

Geography, food, agriculture. Food growing in floating farms

STEM, global issues, growing food around the world – make a floating ‘farm’

Aim: Pupils think about global sustainable development issues and how people can grow food on flooded lands.

Start by discussing flooding as a local and global issue, showing photos of floods here and in Bangladesh.

Talk about how people can grow food in this situation.

Research floating farms in Bangladesh (food growing) and Rotterdam (cows).



Floating gardens

Activity:

Pupils create models of the floating farms as a way to produce crops. In Bangladesh communities build floating gardens to grow their crops on as a result of flooding made worse by climate change. In this activity students are asked to design their own floating garden on which they can grow seeds.

- Write a design brief and consider the issues of creating a structure that must float, contain soil, grow an economical crop, and be harvestable. Pupils test and evaluate their models before making the final design.

To make the model

- Use loosely lashed twigs or similar form mini-rafts.
- Top with a membrane and soil
- Test and evaluate.
- Seed with cress or quick growing microgreens.
- Float the rafts in "ponds" made from plastic trays or lined cardboard boxes.
- Observe the growth of the seeds in the different models – make sure the same crop is being grown in more than one type of floating farm, in order to make fair comparisons between growth rates and crop quality.
- Should the crops be watered or should the model be designed so that the seeds can obtain the water they need from the pond in which they are floating?
- How can you make sure the seeds don't 'drown' though too much water in the compost?

Which floating farm models worked best? Why?

Eat the crop in a salad or sandwich!



FLOATING GARDENS
STEM CHALLENGE!



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Resources:

- **Modelling materials**, (recycled) including items that trap air, and can float, but that also can be made water permeable: small plastic bottles, food trays, twigs, wooden 'coffee stirrers' lollypop sticks, bubble wrap, corks etc.
- **Joining and cutting equipment** such as sticky tack, masking tape, elastic bands, duct tape, scissors, craft knives.
- **Growing medium** compost and/or soil from the school grounds and a membrane to contain the growing medium, whilst allowing water through to the plant roots.
- **Waterproof trays** to float model farms in while the seeds are growing.

More springboards:

- Design Technology Learning Springboards: Hydroponics

Growing rice in a Tokyo elementary school

