

Wetland

IN A PAN

What do you need?

- Rolling paint pan or similar tray
- Clay
- Sponges
- Watering can or spray bottle with water
- Cup of soil
- Jar of muddy water

Wetlands can reduce the impacts of flooding, as they can absorb heavy rain and release water gradually. This experiment demonstrates how wetlands prevent soil erosion and flooding and how wetlands improve water quality by filtering sediments and pollutants.

Build your model

1. Create the Land and Water Areas:

- Spread a layer of clay over one-quarter to one-third of the tray to represent land.
- Leave the remaining part of the tray empty to represent a body of water (lake, river, or ocean).
- Shape the clay to gradually slope down towards the water. You can also form peaks and valleys to mimic natural landforms.

2. Add the Wetland Buffer:

- Cut a sponge to fit the space along the edge of the clay land, creating a wetland buffer zone between the land and water.
- Ensure the sponge fits snugly without any gaps underneath or on the sides.

3. Optional Decoration:

- Decorate your land and wetland with plant cuttings to represent trees and other vegetation.





Procedure

1. Discuss Wetland Features:

- Explain that wetlands are complex natural systems, performing important functions such as filtering pollutants, reducing flood damage, and preventing soil erosion.

2. Simulate Rain with Wetland:

- Slowly spray or sprinkle some water on the clay land and observe what happens. Some of the water will be slowed down by the sponge wetland, while some will flow into the water area.
- Demonstrate that the wetland soaked up water by squeezing the sponge.

3. Simulate Rain without Wetland:

- Remove the sponge wetland and pour or spray the same amount of water on the model at the same spot. Observe what happens. The water should flow into the water area much faster and may eventually overflow and flood the land. This demonstrates how the wetland buffers the flow of water.
- Explain that most wetlands are shallow basins that collect water, slow its rate of flow, and retain water for a time. This slowing process helps reduce flooding and prevents soil erosion.
- Ask: "What would happen if a wetland is destroyed and houses are built there, and there was a severe rainstorm?"

4. Simulate Rain with Soil and Wetland:

- Remove the water from the previous demonstration and replace the wetland sponge.
- Explain that this demonstration will be similar to the first, but this time soil will cover the clay land.
- Ask: "What do you think will happen to the bare soil when it rains?"
- Spread soil onto the clay and simulate rainfall by pouring muddy water onto the land. Explain that this water represents polluted runoff.
- Compare the water that ends up in the water area with the initial muddy water. The soil particles should be trapped by the sponge wetland, making the water that flows into the water section cleaner.

5. Remove Wetland and Repeat Soil Experiment:

- Remove the wetland sponge and repeat the experiment.
- Observe and discuss what happens without the wetland in place. The water should be muddier and flow into the water area more quickly, demonstrating the wetland's role in filtering pollutants and slowing water flow.