Underpass

Building a Safe and Fun Way!

Key words:

LEGO, construction, underground passage, traffic safety, pedestrians, cyclists, accessibility, environment, engineering, infrastructure, creativity, play

Target group:

primary school pupils (ages 6-11)

Objectives:

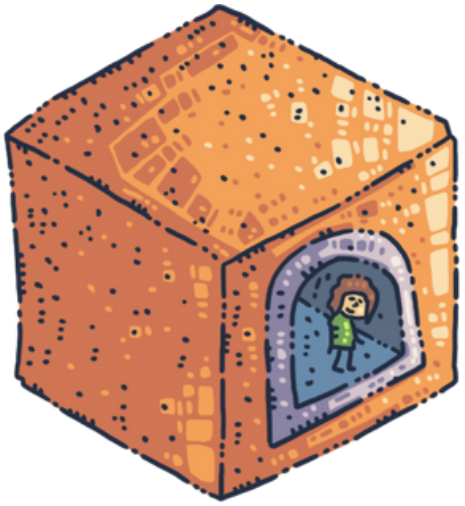
To introduce the concept of an underground tunnel and its importance in urban infrastructure.
To raise children's awareness of the importance of traffic safety and the use of underground passages.
To promote creativity and imagination by building an underground tunnel with LEGO.
To explore the basic principles of engineering and construction.
To develop teamwork, problem solving and communication skills.
To promote environmental awareness and sustainability.

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/resources required:

- Several Lego pieces of different colors and shapes.
- Lego bases (optional).
- Lego miniatures representing pedestrians, cyclists, drivers, etc.
- Lego traffic signs (traffic lights, signs, etc.).
- Decorative elements of Lego (flowers, trees, benches, etc.).
- Lego cars and other vehicles.
- Drawing paper and pencils (optional).

Note: in the absence of elements in LEGO pieces, invite children to draw, color and cut on paper, or build using other material

Introduction:

Talk to children about the importance of traffic safety and the use of underground passages. Explain how underground passageways help to protect pedestrians and cyclists from cars and other vehicles. You can show photos or videos of real underground passageways for children to get a better idea of the environment. Start with the children's prior knowledge and, if possible, visit an underground passage with the children.
An underground tunnel, also known as an underpass, is an underground passageway that allows vehicles or people to cross underneath a road, railway line, or other barrier. These tunnels are important to facilitate traffic and improve safety in urban areas. In this activity, we will explore the theme of the underground tunnel by building our own tunnel with LEGO. Let's imagine how we can design and build a tunnel that is safe and functional.

Procedure:

Preparation
Introduce the theme of the underground tunnel and briefly discuss its importance in urban infrastructure.
Introduce the available LEGO sets and explain that children will use these blocks to build an underground tunnel.

Construction
Divide the children into groups of 2 to 4 people.
Ask each group to draw up a plan for their Lego underground passage.
Let the kids explore LEGO and start building the underground tunnel.
Encourage creativity and imagination while building the different elements of the tunnel, such as walls, floor, ceiling and entrance/exit.
Encourage them to think about the safety and functionality of the tunnel when designing it.
Encourage creativity and collaboration among team members.

Details
Once the basic structure of the underground passage is ready, groups can add details such as:
Lego miniatures representing pedestrians and cyclists using the underground passage.
Traffic signs to indicate the path and ensure the safety of pedestrians and cyclists.
Decorative elements such as flowers, trees, benches, murals, etc. to make the environment more pleasant and cozy.
Cars and other vehicles driving on the streets above the underground passage.

Playing
When the passage is complete, children can play freely with it, creating different stories and scenarios. Encourage dramatization and interaction between groups.

Presentation
After the constructions are complete, ask the children to present their underground tunnels to the group.
Each child can explain the different elements of their construction and how their tunnel contributes to urban infrastructure.

Tips:

- Teach children about traffic safety rules and how to use the underground passage safely.
- Children can create signs to indicate the path and inform about the dangers of the street.
- The underground passage can be integrated into a model of the Lego city, with streets, cars, houses and other buildings.

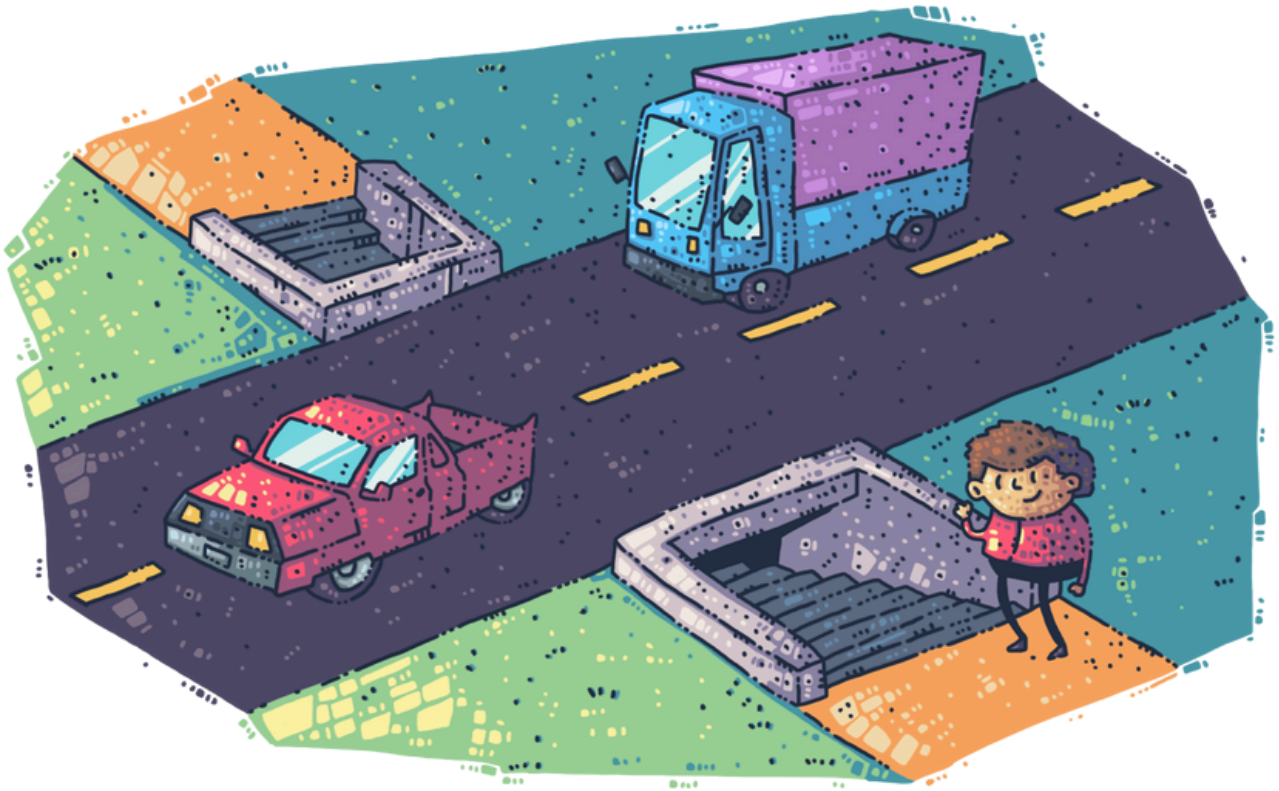
Additional Considerations:

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.

Curriculum Connections:

This activity integrates:
Environmental Studies (urban infrastructure, transport systems, sustainability, traffic safety)
Mathematics (geometry, spatial awareness, measurement)
Art (creativity, design, construction with LEGO)
Language (oral expression, project presentation)
Citizenship and Social Development (traffic rules, responsibility, environmental awareness)



SDG Connections:

- **SDG 3:** Quality Health – Ensure healthy lives and promote well-being for all at all ages.
- **SDG 9:** Industry, Innovation and Infrastructure.
- **SDG 11:** Sustainable Cities and Communities – Making cities and communities inclusive, safe, resilient and sustainable.
- **SDG 13:** Climate Action – Take urgent action to combat climate change and its impacts.
- **SDG 17:** Partnerships for the Goals – Strengthening the means of implementation and revitalising the Global Partnership for Sustainable Development.

By exploring the construction of an underground tunnel, children are learning about the importance of urban infrastructure for the sustainable development of cities. In addition, the activity promotes creativity and problem solving, skills essential for innovation and technological progress.

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