Crossroads

Safe and Smart Street Intersection

Keywords:

intersection, safety, traffic flow, pedestrians, cyclists, signals, urban planning, mobility

Target group:

primary school pupils (ages 6-11)

Objectives:

In this activity, pupils explore how crossroads affect movement, safety, and daily life in a neighbourhood. They will design a street intersection that supports safe and efficient travel for all users — pedestrians, cyclists, car drivers, and public transport — while also integrating green and accessible solutions. Pupils will learn how thoughtful planning can prevent accidents, reduce pollution, and make the public space more welcoming and functional.

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
- Recycled materials: cardboard, paper, tubes, bottle caps
- Paint or markers for roads, lines, arrows, symbols
- Natural materials: pebbles, twigs, dried leaves
- Printed icons: traffic lights, bike lanes, pedestrian signs
- Cardboard base (preferably square or cross-shaped)

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:

Ask pupils:

- What is a crossroads or intersection?
- What problems can happen there? (confusion, accidents, noise, delays)
- Who uses the space — not just cars, but who else?

Explain that crossroads are meeting points — not only for vehicles but for people, bicycles, wheelchairs, buses,... Their design should prevent accidents, reduce stress, and support movement in all directions.

Introduce the task: "Your job is to design a crossroads that is safe, clear, people-friendly, and sustainable."

Procedure:

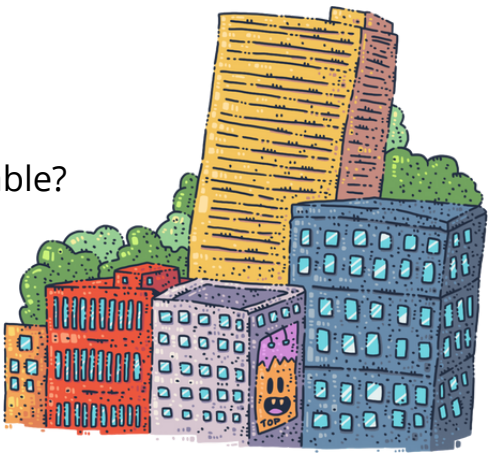
Preparation

In groups, pupils:

- Think about the types of roads that meet at the intersection (busy vs. quiet, wide vs. narrow)
- Identify all users: children, parents, elderly, cyclists, drivers
- Sketch the layout: pavements, crossings, traffic lanes, bike paths, traffic lights, signage, trees, benches, visibility zones

They discuss:

- How do we avoid danger at the crossing?
- How can we make waiting times more comfortable?
- Where can nature be included?



Construction
Pupils build a model intersection using available materials. The model should include:

- Roads meeting at right angles, a T-junction, or a roundabout
- Clearly marked pedestrian crossings and cycle lanes
- Traffic signs and lights, especially at turning points
- Refuge islands or waiting spots in the middle
- Green corners with trees or flowerbeds
- Benches or seating near crossings for older people or those with children

Details
Encourage pupils to focus on:

- Visibility: can all users see each other in time?
- Timing: do lights allow enough time for children or older people to cross?
- Access: are paths smooth and wide for wheelchairs and bikes?
- Green thinking: does the crossing reduce heat, support pollinators, or include rainwater drainage?

Optional additions:

- Shade from trees
- Solar-powered lighting
- A sculpture or artwork in the centre island

Stories
Each group creates a short story set at their crossroads:

- A cyclist safely turns thanks to a separate lane
- A child presses the crossing button and sees it change
- A wheelchair user crosses comfortably thanks to a lowered curb

Presentation
Each group presents their crossroads model:

- What makes it safe and clear
- How it respects all types of users
- What eco-friendly or human touches were added

Tips:

Ask pupils:

- “Where would you feel safest crossing?”
- “Does everyone get the same chance to move?”
- “What happens here at night or in rain?”

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:

- Do a walking audit of a nearby real crossroads
- Interview a local traffic officer or transport planner
- Create street signs or crossing safety posters
- Link the model to previous activities (e.g. residential street → crossroads → park)

Curriculum Connections:

This activity integrates:
Civic Education *(traffic rules, safety, air quality, noise, street greenery)*
Mathematics *(symmetry, angles, flow diagrams, proportion)*
Social Studies *(city life, infrastructure, inclusivity)*
Art *(design, creativity, construction)*
Language *(storytelling, discussion, presentation skills)*

SDG Connections:

- **SDG 3:** Good Health and Well-being – Pupils ensure safety and accessibility in public spaces
- **SDG 11:** Sustainable Cities and Communities – Pupils plan inclusive and people-first infrastructure
- **SDG 13:** Climate Action – Pupils reduce car dominance and promote walking and cycling
- **SDG 10:** Reduced Inequalities – Pupils design spaces usable by all ages and abilities
- **SDG 15:** Life on Land – Pupils support nature in city infrastructure

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