

Biodiversity for Schools

Educational track



This activity was conceived as an **educational track on biodiversity knowledge and awareness in schools**, and was co-ideated and co-implemented by following project partners: LAND, Polifactory-POLIMI, Progetto Natura Onlus, Fondazione Triulza. It has been carried out in 3 phases:

Step 1: Learning activities in schools

Step 2: Knowledge practice on field

Step 3: Raising - awareness actions in schools

Each phase is enabled by the deployment of specific practical tools to increase awareness about biodiversity among young people, especially in urban regeneration contexts.

Timeframe:

Step 1 | 2 hours in class with a frontal lecture on Biodiversity basic knowledge;

Step 2 | 4 hours on field with practical activities supported by tools, observing biodiversity in the pilot site;

Step 3 | 2 hours of creative activities in classroom to imagine the evolution of the landscape observed.

Total hours Activity: 8

Step 1 - Learning activities in schools

T-Factor presents tools for urban biodiversity education for primary and secondary school students (8-14 years old). The first phase of activities takes place in schools. Actions in Step 1 are supported by the contribution of biodiversity experts and non-profit associations that work in the field of biodiversity conservation through education on the harmonisation of the human-nature relationships.

Principle Topics discussed in the classroom:

- Definition of Biodiversity and its value in daily-life
- Definition of Biodiversity in urban regeneration areas
- Value of Local Biodiversity

Tools:

- Biodiversity Monitoring Documents
- Urban Biodiversity Observations from I-Naturalist App

Step 2 - Experience biodiversity on field

Field activities are crucial for the discovery of biodiversity in urban regeneration areas in a tangible and concrete way through direct field experiences. The act of discovering and learning about biodiversity was crucial for:

1. **Observing** and **Measuring** the presence of biodiversity with 40x40 cm grids divided into 5x5cm observation squares (answering to the questions: how many species are present in the grid? How many of them are you able to recognise?)
2. **Experiencing** biodiversity and **Mapping** senses with guiding maps and senses cards
3. **Contributing** and **Strengthening** biodiversity with bug-hotels and seeds bombs

In summary, the **Tools** needed for the 3 macro objectives of the actions carried out in the field are:

1. Markers of various colours, Printed Canvases (1 per group), Sticky Dots, Temporary Use Cards (optional)
2. 40x40 Grid in vegetable cardboard or rigid cardboard
3. Guiding Maps and Senses Cards
4. Bughotels and Seeds Bombs

Step 3 - Raising-awareness actions in schools

To encourage young people to develop imagination and awareness on Biodiversity issues, kids were required to build with paper and cardboard "dioramas", in order to represent how they imagine the biological evolution of the green spaces in the pilot case.

The aim of the activity is to stimulate the students' imagination and to encourage them in the use of images, handling the spatial dimension relationships with collage technique.

Tools:

The diorama representation tool is a time for:

- stimulate collaboration between students to make group decisions;
- select and filtering the elements that make up biodiversity;
- reflect on the value of biodiversity in relation to the evolution of the landscape over time.

Step 1



Step 2



Step 3



Biodiversity for Schools

Cardboard Grid to observe Biodiversity

Suggested time: 1 hours, depending on the number of participants
Suggested partners: No-profit Association on Biodiversity and Environment knowledge
Target: pupils, secondary and High school students

TOOL 1

Goals

The goals of this operational tool are:

- Empowering pupils to take care of the instrument as it is essential to perform the activity on field;
- Analysing the presence or absence of biodiversity in the field;
- Measuring the presence of biodiversity for flora and fauna presence in the field;
- Limiting user observation to a macro (40x40) and micro (5x5) grid
- Selecting the components that build biodiversity in the field;
- Facilitating the description of biodiversity in the field in relation to what is framed by the grid

Materials

The materials needed for the Cardboard Grid construction are:

- plant-based cardboard o cardboard
- laser-cut or cutting pattern of the grid
- primer and glue for waterproofing the object

Experience on Field



Biodiversity for Schools

Biodiversity Map and Sensory Cards

Suggested time: 1 hours, depending on the number of participants
Suggested partners: Expert in participatory processes, No-profit Association on Biodiversity
Target: pupils, primary and secondary school students

TOOL 2

Goals

The goals of this operational tools are:

- Empowering pupils to take care of the instrument as it is essential to perform the activity on field;
- Orienting pupils on urban regeneration grounds;
- Tracing path on urban regeneration grounds;
- Recognising the name of places
- Discovering biodiversity with the senses;
- Describing and analysing biodiversity elements by senses;
- Collecting data with sensory impressions at each stage of the map

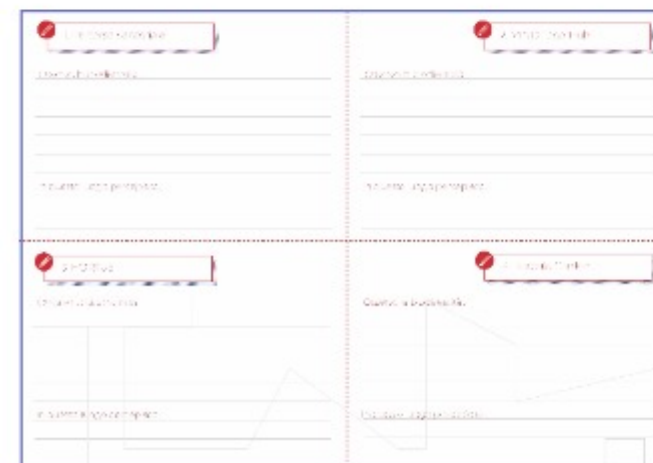
Materials

The materials needed for Biodiversity Map and Card Senses construction:

- Map of the place on A3 cardboard
- Name of the place/stop where perception actions with the senses are planned
- Card senses on cardboards or papers
- Papers and Pencils
- A set of cardboard with expressions as:

"I observe biodiversity"
 "in this place I perceive"
 (expressions for the 5 senses can be written on the back of the location map)

Experience on Field



Biodiversity for Schools

Seed Bombs

TOOL 3

Suggested time: 45 min, depending on the number of participants
Suggested partners: Expert in participatory processes, No-profit Association on Biodiversity and Environment knowledge
Target: pupils, primary, secondary and high school students

Goals

The goals of this operational tools are:

- Let the children experience with their own hands natural materials and seeds
- Raise awareness on the different types of plants and how they can support urban wildlife
- Stimulate curiosity, patience and caring of urban green spaces
- Promote cooperation and teamwork
- Raise awareness on concrete actions and practices to promote biodiversity in urban areas

Materials

- Natural clay powder
- Peat-free compost
- Meadow flower seeds, possibly both annual and perennials
- Water
- Mixing bowl

Recipe: Mix compost and natural clay in equal parts with some water, keeping the compound plastic. Add a teaspoon of the flower seed mix for each seed bomb, then mix again. Prepare the seedbombs with the mixture, let them dry for a few hours (if possible) and take action.

Experience on Field



Biodiversity for Schools

Bug Hotels

Suggested time: 1 hours, depending on the number of participants
Suggested partners: Expert in participatory processes, No-profit Association on Biodiversity and Environment knowledge
Target: pupils, high school students, adults

TOOL 4

Goals

The goal of this operational tool are:

- Diversifying of the environment and preservation of biodiversity;
- Empowering biodiversity in urban contexts;
- Seeking allies for our green space, both in terms of crop defense and increased production due to effective pollination
- Stimulate the self- construction with educational activities

The bug hotels of T-Factor at MIND are designed and prototyped by Polifactory - Politecnico di Milano. The construction was carried out using laser-cut machines in the fab-lab of Politecnico di Milano.

For an Home-made experience, it is possible to use paper templates already set up or folded cardboards for the cutting of modular wooden pieces by interlocking systems.

Materials

Materials for structure:

- Pattern models
- Wooden crates
- Wooden palletts
- Pieces of the interlocking modular box
- Pieces of the modular box with wood screws
- Wooden grills
- Upwind structure for bug hotels tower composition

Materials inside:

- bamboo reeds
- marsh reeds
- hollow stems of herbaceous plants
- branches with a soft or spongy interior
- logs
- mud
- empty shells of snails
- pine cones
- straw or hay
- dried leaves
- paper boards

Experience on field



Biodiversity for Schools

Landscape Dioramas

Wishing your landscape

Suggested time: 2 hours, depending on the number of participants
Suggested partners: Expert in participatory processes, No-profit Association on Biodiversity and Environment knowledge
Target: pupils, primary and secondary school students

TOOL 5

Goals

The goals of this operational tools are:

- Stimulating collaboration between students to make group decisions
- Selecting and filtering the elements that make up biodiversity;
- Reflecting on the value of biodiversity in relation to the evolution of the landscape over time;
- Envisioning new landscape evolutions of the pilot case

Materials

The materials needed for dioramas construction are:

- Coloured cards
- Scissors
- Glue
- Prints of animals and tree species common urban areas
- Prints of buildings consistent with the context of the pilot case
- Ribbons and cords
- Wooden sticks
- Papers and Pencils

Experience on field

