Phylum Mollusca; Class Gaststropoda; Extant (Precambrian to present); Acme in Cenozoic

How can they be easily identified (with soft parts)?

- They have a head with tentacles
- They have a large muscular foot which is used to crawl about on (locomotion = moving).
- All of the other soft body organs are tucked up inside the shell.
- If threatened it can withdraw all soft body tissue into its shell (particularly the body chamber).
- Their guts are coiled >180^0 within their shell.

How can they be easily identified (without soft parts)?

- There are no cambers inside the shell (**unlike cephalopods!)**
- The shell is univalve and made up of a mixture of 2/3 part protein/chitin and reinforced by calcium carbonate (calcite/aragonite).
- The shell shows coiling as the outer lip of the aperture grows faster than the inner lip as calcite/aragonite is laid down at a greater rate on the outer lip. Coiling can be helical or Planispiral and can be dextral of sinistral.
- The lower whorls coil up to the apex to form a spire.

What environments do they inhabit?
They are very diverse and geographically widespread.
Most appear in shallow marine environments but some have evolved to live in freshwaters and on land (places that are not too dry).

How are gastropods orientated when analysing?
We place the apex upwards and the aperture facing towards us. This is known as the **Apertural view.**

What is the difference between dextral and sinistral?
Dextral coiling is the most common and involves coiling of the shell from the apex to the right so that the aperture will appear on the right-hand side when faced head-on. Sinistral coiling is coiling of the shell towards the left so the aperture will end up on the left-hand side when faced.

What is the difference between helical and Planispiral?
A shell is usually coiled helically to form a spiral that goes up to an apex.

The other type of coiling that can be shown (in freshwater species) is called Planispiral. This is coiling of a shell in one plane rather than the normal helical spire.

Genus 1: Turitella
A tightly coiled helical spire . The shell is essentially an elongated coil. After each whorl, the diameter does not increase much in size. The shell tapers upwards to a small apical angle.
The mode of life is benthonic, infaunal and filter feeding.
The long spire burrows into the sediment with the aperture facing upwards so it can survive with a thin shell in a high energy environment.

It can live in shallow sea continental shelves and in the littoral zone.

Modes of life and adaptations:
A large siphonal canal indicates the need for a large siphon to separate inhalant and exhalent currents. Indicative of low energy environments as a filter feeder.

A thin shell with little ornament. Indicative of low energy environments so little need for protection. Maybe a burrower which only needs a weak shell as the burrow is the main protector. E.g. freshwater environments.

A thick shell with ornament. Indicative of a higher energy environment or a predation defence. E.g. shallow marine environments or on land.

A long spire/infaunal gastropod. Indicative of a burrower.

Genus 2: Buccinum (common whelk)
A short siphon that extends upwards and forwards. This is for intake of clean water for respiration as it ploughs through the muddy sea bed.
Buccinum is a carnivore and scavenger.
It has a rasp-like tongue which is used for acting on the soft-tissue of its prey, alive and dead. It commonly eats dead or damaged marine animals.

There are many Marine forms that take a more aggressive approach such as Natica that uses acid to soften its prey's shell and then drills a hole and scoops out the soft tissue.