



Animals and the environment



BURSTING WITH LIFE

Coral reefs make up less than 0.1% of the world's oceans but are home to more than 25% of all marine species.

The Great Barrier Reef is the world's largest chain of coral reefs.

How colourful coral is transformed into sand

Corals are not plants, they are very strange animals. They grow extremely slowly – around two centimetres a year – so some of the big coral reefs we see today have taken 50 million years to form. The fine white sand on tropical beaches is actually digested coral that's been pooed out by fish. One fish family, known as parrotfishes, is especially good at this. A green humphead parrotfish can poo out 90 kilograms of sand in just one year.



Parrotfishes feed on corals.

Clever clouds to cool coral reef

Scientists have made artificial clouds in an attempt to save the Great Barrier Reef, the world's largest collection of coral reefs, located near the north-east coast of Australia.

Coral reefs are made up of thousands of tiny animals called coral polyps. Microscopic organisms called algae live in the tissue of the coral polyps and give the corals their bright and beautiful colours. The algae feed the corals by using sunlight to produce sugar. Fish and other animals also eat the algae. This means coral reefs



A turbine spraying the cloud mix into the air.

support many animals; the Great Barrier Reef is home to more than 6,000 species, for example.

However, many coral reefs, including the Great Barrier Reef, are under threat from warmer water, which is caused by climate change. Climate change is the long-term changes in the world's weather patterns, including rising temperatures, mostly caused by human activities.

When the water gets warmer, the corals get stressed and expel the algae from their tissue. This turns the corals white and is known as

coral bleaching. The coral is still alive but it has lost its major food source and becomes more at risk from disease. Last year, the Great Barrier Reef suffered its most widespread bleaching ever.

This has led to some unusual plans to save the reef. One idea being trialled, called cloud brightening, involves mixing seawater with tiny salt crystals and then using a turbine to spray it into the sky from a boat. The idea is that the salt crystals and water could create a barrier of fog that reflects sunlight away from the ocean surface. This fog will then mix with clouds and make them more reflective too. This could lower the temperature over the water and cool the reef. The project is one of 43 ideas the Australian government said it will trial in its efforts to preserve the reef.



ECO TIP OF THE WEEK

BE RESPONSIBLE WITH WATER

Saving water in your home helps the environment in several ways. Turning off the tap when you're not using it, or while you brush your teeth, wash your hands or clean the dishes, not only saves water, it reduces your use of energy and chemicals too. This is because water companies use energy to treat and pump water through their systems to reach your taps. Generating this

energy gives off greenhouse gases, such as carbon dioxide (CO_2), which cause climate change (long-term changes in the world's weather patterns). Chemicals also get pumped into the water to make it safe to use. Hot water uses up even more energy because it has to be heated. So if you are helping with the laundry, pick cooler settings on the washing machine.

WHAT A SAVE
Reducing wasted water in UK homes could save up to a third of the water taken from the environment.



Only use as much water as you need.

Clever clouds to cool coral reef

Once you have read the article, try any of the following activities...

Investigate

Most people have heard of the Great Barrier Reef off the north east coast of Australia but there are many other reefs around the world. Research one of these and write a fact file about it, stating where and how big it is, and describing some of the wildlife that inhabits it.

Writing challenge!

Choose one of the following writing warm-ups.

1 Write a detailed, vivid description of a healthy coral reef, using either the pictures from the article or images you have found elsewhere. Use as many descriptive techniques as you can, including extended noun phrases and figurative language such as similes and metaphors.

or

2 Write a set of instructions for creating a coral reef. Remember to include a What you need section as well as a set of numbered instructions using imperative verbs.



Hold a debate with your family

If the coronavirus outbreak has taught us anything, it must be the need to listen to experts. Over recent years, it has become fashionable to cast doubt on the work and advice of experts in many fields, including climate change. Coral bleaching is just one of the consequences. Should we take steps to make sure that all decisions that affect the world have a sound scientific basis? Perhaps warnings could be attached to any ideas that are not supported by expert opinion. Or would that interfere with free speech and the discussion of new ideas? Perhaps it might mean that genuinely good suggestions are rejected because they have not been tested yet. What do you think?