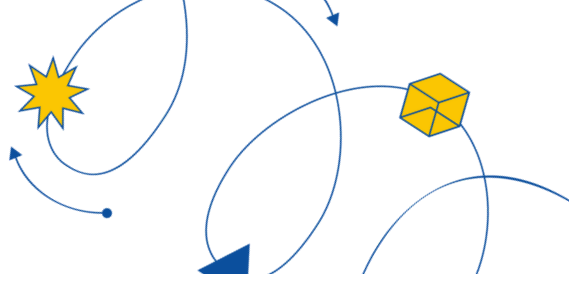


Mini Watch: Coral in Crisis



SCIENCE
ALIVE

Every day, coral reefs bring the ocean to life — bursting with colour, sheltering fish, and supporting entire ecosystems. But have you ever wondered why some reefs are turning ghostly white? This mini is perfect for sparking curiosity about underwater ecosystems, ocean acidification, habitats and biodiversity, and the impact humans have on te taiao (the environment).

WATCH:

1. Āta mataki (carefully watch) the video clip.
2. Ākonga use their rongo (senses) to observe and describe what they notice. Consider:
 - What objects or living things can you see in the video?
 - What are the fish doing in the reef? Where are they swimming?
 - What shapes and textures can you see in the coral?
 - What does the coral look like in the second part of the video?
 - What can you hear?
3. Ākonga share their observations (you might choose to write these down).
4. Encourage ākonga to use precise language to describe what they observe, rather than inferences or opinions, and use questioning to help them focus on the details.

DISCUSS:

Engage ākonga in scientific discussion using the following pātai (questions).

Ākonga elaborate:

1. What differences did you notice between the healthy reef and the dying reef?
 - What did you observe to notice the differences?
2. Why do you think the coral lost its colour?
 - How did you come to that conclusion?

Ākonga give evidence:

1. Do you think coral reefs are alive?
 - What evidence do you have to support your answer?
2. Why is coral an important part of our oceans?
 - Is that true for all types of coral? What makes you think that?

Ākonga think with others:

1. What is happening to our coral reefs?
 - Does everyone agree with this answer? Why or why not?
2. How do you think the changes in the coral reef might affect the animals that live there?
 - Who can add on to this idea?

Science Alive Learning Portal

This printable supports an online resource found on the Science Alive learning portal.

Explore hundreds of interactive resources across a range of topics, all completely free.

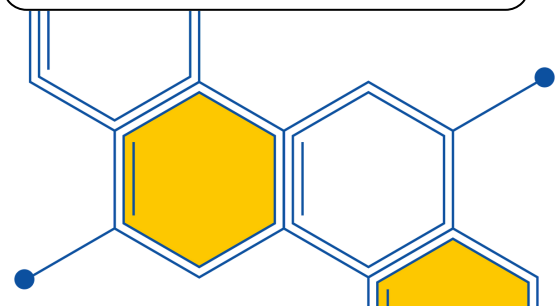
Scan the QR code to visit the lesson library:

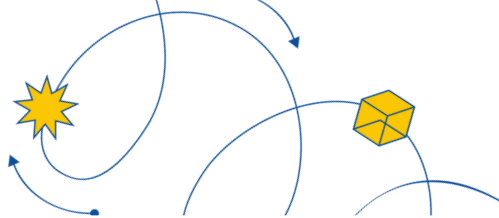


www.sciencealive.co.nz

This lesson was developed with generous support from NEX and NZASE.

www.nzase.org.nz



**DISCOVER THE SCIENCE:**

Coral reefs are **underwater structures** built by **tiny animals called coral polyps**. These soft-bodied organisms live in **large colonies** and protect themselves by using **minerals from seawater** to build **hard calcium carbonate skeletons**, which form the reef structure. In shallow waters, corals have a **symbiotic relationship with algae** called **zooxanthellae**, which provide them with **food through photosynthesis** and give them their **vibrant colours**. In deeper waters, corals feed on **plankton and organic matter**.

Coral reefs are among the most **diverse and valuable ecosystems** on the planet. They support a **wide range of marine life** and play a vital role in **protecting coastlines** from storms and erosion. Reefs also contribute to local economies through **fishing and tourism** and are being studied for their potential in **developing new medicines**.

Coral reefs are **disappearing** due to a combination of **human activities** (such as overfishing, pollution, coastal development) and the **impacts of climate change**. As **oceans absorb carbon dioxide** from the atmosphere, they become more **acidic**, which **weakens coral skeletons**. **Rising ocean temperatures** also stress corals, causing them to **expel the algae (zooxanthellae)** that give them colour and provide essential nutrients. This leads to **coral bleaching** (where the coral loses its colour and turns to white), and if the algae don't return, the coral eventually **dies**. While some reefs can recover, this process is slow and depends on stable environmental conditions.

COMMON MISCONCEPTIONS:

Students' prior knowledge can help them connect with new ideas, but it can also lead to misconceptions if their earlier understanding is inaccurate. Below are some possible misconceptions that may arise from the images used in this mini:

"Coral reefs are just rocks or plants, they are not alive."

The Science: Coral reefs are made up of tiny living animals called coral polyps. These soft-bodied animals build hard calcium carbonate skeletons, which form the reef structure. The reef you see is mostly these skeletons, but the living coral polyps are what keep the reef growing and alive.

"Dead coral reefs are still the same as living reefs."

The Science: The colourful algae leaves coral reefs when coral polyps die, making the reef turn white (bleached). Without living polyps, the coral reef stops growing and starts to break down.

"Once a coral reef has died, it can never come back to life."

The Science: Some coral reefs can recover if conditions improve. Healthy coral larvae can settle on old reef skeletons and grow new coral polyps. Restoration efforts, like coral gardening and reef rehabilitation, are helping some reefs bounce back. However, ongoing threats like climate change and ocean acidification make recovery difficult.

Connect:

Coral in Crisis

SCIENCE
ALIVE

SOCIAL SCIENCES



Junior learners could take part in a class brainstorm about ways to protect coral reefs, then draw or write about their ideas to share with families and the community, encouraging them to care for coral reefs too.

Older learners could [watch this SciShow Kids video](#) on coral reefs, then plan a local campaign or event to raise awareness about protecting marine environments.

ART



Using a variety of different art mediums or materials, younger learners could complete one of the [coral reef creative projects](#) from the Great Barrier Reef Foundation.

Senior ākonga could explore some [before and after photos](#) of coral, then paint a “before and after” coral reef scene showing healthy and bleached coral side by side to express change and impact.

TECHNOLOGY



Junior ākonga could be taken on a [virtual dive field trip](#) of coral reefs around the world. Continue the virtual tour by looking at online images and [videos](#) to learn more.

Older ākonga could use Minecraft or Scratch to create an animation or model of a coral reef. They can include information about coral reefs, why they are important, what is happening to them, and what we can do to look after them.

FUTURE FOCUS



The skills and knowledge developed in this mini could inspire learners to explore pathways beyond the classroom! If your ākonga were engaged in this activity, it could be a great opportunity to connect with experts or someone from your local community to learn more. You could also explore the skills and school subjects involved in some of the related careers listed below:

- Marine Biologist
- Environmental Scientist
- Aquarist
- Oceanographer
- Scuba Diver