Escape Rooms for Green Entrepreneurship

PEDAGOGICAL SEQUENCE

The circular journey of Martha



KEY TOPICS

urban sustainability | accessibility

Target group: learners aged 16+
Duration: 4 sessions (approx. 45 - 60 minutes each)

Introduction

As cities grow denser and face increasing environmental and social challenges, urban sustainability and accessibility become central issues for environmental justice and quality of life. Many urban environments continue to exclude people through architectural barriers, car-centered planning and environmentally harmful infrastructure, despite public discourse promoting “green” or “smart” cities.

This pedagogical sequence introduces learners to the core principles of inclusive urban design, accessibility and environmentally sustainable public infrastructure. It serves as a preparatory learning path for an escape room “Circular journey of Martha” in which learners travel through a fictional city district. It provides a foundational understanding of the key concepts necessary to complete the game.

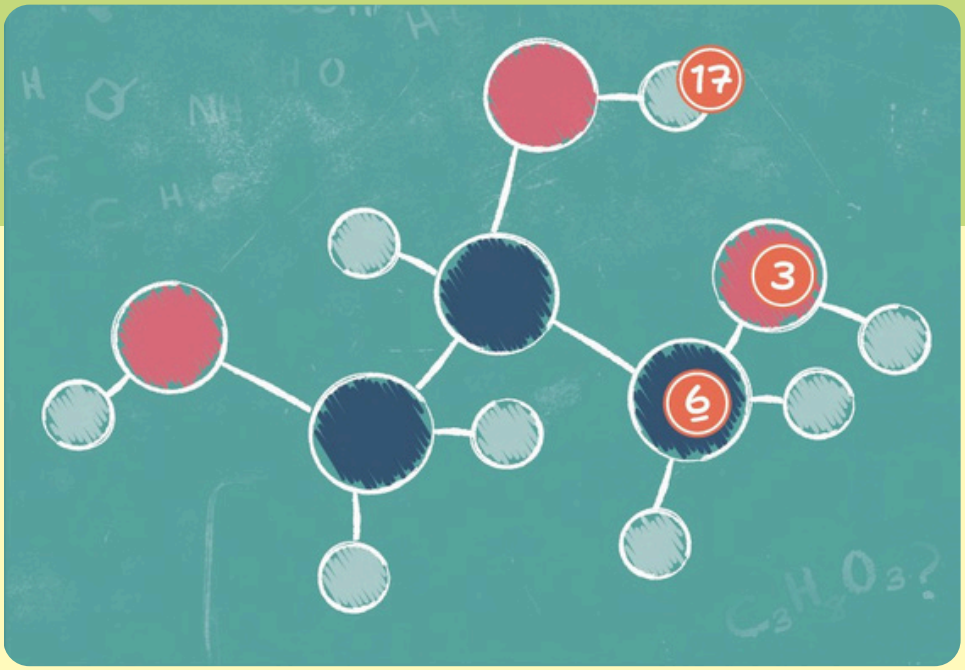
Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Escape Rooms for Green Entrepreneurship

Overview of the pedagogical sequence

SESSION	THEME	MAIN FOCUS	KEY METHODS
1	Urban sustainability basics	Green cities & environmental impact	Presentation, discussion, visual analysis
2	Accessibility & architectural barriers	Inclusive vs exclusive urban spaces	Case studies, observation tasks
3	Inclusive urban design	Inclusive urban design & mobility	Group work, redesign challenges
4	Public infrastructure & environment	Transport, energy, public space	Debate, systems mapping



Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SESSION 1: Understanding the circular economy

Focus

Introduce the concept of sustainable cities and the environmental impact of urban infrastructure.

Learning outcomes

Learners will be able to:

- Define urban sustainability and green cities
- Identify major environmental impacts of cities (transport, buildings, energy)
- Explain why cities play a key role in climate action

Key concepts, definitions and examples

Urban sustainability

Urban sustainability refers to the ability of a city to meet the needs of its current population without compromising the ability of future generations to meet theirs, while balancing environmental protection, social equity and economic viability.

Green city

A green city is an urban area designed to minimize environmental impact through sustainable transport, renewable energy, efficient buildings and protection of biodiversity.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Environmental impact of cities

The effect urban activities have on natural systems, including greenhouse gas emissions, air pollution, land use and resource consumption.

Concrete examples:

Green roof designed to support pollinators

A rooftop garden system with diverse, flowering plants (often native wildflowers and grasses) that provides habitat and nesting potential for pollinators like bees and butterflies. Specific planting choices and substrate depths are often customized to maximize biodiversity.

Shelter with rainwater collection and release system

A structure (like a bus stop or shed) featuring a roof and guttering designed to capture rainwater, store it (often in a cistern or tank) and then release it in a controlled manner or reuse it for purposes such as irrigation. This manages stormwater runoff and conserves water.

Green roof with herbaceous plants

A type of green roof that uses non-woody, vascular plants (herbs, wildflowers, grasses) instead of shrubs or trees. These are often part of extensive, lighter-weight systems suitable for a wider range of buildings.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Modular permeable ramp with side planters

A ramp system made of interconnected, permeable units (allowing water to pass through) that has integrated garden boxes or planters along its sides. This design combines accessibility with on-site stormwater management and vegetation.

Ramp integrated with raised garden beds

An accessibility ramp that is structurally and aesthetically combined with an elevated planting area (raised garden bed). This blends hard infrastructure with green space, potentially for food production, aesthetics or bioretention.

Vegetated swales for water collection

A ground surface treatment that incorporates both plants and permeable materials (like porous concrete with gaps for vegetation). This design allows water to soak into the ground rather than run off, while also providing green space and improving aesthetics.

Bioretention vegetated areas

Landscaped depressions or areas planted with specific vegetation to capture, filter and treat stormwater runoff. The process removes contaminants and sedimentation through filtration, absorption, and biological uptake, improving water quality and reducing peak runoff.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Permeable pavements

Pavement systems made of porous materials (e.g., permeable concrete, porous asphalt, or paving stones with large joints) that allow rainwater and surface layer. This helps manage stormwater, reduce flooding risk and recharge groundwater.

Activities

- Introduce the key concepts
- Brainstorm using the examples: "What makes a city green?"
- Compare of a car-centered city vs a pedestrian-friendly city
- Analyse a case of a nearby city in a discussion of its environmental indicators (air quality, noise, energy use)
- Think about your daily route to school or work. Which part is environmentally sustainable, and which part could be improved? Would you choose public transport or cycling more often if the local infrastructure were different? What would need to change?

Evaluation

Exit slip: identify one urban activity that increases environmental impact.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SESSION 2: Accessibility & architectural barriers

Focus

Understand how urban design can exclude or include people.

Learning outcomes

Learners will be able to:

- Define accessibility and architectural barriers
- Identify physical, sensory and cognitive barriers in urban space
- Explain who is affected by inaccessible design

Key concepts, definitions and examples

Accessibility

Accessibility is the extent to which urban environments can be used independently and safely by all people, regardless of age, disability or mobility level.

Concrete examples:

- Step-free access to public buildings
- Audible pedestrian signals at crossings

Architectural barriers

Architectural barriers are physical or design elements that prevent or limit access to buildings, streets or services.

Concrete examples:

- Stairs without ramps or elevators
- Narrow sidewalks blocking wheelchair users
- Poor lighting affecting visually impaired people

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Exclusion in urban space

The process by which certain groups are unintentionally or intentionally prevented from fully participating in city life due to design choices.

Concrete examples:

- Elderly people avoiding public transport due to lack of seating
- Parents with strollers unable to access metro stations

Activities

- Introduce the key concepts
- Observation task: identify barriers in photos of public spaces
- Group discussion on who is affected and how
- Imagine using the same street as a wheelchair user, a visually impaired person, an elderly person or a parent with a pushchair. What barriers might you encounter? Which single improvement would make the greatest difference?

Evaluation

Short response: one barrier + one inclusive solution.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SESSION 3: Inclusive urban design

Focus

Explore how cities can be designed for everyone.

Learning outcomes

Learners will be able to:

- Explain inclusive urban design principles
- Propose design solutions that improve accessibility and sustainability
- Understand the link between inclusion and environmental responsibility

Key concepts, definitions and examples

Inclusive urban design

Inclusive urban design is the planning and shaping of cities so that they are usable, safe and welcoming for the widest possible range of people.

Concrete examples:

- Public squares with seating for different body types
- Wide sidewalks accommodating wheelchairs and pedestrians

Universal design

Universal design is the principle of designing environments and products that can be used by everyone without the need for adaptation or specialized solutions.

Concrete examples:

- Curb cuts that benefit wheelchair users, cyclists and delivery workers
- Automatic doors used by all visitors, not only disabled people

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Mobility justice

Mobility justice refers to fair access to safe, affordable and sustainable transportation for all social groups.

Concrete examples:

- Affordable public transport passes
- Bike-sharing systems accessible to low-income neighborhoods

Activities

- Introduce the key concepts
- Redesign challenge: discuss how to transform an inaccessible urban space
- Design check: Does your redesigned space work equally well for children, older people, disabled people and people with limited income? Could an environmentally friendly solution unintentionally exclude someone? How could this be avoided?
- Gallery walk and peer feedback using inclusion criteria

Evaluation

Group redesign plan assessed with a rubric.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SESSION 4: Public infrastructure & environmental impact

Focus

Analyze how infrastructure choices affect both the environment and social inclusion.

Learning outcomes

Learners will be able to:

- Describe the environmental impact of public infrastructure
- Compare sustainable and unsustainable transport systems
- Argue for inclusive and low-impact urban solutions

Key concepts, definitions and examples

Public infrastructure

Public infrastructure includes systems and structures provided by public authorities to support daily life, such as transport, water, energy and public buildings.

Concrete examples:

- Roads, bridges, metro systems
- Schools, hospitals, parks

Sustainable infrastructure

Infrastructure designed to minimize environmental impact while supporting long-term social needs.

Concrete examples:

- Electric buses instead of diesel buses
- Energy-efficient public schools with solar panels

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Car-centric urban planning

A planning model that prioritizes private car use over pedestrians, cyclists and public transport.

Concrete examples:

- Multi-lane roads with no bike lanes
- Large parking areas replacing green spaces

Activities

- Introduce the key concepts
- Brainstorm to draft a mindmap linking transport, emissions and accessibility
- Quick vote and discussion: Your city can fund only one project: more parking spaces, safer cycle lanes, cheaper public transport or additional green spaces. Which should be prioritised and why? Who would benefit most from your choice, and could any group be disadvantaged?
- Debate on accessibility as an environmental investment

Evaluation

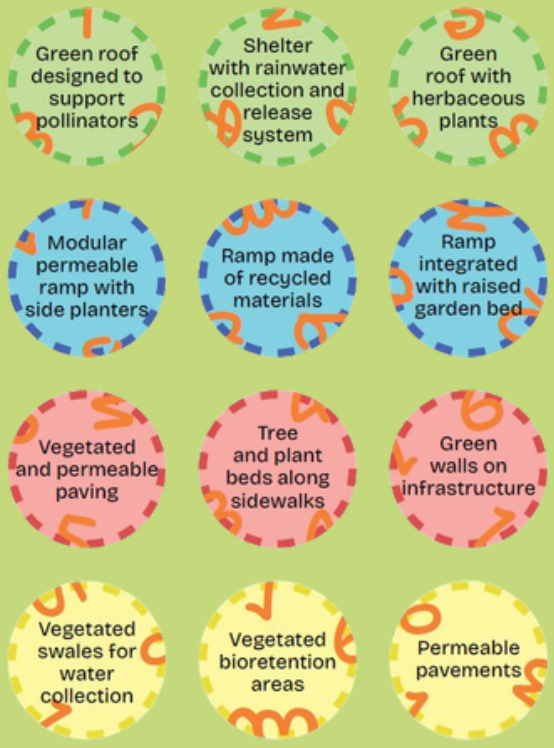
Assessment of argument quality and use of concepts.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

PEDAGOGICAL SEQUENCE

Escape Rooms for Green Entrepreneurship



Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.