

## SEDIMENTATION LABORATORY

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### What I need?

- Tweezers
- Hand-held magnifiers
- Petri dishes
- Trays
- Binocular magnifiers
- Optical microscope (optional)
- Blades and slides (optional)
- Pasteur pipettes (optional)
- Biological material - invertebrate species (bivalves, including cockles)
- Water
- Sediment
- Ethyl alcohol (for possible preservation of some species after the action, which can be used in other future actions)

### How to do it?

#### PART 1:

#### SAMPLE PREPARATION

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1. Place the sediment in the trays needed for the exercise, covering the bottom.
2. Cover the sediments with salt water and place several species of live clams in each tray, including mussels.
3. Place the tweezers, Petri dishes and hand magnifiers on the tables next to the trays.

#### PART 2:

#### DEVELOPMENT

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1. Observe the sediment with a hand-held magnifying glass and look for different species of bivalve in the sediment to observe the shell, foot and identify the siphons (inhalation and exhalation), especially in cockles. Use tweezers to remove the species you have visualised and place them in a petri dish filled with salt water.
2. Observe invertebrates in a petri dish using a hand-held magnifying glass and/or binocular magnifier to see more detail. Observe the cockchafer, noting particular features of its shell and siphons.
3. Record these details in the form of a drawing/illustration.

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### Find out more...

Molluscs - the cluster Mollusca comprises a huge diversity of species inhabiting marine, freshwater and terrestrial habitats. It includes several classes, of which Bivalvia (e.g. bivalves), Gastropoda (e.g. gastropods) and Cephalopoda (e.g. octopuses, squid) are the best known and most diverse.

One of the most characteristic features of molluscs is the existence of a protective shell, which has disappeared in some groups, replaced by protection provided by toxic substances (some snails, e.g. nudibranchs) or by intelligence and speed (cephalopods).



The bivalve species used in this exercise include those with shells, to observe some of the different colours, textures and shapes that identify each species. Bivalves have a shell consisting of two parts (valvae) that connect dorsally.

In the specific context of Ria de Aveiro, more attention will be paid to the crustacean *Cerastoderma edule*. This mollusc is common in estuarine areas and is of economic value to the population. It has an oval, whitish or yellowish shell between 3.5 and 5 cm long with 22-28 radial grooves. Like most bivalve species today, the cockle feeds by filtering organic material and plankton through its gills. Water, which is also used to provide oxygen, enters through the inspiratory (ventral) siphon and exits through the expiratory (dorsal) siphon, siphons that can be observed during the activity of living animals.

During reproduction, bivalves release gametes (male and female) into the water and fertilisation and egg development takes place in the water column. From the egg, small larvae (trochophores) emerge, which move about and, after some time, settle to the bottom and give rise to small juveniles.

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