Ocean World

Film Guide

Footprint
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Ocean World – Coral

Hard coral is made of polyps which are cemented to the reef. They have tentacles which are pushed out into the water. These tentacles catch food particles in the water and push them into the central mouth cavity. Hard coral is not feeding all the time. The best hard coral to watch feeding is the pulsating xenoid coral.

Soft coral is filled with water. They don't need tentacles as the soft coral tissue can collect the food particles easily. All corals have algae living inside their tissues – the algae benefit by being able to stay close to the sunlight near the surface and the coral benefits from the algae making glucose and oxygen from the sunlight.

Scene 1: A tropical coral reef. A coral reef is made up of thousands of tiny animals. The corals can be hard coral or soft coral.

Scene 2: Hard coral called **Staghorn coral** forms branches which are very sharp. There are thousands of individual polyps on each 'branch', all making up a community of corals of the same type. **Leather coral** moves in the currents. When not feeding you can see the individual polyps, looking like dimples.

Scene 3: These are the **pulsating xenoids**. They are feeding by holding out their tentacles into the water to catch food particles. The tentacles can open and close, up to 40 times every minute.

Scene 4: Brain coral is named because it looks like a human brain. There are thousands of individual polyps on this coral, all in lines. The lines hold hundreds of separate coral polyps.

Scene 5: Table coral. When thousands of staghorn polyps form a community they can form shapes like a table.

Scene 6: Feeding Leather Coral shows the individual coral polyps as white dots. The yellow **soft coral** has water inside it to support it (called a hydroskeleton) and is just waving in the current. At the far left is hard **Fan coral** which can take hundreds of years to grow to this shape.

Scene 7: Cabbage coral shows the polyps closed up and they look like dimples, but you can see how many polyps it takes to grown into a complete cabbage coral 'leaf'.

Ocean World – Invertebrates

Invertebrates are animals without a backbone. Some have no bones at all, whilst others, such as crabs and lobsters have hard structures on the outside of their bodies (exoskeletons). All corals are invertebrates.

Scene 1: Anemone coral. This film shows the individual polyps waving in the current. (The nemo fish are nowhere to be seen.) Coral and jellyfish were the first 'real' animals to live on planet Earth (from 580 million years ago).

Scene 2: Jellyfish are drifters in the ocean. They are very simple animals. They don't swim – just undulate to keep them in the top surface of the sea water. Small **algae** (not plants or animals) live inside them which make oxygen and glucose from sunlight – so the jellyfish need to be near the surface where the sunlight shines down into the water.

Scene 3: Sponges were some of the first multi-celled animals. They are soft and squishy to touch and have chemicals on the outside which can harm your skin. It's best not to touch any coral or sponges when swimming underwater. Pipe sponges and Urn sponges are the most common types of sponge.

Scene 4: Marine Worms – a duster worm is a tube worm, and so are Christmas Tree worms.

Scene 5: Shrimps have bony structures on the outside of their bodies. This is a **Boxer shrimp** – watch carefully because it is feeding by waving the tentacles in the water to collect food particles, then scraping off the food and pushing it into its mouth.

Scene 6: Sea Slugs are nothing like the slimy black slugs you'd find in your garden, sea slugs are really beautiful. A **pyjama chromadoris slug** has yellow, black and white stripes – just like pyjamas. Risbecia slugs stay together as they wander around the reef. Sea slugs have small mouths underneath their head which scrapes food off the hard coral.

They have two light organs on the top of their head which can only see light or dark, and they have a feathery structure near the back of their body which acts like fish gills as it collects the oxygen from the water.

Scene 7: Spiny lobsters have long antennae which they are using to try to push the camera away. They love to hide under the coral.

Scene 8: The Octopus and Goatfish Story. The goatfish will usually feed itself by putting its feelers into the sand and disturbing small pieces of dead fish or shrimps. In this film however, it seems like the fish wants to make the octopus move across the sea bed, disturbing the sand so the fish can be lazy. The octopus tries all sorts of camouflage tricks trying to frighten off the fish, but it doesn't seem to be working. The fish is definitely annoying the octopus, which tries to hide in a coral hole, waiting for over ten minutes (the film was edited at this point) and hoping the fish will have gone away – but the goatfish has stayed close-by and sees the octopus emerge. Finally, the octopus swims off.

Ocean World – Fish

Scene 1: Hammerhead Shark. All sharks are fish. They breathe through gills and have fins to help them swim. This shark is swimming through a shoal of Blue Fusiliers, but is obviously not hungry. It is a mistake to think that sharks want to eat all the time.

Scene 2: Racoon Butterfly Fish. These fish do not chase prey so they are not predators. They eat food particles lodged in the coral. Their mouths are shaped to allow them to reach into the coral crevices to eat.

Scene 3: Shoal of Yellow Snappers. These fish gather in hundreds to swim together. It is all about survival. If you are a fish in the middle of a shoal, then you are less likely to be eaten by a predator, but they have to take it in turns to be on the outside where it could be dangerous.

Scene 4: Anemone Fish (Nemos). Anemone coral has a nasty poison on the tentacles to help prevent it being eaten. Only nemo fish have a special covering on their bodies which allows them to go inside the anemone without being stung. Watch the tiny blue fish – they are not protected so they can't go inside the anemone.

Scene 5: Masked Butterfly Fish and Banner Fish. These fish form a partnership and stay together for life. The two masked butterfly fish are obviously life partners, but the striped banner fish seems to be alone.

Scene 6: Giant Moray and Cleaner Fish. This moray is the largest of all the moray species. It could bite off a diver's fingers if you got too close. Its teeth are very sharp. This moray is sitting in the reef being cleaned by a small blue and black wrasse which is picking off all the rubbish from the moray's fishy body.

Scene 7. Blue Spotted Ray. This is a gentle fish. Its mouth is under the front of its body and it sifts the sand looking for shrimps and small fish to eat. It hunts at night and during the day is found hiding in the sand or under a coral reef. It is frightened of humans and swims quickly away. It is related to sharks but where sharks have hard fins, the rays have developed undulating wings to enable them to swim.

Scene 8: Stingrays. These are members of the ray family, but they have very nasty stings in their tails. They hide in the sand with their eyes sticking out, watching for fish to pass by for them to catch.

Scene 9: Crocodile Fish. A very strange looking fish which looks, at first, like a crocodile, but then you can see it has no legs. It has fins at its sides and on the top of its body. It sits and waits, hidden by its camouflage, and watches for food to swim past. The eyes are the strangest of all as they move in different directions so the fish can see if a fish is coming past from both directions at once. If a fish comes close it snaps its mouth and eats it very fast indeed.

Scene 10: Moray Eels. The first eel is a young yellow-mouthed moray, peeking out from a coral crevice and waiting to safely come out. The second is a green moray hiding in a crevice but it decides to retreat back into its hole. The third moray is out of its hole so you can now see the length of its body. The day before this was filmed, there was a big storm and all the sand particles are floating around in the water. When the camera lights shine on the sand it shows up as a red shining light, like small fireworks. The moray is hunting for food, but then hides in a crevice and tries to frighten the camera away.

Ocean World – Marine Reptiles

All marine reptiles go to the surface to breathe oxygen.

Scene 1: Sea Snake. This is a Sea Krait – a black and white banded snake which is very poisonous. One bite from this creature and you will be dead in minutes!

Scene 2: Green Turtle. A really friendly and harmless sea creature. The front flippers do all the work when swimming whilst the tail and back legs act as a rudder. A turtle has a hard mouth and can eat crabs, fish, shrimps and lots of soft coral. The algae in the coral is released into the water as it eats, spreading its green chemical everywhere around, including covering the turtle.

Scene 3. Marine Iguana. This iguana lives on land but when it's hungry it goes into the ocean and feeds on the algae on the rocks. It has big claws to scrape the algae off the rock and a big tail which acts like an engine. It can stay underwater for about 20 minutes, but then comes back to the surface to breathe. All these reptiles are known as marine reptiles as they could not survive without the food they get from the sea.

Ocean World Mammals

All Marine Mammals have to come to the surface to breathe oxygen.

Scene 1: Humpback Whales. This film was taken in Iceland (where it was too cold to dive!). There are three whales playing around the boat. When they stay at the surface with their heads under the water, it is known as logging. Often whales will sleep when logging. These whales however are enjoying themselves 'showing off' their ability to dive. Can you guess where and when they are going to 'blow', then watch for their arched backs and wait for their tail flukes to show. There are three whales – all with a different pattern on the underneath of their flukes.

Scene 2: Dolphins. Firstly, a large pod of dolphins swimming in the Pacific Ocean. Are they competing for who can jump out of the water the highest? Then diving with dolphins in the warmth of the Red Sea. Listen for the clicks as the dolphins talk to each other.

Scene 3: Sealions look awkward on land, especially when walking on the rocks. They can make a lot of noise. The young sealion pups seem happy to go for swimming lessons.

Ocean World Sea Birds

Scene 1: Penguins. These are Magellan penguins filmed in the Beagle Channel in South America. They are experts at fishing for their dinner.

Scene 2: Magnificent Frigate Bird. The males of this species of bird have a bright red pouch under their bill. This throat colour is puffed up in the mating season to attract a mate. When they find a new mate, they rub their bills together.

Scene 3: Blue-footed Boobies. Filmed in the Galapagos Islands, these birds show off their incredible bright blue feet to attract a mate. It looks like they're dancing. What story would you tell about this film clip?