

Ditch

A journey of fantasy!

Key words:

Legos, ditch, Construction, Environment, Sustainability, Collaboration

Target group:

primary school pupils
(ages 6-11)

Objectives:

This hands-on LEGO activity teaches children about the essential role of ditches and canals in water management and flood prevention. As participants design and build their water systems, they'll develop fine motor skills while exploring environmental concepts through creative construction. The project fosters teamwork and collaboration, blending scientific understanding of water systems with artistic design principles for a multidisciplinary learning experience.



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:

- Legos of different shapes and sizes.
- Images of canals and ditches (natural and artificial).
- Paper sheets and colored pencils.
- Small dolls or Lego figures.
- Information sheets on the importance of canals and ditches for the environment and civil engineering.

Introduction:

Explain to children that a channel is a passage, natural or artificial, for conducting water, which can be used for watering, drainage or navigation. Talk about how canals help control floods, provide water for agriculture, and are used for transportation. Show images of different types of channels and discuss their importance in water management.

Procedure:

Preparation

Divide the children into small groups of 3 to 4 participants.

Each group should discuss and plan what their channel will look like. They can draw a sketch on paper to guide them in construction.

Construction

Using Legos, groups begin to build their canal, paying attention to details such as the canal's margins, depth and width, as well as additional elements such as bridges or small boats.

Details

After construction, children can decorate their channel with additional pieces and small Lego figures representing people, animals and plants.



Discussion on Sustainability

After construction, discuss with children about the importance of canals for water management and sustainable practices that help preserve these resources.

Presentation

Each group introduces their channel to the rest of the class, explaining what they have built and what they have learned about the importance of channels and ditches in water management and flood prevention.

Tips:

- Suggest students to do research on ditches and canals, so that they better understand their function and location (field, city, etc.), in order to define what elements, they want to use in their construction.
- Encourage students to add essential elements to their construction: plants, animals, vessels, buildings, etc.
- Distribute reusable materials, such as fabrics, paper and plastic, which can be used so that children can create additional elements to decorate their buildings, making them more realistic.

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:

- Interview someone who lives in a block of flats
- Plan a shared event for the whole building
- Discuss how buildings can be made more eco-friendly (e.g. recycling bins, bike racks, green walls)





Curriculum Connections:

This activity integrates:

Environmental Studies (importance of water management, water cycle, and natural disaster prevention)

Art (creativity and visual expression through LEGO design and construction)

Language (oral communication during group discussions and project presentation)

Social Skills (teamwork, communication, and idea sharing)

SDG Connections:

- **SDG 6:** Drinking Water and Sanitation – Ensure availability and sustainable management of water and sanitation for all.
- **SDG 11:** Sustainable Cities and Communities – Promote the creation of resilient and sustainable infrastructure for water management.
- **SDG 13:** Action Against Global Climate Change – Encourage water management practices that help mitigate the effects of climate change.
- **SDG 15:** Earth Life – Protect, restore and promote the sustainable use of terrestrial ecosystems.
- **SDG 4:** Quality Education – Promote inclusive and equitable learning by encouraging creativity and critical thinking.
- **SDG 17:** Partnerships and Means of Implementation – Encourage collaboration and teamwork by developing communication and cooperation skills among children.

