

HBEEC supports Aquatic Practices

Unique access to both beach and estuarine systems allows HBEEC to provide visiting schools with a number of different aquatic practices programs. Schools can choose to use our pre-developed programs and resources, or to run their own programs on site. Aquatic practices programs and materials have been specially developed to align with the aquatic practices applied senior syllabus. Topic coding for each area of study indicates the concepts and ideas that can be explored for each activity.



Boat Based

Students use boats to investigate mangrove ecosystems focusing on how biotic and abiotic factors relate to the biodiversity and adaptations of organisms. [Senior Science Boating Workbook](#) covers Simpson's Diversity Index, Ecosystem classification, stratified sampling etc.

Investigations include:

- Water Quality Testing (*ongoing results are available as an manipulable excel sheet [Water Testing Data](#) for classroom data analysis*) (E2.1, E2.4, E4.1, R1.1, C2.2)
- Riparian Assessment (E1.2, E2.1, E2.2, E2.3, E2.4, E3.1, E3.2)
- Biodiversity counts e.g. birds, fish, yabbies (E2.1, E2.2, E2.3, E2.4, R1.1)
- Mud Crab Studies (E2.1, E2.2, E2.3, E2.4, R1.1, SM1.1, SM1.2, SM1.3)
- Human Impacts (E1.2, E2.4, E3.1, E3.2)
- Mangrove Watch Citizen Science Program (E1.2, E2.1, E2.2, E2.3, E2.4, E3.1, E3.2, E4.1, E4.2, E4.3)
- Testing design and build of products, fishing rods, lures etc. (R1.1, Cu1.3, Cu2.3, SM1.1, SM1.2, SM1.3)



Land Based

Students investigate mangrove or beach ecosystems and collect field data.

Investigations include:

- Mangrove Identification using dichotomous keys (E2.3, E2.4,)
- Transects to study abiotic/biotic features (*data collected is contributed to the [Mangrove Watch Citizen Science Project](#) to monitor and preserve the health of our ecosystem and is used to calculate carbon storage and other factors*) (E1.2, E2.1, E2.2, E2.3, E2.4, E3.1, E3.2, E4.1, E4.2, E4.3)
- Quadrats – crab/yabby populations, soil types, temperatures, wind speed etc. (E2.1, E2.2, E2.3, E2.4, R1.1, SM1.1, SM1.2, SM1.3)
- Indigenous Plant Trail (Cu1.1)
- Microplastic Sampling (*data collected contributes to the [AUSMAP](#) citizen Science project to monitor shoreline micro plastics*) (E1.2, E2.1, E2.2, E2.3, E2.4, E3.1, E3.2, E4.1, E4.2, E4.3)
- Aquarium (E2.1, E2.2, E2.3, E2.4, R1.1, C2.2,)
- Risk management (R1.1, SM1.3)

The [Senior Science Biology Workbook](#) covers mangrove identification, Simpson's Diversity Index, Ecosystem classification, stratified sampling etc. Several of the activities in this workbook can be utilised to explore concepts and ideas relevant to Aquatic practices.

Programs are collaboratively planned to meet the needs and focus of each group and can also include studies related to other subject such as Earth Sciences and Biology.

