



EXPLORING THE BENTHIC FAUNA OF A ROCKY SHORE

Geography | Biology | Chemistry | Geology | Physics | Mother Language | Arts



BIODIVERSITY

PEDAGOGIC CONTENT:

- Ecosystem
- Biodiversity
- Biotic factor
- Organisms, bacteria
- Environmental sustainability

PRE-REQUISITES:

• Knowledge of notions like: Ecosystem, biodiversity, oxygen, nutrients, temperature, salinity, substrate, aerial exposure, depth, tides, waves, currents, food webs.

NEW COMPETENCIES TARGETED/LEARNING OUTCOMES:

STUDENTS WILL BE ABLE TO:

- Measure/calculate various physicochemical parameters
- Identify and describe abiotic factors and benthic fauna of a sea shore.
- Become familiar with scientific and laboratory equipment
- Be encouraged to take on the role of an environmental scientist



EXPLORING THE
BENTHIC FAUNA OF A
ROCKY SHORE

DESCRIPTION:

➤ IMPLEMENTATION

 **#1:** (in the field). Students with educators walk along a rocky sea shore, observe the environment, and take some photos.

 **#2:** Students will separate in different groups and will gather at least **4** quantitative and **4** qualitative data to describe the ecosystem. By providing measuring equipment students should collect some physical and chemical data (e.g. air and water temperature, pH, type of microhabitat, etc., see the worksheet below), to characterize the abiotic factors and the habitat type of each specimen (crevices, tide-pools and exposed platform).

 **#3:** By providing recording devices such as cameras, as well as measuring equipment to allow the estimation of size and numbers, students could be guided to explore the diversity of species of the rocky shore. With the help of an expert such as a marine biologist they could collect some plant material (seaweed) from the substrate for observation. Students could also observe in mobile stereoscopes some benthic invertebrates from their samples.

 **#4:** (In the classroom). Each group perform research on a benthic species (animal or plant) and then share their information to become 'experts' on their species.

 **#5:** Each group creates a species identification card, focused on its morphological characteristics, habitat and modes of life. At the end, through the comparison of the similarities and differences between the different species analysed, students should develop a deep understanding about marine biodiversity and species adaptations.

 **#6:** (In the classroom, ICT lab). Each group prepares and makes a ppt presentation or a poster with the results of the quantitative and qualitative data from the field research.

 **#7:** Discussion. Students share their comments and conclusions with the rest of the class.

Type of activity  Field research, experimental activities, presentation, project.

Target audience  From 12 years old

Place  Outside space, class room, ICT laboratory

Material needed  Cameras, or mobile phones, work sheets, pencils, measuring equipments, computers, access to the internet. temperature probes, ph indicator paper ,field guides, cardboards glues, scissors, hats, suncreams.

Duration of activity  1 hour in the field
3 hours in the classroom/ ICT laboratory

Authorship  HCMR (Education Unit)
No authorization required

Links  Brieseman, C. (2013). Oceans. An Inquiry Unit. Available at: <http://seaweek.org.nz/wpcontent/uploads/sites/26/2013/10/Ocean-Unit.pdf>

Notes by author  Educator should introduce students to the use of scientific equipment.



Departament de Sostenibilitat i Medi Ambient
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Worksheet

Exploring the benthic fauna of a rocky Shore

Site:

Date:

Coordinates:

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ABIOTIC PARAMETERS

1. Temperature:
2. Conductivity:
3. PH:
4. Dis. Oxygen:
5. Salinity:
6. Other:

BIOTIC ELEMENTS

1.
2.
3.
4.
5.
6.

Observed human interventions in the study area

1.
2.
3.
4.

