Marine South Australia

Explorers' Guide

This is a sample of the *type* of booklets your students can borrow and use when visiting the museum.

It contains information about animal adaptations in Marine environments. However, **the students' booklets are not exactly like this one.** Their booklets come in sets. Between *all* the booklets in a set the students will have all the information available, but each individual booklet has some bits missing.

Students must collaborate with the other members of their group to get all the facts they need. Four students in each collaborative group is ideal.

Please ensure students have their own paper to write on.

South Australian Museum Education

Find the Giant Australian Cuttlefish

Hiding at sea

These cuttlefish change colour. In the video you see them turning bright colours to attract a mate. However, most of the time they try to blend in with their environment, so enemies do not see them.

Changing colour is one way to avoid predators. Another way is to hide under a rock. The cuttlefish lay their eggs under a rock to hide them. Find their eggs on little stalks.

Other animals protect themselves in other ways. For example, the yellow sponges on the rock are poisonous.

Write down two other kinds of protection used by animals in this display.

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Find the *Rocky Reef*

Funny ways to feed

Some animals feed in very different ways to us.

Find the Green Spoon Worm on the floor near the reef display. It feeds by sending out its long, green feeding tube while it hides its body under gravel or in rock crevasses. It feeds mainly on microbes and rotting food on the sea floor.

Find a starfish on the reef. Many starfish prey on shellfish by pulling the shell open with its arms. The starfish then turns its stomach inside out through its mouth and into the shell to eat the animal inside.

Find an animal in the reef display that you think feeds differently from a starfish or spoon worm. What is it and how does it feed?

Find the *fish* near the *Reef*

Puffer fish

If a Prickly Toadfish gets attacked by a predator it puffs up to protect itself. It swallows water and stretches its huge stomach. This makes it swell like a balloon and spines stick out through its skin, making it very hard to eat. It is also one of the most poisonous animals in the world, so anything that does eat it becomes very sick or dies.

There is another, even pricklier fish in this display that is related to the Prickly Toadfish. Find it, check its number and use the computer to find its name. What is it called? What are these fish called?

Why do they have spikes above their heads?

Discuss in your group why you think these fishes' mouths point the way they do. Write down the best explanation.

Find the Whalesucker in the *Open Ocean* display
[With the large sharks]

Sticking to it

A Whalesucker is also called a Remora and has a very special fin on top of its head. The fin grows into a sucker. Look closely and you will see the sucker has slats that open or close to create suction. The Remora uses this sucker to hitch a ride on bigger fish looking for food.

Whalesucker

Discuss with your group the advantages and disadvantages of this way of travelling. Write down one advantage and one disadvantage.

Does anyone in your group know of a different animal that 'hitches a ride' on another animal. If so, write down its name.

Find the *Jetty Pylon* (post)

Animals that cannot move

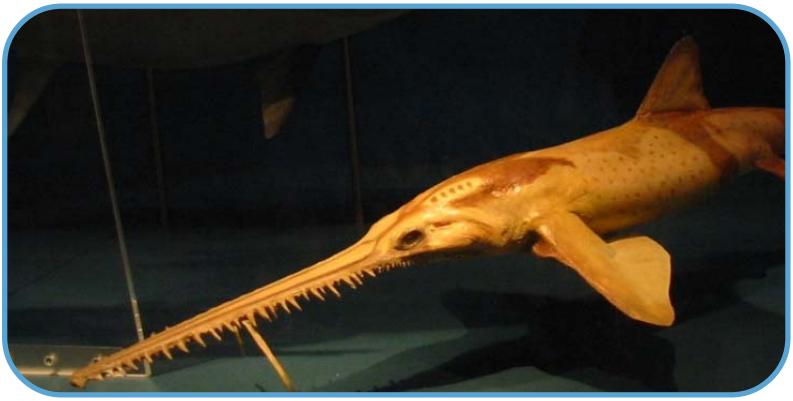
Most of the colourful lumps covering this wooden post are simple animals called sponges. They do not move around, but tiny hairs inside them beat back and forth to push water through small holes in their skin. They feed on specks of food in the water.

Most sponges are poisonous to eat, and are brightly coloured to advertise this. What seems to be the most common colour for sponges here?

Find the Sawshark in the *Open Ocean* display

Beating up fish

Imagine a Sawshark feeding. It slashes its saw through schools of fish, cutting and stunning them. It then eats the wounded fish.



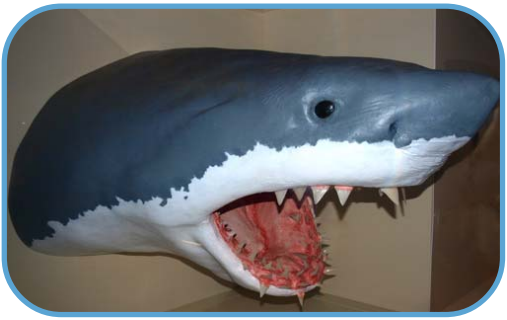
There is another fish in this display that stuns its prey, but it uses its tail rather than its snout. Which fish do you think it is?

Find the shark head

Jaws

A White Pointer Shark is a very good hunter. One of its favourite foods is a seal.

Look carefully at its teeth. Can you see that the edges of each tooth are like tiny saws to help slice up the meat they eat?



Look at the shark jaw next to the head. It has many rows of teeth. Only the front row pokes through the shark's gums. What is the use of the others?

Next to the shark jaw are some other fish jaws. Look at one jaw at a time. Before you lift each flap, guess what sort of food the jaw would be good at eating. When everyone agrees on an answer, lift the flap to see if you are right.

Feeding at Sea

[to the left of the shark]

Many ways to eat

Split your group up so that everyone can read one of the section about feeding at sea. (Pick sections that look interesting.) Take turns telling your group what you discover and then vote on the most interesting .

Fixed feeders

Deposit feeding

Feeding a friend

Biting

Electrocuting

Grazing

Spearing and clubbing

Stunning

Ambushing.

Poisoning

Stealing food

Stinging

Ripping open

Write down no more than 10 words to remind you of the story everyone voted most interesting, so you can tell it again back at school.

Find the crabs in the *Seagrass* display

Crabs

Most people find Blue Swimmer Crabs really good to eat, but we need to be careful that we do not catch too many, otherwise they will become extinct!

Crabs belong to a group of animals called arthropods, which have many jointed limbs. Look at the Blue Swimmer Crab's limbs. They are not all the same.

Discuss in your group what the crab might use each of its different legs for. When you all agree, write down your conclusions.

Look for other crabs. Do they all have the same limbs as the Blue Swimmer?

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Find the Helmet Shells in the *Seagrass and Sand* case

What is a mollusc?

Helmet Shells are one member of a huge group of animals called molluscs. All molluscs have their body organs covered by a special tissue called a mantle. They also have similar nervous systems.

Many molluscs make a shell. Snails, clams and oysters are some that do. Other molluscs do not make a shell. Slugs, cuttlefish and octopuses are molluscs in this group.

Helmet Shells

Collect enough information about molluscs to be able to give a short talk about them back at school. Use the drawers and the computer screens in the marine display to collect as much information as you can

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Record three things that you have learned about how animals survive in our oceans.

Write down the names of three animals you have not seen before.

Using what you know about how animals live in the oceans, note two ways that people can help look after these environments.

Collect • Research • Discover

Education programs at the South Australian Museum are supported by the Department for Education.

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