

Lessons from the Maldives

Explore the Coral Reefs KS2



Captivating
Classrooms™



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Soneva

Academy

LESSON: Explore the coral reefs

AGE RANGE: KS2 with some additional KS3 level slides for pupils working at a greater depth

TIME: 1 – 2 hours

CURRICULUM LINKS:

Science- Upper KS2 (Year 5 and 6)

Living Things and Their Habitats

- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- describe the life process of reproduction in some plants and animals.
- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.
- give reasons for classifying plants and animals based on specific characteristics.

Working Scientifically

- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- identifying scientific evidence that has been used to support or refute ideas or arguments.

Animals, including humans

- understanding food chains and food webs, predators and prey.

Science - KS3

Biology

Material cycles and energy

Photosynthesis

- the dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere.

Interactions and interdependencies

Relationships in an ecosystem

- the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops.
- how organisms affect, and are affected by, their environment, including the accumulation of toxic materials.

Geography – KS3

- develop contextual knowledge of the location of globally significant places – both terrestrial and marine – including their defining physical and human characteristics and how these provide a geographical context for understanding the actions of processes.

Human and Physical Geography

- Understand how human and physical processes interact to influence, and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems.

LESSON OVERVIEW

This lesson introduces coral reef ecology and the importance of coral reefs to our planet. It includes information about the threat to coral reefs and how we can protect them. Additional KS3 slides have been added for pupils working at a greater depth, to stretch their knowledge and understanding. They are marked with 'KS3' at the top of the slide. Please adapt this lesson to the pupils in your class and remove these additional slides if they are not needed.

KEY VOCABULARY

Ocean. Oxygen. Coral reef. Ecosystem. Food chain and Food web

POWERPOINT PRESENTATION

Slides 1 and 2 introduce the lesson and the lesson aims.

Slides 3 to 6 explore the ocean as a supplier of oxygen.

Slides 7 to 23 cover the anatomy of coral, different types of coral and where reefs are found.

Slides 24 to 31 look at the classification of corals and the coral reef ecosystem.

Slides 32 to 35 look at the symbiotic relationship in a coral reef.

Slides 36 to 38 cover food chain and food webs.

Slides 39 to 43 explain why coral reefs are so important to the world.

Slides 44 to 46 explore coral bleaching.

Slides 47 to 52 outline the current threats to the coral reefs and what we can do to protect them.

Slide 53 onwards include activities linked to the lesson.

Supporting
Activity
Available

This graphic on the classroom PowerPoint presentation slide, highlights a corresponding activity within these teacher's notes.

Invertebrates or Vertebrates

Activity: PowerPoint slides 30-31

See if you can classify the organisms you found living in the coral reef.

Are there any that you can't classify below?



Seahorse



Starfish



Clownfish



Sea turtle



Lobster



Grey reef shark



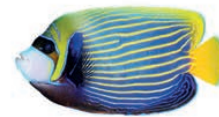
Octopus



Stingray



Jellyfish



Angelfish



Coral

The organisms found on the coral reef animation are classified as follows.

Activity: PowerPoint slides 30-31

INVERTEBRATES	VERTEBRATES
Lobster - Crustacean (Arthropod) Octopus - Mollusc Starfish - Echinoderm Coral - Cnidarian Jellyfish - Cnidarian	Seahorse - Bony Fish Sea turtle - Reptile Angelfish - Bony Fish Clownfish - Bony Fish Grey reef shark - Cartilaginous Fish Stingray - Cartilaginous Fish

Note: There is a difference between cartilaginous fish and bony fish. Sharks and stingrays belong to the cartilaginous fish group. However, all others fall under bony fish.

Additional examples of symbiotic relationships

Activity: PowerPoint slides 32-35

Mutualism

The symbiotic algae that lives inside the tissue of the coral (zooxanthellae) also have a mutually beneficial relationship. The coral provides a safe home for the zooxanthellae while the zooxanthellae is providing the coral with 90% of the food/energy it requires to grow.

Commensalism

A remora attaching itself to a larger animal (shark, manta, turtle etc.) using a sucker on its mouth. The remora catches any food that the larger animal misses.

Large jellyfish provide a home for juvenile fish, crabs and sometimes feather stars. The tentacles of the jellyfish protect them from predators with their stinging cells.

Parasitism

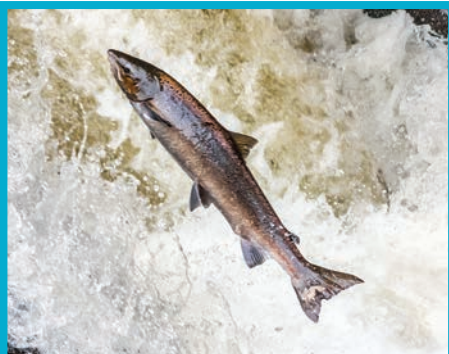
The tongue-eating isopod enters the gills of some fish and makes its way to the fish's mouth, attaching itself to the fish's tongue. It sucks all of the blood out of the tongue until the isopod becomes the tongue of the fish, it will then get its nutrients from the food the fish is eating. Remember to always check the mouth of a fish before you buy it to eat, you might be able to see one!

Christmas tree worms drill into corals as a foundation for them to live. They take nutrients from the coral, much like sea spider larvae, however they do look very beautiful!

Fish in the UK

Activity: PowerPoint slide 41

Take a look at these examples of fish which can be found in a UK supermarket/market.



Name: Atlantic Salmon

Average size: 75cm

Commonly found in:
Scottish Highlands



Name: Cod

Average size: 50cm

Commonly found in:
Atlantic Ocean



Name: Yellowfin tuna

Average size: 210cm

Commonly found in:
Maldives

On a separate piece of paper, answer the questions below for each of these fish.

Has this fish lived on a coral reef? Yes/No

If **yes**, where?

If **no**, is there still a link between this fish and a coral reef?

What can we do to make sure we consume this fish sustainably?

How can we help?

Activity: PowerPoint slides 50-52

How many ideas can you think of that we can do to reduce the threats of the below?

**Global
Warming**

CO₂

Overfishing

Pollution

Tourism

Marine Life: Keywords Flashcards



Ocean

Oxygen

Coral reef

Ecosystem

Food chain

Food web

Ocean

Oxygen

Coral reef

Ecosystem

Food chain

Food web