Marine Environment Studies   Unit 2   Year Level: 11

Context/Setting: Marine Diversity

The Big Ideas: What is 'environment'; what is in the marine environment?; how does it all fit together? how can we sample it?

Maori Perspective:	I.C.T. Component:
Gain some understanding of the importance of the marine environment to Maori	Use of water quality equipment

Resources:
- Contact Wade Doak
- Photo cards of local marine species
- Books on Marine Ecology for interrelationship research
- Transect lines and quadrats
- Practise Task – shady vs sunny
- Underwater 'animals'
- Book pool for pool sessions
- Real task – intertidal vs subtidal

Evaluation of Unit: What worked? What didn't work? What would you do differently next time?

The shady vs sunny learning (practise) AS worked ok but a lot of students not see the point of it so a lot were away therefore about half the class struggled with working out the percent cover for the plant/algae species – this was not apparent during the learning AS; datasheet needs to separate the algae from the animals – this would make doing the graphs a lot easier, some of them did not get the data off the other pair in their team so I gave them a copy of someone else's data (had several copies photocopied for this) but they didn't know which ones were algae and which ones were animals; they enjoyed the field trip and having the swim around in the morning was good for me to see how confident they were in the water; needed practise on data interpretation-ie/ what do the graphs/venn diagrams tell me!?!

Learning Intentions (What do you want the students to understand)	Success Criteria (How will you know that students have achieved Learning Intentions)	Learning Opportunities (The strategies/activities/experiences that students can have to support the achievement of the learning intentions)	Assessment (The 'product(s)' students produce to demonstrate the success criteria)
Students will: • gain an understanding of the diversity of life in the marine environment • understand at least 3 different methods of sampling the marine environment • gain further research skills and experience	Students will: • be able to identify the marine species in the field • submit reports which show they understand the concepts covered	Lesson 1 • What is 'environment'? • Think, pair, share – what lives in the marine environment? • What is diversity? • How could we keep this diversity? (sustainability) L2 • Wade Doak: slide show on different organisms (Focus: diversity; interrelationships) L3 • Food chains and food webs (interrelationship – who eats who? (predation)). • What are they? • Make some using photos of local marine organisms L4 • Other interrelationships (eg Nemo) • Give names of the various interrelationships – students to research examples L5 • Influences on the marine environment – natural and human • Natural – environmental factors (abiotic and biotic): predation; competition; wave action; desiccation; light; food availability; salinity • Human – trampling; harvesting (eg fishing, shell fish gathering) L6 • Sampling techniques – transect lines, quadrats, fish counts • Beach profiles • Data sheets L7 • How NCEA works	• Produce a 'practise' report on grass species in a shady vs sunny location • Produce a 'real' report on species in the intertidal zone compared to the intertidal zone (AS Bio 1.4)

| | | L8
• Practise sampling: shade vs sunny - transect line, quadrats and 'beach' profile on field (use coloured ice block sticks for the species)
OR practise in pool with equipment!

L9
• Report writing – write method, process data, write remainder of report (incl. similarities or differences btwn shady and sunny)

L10
• Finish report – hand in.

L11
• Field work: Matauri Bay – AS Bio 1.4

L12 - 14
• Work on AS Bio 1.4 | |