

**Activity – Exploring Seashell Fauna
(Gr 3 - 10)**

Overview: Different types of marine invertebrate make different types of shells. Measure and draw a range of shells and try to identify them. Comparing the size, shape and colours of seashells is a great way of exploring the diversity in molluscs that live along rocky shorelines. Looking closely at shells can reveal the type of mollusc that created it, and may provide an indication of their way of life and diet. There is also an entire tiny world of micro-molluscs, 1 – 10 mm in size, in the drifts of shells that accumulate along the strandline or in the lee of intertidal rocks. For those willing to get down on hands and knees you will be amazed at what can be learned about the local environment from a single handful of shell grit.



1 – 10 mm sized micro-molluscs found in a handful of shell grit. Image: S. Grove.

TASK: Split the class into small groups and collect a range of empty shells from along the foreshore. Make sure the shells are empty, as we don't want to displace living creatures.

Materials:

- magnifying glass
- ruler
- flat tray with black cardboard
- pencil
- paper
- eraser
- shell ID chart - Before you undertake the DEP Discovery Trail print out a few copies of this pictorial guide to help the kids identify shells commonly found in coastal environments. This material relates to shells found in Aboriginal middens of Victoria, but is also useful for intertidal studies.

http://www.dpcd.vic.gov.au/__data/assets/pdf_file/0020/35633/A_Guide_to_Shells_August_2007.pdf

1. Using pencil and paper, ask the students to draw life size sketches of a range of different shells.
2. Take a handful of shell grit and place it on top of black cardboard in a tray.
3. Use a magnifying glass to sort through the grit to identify the number and type of shells found based on their shape.
4. Draw an enlarged version of some of the shell types you see, and note their life size on your drawing with a scale bar. Use arrows and note down key features of the shells that can be used to identify them when back in the classroom.

Main types of shell

1) Bivalves:

- are often the most common shells found on ocean beaches
- are fan shaped, or look like a pair of butterfly wings (also commonly singular shell if hinge has broken)
- when inhabited these shells are joined by a hinge which is used to clamp them shut when exposed to air
- local examples include mussels, scallop, clams, and oysters

2) Herbivorous marine snails – Gastropods:

- all marine snails have spiral shells
- each spiral is called a 'whorl'
- local examples include limpets, turban snails, abalone, and top shells (trochids)

3) Carnivorous marine snails:

- are medium to large elongate shells
- have moderate ribs across the shell
- a distinguishing feature is a small groove at the mouth of the shell, which enables the animal to extend its proboscis (snout or siphon) into the water to 'sniff out' prey
- local examples include tritons, whelks, dogwhelks, and helmet shells

4) Poly-placo-phorans:

- have a rounded and concave shell
- shell texture can range from smooth to corrugated
- local examples include chitons and limpets
- chitons have 8 plates, also known as 'valves'
- limpet shells look like a tiny hat

Some shell anatomy facts

- shells are the exoskeleton of invertebrates known as molluscs
- mollusc shells are mainly made of calcium carbonate
- shells found on beaches or rocky shores are empty because the animal has died and the soft parts have been eaten by another animal or have rotted.
- the exoskeleton of some other marine animals are also known as shells, although they usually have a different name. For example, the shells of sea urchins are called '*tests*', and the moulted shells of crabs and crayfish are called '*exuviae*'
- the growth of shells is often evident by obvious bands of colour, or corrugations which are bursts of growth each year
- changes in the diet may contribute to different colours in a shell

- hermit crabs do not make their own shell. Instead they simply occupy vacant shells that are of a suitable size.

Changing shells over time

- the Derwent estuary and the D'Entrecasteaux Channel has seen major and consistent declines in shell abundance and species richness in recent decades
- in the Derwent estuary the native species of screw shell has been gradually replaced by an introduced species of screw shell from NZ
- Seashells have been used by humans for many different purposes throughout history and pre-history.

Q: What sort of tool or ornament do you think you could make with shells?

Marine invertebrates, especially molluscs have some very interesting common names such as kelp-snail, false cockle, margin-shell, jingle-shell.

Q: If you discovered a new species of mollusc what creative name would you give it?