

Aquarium

A Sustainable Underwater Oasis

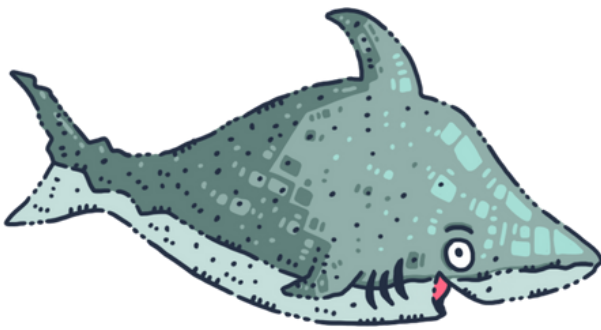
Keywords:

sustainability, aquarium, marine life, conservation, ecosystem

Target group:

primary school pupils
(ages 6-11)

Objectives:



This activity introduces pupils to the concept of sustainable aquariums and the vital role they play in marine conservation and education. Pupils will explore how aquariums can be designed to mimic natural habitats, support biodiversity, and reduce environmental impact.

Through teamwork and hands-on model-making, they will develop a deeper understanding of marine ecosystems and the challenges they face, such as pollution and habitat loss.

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:

- Shoeboxes, transparent plastic containers, or cardboard boxes
- Blue cellophane, plastic wrap, or tissue paper (to simulate water)
- Recycled materials such as bottle caps, straws, and plastic packaging
- Natural materials like stones, sand, dried leaves, or shells
- Coloured paper, scissors, glue, markers, string, tape
- LEGO pieces or small figures
- Images or posters of marine animals, ocean habitats, and real sustainable aquariums
- Tablets or books with information about marine biodiversity, aquarium systems, and conservation projects (optional)

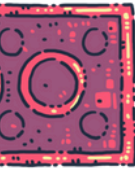
Note: Encourage pupils to use their imagination and repurpose available materials in creative and functional ways. If LEGO bricks are not available, pupils may draw, cut, and construct using paper and craft supplies.

Introduction:

Begin by asking pupils what they know about aquariums. Have they ever visited one? What kinds of animals did they see? What did they learn? Explain that aquariums are more than just places to see fish — they can also help protect endangered species, educate people about the ocean, and inspire action to protect marine life. Then introduce the idea of a sustainable aquarium: one that is kind to both animals and the environment. Show pictures or short videos of real-life aquariums that use renewable energy, recycle water, or recreate natural habitats for marine creatures.

Procedure:

Preparation:

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- Begin by exploring the importance of ocean ecosystems and the threats they face — such as plastic pollution, overfishing, and coral bleaching.
 - Show examples of sustainable aquarium practices, like using filtered seawater, energy-efficient lighting, and educational exhibits about marine life.
 - Lead a discussion with pupils: What would make an aquarium both fun and environmentally responsible? What should visitors learn there?
 - Then explain the challenge: to design and build a model of a sustainable aquarium that protects marine life and teaches people about the ocean.



Construction:

Divide pupils into small groups and provide craft and recycled materials.

Ask each group to:

- Choose several marine animals or ecosystems to feature (e.g. coral reef, kelp forest, deep sea)
- Design tanks or habitats that meet the animals' needs and mimic real environments
- Include sustainable features, such as water recycling systems, solar panels, or educational displays
- Build their aquarium inside a box or container, using coloured backgrounds, fish cut-outs, and handmade decorations
- Add signs, pathways, or miniature visitors to simulate the experience of walking through their aquarium

Details:


As groups work, guide them in refining the features of their aquariums.

Ask: How is your aquarium protecting the ocean? What can visitors learn from your design? How do the animals feel in this space? Support pupils in adding interactive or educational elements — such as touch screens (drawn or simulated), signs with ocean facts, or recycling bins. Highlight the balance between education, conservation, and care.

Stories:

Invite pupils to create a story set in their aquarium. The story can follow a visitor exploring the exhibits, or a marine animal experiencing its new home. Pupils can describe how visitors react to the exhibits, what they learn, and how the design of the aquarium supports marine life. They might include challenges — such as a plastic pollution problem or a rescued sea turtle arriving at the centre — and explain how their aquarium responds.

Presentation:



Invite each group to present their sustainable aquarium model. Pupils should walk their classmates through the different features of their aquarium — highlighting marine habitats, animal care, eco-friendly systems, and educational zones. Encourage them to explain how their design helps protect ocean life and inspires visitors to take action. Presentations can include visual aids, signs, and even sound effects or background music to bring the aquarium experience to life. After each presentation, allow time for classmates to ask questions or offer feedback. Consider creating a temporary classroom “aquarium gallery” where all the models and stories can be displayed.



Tips:

- Remind pupils that a great aquarium is not just beautiful — it also respects animal needs and helps protect the planet. Use guiding questions like “What would a sea turtle need to feel safe here?” or “How can your aquarium teach visitors to care for the ocean?”
- Encourage creative use of textures, colours, and materials to make underwater scenes feel alive.

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.

Extended learning:

Plan a visit to a local aquarium (virtual or in-person) and compare its features with the pupils’ models. Invite a marine biologist, aquarium staff member, or conservation expert to speak with the class. Launch a class campaign to reduce plastic waste or raise awareness about ocean protection. Pupils could also design informational posters, leaflets, or short videos to promote marine conservation and share them with the school community.

Curriculum Connections:

This activity integrates:

Science (*marine ecosystems, habitats, pollution, biodiversity*)

Social Studies (*environmental issues, conservation, community engagement*)

Art (*design, creativity, construction*)

Language (*oral communication, storytelling, and listening skills*)

Technology (*use of digital tools*)

SDG Connections:

- **SDG 12:** Responsible Consumption and Production – Pupils explore how aquariums can reduce waste and promote sustainability.
- **SDG 13:** Climate Action – The activity raises awareness of how human actions affect marine life and global systems.
- **SDG 14:** Life Below Water – Pupils learn about ocean ecosystems and how to protect marine biodiversity.