

# Beachcombing

Our southern coastlines and marine environments are unique, with many of the species found in the sea around our coast occurring nowhere else in the world. While we can see some of our amazing sea creatures if we go snorkelling or diving, another way to get a glimpse of the local marine environment is to go beachcombing along the shoreline.

Wander along the beach and see what you can find. Is it on this chart? Hopefully after reading and doing the activities on this chart you will have a deeper appreciation of our wonderful marine plants and animals.

# Identification chart

## Wireweed



Wireweeds (*Amphibolis* species) are seagrasses. Despite the name seagrass, they are not true grasses. Instead they are the only marine-submerged flowering plants. There are 60 different types of seagrass worldwide.

## Tapeweed



Tapeweeds (*Posidonia* species) are seagrasses mainly found in South Australia. They can form large meadows that are important breeding sites for many fish. Seagrasses store carbon in their root systems for centuries, helping to reduce climate change impacts.

## Tapeweed fruits



Seagrasses have tiny flowers that are pollinated by sea water moving pollen from one plant to another. Once pollinated, they produce green floating fruits that disperse long distances before settling, where the seeds germinate and grow into new plants.

## Tapeweed fibre ball



When the leaves and other fibrous parts of tapeweeds break down they are rolled together by wave action, forming these fibre balls or sausages. In the early 1900s the fibre was used in the manufacture of suits, explosives and household products.

## Wireweed stick ball



These are the stems of wireweeds. Can you find the plant on the chart? How do you think the ball was formed? Be a detective and see what else is attached to the stems in the ball. This will give you some clues to other things that are in the sea.

## Common Kelp



Common Kelp (*Ecklonia radiata*) is a brown alga that can grow to 2 metres in length. Like many other algae it has a holdfast which it attaches to rocks and other surfaces. Can you find a really long Common Kelp? How long is it?

## Neptune's Necklace



Neptune's Necklace (*Hormosira banksii*) is a brown alga that lives in shallow, rocky areas. At high tide the beads of the alga's necklace, which are filled with gas, allow it to float close to the water's surface. This helps it to gain energy from the sun.

## Corkweed



Corkweed (*Scaberia agardhi*) is a type of brown alga but the colour varies from brown to greenish gold. It lives on reefs in areas with moderate to strong currents.

## Sea lettuce



Sea lettuces (*Ulva* species) grow at and below the low tide line on rocky shorelines. They are green algae that are edible, typically used in soups and salads. Sea lettuces are an important food source for marine organisms including abalone.

## Branched coralline algae



*Metagoniolithon* species are types of branched coralline algae that attach to seagrasses, other algae or rocks. When these calcareous red algae are washed up on the sand they lose their colour and turn white. See how many different shades from red to white you can find.

## Sea star



Sea stars can reproduce sexually or asexually. Most can regenerate body parts, including their arms, which can number five or more. Try to find a sea star with more than five arms. Are the arms all the same length? If not, what do you think happened?

## Sea urchin



These animals are related to sea stars. They live on algae and slow moving or immobile animals. They have radial symmetry and move using tube feet. Their spines can be poisonous, protecting them from predators. The spines also help them to wedge in rocky reef areas.

## Squid eggs



Have a look at the eggs. Can you see anything inside? Sometimes you can see the black eyes of the unhatched squid. Do you know what a squid looks like? If not, maybe do some research. You could also find out how many arms and tentacles they have, how they eat and how these jet propelled animals move in the sea.

## Cuttlebone with dolphin teeth marks



Did you know that the cuttlebone is the equivalent of a backbone for the cuttlefish? The cuttlefish has eight short arms and two tentacles. It is a relative of the squid. Can you think of another relative with 8 arms? The bone also acts as a buoyancy device that the cuttlefish can fill with gas.

## Moon snail egg mass



These jellies are egg cases of moon snails. Moon snails, see inset, are brown-grey gastropods that prey on cockles and other bivalves. The adults have a hard toothed tongue-like structure called a radula to scrape holes in bivalve shells. They then release enzymes to help digest their prey, further breaking it up with their radula. Research why they are called gastropods.



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## Sponge



Sponges are animals that do not have a digestive system; instead they have pores and channels. Water moves through them to provide food and oxygen and to remove waste. In some places sponges are used as a soft alternative to a flannel for washing the body, and cleaning cars and other objects. Do you think we should be collecting sponges for use in cleaning? Why/why not?

## Colonial ascidian



Colonial ascidians are groups of animals that look like a sponge. They have a nervous system and respond to touch by closing their siphons and retracting. Unlike sponges they actively pump water through their system to get food. They come in a wide range of patterns and colours.

## Sea tulip



Sea tulips are solitary ascidians with a long stalk. They are filter feeders, actively pumping water to get food. While sea tulips appear to come in a range of colours, it is encrusting sponges growing on them that provide the colours. Sponges have compounds to deter predators, which also protect the sea tulips.

## Crab



Did you know the female crab has a broader triangular tail than the male? It is folded under her body where she keeps her eggs. See if you can find a crab. Is your crab a female or male? Do you think crabs can breathe under water? You can do some research to find out the answer.

## Port Jackson Shark egg



The female sharks wedge the soft egg cases in rocks using their mouths before the cases harden. The corkscrew shape makes it difficult to dislodge. It takes 10 to 12 months before the baby emerges.

## Scallop



Scallops are bivalves. This means they have two shells which are attached. They have up to 100 eyes along their mantle. Scallops are very ancient animals with no brain, but have ganglia; which are masses of nerve tissues, controlling their central nervous system. Most bivalves bury themselves or attach to rocks but scallops can swim rapidly for short distances.

## Cockle



Have you ever noticed a cockle shell with a hole in it and wondered what has caused this? It was probably a moon snail. Moon snails are gastropods and cockle shells are bivalves. Bi means two. Can you find a cockle shell that has a twin? Can you find a moon snail on this ID chart?

## Limpet



Limpets travel up to a metre at high tide grazing on algae, but they follow the scent of the mucous trail they left to go back to the same spot each day at low tide. They seal themselves off while exposed at low tide. Can you find some limpets? You can tell whether it's high or low tide by whether they are in the water or not.

## Abalone



Abalone shells are unusually strong. The shell is made up of minute tiles stacked and held together by a clingy substance. The tiles slide over each other when the shell is hit, preventing it from being damaged. Scientists are using this knowledge to create stronger products.

## Razorfish



Razorfish are mostly found partially buried, point down and fan end up, in sand or mud flat areas in southern Australia. They get their name from the razor sharp fan as people often cut their feet by standing on them. They live together in large colonies.

## Weedy and Leafy Seadragons



Seadragons live in areas where there is seaweed or seagrass as this matches their leafy appendages, providing camouflage from predators. What other animal on the chart do you think these two creatures are related to?

## Seahorse



What do you think seahorses and Ringtail Possums have in common? For a hint look at their tails and think about how they use them. Did you know a male seahorse has a pouch where he incubates the eggs laid by the female? When the eggs hatch they disperse as miniature versions of the adults.

## Bird poo



Did you know that there are seabirds that descend on the Arctic in summer? The ammonia from their poo vaporises and helps form clouds which reflect the sun's light and regulate temperature. Can you research to find out whether any local animals help to regulate the environment they live in?

## Bird footprints



Find some bird footprints in the sand. Which way do you think the bird was walking? Have you noticed that some birds have separated toes? Find a seagull and look at what it has between its toes to help it move in the water.

## Plastic



Plastic pollution is a major environmental problem. Can you count the pieces of plastic on the beach? See how many micro pieces you can find using a magnifying glass. Over 7.25 million tonnes of plastic ends up in our oceans every year. Research the sources and impacts of plastic pollution.

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