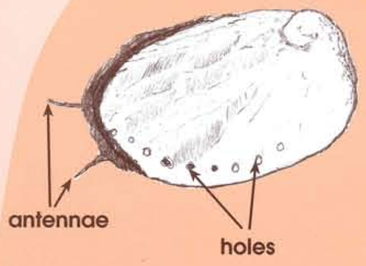
All About Shells

UNIVALVES
(one shell)

PAUA



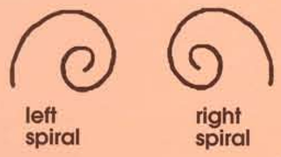
The shell is easily recognised by the wonderful internal lustre of opalescent greens and blues. The row of holes in the shell are important for breathing, expelling wastes and reproduction.

LIMPETS

Limpets have a cone shaped shell for protection. On exposed coasts, a shell with a low profile helps prevent dislodgement by waves.

SNAILS

Shells are spirally coiled to the right (clockwise) or to the left (counter clockwise), although left spiral shells are uncommon in New Zealand.



What has a shell?

*The animals described on this poster are all part of a group that scientists call **'molluscs'** Most molluscs have a **foot**, a **shell** and a **mantle**. The mantle is responsible for making the shell. Pigment cells in the mantle produce the shell's colours.*

Molluscs are not the only group of animals which have a shell. Crabs have a crusty outer skin made of chiton. Tube worms make a protective home out of calcium carbonate and brachiopods (lamp shells) have a shell similar to a clam.

Why have a shell?

Shells protect the animal from waves and other physical damage. They also provide protection from predators.

A shell helps to stop an animal drying out at low tide by keeping moisture inside.

Movement

An animal with a shell has a very secure home, but it usually means they are not very mobile.

Most bivalves don't move far. They attach themselves to rocks or bury themselves in sand or mud.

Univalves move slowly over seaweed, sediment or rock using their strong muscular foot.

Feeding

Bivalves circulate water over their gills and filter out plankton.

*Most univalves feed by scraping their rasping tongue, called a **radula**, over seaweed or other algae growing on rocks.*

Some carnivorous univalves will drill their way into other shellfish using their radula. They then use this tiny hole to reach the tasty meal inside.

Growth lines

*Look for ridges on a shell, they tell the story of its growth. Molluscs make their shell by laying down layers of **calcium carbonate**. As the animal inside the shell grows, another layer is added to the outer edge of the shell.*
*The oldest part of a bivalve is called the **umbo**.*

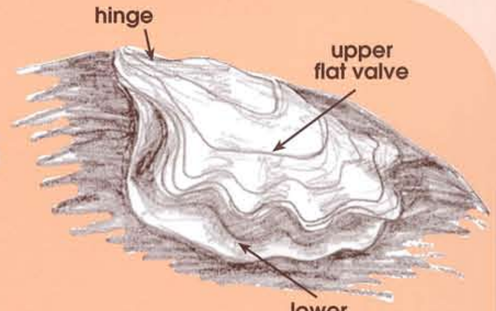
Collecting shells

If you take shells from the beach make sure there is nothing living in the shell or growing on the outside. Return them to the same place on the beach when you have finished with them so that other animals, like hermit crabs, can find a home.

Other Molluscs

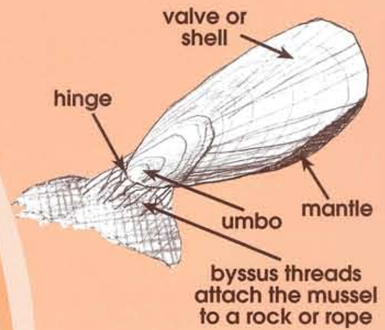
Cephalopods are a group of Molluscs which include nautilus, octopus, squid and cuttlefish.
Except for the nautilus, the shell in these species is reduced and internal or absent.

BIVALVES
(two shells)



OYSTERS

The lower valve of the oyster is smaller and flatter than the upper valve.Some oysters cement the lower valve to the rock. You will often only find one half of an oyster shell. Look for the hinge on the edge of the shell.

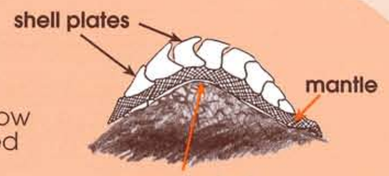


MUSSELS

The two valves are connected together by muscles and a hinge. When under water, the shells gape open allowing the animal to feed. When the tide is low the valves are pulled tightly together to prevent water loss.

CHITONS

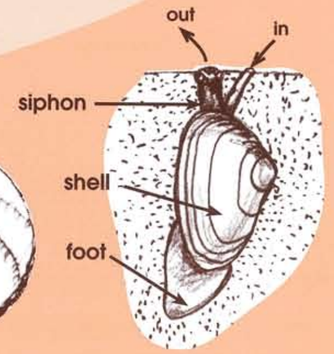
The shell consists of eight overlapping plates, which allow the chiton to attach to curved surfaces or roll up in a ball.



SCALLOPS

Scallops have two shells with 'wings' on one or both sides of the hinge. They are able to swim by clapping the shells together, which forces water from the mantle cavity to exit near the hinge.

CLAMS



Clams use their foot to burrow in the sand or mud. They have two siphons. One brings food and water in and the other takes waste out. When disturbed, clams will withdraw siphons and foot, pulling two valves closed.

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