Whakamātau | Experiment:

How do repo | wetlands filter freshwater to make it cleaner?

Step 1 Cut a plastic bottle in half and set it up as in the picture. Line the top part with a well-folded paper towel, then fill it up with stuff like soil, sand, gravel, dead leaves, fresh leaves, and grass.

Step 2 Pour some muddy/dirty water into the top of the model.

It's all to do with what's happening within wetlands.

- Water slows right down when it is flowing through wetlands. Repo have water-loving soils that act like a sponge, and vegetation (plant life) that gets in the way. Sediments (like sand or silt) and organic matter (like leaf litter) in the water have time to drop and settle down on the bottom of the repo, rather than moving on to rivers and lakes. The scientific name for this is "particle settling".
- The roots of wetland plants take up nutrients (like nitrogen and phosphorus) and pollutants (like zinc and lead) for the plants to store and use, removing them from the water. Wetland algae and bacteria do this as well.
- Natural chemical reactions and cycles happen within wetlands. These transform and break down pollutants and nutrients.

Step 3 Compare the muddy water with the water filtered through the wetland model.

Video instructions found here.

Wetlands are often referred to as "nature's kidneys".