Ploughed Field

From Plow to Prosperity via Sustainability

Keywords:

land management, soil health, biodiversity, cenvironmental impact, sustainable agriculture

Target group:

primary school pupils (ages 6-11)

Objectives:

This activity introduces pupils to the principles of sustainable land management in agriculture, focusing on the vital role of soil health and biodiversity. Through hands-on learning, model building, and collaborative discussions, pupils will explore how to balance agricultural productivity with environmental responsibility. They will learn about soil types, understand the importance of diverse crops, and discover sustainable practices such as crop rotation, cover cropping, and composting. By the end of the activity, pupils will be able to explain how healthy soil supports ecosystems and food production, develop a model of a ploughed field that incorporates eco-friendly strategies, and reflect on the long-term benefits of sustainable farming .

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.

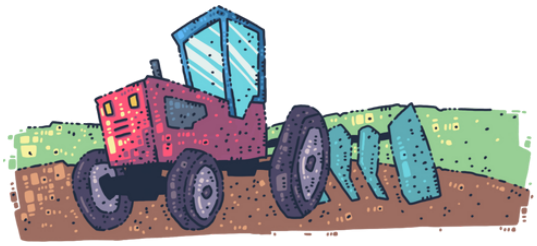
The main construction phase, during which children plan and build their urban element using LEGO bricks, should typically not exceed 45 to 60 minutes. However, this phase often stimulates further curiosity and questions among the children, potentially leading to extended engagement or follow-up activities. 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:

- Pictures of ploughed fields and examples of sustainable farming practices
- Whiteboard and markers
- Craft materials: paper, crayons, coloured pencils, scissors, glue
- Small plant pots, soil samples (e.g. sandy, clay, loamy), and seeds (e.g. beans or peas) (for tactile exploration and planting activity)
- Recycled materials such as cardboard, bottle caps, and plastic containers (for constructing compost bins, water systems, and field elements)
- LEGO bricks or other building blocks (optional, for modelling landscapes, crops, and farm structures)
- Tablets or computers with educational apps or videos (optional, for interactive learning or virtual farm simulation)
- Pre-recorded interview with a sustainable agriculture expert (optional, for real-world insight and reflection)

Note: Encourage pupils to use a variety of creative and recycled materials when building their models. If LEGO bricks or digital tools are not available, pupils can rely entirely on craft supplies and natural materials to represent sustainable land practices.

Introduction:



Show pupils photos of ploughed fields and pass around small plant pots filled with different types of soil — such as sandy, clay, and loamy soil. Encourage pupils to touch and observe the soil, then lead a short discussion using the question: “Why is soil so important for growing food?” Use this sensory experience to introduce the idea that soil is more than just “dirt” — it is a living, essential part of our planet that supports plant growth and biodiversity.

Procedure:

Preparation:

- Present images or a short video showing both traditional and sustainable farming methods. Encourage pupils to discuss what challenges farmers might face when trying to grow enough food while also protecting the environment.
- Invite pupils to consider how land can be managed in a way that is both productive and environmentally friendly.

Construction:
Divide the class into small groups and explain that each group will design and build a model of a ploughed field that supports sustainable farming. Pupils will create a miniature field that includes both crops and features supporting biodiversity. Guide pupils to include sustainable practices in their designs, such as:

- Crop diversity (e.g., including legumes or root vegetables)
- Cover crops to protect soil between growing seasons
- Compost bins made from recycled materials
- Water conservation systems, like rainwater collection
- Windbreaks or hedgerows to protect soil and support wildlife
- Signs showing no-pesticide zones or organic growing areas

Details:
As groups build, ask reflective questions such as: What makes your field sustainable? How does your design help keep the soil healthy? What would happen to your crops if the soil was poor? Support pupils in making connections between their design choices and the real-world impact of farming practices. Encourage them to think about the long-term health of their land and how different features — like biodiversity zones, crop rotation or composting — can help the field stay productive and balanced over time.

Stories:
Engage pupils in a role-playing activity. Assign or let them choose roles such as farmer, soil scientist, biodiversity expert, or local community member. Ask them to create a short story or scenario about managing their field over the course of a growing season. The story can describe how they care for the soil, deal with challenges like pests or drought.

Presentation:

- Invite each group to present their ploughed field model. Pupils should explain the key features of their design, focusing on how their choices support soil health, increase biodiversity, and improve long-term productivity. Encourage them to point out specific sustainable practices they included and describe how these benefit both the environment and local communities.
- Use interactive tools—such as tablets or an interactive whiteboard — if available, to allow pupils to showcase photos, videos, or drawings related to their work. After each presentation, open the floor for questions, comments, and peer feedback.

Tips:

- Encourage pupils to be imaginative in how they represent crops, soil structures, and sustainable elements using simple materials.
- Use real-life examples—such as local farms, community gardens, or school compost bins — to make the learning more relatable.

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:

- Plan a visit to a local farm or invite a sustainable agriculture expert to speak with the class about real-world farming challenges and solutions.
- Develop a class project to apply sustainable techniques in a school garden.
- Use interactive educational tools — such as farming simulation apps — to let pupils experiment with different choices and see how they affect yield, soil health, and the environment.

Curriculum Connections:

This activity integrates:

Science *(types of soil, soil health, biodiversity, sustainable agriculture and ecosystem stability)*

Social Studies *(sustainable agriculture, global and local impacts, food security and community well-being)*

Art: *(creativity, spatial reasoning, and model construction)*

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

Technology *(digital tools, educational apps and simulations)*

SDG Connections:

- **SDG 2:** Zero Hunger – Pupils learn how sustainable agriculture helps ensure long-term food security.
- **SDG 12:** Responsible Consumption and Production – The activity promotes farming practices that reduce environmental impact.
- **SDG 15:** Life on Land – Pupils explore how biodiversity and land stewardship are essential for healthy ecosystems and resilient food systems.

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