources, educators can confidently bring these ideas into their classrooms and communities. Together, we can nurture a new wave of changemakers. Changemakers who are creative, critical, and committed to shaping a greener, fairer, and more resilient world.



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