BOOKING

SPECIAL PROGRAMS

STAGE 6

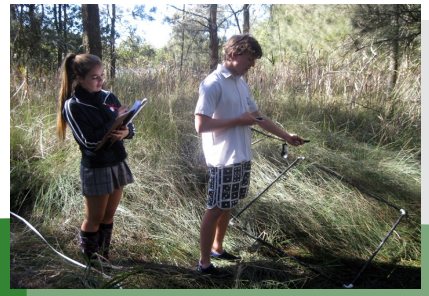
Biology Ecosystem Dynamics

Location: Bateau Bay or Copacabana Rock Platform.

Students will use an inquiry leaning model to investigate the population dynamics of local ecosystems and determine relationships between biotic and abiotic factors in an ecosystem. The future of ecosystems will also be examined with discussions of management options and the perspective of stakeholders.

Field work activities include:

- use of transects and quadrats to measure distribution and abundance of plants and animals
- wildlife observation with reference to field guides and identification APPS
- measurement of physical and chemical abiotic influences
- observations of predation, competition and symbiotic relationships amongst local ecosystem species
- practical observations and discussion of adaptations of plant and animal species
- discussion of environmental pressures that promote a change in species diversity and abundance.



STAGE 6

Earth & Environmental Science Introduced Species

Location: Strickland State Forest.

An investigation of introduced species and their impact on ecosystems.

Field work activities include:

- use of quadrat sampling techniques to compare a lantana infested area and a natural rainforest;
- measurements of abiotic factors to account for impacts of lantana
- surveys of introduced animal species such as Mosquito Fish and Bell Birds
- assessment of the impact of introduced species on the rainforest environment
- discussion of control and mitigation of introduced species at Strickland Forest and
- water quality testing and discussion of how human activity can influence the availability and quality of water.

Depth Study Support

Participation in our Stage 6 field work programs could contribute **four hours** to student Depth Study Investigations. Pre and post visit resources and links will be provided to further support students in their area of interest.

Cost: $5 per student, up to 60 students
Book on line at
www.rumbalara-e.schools.nsw.edu.au/bookings

RUMBALARA
ENVIRONMENTAL EDUCATION CENTRE

Rumbalara Environmental Education Centre

Science Programs 2021

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NSW GOVERNMENT Education Public Schools

2021 FIELDWORK PROGRAMS SCIENCE

STAGE 4 - Energy
Physical World

Invite Rumbalara's 'Bright Sparks' energy trailer to your school. It's full of exciting, hands-on activities promoting scientific curiosity and the search for alternative energy solutions. Investigate solar panels, wind turbines, solar thermal, lemon batteries and sustainable lighting.

STAGE 5
Living World

Students apply fieldwork skills to measure and describe the characteristics of an ecosystem, identify foodwebs and observe the adaptations of organisms. Includes the use of scientific instruments, sampling techniques and classification keys. Program is focused on Tuggerah Lakes with location at Long Jetty / The Entrance. (Other customised programs are available for different locations - please contact us to discuss).

STAGE 5
Marine and Aquaculture Technology

Location: Bateau Bay Beach/Bensville Wetland

Conduct primary research on the environmental conditions that have shaped adaptations and the patterns of life on rock platforms, beaches, estuaries and coastal lagoons. Students use transects and quadrats to measure distribution and abundance of plants and animals. They will also measure physical and chemical abiotic influences.

STAGE 6
Investigating Science Cause & Effect (Microplastics)

Location: Terrigal Lagoon

This program will focus on microplastics and include a practical investigation that will collect a range of qualitative and quantitative primary data on the impact of microplastics on our coastal lagoons.

Field work activities include:

- use of a transect and quadrat to collect data
- classification of microplastics into size classes and polymer types
- collecting data on macroplastics & litter
- conducting water quality testing to identify other sources of pollution
- discussion of impacts and sources of microplastics in the local area

STAGE 6
Earth's Resources

Students will be taken on a journey through time through an investigation of geology and fossils at at three significant geological locations close to the Central Coast. Features of each location are outlined below:

Catherine Hill Bay—Sedimentary rock (Teralba Conglomerate), coal seam, dyke and entrance to old coal mine.

Swansea Heads –Igneous rocks (Tuff), remains of Glossopteris Forest and discussion of previous volcanic activity.

Mulbring Quarry– Sedimentary rock (Branxton Formation which includes clays and shale), fossil site includes Bryzoa, Mollusc, Brachiopods and Crinoids.

Field work activities include:

- soil texture, colour and ph tests
- quadrat diagrams of rock and grain size in conglomerate
- drawing stratigraphic representations of rock layers
- classification of fossils
- measurement of fossil size and orientation