S.Y9.U6 - Marine Ecosystems - Year 9

Students focus on communities of interdependent marine organisms and abiotic components of the marine environment. The key practical components from **Curriculum into the Classroom - Science Unit 6 Responding to change, lessons 1, 2, 3, 4, 5 & 6** are undertaken at the centre supporting a marine based response to the C2C unit's assessment items.

NUDGEE BEACH
environmental education centre

Day Visit program

YEAR 9 Science – Australian Curriculum and C2C Mapping					
ACARA	**Science as a Human Endeavour**	**Nature and developing science** Scientific understanding, including models and theories, are contestable and are refined over time through a process of review by the scientific community (ACSHE157) Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries (ACSHE158) **Using and Influencing science** People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions (ACSHE160) Advances in science and emerging sciences and technologies can significantly affect people's lives, including generating new career opportunities (ACSHE161) The values and needs of contemporary society can influence the focus of scientific research (ACSHE228)			
	Science Inquiry Skills	**Questioning and Predicting** Formulate questions or hypotheses that can be investigated scientifically (ACSIS164) **Planning and Conducting** 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 (ACSIS165) Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data (ACSIS166) **Processing and analysing data and information** Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies (ACSIS169) Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (ACSIS170) **Evaluating** Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data (ACSIS171) Critically analyse the validity of information in secondary sources and evaluate the approaches used to solve problems (ACSIS172) **Communicating** Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (ACSIS174)			
	Science Understandings	**Biological Science**	**Chemical Science**	**Earth and Space Science**	**Physical Science**
		Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment (ACSSU175) Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176)	All matter is made of atoms which are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms (ACSSU177) Chemical reactions involve rearranging atoms to form new substances; during a chemical reaction mass is not created or destroyed (ACSSU178) Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer (ACSSU179)	The theory of plate tectonics explains global patterns of geological activity and continental movement (ACSSU180)	Energy transfer through different mediums can be explained using wave and particle models (ACSSU182)
C2C		Life in the Balance Responding to Change	Chemical Changes Heat and Eat	It's elementary Changing Earth	Energy on the Move Making Waves
Nudgee Beach EEC programs		**Food Webs in the Marine Environment**			

ACARA	**General Capabilities**	**Literacy** • Comprehending texts through listening, viewing and reading • Composing texts through speaking, writing and creating • Text knowledge • Grammar knowledge • Word knowledge • Visual knowledge **Numeracy** • Calculating and estimating • Recognising and using patterns and relationships **ICT Capability** *Queensland Student ICT Expectations:* • Inquiring with ICT • Operating with ICT **Critical and creative thinking** • Inquiring - identifying, exploring and clarifying information • Generating innovative ideas and possibilities • Reflecting on thinking, actions and processes • Analysing, synthesising and evaluating information **Personal and social capability** • Self-awareness • Self-management • Social awareness • Social management **Ethical behaviour** • Understanding ethical concepts and issues
	Cross Curriculum Priorities	**Aboriginal and Torres Strait Islander histories and cultures** Students will discuss how Aboriginal peoples' and Torres Strait Islander peoples' knowledge about environmental changes can influence the sustainable management of ecosystems. **Sustainability** Students will consider a balanced approach to the way humans interact with the environment.