Boathouse

LEGO Boathouse Challenge

Keywords:

Creativity, Problem-solving, Engineering, STEM

Target group:

Children aged 8 and above

Objectives:

This LEGO-based activity encourages children to explore fundamental engineering concepts while creatively designing and constructing their own boathouses. Through hands-on building, participants will develop problem-solving skills and teamwork as they collaborate on their projects, blending technical learning with imaginative play in an engaging, interactive format.

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 (assorted sizes and colors)
- Baseplates or building platforms
- Marker pens

Introduction:

"LEGO Boathouse Challenge" is a hands-on activity designed to inspire creativity and teamwork. Participants will use LEGO bricks to design and build their own unique boathouses, exploring engineering concepts while having fun.

Procedure:

Preparation
Kicks off with a brainstorming session where participants can freely generate ideas for their boathouse designs.
Divide participants into small groups.
Present the challenge: "Design and build an adventurous boathouse using LEGO bricks."
Encourage brainstorming and discussion of ideas within each group.
Groups create a rough sketch or plan of their boathouse design.
Encourage consideration of layout, color scheme, and special features.

Construction
Provide LEGO bricks and baseplates for construction.
Encourage creativity and experimentation.

Testing and Evaluation
Test the stability and functionality of the boathouses.
Discuss the durability and creativity of each design.

Discussion and Reflection
Groups share building experiences and favorite design elements.
Discuss how the activity developed problem-solving skills and teamwork.

Note: The activitie offers a fun and educational experience, fostering creativity and teamwork through hands-on building with LEGO bricks.

https://kidscraftroom.com/stick-raft-building-stem-project/

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 *(the function and context of boathouses, aquatic environments, water safety and environmental awareness)*
Art *(creativity and visual expression)*
Language *(oral communication)*
Social Skills / Citizenship Education *(teamwork, collaboration, idea sharing, and problem-solving in group settings)*

SDG Connections:

- **SDG 4:** Quality Education - Promotes creative learning in STEM (engineering, design, and problem solving).
- **SDG 9 -** Industry, Innovation and Infrastructure - Introduces basic concepts of engineering and sustainable construction (innovation through structural design).
- **SDG 11:** Sustainable Cities and Communities . Adapted to include sustainability (e.g., use of 'green' materials or discussion of resilient infrastructure near rivers/lakes).

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