

# Unit 14

Landscape & Climate Change  
Adaptation in Education

## Proximity Landscapes

For people, for nature

**INTRO:** Urban landscapes, if not designed properly, interrupt natural ecosystems, hindering ecological connections. How can we integrate nature in cities and enhance urban biodiversity and, at the same time, promote slow mobility and the “15-minute city” in our neighbourhoods?

AGE GROUP

6–11 years

TIME REQUIRED

5 lessons  
(5 × 45 min)

+ 1 outdoor activity  
(strongly suggested)

LINKS TO CURRICULUM

Geography

Science

Literature/History

Foreign languages

Art

Technology

Physical education

# Legend

## Layout orinetation

Head with logo

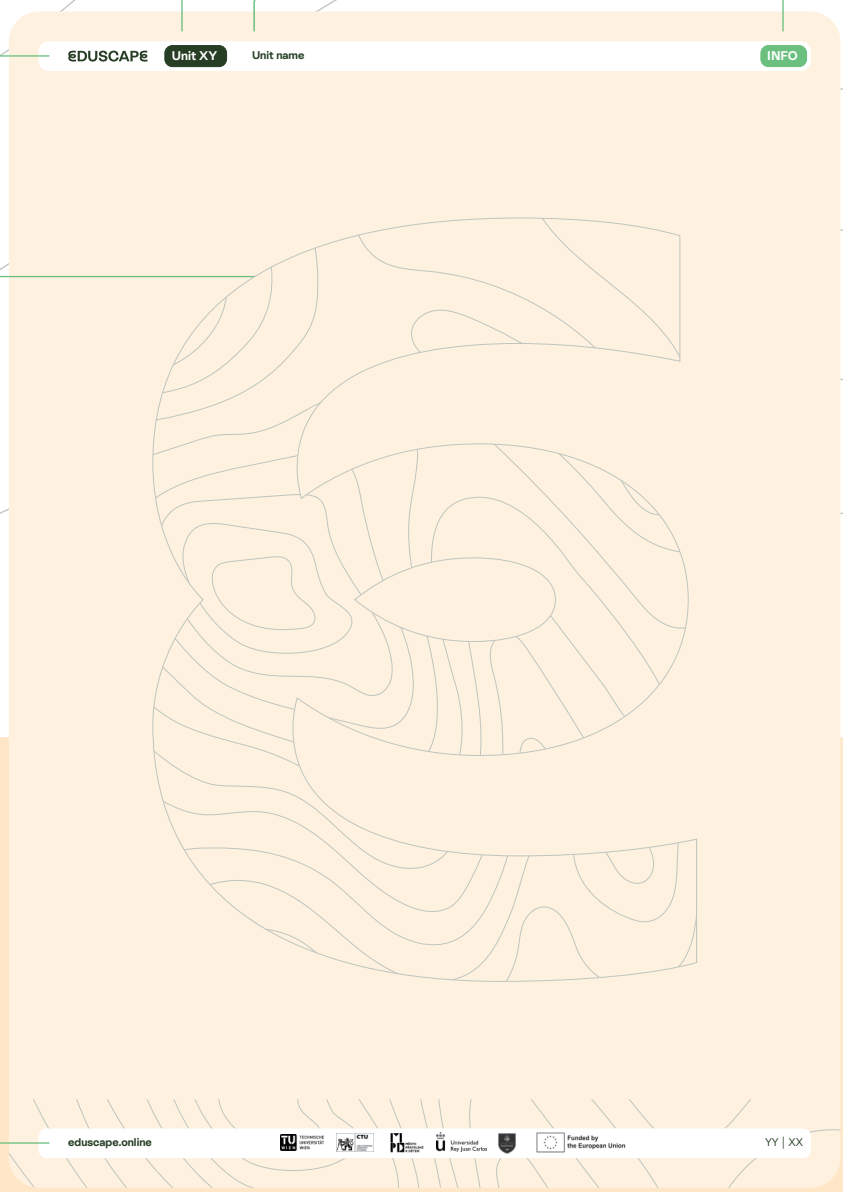
Unit number

Unit name

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Footer with web link, logos of partners, EU, current page & full page counter



## Content icon

for teachers

for students

references

## Phase of the Unit

gaining knowledge

analyzing

creating



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# Proximity Landscapes

**How our neighbourhood landscape is heavily man-made, shaped in particular by infrastructure and built-up areas causing heavy impacts on ecosystems and biodiversity. The built-up parts and the logistical/ industrial/technological infrastructures (eg. harbours, airports, train railways ecc.) interrupt the natural and ecological connections of one's city (i.e. accessibility), a phenomenon observable mostly from the neighbourhood scale. While it is increasingly important to talk about slow mobility, walking in/ through the landscape, proximity and the 15-minute city, at the same time it is fundamental to preserve the natural connections inside the city that enable the production of ecosystem services and preserve biodiversity as a support for the quality of life.**

## The unit focuses on:

- Observing the relationships between natural and anthropic elements of the everyday landscape, focusing on connections, barriers (caused by infrastructures, property, buildings) and impacts on the status and health (quality) of ecosystem networks in the neighbourhoods
- Understanding the fundamental actors that cross these connections (flora, fauna, human beings, goods...) and shape the landscape as a network;
- Understanding the historical evolution of relationships, ecological networks and connections in the city, particularly on a neighbourhood scale, considering anthropic and natural changes and threats related to land development (housing development, transport, accessibility, public and private property).

By observing their own city and neighbourhood through images, photographs and digital tools (e.g. Google earth), students will learn how to identify and assess the natural and artificial connections and any barriers.

Therefore, students acquire a method to understand how connections are used and what they connect. Teachers motivate students to critically observe the landscape around them with the focus on the people's impacts on it, stimulating thinking about existing problems and possible solutions/improvements in order to improve green/soft networks in local contexts.

## AGE GROUP

**6–11 years****ENVIRONMENT**

*Classroom/School Garden/  
Landscape*

**TIME REQUIRED**

*5 lessons (5 × 45 min)  
+ 1 outdoor activity  
(strongly suggested)*

**LINKS TO CURRICULUM**

*Geography, Science, Literature/  
History, Foreign languages, Art,  
Technology, Physical education*

**KEYWORDS**

*natural connections, green/blue/  
grey infrastructure, public and  
private properties, biodiversity,  
climate change and adaptation,  
slow mobility, individual liability*

**GOALS**

- Pupils discover the quality of natural and human connections with the identification of the vulnerabilities, criticalities and potentials of the different anthropogenic and natural connections in their own city and neighbourhood (I);
- Pupils realise that the current connections are the result of historical evolution of anthropogenic and natural relationships and relative changes (II) (III);
- Pupils learn that the redevelopment, restoration and planning actions have an impact on climate and sustainability, which is why we speak about the 15-minute city or the redesigning of the green and public city with greenways, etc. (IV);

**OTHER SKILLS/KNOWLEDGE ACQUIRED:**

- Pupils realise that the landscape is made up of multiple connections: flora and fauna, people flows (i.e. mobility), etc. and the human beings need connections and so do flora and fauna(I);
- Pupils realise that some anthropic elements (infrastructures, buildings, walls of private property) within the city and the neighbourhood generate a barrier effect, with the consequent reduction of human accessibility, fauna movements and the alteration of the flora (II)(III);
- Pupils discover that the infrastructure, both technological and traffic, creates impacts (disruption of the ecological network, increased traffic, noise, pollution, CO<sub>2</sub> emissions from exhaust gases) on biodiversity, air, human health (II)(III);
- Pupils learn the ability to propose solutions and strategies for a more sustainable city and neighbourhood (IV) (V).

## TIME REQUIRED

Students will therefore be motivated to look critically at the landscape they inhabit, recognising the system of relationships and connections that are important for preserving biodiversity, promoting a sustainable, respectful lifestyle and counteracting climate change starting with everyday actions in our neighbourhood landscape. The contents aim to encourage a high quality of urbanism and landscape, also taking into account all the actors in the landscape.

## INTENT – CONNECTION TO CLIMATE CHANGE ADAPTATION AND MITIGATION

Students will therefore be motivated to look critically at the landscape they inhabit, recognising the system of relationships and connections that are important for preserving biodiversity, promoting a sustainable, respectful lifestyle and counteracting climate change starting with everyday actions in our neighbourhood landscape. The contents aim to encourage a high quality of urbanism and landscape, also taking into account all the actors in the landscape.

## ABOUT TOPIC

How our neighbourhood landscape is heavily man-made, shaped in particular by infrastructure and built-up areas causing heavy impacts on ecosystems and biodiversity. The built-up parts and the logistical/ industrial/technological infrastructures (eg. harbours, airports, train railways ecc.) interrupt the natural and ecological connections of one's city (i.e. accessibility), a phenomenon observable mostly from the neighbourhood scale. While it is increasingly important to talk about slow mobility, walking in/through the landscape, proximity and the 15-minute city (i.e. that means all primary services within a 15 minutes distance from home), at the same time it is fundamental preserve the natural connections inside the city that enable the production of ecosystem services and preserve biodiversity as a support for the quality of life.

Some specific concepts are covered in the Unit, including:

**15-Minute City:** The concept of the "15-Minute City" is an urban planning model aimed at creating cities where all essential services—such as schools, shops, parks, offices, and healthcare facilities—are reachable within 15 minutes on foot or by bike. This approach promotes a higher quality of life by reducing the need for car travel, improving sustainability, and fostering a stronger sense of community. The idea is to create self-sufficient neighborhoods that reduce traffic congestion and pollution, thus contributing to the fight against climate change.

**Mobility and its impacts on climate change:** Mobility refers to the ways people move from one place to another and has a significant impact on climate change. The excessive use of motor vehicles powered by fossil fuels significantly contributes to greenhouse gas emissions. Promoting sustainable forms of transportation, such as public transport, car sharing, cycling, and electric mobility, is crucial for reducing these emissions. Exploring innovative solutions and policies that support greener mobility is essential for mitigating the negative effects of climate change.

**Flora and fauna connections:** Connections between flora and fauna are fundamental to biodiversity and the well-being of ecosystems. Plants provide habitat and food for numerous animal species, while animals play key roles in seed dispersal and pollination. Preserving these connections is vital for maintaining ecological balance and ensuring the resilience of ecosystems in the face of environmental changes. Educating students about these interactions and the importance of biodiversity can foster greater respect for the environment and awareness of sustainable practices.

**Neighborhood accessibility:** Neighborhood accessibility refers to the ease with which people can reach services and resources within their community. A well-accessible neighborhood promotes social inclusion, mobility, and the overall well-being of its residents. Including ramps for disabled individuals, safe sidewalks, well-marked pedestrian crossings, and efficient public transportation are key aspects of ensuring that all citizens, regardless of their physical abilities, can fully participate in community life. Improving accessibility contributes to creating more equitable and livable urban environments.

The learning process is based on stimulus-action, prompting the student to develop the ability to understand current problems, reflecting on the causes and possible good practices or actions to counteract them.

By observing their own city and neighbourhood through images, photographs and digital tools (e.g. Google earth), students will learn how to identify and assess the natural and artificial connections and any barriers.

Therefore, students acquire a method to understand how connections are used and what they connect. Teachers motivate students to critically observe the landscape around them with the focus on the people's impacts on it, stimulating thinking about existing problems and possible solutions/improvements in order to improve green/soft networks in local contexts. Techniques used for this purpose are: open and self-organised learning (laboratory approach, class work, workshops); interaction between pupils (group work); teaching/learning outdoors and in the landscape (e.g. excursions, scouting, field trips and outdoor walks); game-based approaches (e.g. learning games, role-playing games, experimental games or 'serious games').

# Proximity Landscapes

## I. MOTIVATION + ACQUIRING BASIC KNOWLEDGE

### Activity 1

#### Landscape and the natural and human connection in a neighbourhood

The landscape is made up of multiple connections: flora and fauna, people flows (i.e. mobility), etc. and the human beings need connections and so do flora and fauna. Pupils discover the quality of natural and human connections.

### Activity 3

#### Through connections: problems to discover the landscape

Pupils will indicate and present during a discussion led by the teacher the elements of quality and those of problematic within the analysed elements.

The structure suggested here constitutes a basis for reference and can be adapted to the specific needs of the subject taught. The Unit consists of 6 activities and experiments to be carried out in the classroom and/or outside the classroom, according to the possibilities and at the discretion of the teacher. In continuity with the project methodology, the Teaching Unit is divided into three learning moments:

## II. MAPPING THE FIELD + ANALYSIS, PROBLEM DEFINITION

### Activity 2

#### Through connections to discover the landscape

Pupils will play a role game where they will observe the identified elements of connections from the perspective of insects, animals, vegetation, and people.

### Activity 4

#### Through the citizen discover the networks and connections

The current connections are the result of historical evolution of anthropogenic and natural relationships and relative changes. Pupils analyse the effect of some anthropic elements on human accessibility and, fauna and flora movements.



### III. DESIGNING SOLUTION + SHAPING

#### Activity 5

##### **Creating a more sustainable neighbourhood**

The landscape can be shaped and each of us have the power to do so for a more sustainable city and neighbourhood! Practising the concepts of the 15-minute city or the green and public city with greenways, etc.

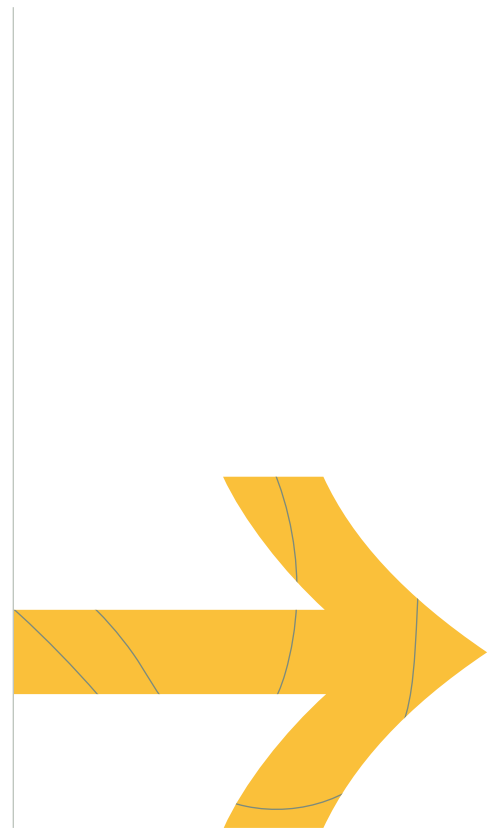
#### Activity 6

##### **Promote a sense of responsibility and care for neighbourhood/landscape**

Following the Mapping, the experience can be complemented by concrete, first-hand action by intervening in the neighbourhood where the school is located.



# Activites for Students



## Activity 1

**TIME REQUIRED:**

45 minutes

**AIM:**

Pupils realise that the landscape in neighbourhood is made up of multiple connections: flora and fauna, people flows (i.e. mobility), etc. and the human beings need connections and so do flora and fauna

**TOOLS:**

powerpoint presentation  
(digital projection)  
or photographs and  
orthophotos, etc.

## Landscape and the natural and human connection in a neighbourhood

**Description:**

- The teacher shows selected images and gives a short lesson on natural and anthropic connections (green, grey, blue) depending on the area where the school is located.
- The students will identify the human and natural connections that characterise neighbourhood or the area around the school, and reflect on which connections/infrastructure they use and see on a daily basis.
- Divided into groups, they will draw on a poster (or on orthophotos) the route they take from home to school and they will identify how many types of connections they see, use and travel through.



## Activity 2

**TIME REQUIRED:**

45 minutes

**AIM:**

- Pupils realise that some anthropic elements (infrastructures, buildings, walls of private property) within the city and the neighbourhood generate a barrier effect, with the consequent reduction of human accessibility, fauna movements and the alteration of the flora;
- Pupils discover that the infrastructure, both technological and traffic, creates impacts (disruption of the ecological network, increased traffic, noise, pollution, CO<sub>2</sub> emissions from exhaust gases) on biodiversity, air, human health;

**TOOLS:**

a map or photograph of the school surroundings, pawns, colours

## Through connections to discover the landscape

**Description:**

The teacher gives a A2 or A3 printed map of the city, marking a route to the school, or to another recognisable point in the city.

Pupils, divided into groups, will play a role game where they will observe the identified elements of connections from the perspective of insects, animals, vegetation, and people (i.e. the pawns).

By drawing a card from the game 'Voids' they can read the character sketch and choose a game token. By rolling the dice, they can advance their token 1 cm along the route marked on the map, identifying obstacles or better routes according to their character.

Pupils identify and analyse the different problems for the different users.

The exercise can be completed by leaving each student with questions such as:

- Is the marked route the best route for your character? If not, describe the points at which you thought of a diversion
- What obstacles did your character encounter?



Fig.1

Source: Full Voids game, Martina Eddone and Margherita Via

### Teacher's note

Younger students, the card game 'Voids' can be used, in which students look at the city through the eyes of different characters. The game is printable and available at the link:

<https://riga-biennial-com.s3.eu-central-1.amazonaws.com/artworks/Full-Voids-appendix-2-WEB.pdf>

<https://www.rigabiennial.com/en/education/education-kits/full-voids>

## Activity 4

**TIME REQUIRED:**

45 minutes

**GOAL:**

- Pupils realise that the current connections are the result of historical evolution of anthropogenic and natural relationships and relative changes;
- Pupils realise that some anthropic elements (infrastructures, buildings, walls of private property) within the city and the neighbourhood generate a barrier effect, with the consequent reduction of human accessibility, fauna movements and the alteration of the flora;

**TOOLS:**

interview, evaluation forms;

## Through the Citizen Discover the Networks and Connections

**Description:**

- Through the outdoor activity, the students will walk along the streets/ infrastructure closest to the school, and interview the stakeholders identified by the teachers with regard to the history and changes in the neighbourhood (tab1).
- During the activity, the students will fill in evaluation forms (tab2), trying to read the different types of connections, the fragmentation of green spaces, their accessibility and any lack of green/blue infrastructure.
- The aim of this activity is to develop a new view of the city as a place of connection and meeting for people and local biodiversity by understanding the relationships between this topic and the impacts of climate change.

**Tab. 1****Questions**

Why does the road pass here? Do you know its history and origin? What was it before?
What are the characteristics of this connection?
Which subjects/actors have left this sign in the landscape?
Which ones have transformed it and when?
How do you evaluate the green quality/presence in your neighbourhood?
Do you think this is a good connection for everyone? Or is it not accessible by anyone?

## Activity 5

**TIME REQUIRED:**

45 minutes

**GOAL:**

- Pupils learn the ability to propose solutions and strategies for a more sustainable city and neighbourhood

**TOOLS:**

art supplies, pen and paper

## Creating a more sustainable neighbourhood

**Description:**

On the basis of the considerations identified and set out, the students, in groups, will prepare:

- texts with solutions to improve natural and man-made connections
- drawings with solutions and proposals of new routes or areas for animals and people that can make their neighbourhood more sustainable.

Tab. 2

Evaluation forms		
Name area of interest and students name:		
Fill in the form assuming the point of view of the categories in the first column and give a grade according to the permeability/accessibility of the area for them. Can they move freely? Are there obstacles, barriers, hindrances?		
Subjects	Vote (low to high)	Which obstacles identified
Human beings	☆ ☆ ☆ ☆ ☆	
Insects	☆ ☆ ☆ ☆ ☆	
Small animals	☆ ☆ ☆ ☆ ☆	
Big animals	☆ ☆ ☆ ☆ ☆	
Vegetation (pollen, cuttings...)	☆ ☆ ☆ ☆ ☆	
Fungi	☆ ☆ ☆ ☆ ☆	
...	☆ ☆ ☆ ☆ ☆	
...	☆ ☆ ☆ ☆ ☆	

## Activity 6

**TIME REQUIRED:**

45–90 minutes

**GOAL:**

- Pupils learn the ability to propose solutions and strategies for a more sustainable city and neighbourhood.

**TOOLS:**

Cardboard, stencils, paint, ropes or sticks etc.;

## Promote a Sense of Responsibility and Care for Neighbourhood/Landscape

**Description:**

- Following the mapping, the experience can be complemented by concrete, first-hand action by intervening in the neighbourhood where the school is located. For example, students could create and post warning signs (e.g. crossing specific natural species), posters to sensitise stakeholders on green issues, the historical memory of the neighbourhood, marking possible disturbing areas/elements on the ground, placing small pots and plant essences, posting requests for care of green areas, etc.
- These small strategic actions are a way to promote a sense of responsibility and care for one's neighbourhood/landscape and give an immediate and extremely concrete signal. A signal that could start a chain effect in the neighbourhood, starting with shopkeepers and associations that could adopt the actions, promote them and get them across to the administrations.

Fig. 2

Example of a possible output. Source: authors' elaboration



## Recap

Open and self-organised learning (laboratory approach, class work, workshops);  
 Interaction between pupils (group work);  
 Teaching/learning outdoors and in the landscape (e.g. excursions, scouting, field trips and outdoor walks);  
 Game-based approaches (e.g. learning games, role-playing games, experimental games or 'serious games');  
 across to the administrations.

## References

### EDUSCAPE References (PR05)

#### Bibliography

Castiglioni B. (2010), Educare al Paesaggio. Traduzione da “Education and Landscape for Children”, Consiglio d’Europa.  
 Cisani, M., Castiglioni, B. (2019). Idee di paesaggio nei contesti educativi: attori, progetti e obiettivi. Ri-Vista. Research for Landscape Architecture, 17(1), 110-127.  
 Institute for Transportation and Development Policy, Bernard van Leer Foundation. (2022). Access for All Series. Policies for Inclusive TOD, Access and Babies, Toddlers, and Their Caregivers.  
 Marcellini N., Ralli L., (2021) Come una Pigna in città – Piccolo manuale per l'educazione in Natura.

#### Sitography

Art at School, landscape drawing activities with mixed techniques. Some examples at the following links:

<https://arteascuola.com/it/2018/11/paesaggio-a-tecnica-mista/>

<https://arteascuola.com/it/tag/paesaggio/page/4/>

[https://www.maestramarta.it/arte-e-immagine/classe-terza/paesaggi-allargati/#google\\_vignette](https://www.maestramarta.it/arte-e-immagine/classe-terza/paesaggi-allargati/#google_vignette)

<https://www.educazioneartistica.com/la-linea-creativa-paesaggi-di-linee/>

Climate Curriculum, Leeds-DEC, Development Educational Center |

Educating for a just and sustainable world

<https://leedsdec.org.uk/>

<https://leedsdec.org.uk/global-learning-lessons-science/>

European Environmental Agency (best practices)

<https://www.eea.europa.eu/publications/who-benefits-from-nature-in>

<https://www.eea.europa.eu/publications/who-benefits-from-nature-in/oasis-school-grounds-programme-in>

<https://www.eea.europa.eu/publications/who-benefits-from-nature-in/green-schoolyards-in-flemish-brabant-belgium>

Istituto Alcide Cervi — Biblioteca Archivio Emilio Sereni, For Landscape Education at School:

[https://www.istitutocervi.it/wp-content/uploads/2020/12/Brocure-didattica-paesaggio\\_WEB.pdf](https://www.istitutocervi.it/wp-content/uploads/2020/12/Brocure-didattica-paesaggio_WEB.pdf)

The Institute for Transportation and Development Policy (ITDP)

<https://itdp.org/publication/access-for-all-babies-toddlers-and-their-caregivers/>

[https://itdp.org/wp-content/uploads/2022/01/Access-for-All-Babies-and-Toddlers\\_December-2021-pages\\_final-3.pdf](https://itdp.org/wp-content/uploads/2022/01/Access-for-All-Babies-and-Toddlers_December-2021-pages_final-3.pdf)

Full Voids game, Martina Eddone and Margherita Via, 2022

<https://riga-biennial-com.s3.eu-central-1.amazonaws.com/artworks/Full-Voids-appendix-2-WEB.pdf>

<https://www.rigabiennial.com/en/education/education-kits/full-voids>

Movimento Volontari Italiani | Territori Educativi

<https://comune-info.net/scuole-aperte/il-progetto/>

Raccontami un paesaggio (best practice)

[https://umap.openstreetmap.fr/it/map/raccontami-un-paesaggio\\_210064#7/43.866/14.238](https://umap.openstreetmap.fr/it/map/raccontami-un-paesaggio_210064#7/43.866/14.238)

## Picture caption

**Fig. 1** Full Voids game, Martina Eddone and Margherita Via

**Fig. 2** Example of a possible output. Source: authors' elaboration

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