

A large sea turtle is the central focus, swimming towards the viewer. In the background, a group of people are snorkeling in clear blue water. The scene is set over a coral reef.

# Great Barrier Reef Education Experience

Teaching resources guide



Queensland  
Government



# Great Barrier Reef Education Experience Teaching resources guide

The Great Barrier Reef Education Experience teaching resources guide provides a range of educational resource materials and activities.

All resources are curriculum-linked for all year levels, from early learning to grade 12.

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## Early Learning (Prep)

### Activities for young learners

Young learners can learn about the reef, habitats and environmental issues, using these hands-on science activities.

» View the [Early Years Activities](#) (PDF, 5.39 MB)

## Lower Primary School (Grade 1–3)

### Habitat investigations Year 1

Students will explore one or more habitats within their local environment. They will identify external features of different plants and animals, and how their needs are met in the habitats they live in. Students will identify and describe changes to local habitats as a result of human activity and suggest how science helps people care for their local habitats.

» View the [Habitat Investigations unit plan](#) (DOC, 1.98 MB)

*Australian Curriculum link – Science ACSSU017, ACSSU211*

*Related Australian Curriculum links – HASS ACHASSK031; ACHASSK062; ACHASSK066;*

### Growing up on the Reef Year 2

Students will explore the different life stages of a variety of reef creatures and look at their life cycles. How do reef creatures grow? Are they born live, or do they hatch from eggs? Do they look like their parents when they are young or do they look completely different? Do their parents look after them or do they have to fend for themselves?

» View the [Growing up on the Reef activities](#) (PDF, 5.39 MB) for prep to year 2

» View the 30-minute [lesson video](#) on YouTube

» Follow along with the [Reef Babies activity sheet](#) (PDF, 543KB).

*Australian Curriculum link – Science ACSSU030*

*Related Australian Curriculum link – Science ACSSU072*

### Exploring the Reef Year 3

Students will investigate living and non-living things (including things on the Great Barrier Reef). They will observe and group things as living or non-living based on observable features. They will explore the characteristics of living things. Students will identify natural and human threats to living things on the reef and recognise how science can help people understand threats to the reef, such as oil spills and the effect of human actions.

» View the [Exploring the Reef unit plan](#) (DOC, 2.29 MB)

*Australian Curriculum link – Science ACSSU044*

*Related Australian Curriculum links – HASS ACHASSK068; ACHASS048; Design and Technologies ACTDEK003*



## Upper Primary School (Grade 4–6)

### Marine Turtles Year 4

Students will investigate marine turtles and their life cycles. They will explore the relationship between the survival needs of marine turtles and the habitats they live in, including interactions with other living things. By considering changes to the habitats, such as coastal development and climate change, students will predict the effect of these changes on marine turtles, including the impact on the survival of the species. Students will recognise how science knowledge helps people understand the effect of their actions.

» View the [Marine Turtles unit plan](#) (DOC, 1.44 MB)

*Australian Curriculum link – Science ACSSU072, ACSSU073*

*Related Australian Curriculum links – HASS ACHASSK088; ACHASSK089; ACHASSK090*

### Animal Adaptations Year 5

Students will investigate structural and behavioural adaptations of animals and plants. They will understand how these adaptations help animals and plants survive in the environments they live in. Students will recognise how science knowledge, such as knowing how adaptations in living things help them survive in their environments, can be used to inform personal and community decisions.

» View the [Animal Adaptations unit plan](#) (DOC, 1.95 MB)

*Australian Curriculum link – Science ACSSU043*

*Related Australian Curriculum links – HASS ACHASSK087; ACHASSK090*

### Fishing Year 6

Students will investigate fish species and their survival needs. They will explore the habitats in which they live and identify how changes to the physical conditions of the habitat e.g., by pollution, can affect the growth and survival of fish. Students will identify fishing rules and investigate sustainable fishing practices. Students will use their knowledge about fish growth and survival to inform decisions about fishing and sustainable fishing practices.

» View the [Fishing unit plan](#) (DOC, 1.90 MB)

*Australian Curriculum link – Science ACSSU094*

*Related Australian Curriculum links – HASS ACHASSK087; ACHASSK090; ACHASSK117; Design and Technologies ACTDEK012; ACTDEK021; ACTDEK032; ACTDEK033*

## Junior Secondary School (Grade 7–9)

### Wetlands Year 7

Students will investigate different wetland types. They will describe how wetlands are part of the water cycle. Students will identify different animals that live in wetlands and group and classify them. Students will recognise and understand the interactions between living things in food chains and food webs in a wetland, and how human activity can affect these interactions. Students will understand and investigate water health of a wetland and consider threats to wetland health and how to manage it.

» View the [Wetlands unit plan](#) (DOC, 1.66 MB)

*Australian Curriculum link – Science ACSSU111, ACSSU112*

*Related Australian Curriculum links – Geography ACHGK070; ACHASSK113*

### Coral Bleaching Year 8

Students will observe different animal and plant cells under the microscope. They will investigate the structure and function of different animal cells and observe and describe the function of chloroplast in plant cells. Students will investigate zooxanthellae and their symbiotic relationship with coral and use this understanding to explain coral bleaching. Students will recognise the link between carbon footprint and coral bleaching and identify ways to manage carbon footprints from the individual to community level.

» View the [Coral Bleaching unit plan](#) (DOC, 1.91 MB)

*Australian Curriculum link – Science ACSSU149*

*Related Australian Curriculum links – Science ACSSU189; Geography ACSES105, Earth and Environmental Science ACSES105, ACSES106*

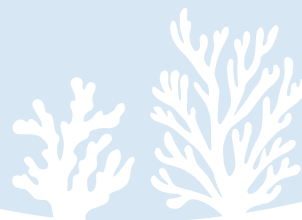
### Ecosystems Year 9

Students will investigate starch production in leaves and understand how plants use the sunlight energy to produce food. Students will explore energy flow in food webs within ecosystems. Students will identify the biotic and abiotic components of ecosystems and understand how these interact and relate to energy flow. Students will investigate how changing abiotic factors impact ecosystems and understand how natural and human events also impact ecosystems.

» View the [Ecosystems unit plan](#) (DOC, 2.14 MB)

*Australian Curriculum link – Science ACSSU176*

*Related Australian Curriculum link – Biology ACSBL019*



## Senior Secondary School (Grade 10–12)

### Climate Change Year 10

Students will explore the carbon cycle and the four global systems: biosphere, lithosphere, atmosphere and hydrosphere. Students will investigate greenhouses gases and carbon dioxide and describe the relationship between the carbon cycle and climate change. Students will investigate what happens when carbon dioxide is absorbed by seawater and potential impacts of ocean acidification on reef biodiversity. Students will discuss impacts of climate change on ecosystems and everyday changes to reduce these impacts.

» View the [Climate Change unit plan](#) (DOC, 1.72 MB)

*Australian Curriculum link – Science ACSSU189*

*Related Australian Curriculum link – Geography ACSES105, Earth and Environmental Science ACSES105, ACSES106; Design and Technologies ACTDEK040; ACTDEK041; ACTDEK044; ACTDEK047; History ACDSEH128*

### Extended Investigation Year 11 and 12

‘Extended Investigations’ are student led investigation tasks that focus on the five key threats to the Great Barrier Reef. The research utilises GBRMPA resources and goes into detail on how the Outlook Report can be used to fulfil the requirements set out in the Marine Science syllabus and the Marine and Aquatic Practices syllabus.

» View the [Extended Investigations unit plan](#)

*Would be suitable for use in Biology, Marine Science, Geography, Aquatic Practices, Tourism and other senior subjects studying the Great Barrier Reef.*

### Eye on the Reef – Citizen Science

The [Eye on the Reef monitoring and assessment program](#) enables anyone who visits the Great Barrier Reef to contribute to its long-term protection by collecting valuable information about reef health, marine animals and incidents that is used to understand the bigger picture and inform how we manage the reef.

### Eye on the Reef app and Sightings Network

The Eye on the Reef Sightings Network is a community-based program developed to capture the interesting, unusual and amazing experiences people have on the Great Barrier Reef through the [Eye on the Reef app](#). The [interactive Sightings Network map](#) allows anyone in the world to see the amazing wildlife being encountered and recorded by visitors to the Great Barrier Reef.

### Rapid Monitoring program

The Eye on the Reef [Rapid Monitoring program](#) is a citizen science tool for people with little, to moderate, reef experience who are either snorkelling or diving. It enables reef users to record what they see on the reef and report that data to the Great Barrier Reef Marine Park Authority. School groups can use the survey as an introduction to reef biology, and then submit and view the data via the [Eye on the Reef database](#). Training modules are available for teachers and students to support learning how to use this tool.

### Reef Discovery course

The [Reef Discovery online course](#) is a convenient online education package which aims to improve knowledge and understanding of the Great Barrier Reef World Heritage Area, its cultural connections, biological diversity, management and protection and how best to interpret this information. This is a great professional development course for teachers as well as learning resource for senior secondary students.

### Reef Guardian school program

The [Reef Guardian schools program](#) connects students to environmental and sustainability projects within their classrooms, their school grounds and local areas such as native habitat revegetation, cleaning up beaches and recycling.



## Additional resources

### Reef Beat education series

The [Reef Beat education series](#) is a popular resource for teaching primary school students. Each series focuses on a different topic and includes a series of posters, an activity book and, in some cases, videos.

The education series covers a range of topics, including climate change, sea country connection, sustainability, wetlands, threats to the reef, biodiversity and more.

[Reef Beat 2020](#) — junior outlook

[Reef Beat 2016](#) — threats to the Great Barrier Reef

[Reef Beat 2013](#) — the amazing Great Barrier Reef, let's keep it great

[Reef Beat 2012](#) — the inshore Great Barrier Reef, bursting with biodiversity

[Reef Beat 2011](#) — working together today for a healthier reef tomorrow

[Reef Beat 2010](#) — sea country connections

[Reef Beat 2009](#) — climate change and the reef

[Reef Beat 2008](#) — yesterday, today and tomorrow

[Reef Beat 2007](#) — sustainability

[Reef Beat 2006](#) — wetlands

[Reef Beat 2005](#) — river to reef

[Reef Beat 2004](#) — catchments to coast

[Reef Beat 2003](#) — our Great Barrier Reef

### Great Barrier Reef Marine Park educational videos

The Great Barrier Reef Marine Park Authority's YouTube channel has many short animations and short videos that support teaching and learning about the Great Barrier Reef. [Subscribe to our YouTube channel](#) to stay up to date. There are many short animations and short videos that support teaching and learning about the Great Barrier Reef.

### The 'Reef Manual: understanding essential communication'

Provides important information on the natural systems that drive the reef and many stories about the creatures found there.

» View the [Reef Manual](#)

### Reef HQ Aquarium

As the Australian Government's National Education Centre for the Great Barrier Reef, [Reef HQ Aquarium](#) offers a range of educational resources and activities.

### Virtual connections

Reef HQ Aquarium uses [Virtual Connections](#) to virtually connect with classrooms to deliver educational programs and activities. Students can learn about the Great Barrier Reef across a range of curriculum linked programs. Schools can access a range of free Virtual Connections across the school year.

### Reef HQ Aquarium educational videos

The Reef Education team at Reef HQ Aquarium have virtual lessons available through the [Reef HQ Aquarium YouTube channel](#) with supporting worksheets.

### Classifying reef creatures

Students will learn about how classification helps to organise and group organisms and provides an overview of the taxonomic system.

There are nine videos in this series, with an accompanying activity sheet for each.

1. Introduction to classification. What is biological classification? [View the youtube video](#) and [download the activity sheet](#) (PDF, 148 KB)
2. Phylum Cnidaria, includes animals such as corals, anemones and jellyfish. [View the youtube video](#) and [download the activity sheet](#) (PDF, 143 KB)
3. Phylum Porifera, the sponges. [View the youtube video](#) and [download the activity sheet](#) (PDF, 144 KB)
4. Phylum Chordata, iconic animals that possess a backbone, such as fish, sharks, reptiles, whales and dugongs. [View the youtube video](#) and [download the activity sheet](#) (PDF, 146 KB)
5. Phylum Platyhelminthes, the flatworms. [View the youtube video](#) and [download the activity sheet](#) (PDF, 146 KB)
6. Phylum Mollusca, includes animals such as marine snails, chitons, nudibranchs, clams, cuttlefish, octopus and squid. [View the youtube video](#) and [download the activity sheet](#) (PDF, 148 KB).
7. Phylum Echinodermata, includes sea stars, sea cucumbers, brittle stars, feather stars and sea urchins. [View the youtube video here](#) and [download the activity sheet](#) (PDF, 146 KB)
8. Phylum Arthropoda and the subphylum Crustacea, which includes crayfish, prawns and crabs. [View the youtube video](#) and [download the activity sheet](#) (PDF, 143 KB)
9. Phylum Annelida, includes earthworms, leeches and bristle worms. [View the youtube video](#) and [download the activity sheet](#) (PDF, 298 KB).

### Tourism and Events Queensland

The Tourism and Events Queensland website provides inspirational content that can help schools plan their visit, including:

- how to [access the Great Barrier Reef](#) and the experiences on offer
- how to experience the reef [without getting wet](#)
- where to have the best [marine wildlife encounters](#)
- how tourism contributes to [caring for the reef](#) and more.

### Great Barrier Reef images and videos

Tourism and Events Queensland maintains an [online gallery of images](#) showcasing the diversity and splendour of this naturally beautiful State of Australia. Access to this site is available to travel and tourism industry professionals, media and anyone seeking professional images for use in the positive promotion of Queensland. Register for access, then search using the drop-down menus or by typing the search term, 'Great Barrier Reef'.

There is also a selection of inspirational videos on the Great Barrier Reef playlist on the [Queensland YouTube Channel](#).

### Great Barrier Reef – brochure

No matter where in Queensland you access the Great Barrier Reef from, you'll see why it's like nowhere else on earth. This brochure highlights how to get there and the different experiences available in this highly protected and complex marine ecosystem supported by sustainable tourism practices.

- » Download the [Discover Australia's Great Barrier Reef brochure](#) (PDF 1.44 MB)

### Reef facts

One of the world's most remarkable natural wonders, the Great Barrier Reef lies just off Queensland's coastline and is home to countless species of marine wildlife, stunning natural scenery and world-class experiences. Want to learn more about the reef?

- » Check out this [infographic of Great Barrier Reef facts](#)

### Wildlife and natural events calendar

From swimming with whales to sneaking a peek at the miracle of life with turtle nesting on the beach, the [Great Barrier Reef: wildlife and natural events calendar](#) showcases wildlife and natural events across the Great Barrier Reef.

