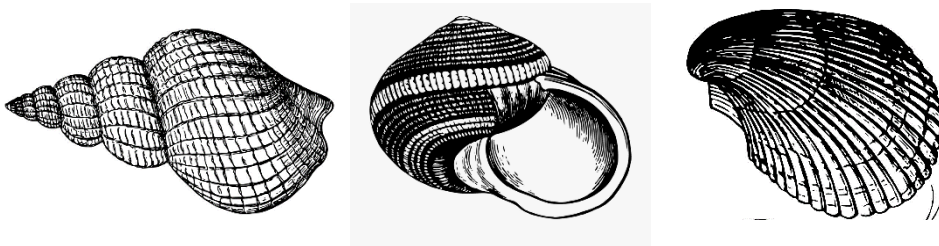


## Shells

Shells are the remains of a group of animals called molluscs. Molluscs are soft-bodied animals inhabiting marine, land and freshwater habitats. The shells we commonly come across on the beach belong to one of two groups of molluscs, either gastropods which have one shell, or bivalves which have two shells. The material making up the shell is secreted by special glands of the animal living within it.



Gastropod = One Shell

Bivalve = Two Shells

Particular shell shapes have been adapted to suit the habitat and conditions in which the animals live, helping them to survive. The wedge shape of a cockle shell allows them to easily burrow into the sand. Ribs, folds and frills on many molluscs help to strengthen the shell and provide extra protection from predators. The shape of molluscs allows the shell to grow as the creature continually grows inside. In most cases you can see the growth lines along the shell.

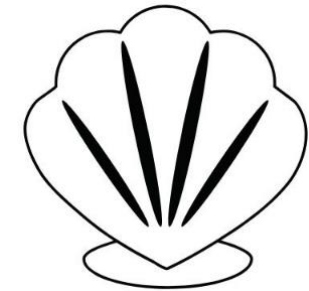
Can you tell how big your shell was as a baby?

## Bivalves

Bivalves are molluscs made up of two shells joined by a hinge with interlocking teeth. The shells are usually held together by a tough ligament. These creatures also have a set of two tubes which sometimes stick out from shell allowing the animal to breathe and feed.

Some commonly known bivalves include clams, cockles, mussels, scallops and oysters. Can you think of any others?

Oysters and mussels attach themselves to solid objects such as jetty pylons or rocks on the sea floor and filter feed by taking water into one tube and removing the tiny particles of plankton from the water. In contrast, scallops and cockles are moving bivalves and can either swim through the water or pull themselves through the sand with their muscular, soft bodies.



## Have you ever found a cockle with a hole in its shell?

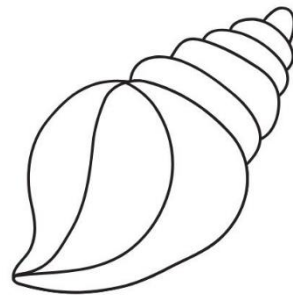
These holes are caused by meat-eating snails using their sharp tongues to drill into the cockle shell and eat the soft-bodied animal from the outside!

## Gastropods

Gastropods are also sometimes known as univalves. They are molluscs that only have one shell, usually in a spiral shape. These creatures have tentacles and small eyes to detect food and predators, and their soft body is able to withdraw inside the shell. The flat piece of shell acting as the 'front door' to the snail shell is called an operculum. The muscular body of gastropods on the underside of their shell allows them to crawl around.

Some common South Australian gastropods include abalone, turban shells, sand snails, whelks, limpets and tulip snails. Can you think of any others?

If you have ever found a clear, sausage-shaped jelly washed up on South Australian beaches, you have come across the egg mass of a sand snail. Many people believe these to be parts of jellyfish, but they actually contain hundreds and hundreds of tiny sand snail eggs waiting to hatch.



Many gastropods have a radula, which is like a tongue covered in hundreds of tiny teeth. Herbivorous snails will use this structure to scrape algae from rocks, while carnivorous snails are able to drill through the shells of other molluscs by moving the radula backwards and forwards, before sucking its prey out through the hole.

## Activities and Questions

- Next time you find a spiral-shaped shell on the beach, hold it with the point toward yourself and take notice of the direction of the spiral. Most shells you will find will have a clockwise spiral.
- When walking along the beach, tally how many cockle shells you find with holes and how many you find without holes.
- Why do you think some shells have detailed patterns?
- Why do you think cockles have smooth shells and oysters have rough, bumpy shells?
- How many different coloured shells can you find on the beach?
- Research some different kinds of marine animals that eat bivalves and gastropods.

**Fast Fact: Octopus, squid and cuttle are actually molluscs too. The octopus has changed over many years and lost its shell, while the squid and cuttle have internal shells known as squid pens and cuttle bones.**