

The Eco-Traveller Notes for Teachers – Cyprus



The Mediterranean island of Cyprus has been suffering from a long drought linked to climate change. Rainfall has fallen by 50% during the last 30 years and the islanders are now very short of water.

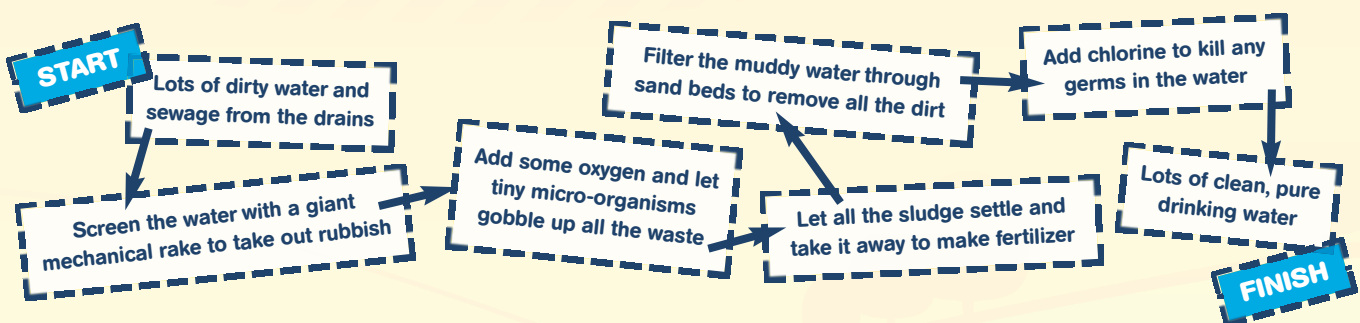
Many people visit on holiday every year, but don't realise the scale of the problem because hotels are well supplied and the very limited resources are often supplied to tourists and their swimming pools as a priority. Many of the Mediterranean islands face the same problem.

One solution might be to recycle water so that everyone has enough but the shortage is now so serious that even underground supplies are filling up with salty sea water while the reservoirs are drying up. There are 3 desalination plants in Cyprus, taking seawater and purifying it, but they are very expensive to run and cause pollution; local people object to living near them.

Recycled Water

This very simple diagram shows some of the stages water must go through as sewage gets turned back into drinking water. In the UK, partially treated 'effluent' gets pumped back into rivers, but in Cyprus the shortage is too severe, so rivers are allowed to run dry. This has a catastrophic effect on wildlife.

- Raw sewage goes to the recycling plant where it is screened to collect rubbish, which usually goes to a landfill site.
- Oxygen bubbles through the water (aeration) so micro-organisms thrive, chewing up solid waste, which converts to CO₂.
- This is the cheapest and most cost-effective method.
- Sludge settles to the bottom and will be pumped out over several days to be treated with sawdust and sand, turning into compost or fertilizer.
- The water is then filtered through sand and chlorinated to kill off the bacteria.
- UK treatment works use active carbon to remove the bad taste.



Ask pupils to think about why we need to save water.

They could think of some different ways to save water; they could pretend to be on holiday in a country like Cyprus, where people have water for only a few hours, twice or three times each week.

Suggestions might include pouring bathwater or dishwater over garden flowers instead of wasting it, putting a brick or 'water hippo' into the toilet cistern to reduce flushing, making sure the washing machine has a full load and even catching rain water in a butt or barrel for use in the garden.

True/False

Encourage your pupils to do some research on Cyprus either in books, on the internet or they can get information from their local First Choice store.

1. **True.** There are at least 105 reservoirs on the island. In fact Cyprus has more reservoirs per head of population than any other country in the world!
2. **False.** People need at least 2.2 litres per day to avoid dehydration.
3. **True.** The deep wells and bore holes go down for about 1 km. But there is very little water left, so dense salty seawater (brine), has been seeping in and filling up the underground aquifers.
4. **True.** There is a complete hosepipe ban across the island.
5. **True.** Greek tankers bring 50,000 tonnes of fresh water to the island but it is very expensive. The government needs \$65 million to pay for all the water they need this year from the mainland.
6. **This is also true.** Tap water isn't very popular in Cyprus because much of it comes from the desalinization plants – purified seawater. People can still taste the salt, so they go out and buy bottled water anyway.

The Rain Cycle

On this diagram, the UK appears at the top with lots of rainfall arriving from the Atlantic Ocean. There are droughts in the UK but on average we receive 1250 mm. of rain each year. Cyprus gets about 450 mm. per year.

The thickness of the arrows indicates rain, evaporation, percolation into the soil and runoff in to the rivers.

Some pupils might like to add an extra arrow on the UK diagram, with 10 'units' of water returning to the sky as 'transpiration' from trees and leaves. This then returns to the cycle as more rain.

In the second diagram, Cyprus receives far less rain and the arrows should be drawn in to show where it goes. Most of the water evaporates at once. There is a little percolation through the soil but nothing left for the rivers, which dry up.

Some pupils might like to draw in a little dam and a dried-up reservoir in the second picture.

Practical exercise

There is lots of scope for practical work. Children will enjoy watching water being recycled and there are strong links to KS2 Science.

Collect a little water and lots of dirt, mud and grit in a plastic bottle. Give it a good shake, then let the children see how dirty and mucky it is. Pour it gently though some filter paper in a filter funnel. Soft tissues work just as well if there is no filter paper available.

Children will see 'clean' water dripping though, although the keen eyed will notice tiny bits of dirt floating in the 'pure' water. Please remind children that it still isn't safe to drink, of course, because of germs and bacteria in the water.

Encourage your pupils to do some research either from books or the internet. As a bonus, your pupils can go into their local First Choice store and request more information to complete the activity sheets. Your First Choice store will have some fact sheets and any brochures available on the various destinations for your pupils to cut out pictures if need be. If your pupils go into the stores with their families they can expect to walk away with an Eco-Traveller certificate just for asking for more information.