

Green wall

Bringing Living Plants into Grey Spaces

Keywords:

green infrastructure, vertical garden, reuse, urban nature, public space, planting, microclimate

Target group:

primary school pupils (ages 6-11)

Objectives:



This activity invites pupils to explore how vertical gardens — known as green walls — can bring nature back into cities and help cool, clean, and brighten urban spaces. Pupils will plan and build their own small green wall using reused plastic bottles, natural materials, and plants. Through this hands-on experience, they will learn about urban ecology, recycling, and plant care. By the end of the activity, pupils will be able to explain how green walls support sustainable cities and demonstrate how to build and maintain a simple vertical garden.

General Guideline on Time Allocation:

The duration needed to carry out this activity may vary depending on the specific group of children. Teachers are encouraged to adapt the implementation according to the needs, interests, and dynamics of the group.

In the preparatory phase, teachers may use a variety of activities to introduce and contextualize the chosen topic. These can include discussions, videos, drawings, storytelling, or even a field trip, depending on the age and background knowledge of the children.

The main construction phase, during which children plan and build their urban element using LEGO bricks, should typically not exceed 45 to 60 minutes. However, this phase often stimulates further curiosity and questions among the children, potentially leading to extended engagement or follow-up activities. For more detailed instructions and pedagogical support on how to implement activities of INNO-kids project, please download the Teacher's Methodological Guide.



Materials and Resources Needed:

- LEGO bricks of various types
- Paper, markers, crayons, and coloured pencils, scissors and glue, recycled materials such as cardboard, plastic bottles, bottle caps, or packaging
- Clean plastic bottles (all the same size recommended)
- String or garden twine
- Wooden frame, coat stand, or garden rack (to hang the green wall)
- Scissors
- Soil mixed with planting substrate
- Gravel or small stones (for drainage)
- Water container and watering cans
- Seedlings (herbs, strawberries, climbing plants, etc.)
- Photos of green walls from around the world (urban, school-based, artistic)


Note: Encourage pupils to repurpose available materials creatively. If LEGO bricks are not available, pupils may use basic craft supplies to bring their ideas to life through drawings and handmade models.

Introduction:

Begin with a walk around the school or local area. Ask pupils to look for natural elements — trees, flowers, or green spaces — and then note where these are missing. What does it feel like to be surrounded by grey walls, hot pavement, and concrete? Introduce the idea of green walls — vertical gardens that bring life and beauty into public spaces. Show examples from other cities and explain that even a small wall with plants can cool buildings, reduce pollution, support pollinators, and bring joy.

Procedure:

Preparation



Back in the classroom or outdoor workspace, discuss how green walls are built. Where would they put a vertical garden? What would it look like? What materials could be reused to make it happen? Then explain that their first task is to build a model of their vertical garden using LEGO bricks and recyclable materials. The goal is to explore shape, structure, layering, and spacing before working with soil and plants.

As they build their model, guide them to think about how water would move through the layers, how sunlight reaches the plants, and how the structure can be stable and safe. Models don't need to function — they are for testing ideas and visualising the system.



Construction

Divide pupils into small groups. Using LEGO bricks, plastic bottle parts, string, cardboard, or other clean recycled materials, each group constructs a small-scale version of a green wall.

The model should reflect the main features of a real vertical garden:

- A stable frame or structure that supports the vertical layout
- Multiple levels or "planting" layers
- Containers or compartments (e.g. LEGO boxes, bottle caps) representing planters
- Drainage or watering channels (imagined or simulated)
- Indications of real plants (e.g. green bricks, paper cut-outs, drawn herbs)

Pupils should label their models, identify plant types they would include in reality, and ensure the layout allows for sunlight, water flow, and ease of access. While no real soil or plants are used at this stage, the model should clearly communicate the design idea and function.

Details

As groups build and refine their models, encourage them to focus on both form and purpose. Ask them to think like urban designers or community gardeners:

- Does the structure look balanced and accessible?
- Would this model work in a schoolyard, on a wall, or in a playground?
- How will water flow through it? How will the plants be arranged for beauty and function?

Pupils can use markers or signs to show where edible herbs, colourful flowers, or bee-friendly plants would be placed. They may add decorations, benches, labels, or educational signs to imagine the wall as part of a welcoming public space.



Stories

Invite pupils to imagine a short story about how their green wall changes a space. Perhaps a lonely wall becomes a place for butterflies. A noisy corner becomes calm. A child walks by every day and watches the herbs grow taller.

Presentation

Each group presents their green wall to the class, describing how it was built, what plants they chose, and why. Pupils are encouraged to reflect on how their wall contributes to the environment and how it might grow and change over time.



Tips:

- Encourage pupils to treat their model as a real design proposal — not just a craft, but a prototype for something that could actually improve a space.
- If pupils get stuck, suggest they look again at photos of real green walls to gather new ideas.

Additional Considerations:

Differentiation:

Provide additional support or simplified instructions for pupils who may require extra assistance. For advanced pupils, offer extension tasks such as researching further sustainable practices or designing more complex models.

Assessment:

Assess pupils based on their participation and engagement during discussions and hands-on activities. Evaluate the creativity, effort, collaboration, depth of understanding demonstrated in their models, critical thinking, ability to provide constructive feedback and presentation skills.

Extension Activities:

If space and materials allow, pupils can transform their model into a real vertical garden — using bottles, soil, and live plants as outlined in the original construction plan. This could be installed on a fence, balcony, or indoor frame.



Curriculum

Connections:

This activity integrates:

Science (*plant needs, ecosystems, water cycle, climate adaptation*)

Social Studies (*shared responsibility for public spaces*)

Art (*design, creativity, construction*)

Language (*storytelling, discussion, presentation skills*)

SDG Connections:

- **SDG 11:** Sustainable Cities and Communities – Pupils bring green ideas to built environments, improving quality of life.
- **SDG 12:** Responsible Consumption and Production – Pupils reuse materials and learn how design can reduce waste.
- **SDG 13:** Climate Action – Pupils understand how urban greenery helps reduce heat.
- **SDG 15:** Life on Land – Pupils support biodiversity and microhabitats for insects and pollinators.



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