



ROCKY SHORE RESEARCH

PRE-VISIT INFORMATION FOR TEACHERS

The Rocky Shore Research program is a marine science investigation that uses a hands-on science experience to engage and inspire students to develop a new appreciation for marine science and the marine environment. The students will explore a local rock platform while examining the biotic and abiotic factors that affect it. This program covers the required fieldwork component for Year 11 biology in the NSW and Australian Curriculums.

During this two hour program a Marine Education Officer will guide students through data collection methods, species identification and classification and proper recording practices. The program is designed for students in Years 7-12, and can be tailored to suit your curriculum needs.

It is important that teachers read and understand this pre-visit information and what is required for the delivery of the program.

Thank you.



Australian
National
University

a proud sponsor of the Sapphire Coast Marine Discovery Centre

PRE-VISIT INFORMATION

Program duration	2 hour
Program cost	\$10 per student (maximum of 30 students per session)
Bookings enquiries	T: 02 6496 1699 E: education@sapphirecoastdiscovery.com.au

What the school needs to do prior to our visit

- Confirm the date, time and numbers for the school visit via email.
- Let us know of any special topics you would like covered in your session. We are happy to tailor the program to best suit your learning requirements.
- During the visit the students will work in groups of 3 to allow a better learning impact. Please arrange these groups prior to the visit to make organisation on the day simpler.
- Inform us if there are any seafood allergies within the group.
- Advise the students that they will need to wear closed, sturdy footwear and a hat. It is also advisable that they have sunscreen and a drink bottle as the program is run outdoors.
- This program is available to be run near some coastal schools. Please ask us if you would like us to travel to you.

Post visit evaluation

We aim to provide a high quality program and feedback is a wonderful way to help us continually improve. During the visit a Marine Education Officer will provide each teacher with feedback forms. We ask that teachers fill these in thoroughly and honestly. The forms can be completed and handed back on the day, or returned to the Centre via email, fax or post. Contact details are provided on the forms.

Program related curriculum links

Australian Science Curriculum

Source: <http://www.australiancurriculum.edu.au/Science/Curriculum/F-10>

Skip to Year Level

[Year 7](#)

[Year 8](#)

[Year 9](#)

[Year 10](#)

[Year 11 & 12](#)

-**Biology:** [Unit 1](#),

-**Earth and Environmental Science:** [Unit 1](#), [Unit 3](#),

Year 7

ACSSU111 - There are differences within and between groups of organisms; classification helps organise this diversity

ACSSU112 - Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions.

ACSSU222- Water is an important resource that cycles through the environment

ACSHE119 - Scientific knowledge changes as new evidence becomes available, and some scientific discoveries have significantly changed people's understanding of the world

ACSHE121 - Science understanding influences the development of practices in areas of human activity such as industry, agriculture and marine and terrestrial resource management

Year 8

ACSSU150 - Multi-cellular organisms contain systems of organs that carry out specialised functions that enable them to survive and reproduce.

ACSHE134 - Scientific knowledge changes as new evidence becomes available, and some scientific discoveries have significantly changed people's understanding of the world.

ACSHE136 - Science understanding influences the development of practices in areas of human activity such as industry, agriculture and marine and terrestrial resource management.

Year 9

ACSSU175 - Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment.

ACSSU176 - Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems.

ACSHE160 - People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions.

AC SIS164 - Formulate questions or hypotheses that can be investigated scientifically.

AC SIS165 - Plan, select and use appropriate investigation methods, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods

AC SIS169 - Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies

AC SIS170 - Use knowledge of scientific concepts to draw conclusions that are consistent with evidence

AC SIS171 - Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data

Year 10

AC SSU185 - The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence.

AC SHE194 - People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions.

AC SIS198 - Formulate questions or hypotheses that can be investigated scientifically.

AC SIS199 - Plan, select and use appropriate investigation methods, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods.

AC SIS203 - Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies.

AC SIS204 - Use knowledge of scientific concepts to draw conclusions that are consistent with evidence

AC SIS205 - Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data.

Year 11 & 12

Biology

Unit 1: Biodiversity and the interconnectedness of life

Science Inquiry Skills (Biology Unit 1)

1. Identify, research and construct questions for investigation; propose hypotheses; and predict possible outcomes (ACSBL001)
2. Conduct investigations, including using ecosystem surveying techniques, safely, competently and methodically for the collection of valid and reliable data (ACSBL003)
3. Represent data in meaningful and useful ways; organise and analyse data to identify trends, patterns and relationships; qualitatively describe sources of measurement error, and uncertainty and limitations in data; and select, synthesise and use evidence to make and justify conclusions (ACSBL004)
4. Select, construct and use appropriate representations, including classification keys, food webs and biomass pyramids, to communicate conceptual understanding, solve problems and make predictions (ACSBL006)

Science as a Human Endeavour (Units 1 and 2)

1. Scientific knowledge can enable scientists to offer valid explanations and make reliable predictions (ACSBL013)
2. Scientific knowledge can be used to develop and evaluate projected economic, social and environmental impacts and to design action for sustainability (ACSBL014)

Science Understanding

Describing biodiversity

1. Ecosystems are diverse, composed of varied habitats and can be described in terms of their component species, species interactions and the abiotic factors that make up the environment (ACSBL019)
2. Relationships and interactions between species in ecosystems include predation, competition, symbiosis and disease (ACSBL020)
3. In addition to biotic factors, abiotic factors including climate and substrate can be used to describe and classify environments (ACSBL021)

Earth and Environmental Science

Unit 1: Introduction to Earth systems

Science Inquiry Skills (Earth and Environmental Science Unit 1)

1. Identify, research and construct questions for investigation; propose hypotheses; and predict possible outcomes (ACSES001)
2. Represent data in meaningful and useful ways; organise and analyse data to identify trends, patterns and relationships; qualitatively describe sources of measurement error, and uncertainty and limitations in data; and select, synthesise and use evidence to make and justify conclusions (ACSES004)

Science as a Human Endeavour (Units 1 & 2)

1. Scientific knowledge can enable scientists to offer valid explanations and make reliable predictions (ACSES013)
2. Scientific knowledge can be used to develop and evaluate projected economic, social and environmental impacts and to design action for sustainability (ACSES014)

Science Understanding

Development of the biosphere

1. In any one location, the characteristics (for example, temperature, surface water, substrate, organisms, available light) and interactions of the atmosphere, geosphere, hydrosphere and biosphere give rise to unique and dynamic communities (ACSES027)

Unit 3: Living on Earth - extracting, using and managing Earth resources

Science Inquiry Skills (Earth and Environmental Science Unit 3)

1. Identify, research and construct questions for investigation; propose hypotheses; and predict possible outcomes (ACSES057)
2. Represent data in meaningful and useful ways; organise and analyse data to identify trends, patterns and relationships; discuss the ways in which measurement error and instrumental accuracy and the nature of the procedure and sample size may influence uncertainty and limitations in data; and select, synthesise and use evidence to make and justify conclusions (ACSES060)

Science as a Human Endeavour (Units 3 & 4)

1. Scientific knowledge can be used to develop and evaluate projected economic, social and environmental impacts and to design action for sustainability (ACSES070)

Science Understanding

Use of renewable Earth resources

1. Any human activities that affect ecosystems (for example, species removal, habitat destruction, pest introduction, dryland salinity) can directly or indirectly reduce populations to beneath the threshold of population viability at local, regional and global scales and impact ecosystem services (ACSES081)
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School Group Feedback Form

School Name: _____

Teachers Name: _____ Year Level: _____

SCMDC Program: _____ Date: _____

Thank you for booking the Sapphire Coast Marine Discovery Centre. In order to provide quality programs into the future, we would appreciate your feedback.

Return by email education@sapphirecoastdiscovery.com.au or fax to (02) 6496 2404.

- 1) How did the program meet your expectations (Please circle appropriate number)

Worse than Expected		As Expected		Exceeded Expectations
1	2	3	4	5

Comments:

- 2) The program was helpful and informative (Please circle appropriate number)

Strongly disagree				Strongly agree
1	2	3	4	5

Comments:

- 3) The program content was relevant to the students learning (Please circle appropriate number)

Strongly disagree				Strongly agree
1	2	3	4	5

Comments:

Please turn over

