

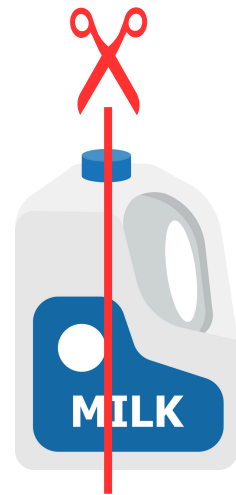
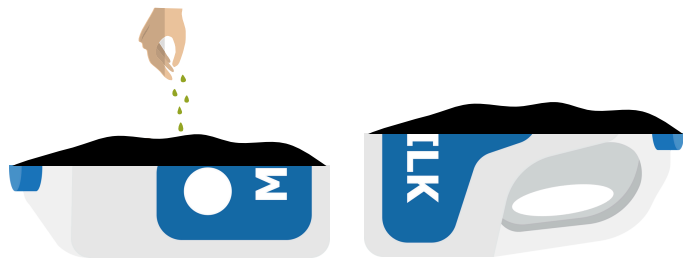
# HOLDING IT TOGETHER

We've explored how important natural habitats are at protecting the coast, including the importance of seagrass roots, so let's look at how these roots reduce erosion now!

You will need:

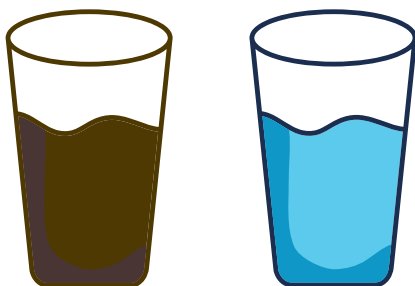
- Milk carton (empty)
- Plant seeds (e.g. grass/ basil etc.)
- Soil
- Water
- Jug
- Tray

Step 1: Take a large carton of milk and half it, cutting from the centre of the opening to its base. Ask a grown up to help with this part!



Step 2: In one half, add soil and plant seeds, and in the other, add just soil...

Step 3: Once the plants are fully grown, place both halves of the carton at an angle over a tray or bowl, with the carton mouth open at the base, and gently pour water over each half.



Step 4: Observe the water collected from each tray and compare them, which water is cleaner? You may need to pour the water from each tray into different glasses to compare more easily!

## Top Tip!

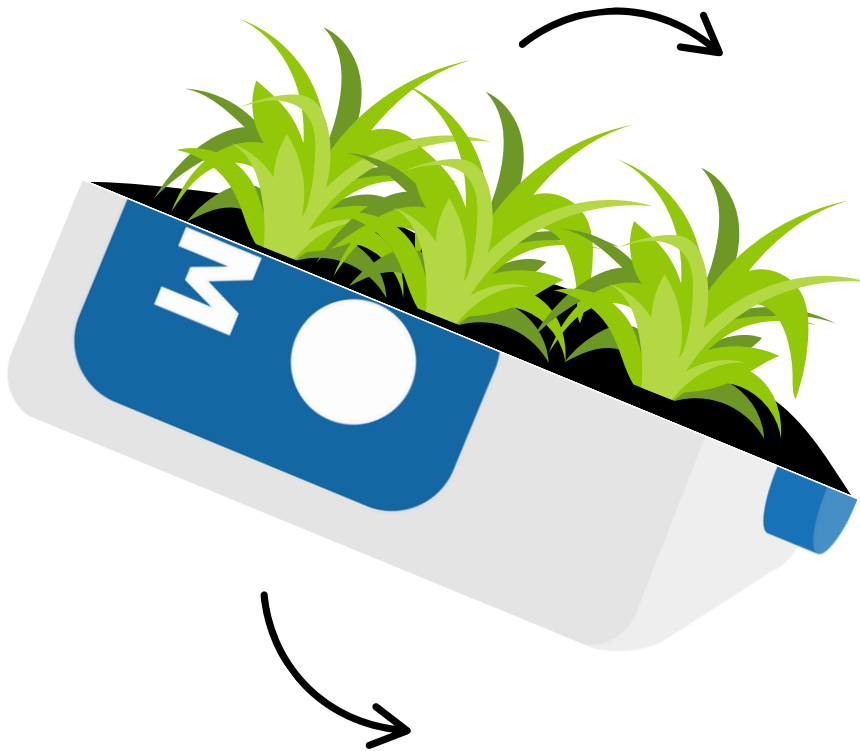
If you don't want to grow your own plants, buy ready grown plants from the supermarket. The dying ones may be discounted, but it's the roots that are important in this demonstration!

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Step 5: You can try altering different 'variables' to explore the importance of these roots in the soil!

Try:

- Holding the milk jugs at different angles so the water runs down faster or slower.
- Adding a layer of sand or gravel above or below the soil and testing the effects.
- Trying this with different plants.
- Adding the water in a single stream vs. showering the water as if it was a heavy rainstorm!



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**Demonstration Explained:** Plant roots weave through the sediment that they grow in, holding it together and so preventing it from being washed away as water moves over it. Many plants, including some seagrass species, have very small hairs on their roots that help them to bind to the soil.

Without roots, the sediment is loose, and so waves, fast flowing water or strong currents can all pick up and transport this sediment elsewhere. This is true on land during intense rainfall, and along the coast where entire beaches can be moved during a single storm!

The root system of plants can therefore help to reduce erosion by preventing this movement of sediment, creating stronger and more resilient coastlines.

