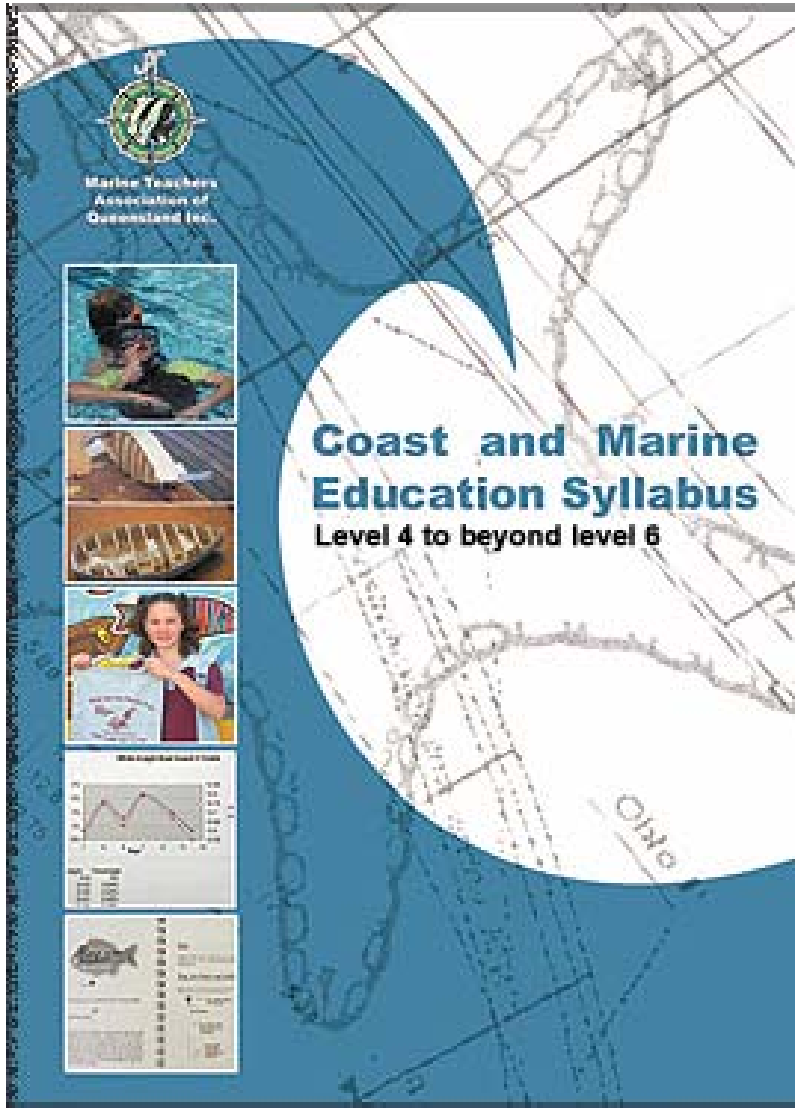
Workshop presentation - Explaining the syllabus



A joint venture between MTAQ, Education Queensland and the Marine Education Industry

The syllabus was developed from school and industry partners

Holy Spirit College
Kirwan SHS
Sunshine Beach SHS
Mercy College
Southern Cross College
Hervey Bay SHS
Clontarf Beach SHS

North West Cape College
Mackay SHS
Rockhampton Grammar School
Yeppoon SHS
Tin Can Bay Sec Department
Dunwich SHS
Victoria Point SHS

Queensland Government
Maritime Safety Queensland

YACHTING QUEENSLAND

Australian Government
Quality Teacher Programme

Wet Paper

Australian Government
Great Barrier Reef
Marine Park Authority

Queensland Government
Education Queensland

AMC
AUSTRALIAN MARITIME COLLEGE

The purpose of this presentation is to:

- Give you some background to MTAQ
- Detail the features of the syllabus
- Describe a few case studies from the syllabus trial

This will take 30 minutes and please feel free to ask any questions during the presentation

MTAQ has become the peak body for Marine Education in Queensland

Marine Teachers Association of Queensland

mtaq

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Junior Marine Studies Project Reports

Coast and Marine Education 2004 Draft Syllabus

The syllabus was developed to

- Engage students from Year 8-10 with content and tasks relevant to their daily lives

- Introduce students to marine education to show them a pathway into the Year 11-12 Marine Studies as well as careers in the maritime industry

- Engage teachers in relevant curriculum using latest curriculum practices

Courses developed from the syllabus will

- use existing equipment and curriculum resources supplied to industrial arts, science, SOSE or Physical Education subject departments

and

- allow a first year graduate teacher with
  - a love of the sea
  - A Science or SOSE background and
  - minimal qualifications (Eg: a speed boat drivers licence, a first aid certificate and/or an ability to snorkel)

to teach the subject

The syllabus has five strands

Courses of study can be planned using learning outcomes from

a single strand

or

from a number of strands.

Practices and skills:

that allow people to use marine and coastal environments

identify situations that are potentially dangerous to humans.

Industries:

that are related to coastal and marine environments.

Oceanography:

the physical and chemical interactions between the ocean and the coast.

Coast and Marine Education

Conservation:

the sustainability of coastal and marine systems

Ecology :

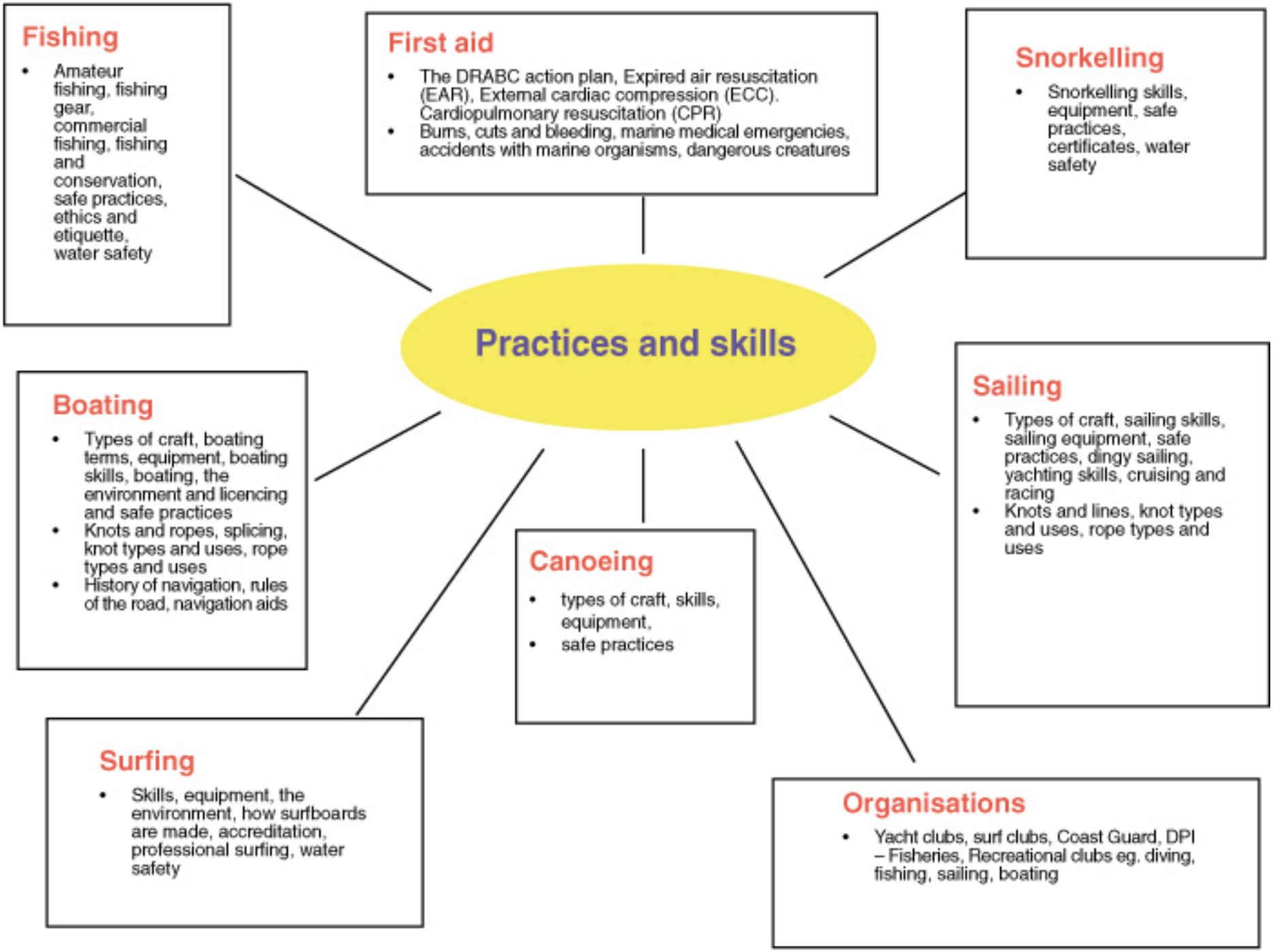
the biological interactions that occur between the ocean and the coast.

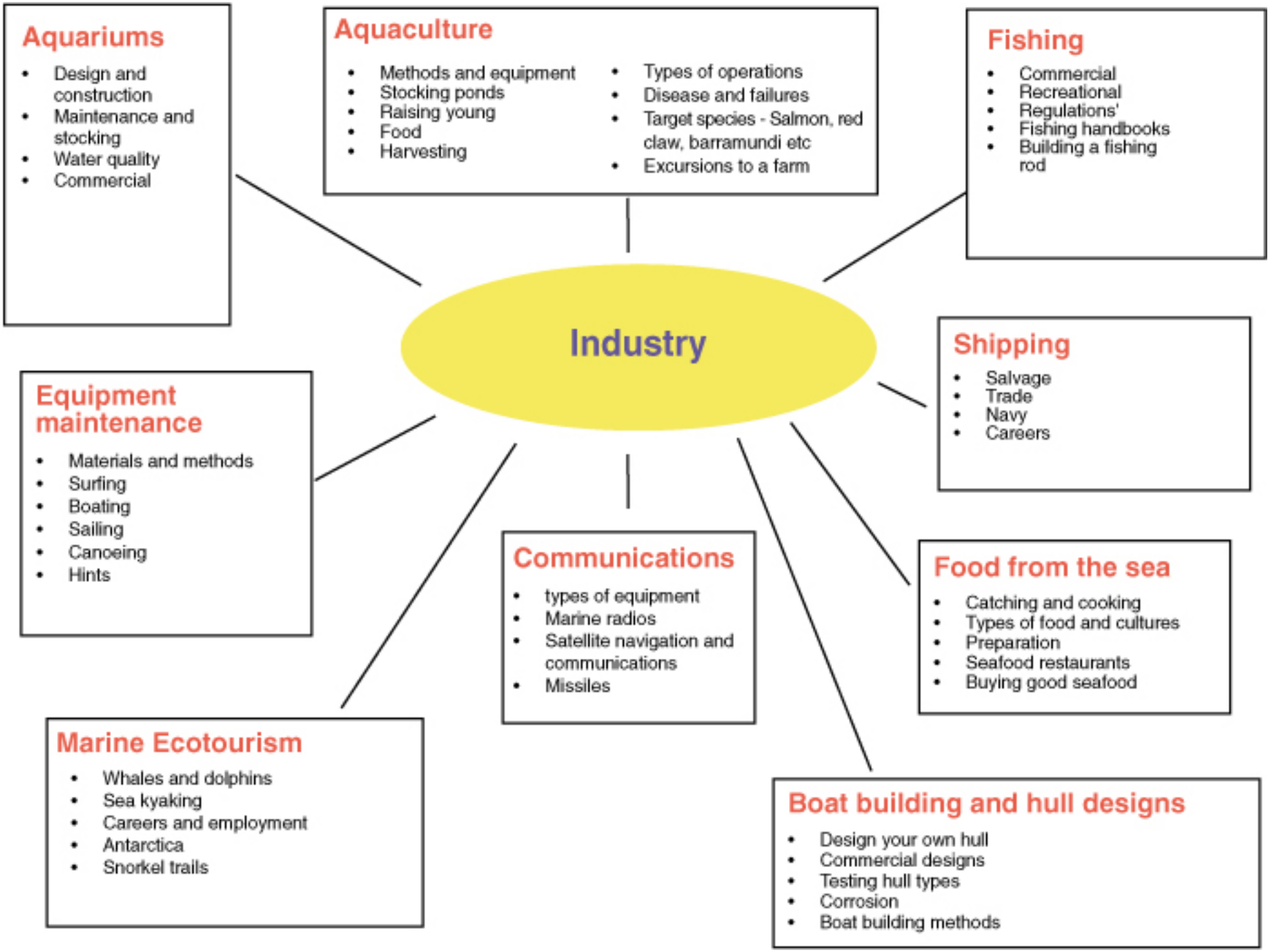
Central content

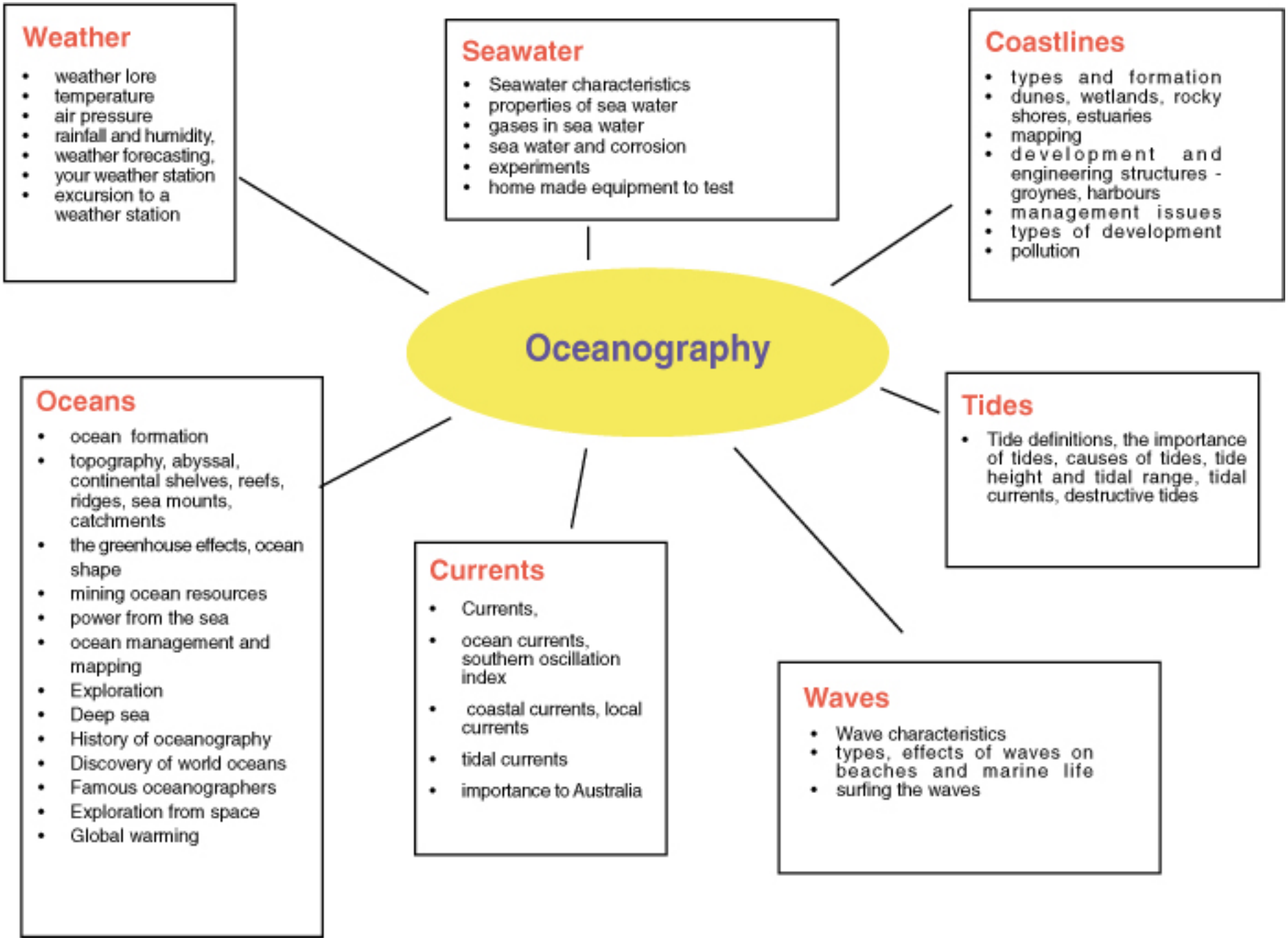
Students will engage with central content when they are provided with opportunities to demonstrate central learning outcomes.

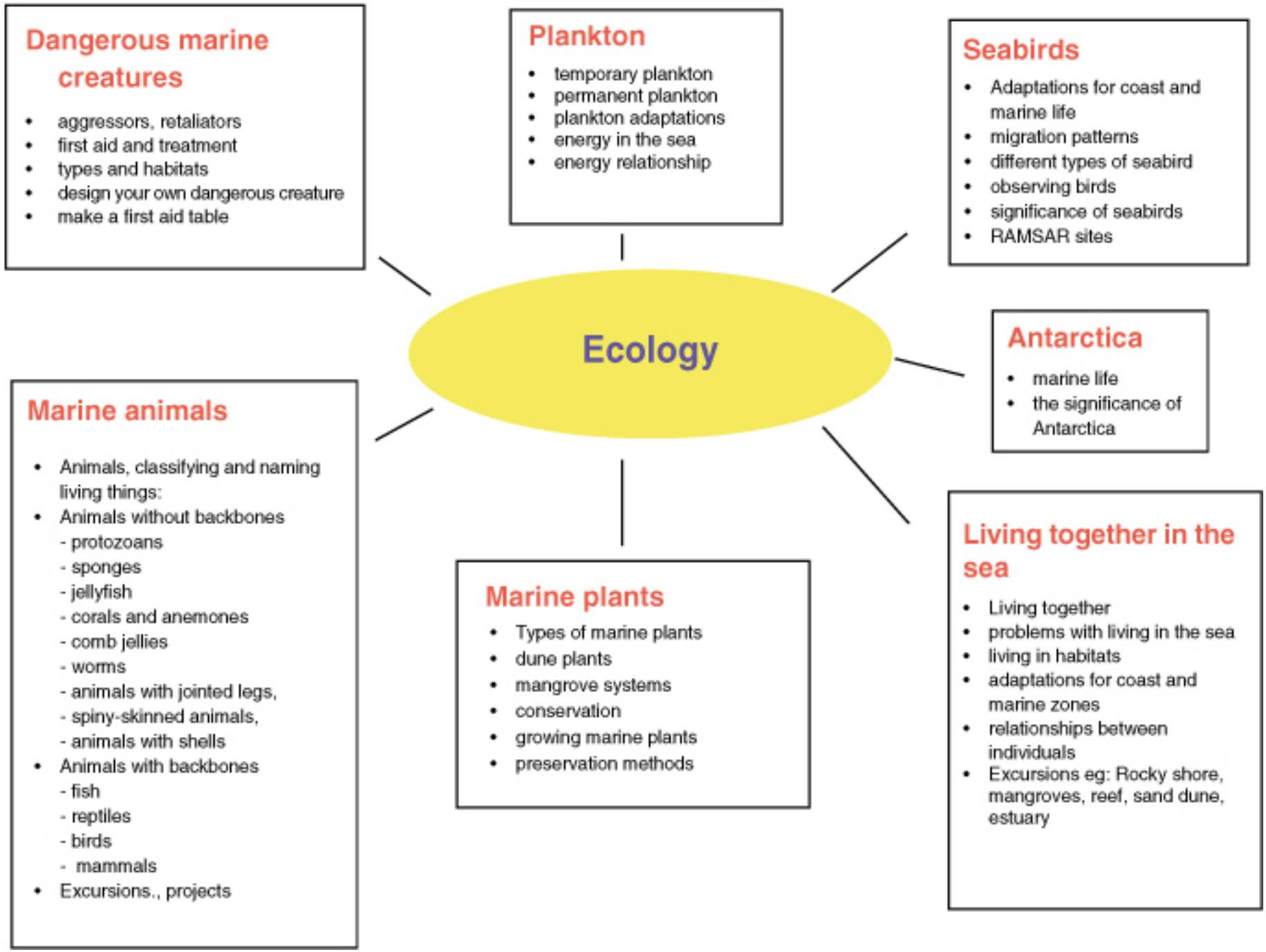
Features of the content outlined in the syllabus

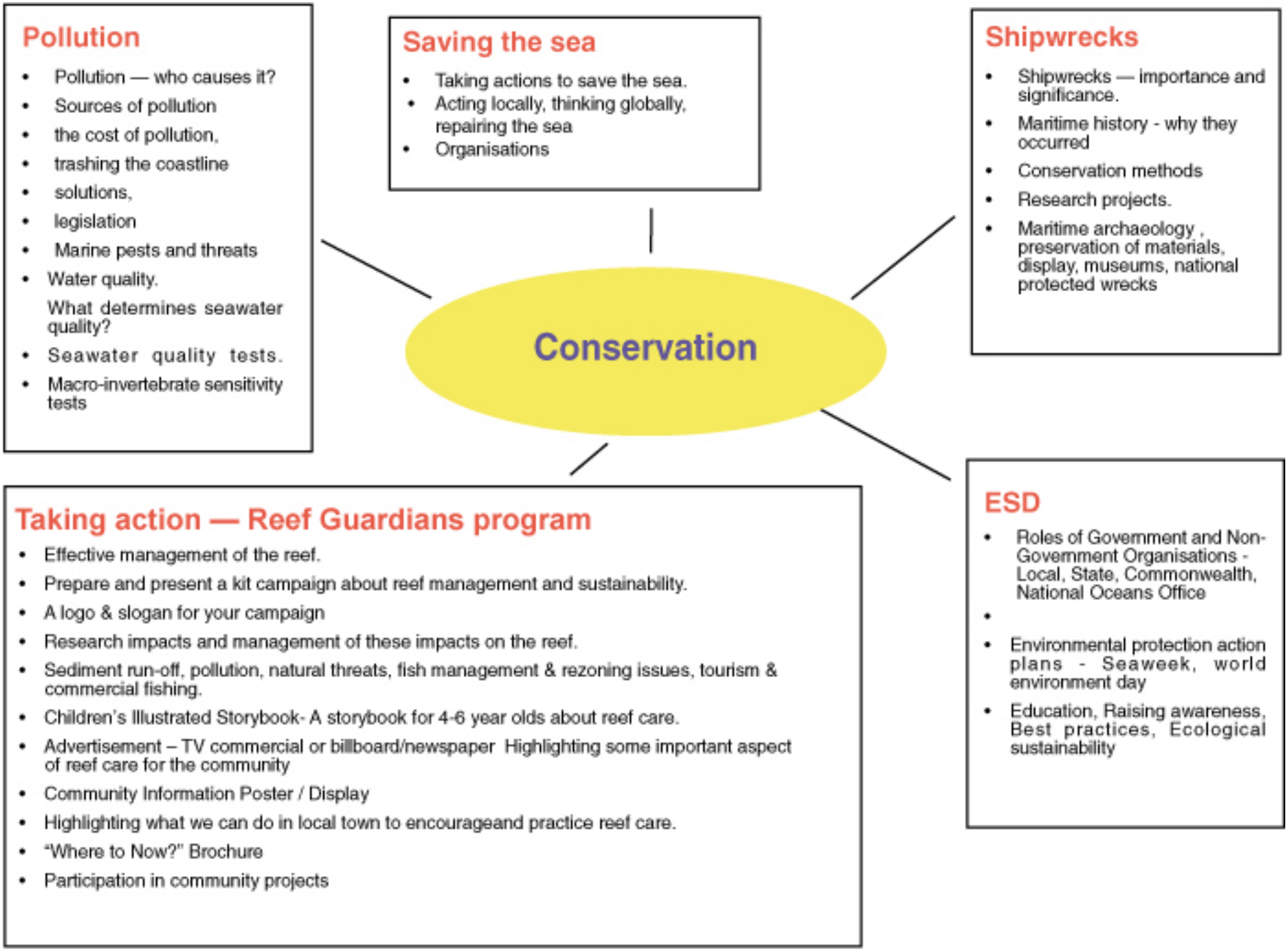
- Content engages students with concepts and tasks familiar to them, in their daily lives. Students perceive it as "I can do this", "I can use this" , "I can get fit"
- Content lists enable teachers to select tasks and activities to suit students' needs, interests and abilities and to take account of their prior knowledge and experiences.
- The content is NOT hierarchical or exhaustive and can be added to easily by a teacher who has a general knowledge or interest in the sea - it's teacher motivating.
- Any of the content can be addressed at ANY level and not all of the content need be addressed at every level - VERY flexible.


Practices and skills
Fishing
Amateur fishing, fishing gear, commercial fishing, fishing and conservation, safe practices, ethics and etiquette, water safety
First aid
The DRABC action plan, Expired air resuscitation (EAR), External cardiac compression (ECC). Cardiopulmonary resuscitation (CPR)
Burns, cuts and bleeding, marine medical emergencies, accidents with marine organisms, dangerous creatures
Snorkelling
Snorkelling skills, equipment, safe practices, certificates, water safety
Boating
Types of craft, boating terms, equipment, boating skills, boating, the environment and licencing and safe practices
Knots and ropes, splicing, knot types and uses, rope types and uses
History of navigation, rules of the road, navigation aids
Sailing
Types of craft, sailing skills, sailing equipment, safe practices, dingy sailing, yachting skills, cruising and racing
Knots and lines, knot types and uses, rope types and uses
Canoeing
types of craft, skills, equipment,
safe practices
Surfing
Skills, equipment, the environment, how surfboards are made, accreditation, professional surfing, water safety
Organisations
Yacht clubs, surf clubs, Coast Guard, DPI – Fisheries, Recreational clubs eg. diving, fishing, sailing, boating


Aquariums
Design and construction
Maintenance and stocking
Water quality
Commercial
Aquaculture
Methods and equipment
Stocking ponds
Raising young
Food
Harvesting
Types of operations
Disease and failures
Target species - Salmon, red claw, barramundi etc
Excursions to a farm
Fishing
Commercial
Recreational
Regulations'
Fishing handbooks
Building a fishing rod
Industry
Shipping
Salvage
Trade
Navy
Careers
Equipment maintenance
Materials and methods
Surfing
Boating
Sailing
Canoeing
Hints
Communications
types of equipment
Marine radios
Satellite navigation and communications
Missiles
Food from the sea
Catching and cooking
Types of food and cultures
Preparation
Seafood restaurants
Buying good seafood
Marine Ecotourism
Whales and dolphins
Sea kyaking
Careers and employment
Antarctica
Snorkel trails
Boat building and hull designs
Design your own hull
Commercial designs
Testing hull types
Corrosion
Boat building methods


Weather
weather lore
temperature
air pressure
rainfall and humidity,
weather forecasting,
your weather station
excursion to a weather station
Seawater
Seawater characteristics
properties of sea water
gases in sea water
sea water and corrosion
experiments
home made equipment to test
Coastlines
types and formation
dunes, wetlands, rocky shores, estuaries
mapping
development and engineering structures - groynes, harbours
management issues
types of development
pollution
Oceanography
Oceans
ocean formation
topography, abyssal, continental shelves, reefs, ridges, sea mounts, catchments
the greenhouse effects, ocean shape
mining ocean resources
power from the sea
ocean management and mapping
Exploration
Deep sea
History of oceanography
Discovery of world oceans
Famous oceanographers
Exploration from space
Global warming
Currents
Currents,
ocean currents, southern oscillation index
coastal currents, local currents
tidal currents
importance to Australia
Tides
Tide definitions, the importance of tides, causes of tides, tide height and tidal range, tidal currents, destructive tides
Waves
Wave characteristics
types, effects of waves on beaches and marine life
surfing the waves


Ecology
Dangerous marine creatures
aggressors, retaliators
first aid and treatment
types and habitats
design your own dangerous creature
make a first aid table
Plankton
temporary plankton
permanent plankton
plankton adaptations
energy in the sea
energy relationship
Seabirds
Adaptations for coast and marine life
migration patterns
different types of seabird
observing birds
significance of seabirds
RAMSAR sites
Antarctica
marine life
the significance of Antarctica
Marine animals
Animals, classifying and naming living things:
Animals without backbones
- protozoans
- sponges
- jellyfish
- corals and anemones
- comb jellies
- worms
- animals with jointed legs,
- spiny-skinned animals,
- animals with shells
Animals with backbones
- fish
- reptiles
- birds
- mammals
Excursions., projects
Marine plants
Types of marine plants
dune plants
mangrove systems
conservation
growing marine plants
preservation methods
Living together in the sea
Living together
problems with living in the sea
living in habitats
adaptations for coast and marine zones
relationships between individuals
Excursions eg: Rocky shore, mangroves, reef, sand dune, estuary

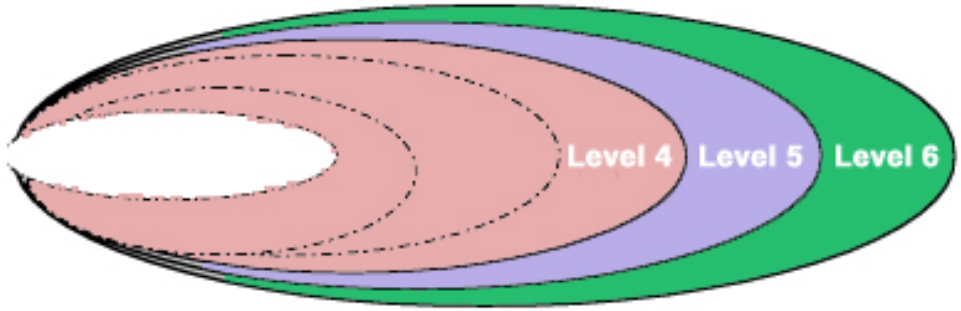

Pollution
Pollution — who causes it?
Sources of pollution
the cost of pollution,
trashing the coastline
solutions,
legislation
Marine pests and threats
Water quality.
What determines seawater quality?
Seawater quality tests.
Macro-invertebrate sensitivity tests
Saving the sea
Taking actions to save the sea.
Acting locally, thinking globally, repairing the sea
Organisations
Shipwrecks
Shipwrecks — importance and significance.
Maritime history - why they occurred
Conservation methods
Research projects.
Maritime archaeology , preservation of materials, display, museums, national protected wrecks
Conservation
Taking action — Reef Guardians program
Effective management of the reef.
Prepare and present a kit campaign about reef management and sustainability.
A logo & slogan for your campaign
Research impacts and management of these impacts on the reef.
Sediment run-off, pollution, natural threats, fish management & rezoning issues, tourism & commercial fishing.
Children's Illustrated Storybook- A storybook for 4-6 year olds about reef care.
Advertisement – TV commercial or billboard/newspaper Highlighting some important aspect of reef care for the community
Community Information Poster / Display
Highlighting what we can do in local town to encourageand practice reef care.
"Where to Now?" Brochure
Participation in community projects
ESD
Roles of Government and Non-Government Organisations - Local, State, Commonwealth, National Oceans Office
Environmental protection action plans - Seaweek, world environment day
Education, Raising awareness, Best practices, Ecological sustainability

Outcomes and organisation

The central learning outcomes are the focus for planning learning activities and assessment tasks.

The syllabus describes learning outcomes for Level 4, Level 5, Level 6 and Beyond Level 6.

The sequencing of the learning outcomes is such that each level is 'nested' within the following level. Learning outcomes for successive levels are conceptually related to each other, forming a continuum rather than existing simply as a number of discrete entities.



A level statement is included for each level of each strand of the syllabus which summarises the learning outcomes at each level and provides a framework for developing the central and supplementary learning outcomes.

A set of organisers for each strand set the parameters for the outcomes

For example

Learning outcomes

Practices and skills

Organisers for the learning outcomes in the practices and skills strand are:

Coast and marine activities – skills

Coast and marine activities – equipment and services

Coast and marine activities – management and safe practices

Level 4	Level 5
Level statement Students understand the skills involved in a coast and marine activity. They investigate the equipment and services required for an activity. They understand that safe and unsafe behaviours and situations require management. **Central learning outcomes** PS 4.1 Students participate and report on a coast and marine activity. PS 4.2 Students compare and contrast a selection of equipment and services to meet their recreational needs. PS 4.3 Students identify and explain situations and behaviours that are safe or unsafe after assessing personal behaviours and consequences.	**Level statement** Students perform the skills of a coast and marine activity. They investigate the reasons behind their choices of equipment for an activity. They perform behaviours to control an unsafe situation. **Central learning outcomes** PS 5.1 Students demonstrate specific skills in a coast and marine activity. PS 5.2 Students analyse factors that influence their selection of equipment and services for an activity. PS 5.3 Students demonstrate safe behaviours and actions to minimise unsafe situations.

Level 6	Beyond Level 6
Level statement Students evaluate their performance in an activity and design ways for everyone to participate. They evaluate the equipment and services used in an activity. They design strategies to respond to unsafe situations. **Central learning outcomes** PS 6.1 Students evaluate their own performance and plan strategies to ensure everyone can participate in an activity. PS 6.2 Students use and evaluate a variety of equipment and services for an activity. PS 6.3 Students devise and implement personal and community strategies to respond to unsafe situations.	**Level statement** Students evaluate the skills required to receive a community award. They promote an activity to the community. They evaluate strategies that are used to respond to unsafe situations. **Supplementary learning outcomes** PSS 6.1 Students analyse and evaluate performance skills required to receive a community award. PSS 6.2 Students design a community promotion for an activity based on the equipment and services available. PSS 6.3 Students evaluate strategies for potentially unsafe situations and behaviours in order to optimise benefits.

*L*earning outcomes
Industry
Organisers for the learning outcomes in the industry strand are: Coast and marine industries – properties of materials Coast and marine industries – operating procedures **Core Content can be found on page 19**

Level 4	**Level 5**
Level statement Students investigate properties of materials specific to their use. They research the operations of an industry. **Central learning outcomes** I 4.1 Students investigate how the properties of materials influence their use. I 4.2 Students investigate a local industry and report on its operations.	**Level statement** Students test the properties of materials. They analyse the operations of an industry. **Central learning outcomes** I 5.1 Students devise tests to show that the properties of materials influence their use. I 5.2 Students analyse the efficiency of the operations within an industry.

Level 6	**Beyond Level 6**
Level statement Students evaluate commercial products and their requirements to meet specific standards. They make recommendations to the operations of an industry. **Central learning outcomes** I 6.1 Students evaluate different commercial products to test if their materials meet specific standards for their use. I 6.2 Students evaluate and make recommendations on the operations of an industry.	**Level statement** Students construct a product that meets specific standards. They devise a coast and marine industry operation. **Supplementary learning outcomes** IS 6.1 Students design and construct a product using materials which meet specific standards for their use. **IS 6.2 Students design and plan a coast and marine industry operation.**

***L*earning outcomes**
Oceanography
Organisers for the learning outcomes in the oceanography strand are: Coast and marine environments – systems Coast and marine environments - research Core content can be found on page 20

Level 4	Level 5
Level statement Students identify the natural systems and research methods of the ocean. Central learning outcomes O 4.1 Students identify the natural systems of the ocean. O 4.2 Students identify various research methods.	Level statement Students understand that there are the natural systems of the ocean. They can explain the procedures of a research method. Central learning outcomes O 5.1 Students explain the interactions between the natural systems of the ocean. O 5.2 Students investigate the procedures of a research method.

Level 6	Beyond Level 6
Level statement Students explain features and events caused by the interaction of the natural systems of the ocean. They evaluate a research method used to study the ocean systems. Central learning outcomes O 6.1 Students use scientific ideas and theories about interactions within and between the natural systems of the ocean to explain past and present features and events. O 6.2 Students evaluate a research method for effective design and implementation.	**Level statement** Students understand how features and events can be predicted using knowledge of the oceans natural systems. They select a research method and design an appropriate tool. **Supplementary learning outcomes** OS 6.1 Students explain how and why scientific ideas of the oceans systems can be used to predict features and events. OS 6.2 Students design a research tool specific to a research method.

***L*earning outcomes**
Ecology
Organisers for the learning outcomes in the ecology strand are: Coast and marine environments – living things Coast and marine environments – interactions Coast and marine environments - classification Core content can be found on page 21

Level 4	Level 5
Level statement Students understand that the features of organisms and their interactions with living and non-living parts of their environment enable them to survive and reproduce. They understand the grouping process of organisms. Central learning outcomes E 4.1 Students identify features of organisms that enable them survive and reproduce E 4.2 Students make generalisations about the types of interaction which take place between the living and non-living parts of the environment. [Science LL 4.3] E 4.3 Students make inferences about the groupings of organisms.	**Level statement** Students explain how the features of organisms can enable them to survive and reproduce. They understand that interactions between living and non-living parts of an environment have consequences. They explore the use of characteristics in the classification process. **Central learning outcomes** E 5.1 Students examine the internal and external features of organisms and relate these features to survival and reproduction. E 5.2 Students evaluate the consequences of interactions between the living and non-living parts of environments. [Science LL 5.3] E 5.3 Students explain how characteristics are used for classification

Level 6	Beyond Level 6
Level statement Students understand the abilities of organisms to enhance their survival and reproduction. They describe how human action can affect biodiversity. They use characteristics to classify organisms. **Central learning outcomes** E 6.1 Students evaluate the different strategies of organisms in terms of their relative efficiency in survival and reproduction. E 6.2 Students prepare scenarios to describe the potential long-term effects of changes in biodiversity caused by human action on ecosystems. [Science LL 6.3] E 6.3 Students classify organisms using internal and external characteristics.	**Level statement** Students understand the changing effects of an organism in response to its environment. They understand that human activities result in long-term effects. They design and use a classification key in the field. **Supplementary learning outcome** ES 6.1 Students identify the reasons why functioning and behaviour of organisms change in response to variations in internal and external conditions. ES 6.2 Students examine potential long-term effects of human activities on the environment. [Science LL DB6.3] ES 6.3 Students participate in a field study and design a classification key for observed organisms.

*L*earning outcomes
Conservation
Organisers for the learning outcomes in the conservation strand are: Coast and marine environments – user groups Coast and marine environments – impacts and management Core content can be found on page 22

Level 4	Level 5
Level statement Students understand that different user groups impact on a coast and marine environment, making recommendations for sustainability. **Central learning outcomes** C 4.1 Students identify the different user groups within a coast and marine environment. C 4.2 Students identify impacts on a coast and marine environment and recommend effective ways to sustain it.	**Level statement** Students understand the cultural differences between user groups of a coast and marine environment. They explore how an organisation ensures sustainability. **Central learning outcomes** C 5.1 Students compare and contrast the culture of the different user groups within a coast and marine environment. C 5.2 Students investigate an existing organisation designed to establish a sustainable future.

Level 6	Beyond Level 6
Level statement Students understand that user groups impact on each other. They develop a sustainability plan for a coast and marine environment. **Central learning outcomes** C 6.1 Students investigate the interactions between the user groups within a coast and marine environment. C 6.2 Students develop an action plan for a coast and marine environment to establish a sustainable future.	**Level statement** Students understand the need for a collaborative plan for all user groups of a coast and marine environment. They promote and implement a community awareness sustainability program. **Supplementary learning outcomes** CS 6.1 Students devise a proposal coordinating the collaboration of the user groups within a coast and marine environment. CS 6.2 Students promote and implement a community awareness program designed to establish a sustainable future.

Trial school case studies

Kirwan SHS

Sunshine Beach SHS

Mercy College

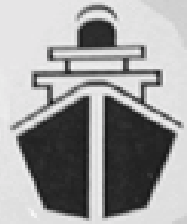
Holy Spirit College

Kirwan SHS

-Zoe Hiddins

Your Task:

For centuries, shipwrights have been trying desperately to discover which materials are more suited to shipbuilding. Early attempts focused on natural materials such as wood but with advancements in technologies, more sturdier materials such as metals became popular. Despite many years of experimentation, the current materials still are not without problems associated with the ocean.



Context:

You have been commission by Ross Haven Marine, a local shipwright company, to investigate different materials with respect to their suitability for ship building purposes.

In doing so, you are required to investigate the properties and characteristics associated with the ocean and how they impact on the various materials you have selected.

Ross Haven Marine require you to design, implement and report your findings in the form of a Scientific Report. You should also keep a log of your activities along the way. Your report should adhere to appropriate report genre and address the necessary criteria.

Kirwan SHS

-Industry outcomes

Kirwan State High School Science Department

Year 9 , Research & Technology
Semester 1 : Corrosion Control!

Experimental Report

Teacher: HIDDZO Name: _____ Due Date: _____

Conditions of Task:

- Experimentation to be completed in groups of 3 – 4 students
- Written work for submission to be completed individually
- Each student is permitted two drafts only
- Several weeks class time will be allowed for completion of this report
- Report length to be 500 – 600 words.

Year 9 SRT

Experimental Report Outcomes Criteria Sheet: Corrosion Control

Name : _____ Teacher: _____

Outcome	Demonstrated	Progressing	Not Yet Demonstrated
Industry 4.1	Materials selected for experimental investigation are appropriate for use as shipbuilding use and justification of selection refers to their properties.	An attempt to select and justify appropriate materials but selection does not necessarily relate to properties.	Materials selected are not justified i terms of their properties or are not relevant to their intended use.
Industry 5.1	Tests devised which demonstrate the properties of materials selected and relates the results to its intended use.	An attempt to devise tests which examine the properties of various materials. Tests do not necessarily indicate suitability of materials to intended use.	Tests devised do not examine mate properties. Suitability of materials to purpose is not addressed.
Industry 6.1	Evaluation of local shipbuilding materials undertaken and justifiable conclusions made. Industry standards used.	Evaluation attempted but does not consider current industry standards.	Evaluation not undertaken or evalu is not justifiable.

Kirwan SHS - Students results

7	12.8	1.59%
10	12.7	0.79%
12	12.6	0%

Day	Weight	Percentage
1	12.4	0%
3	12.43	0.24%
5	12.43	0.24%
7	12.47	0.56%

Year 9 Sunshine Beach SHS

Martin Taylor

Sunshine Beach State High School

Marine Studies SCI2M

Program

Semester 1 2004

Week	Unit	Topics Covered	Assessment Items Due
Week 1	**Introduction To Marine Studies**	❑ Introduction to Marine Studies ❑ Safety for Specific Marine Sports ❑ Careers in Marine	
Week 2	**Unit 1 Coast and Marine Ecology** "Dangerous Creatures"	❑ Creatures of the Sea ❑ Marine Classification ❑ Reef Communities	
Week 3		❑ Similarities and Differences ❑ Food Glorious Food ❑ Sharks and Safety	
Week 4	**Unit 2 Practices and Skills** "Model Boat Project"	❑ **Underwater World Excursion** ❑ Dangerous Creatures ❑ DANGEROUS CREATURES ASSIGNMENT	Poster (__/__/04)
Week 5		❑ Boating ❑ Types and parts of sailing & power boat	
Week 6	**Unit 3 Marine Industry** Recreational Fishing	❑ Boat Hull Types and Design ❑ Boat Building Part A (Design) ❑ Boat Building Part B Build	
Week 7		❑ Boat Building Part C Test Tank ❑ Boat Building Part D Report ❑ **BOAT BUILDING ASSIGNMENT**	
Week 8	**Unit 4 Marine Industry** Aquariums	❑ Fishing ❑ Setting Up Tackle ❑ Bait Gathering	Model & report (__/__/04)
Week 9		❑ Local Fish Habitat ❑ Fishing and Bait Gathering Field Trip	
Week 10	**Unit 5 Oceanography**	❑ Fish Parts (Fish Dissection) ❑ Crustaceans	
		❑ Aquariums Set up Tanks ❑ Aquarium Fish Fresh and Salt Water **FISHING TACKLE BOOK ASSIGNMENT**	
		Easter Holidays	
Week 12 TERM 2	**Unit 6** "Shipwrecks and Pollution"	❑ ❑ Filtration and Aeration ❑ Abiotic Factor	
Week 13		❑ Monitoring Tanks ❑ Marine Pests & Threats	
Week 14		❑ Tides, Swell ❑ Currents, Waves	
Week 15		❑ Wind Direction and Speed ❑ Synoptic Charts	
Week 16		❑ **Tides and Weather Test**	
Week 17		❑ Marine Accidents ❑ Survivor at Sea ❑ Survival Techniques ❑ Marine Rescue Procedures	
Week 18		❑ Marine Pollution and Effects on the Environment	
Week 19		❑ Shipwreck Research Project ❑ Titanic Case Study	
Week 20		**SHIPWRECK ASSIGNMENT**	

Sunshine Beach State High School

Coast and Marine Exit Achievement Statement

Student Name: _____ **Class:**_____ **Teacher:** **M Taylor**

STRAND	LEVEL 4	LEVEL 5	LEVEL 6
Marine Practice and Skills **Model Boat Assignment**	Practices and Skills Model Boat shows original design and sound construction. Report demonstrates scientific testing and judgements made on quantitative data	**Practices and Skills** **Model Boat shows original design and sound construction. Report demonstrates scientific testing and judgements made on quantitative data**	Practices and Skills Model Boat shows original design and sound construction. Report demonstrates scientific testing and judgements made on quantitative data
Marine Industry **Aquariums and Fishing Tackle Book**	Industry Tackle Book demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.	**Industry** **Tackle Book demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.**	Industry Tackle Book demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.
Oceanography **Tides and Weather Test**	Oceanography Test Results indicate that students has achieved a satisfactory standard	**Oceanography** **Test Results indicate that students has achieved a high Standard**	Oceanography Test Results indicate that students has achieved a very high Standard
Coast & Marine Ecology **Dangerous Creatures**	Coast and Marine Ecology Poster demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.	**Coast and Marine Ecology** **Poster demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.**	Coast and Marine Ecology Poster demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.
Coast and Marine Conservation **Shipwrecks Assignment**	Coast and marine Conservation demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.	**Coast and marine Conservation** **demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.**	Coast and marine Conservation demonstrates considerable effort in research, explaining concepts and clear presentation of scientific facts.

SUNSHINE BEACH STATE HIGH SCHOOL

Student Name:	Topic:	Subject
	Boat Design and Construction	SCI2M SCI2M
Teacher's Name:	**Date Due**	**Project S**
M Taylor	Monday 15th March 2004	Mr Ta

I 5.1 Students devise tests to show that the properties of materials influence their use.

I 6.1 Students evaluate different commercial products to test if their materials meet specific standards for their use.

IS 6.1 Students design and construct a product using materials which meet specific standards for their use.

Task 1 Design and construction of model boat

In pairs you need to design and construct a model boat that is no larger than the specifications below

Task 2 Boat Testing (DATE: / /)

Test the performance of the boat for:

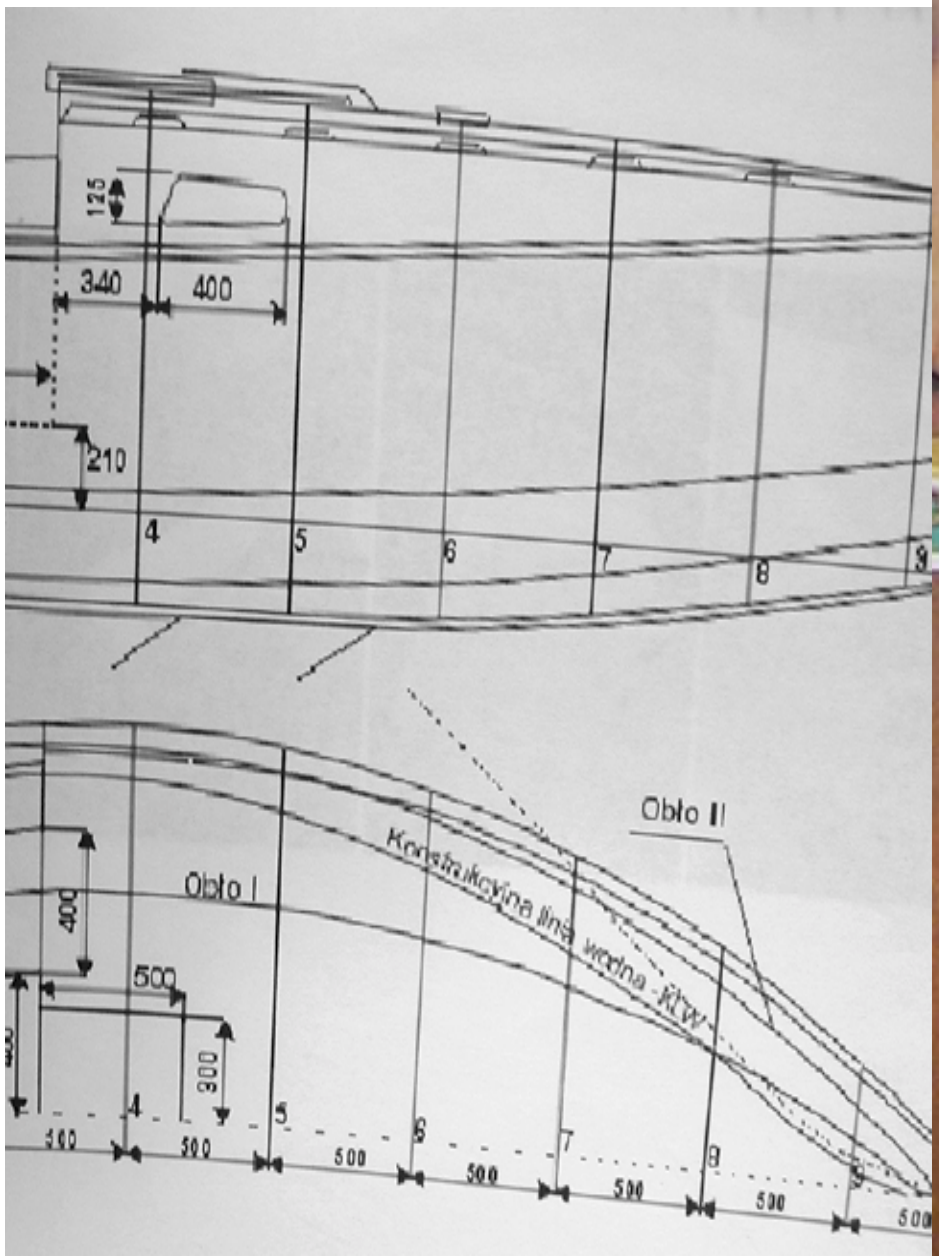
(a) Hull Speed (Using a Standard Weight Tow)
(b) Speed under Sail (Using a Fan)
(c) Stability
(d) Carrying Capacity

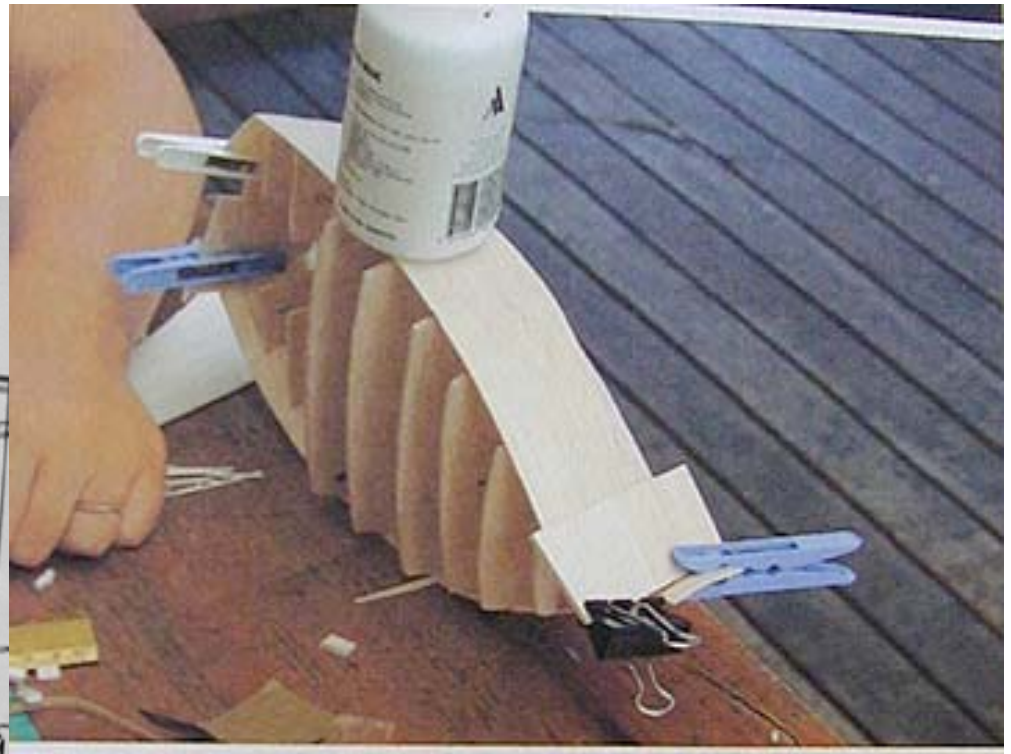
Task 3 My Boats Performance Report (DATE: / /)

(a) Describe the Hull shape
(b) Describe the advantages and disadvantages of the hull shape
(c) Drawing of Hull with parts labelled including actual dimensions
(d) Describe the materials used and method of construction
(e) Present the results of your tests including a summary of overall performance
(f) Describe the changes in design and or construction materials that would improve the boats overall performance

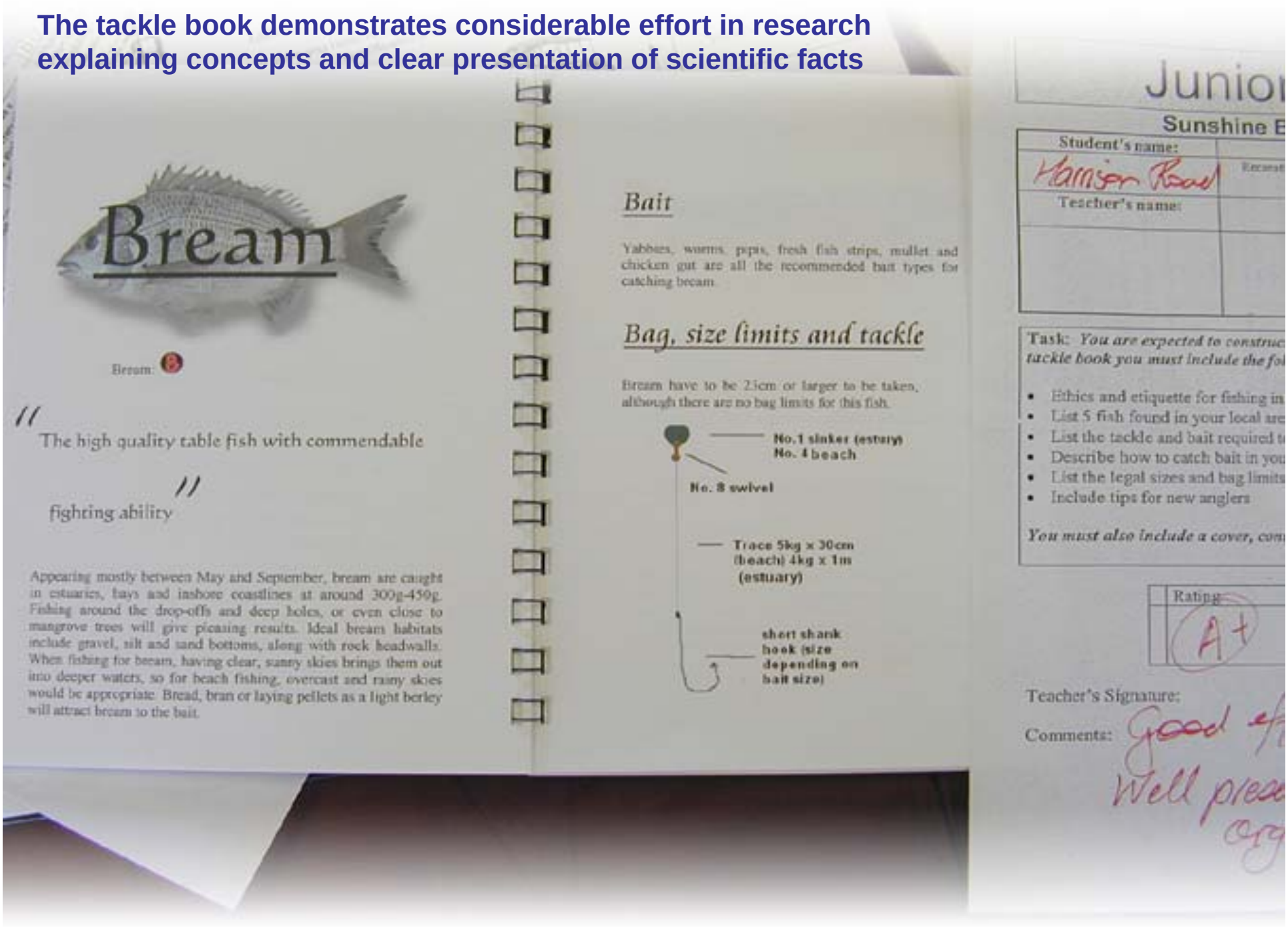
(400 words)

Students design and construct a product





The tackle book demonstrates considerable effort in research explaining concepts and clear presentation of scientific facts



Year 10 Sunshine Beach SHS

Sheree Bell

TASK:

- You will go on an **excursion to the rocky shore** and you must perform tests and observations to complete the fieldwork booklet.
- You will **work in pairs in the field** and **individually work on your reports.**
- You must conduct research to add to your booklet in the format of appendices thereby adding more information to your field data.

ANTICIPATED EVIDENCE: FIELDWORK BOOKLET WITH APPENDICES

Strand/Outcome	Level 4	Level 5	Level 6
EC.1	Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals	Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals with appendices provided	Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals with appendices provided and justifications for survival and reproduction
EC.2	. Answers to the questions in sections: Rocky Shore Ecosystems, Rocky Shore Structure and Rocky Shore Zones	Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals with appendices provided	. Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals with appendices provided and justifications of human action on long term effects.

REFERENCES:

Use your class notes, rocky shore creature classification booklets, marine text book.

TASK:

- You will go on an **excursion to the rocky shore** and you must perform tests and observations to complete the fieldwork booklet.
- You will **work in pairs in the field** and **individually work on your reports.**
- You must conduct research to add to your booklet in the format of appendices thereby adding more information to your field data.

ANTICIPATED EVIDENCE: FIELDWORK BOOKLET WITH APPENDICES

Strand/Outcome	Level 4	Level 5	Level 6
EC.1	Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals	Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals with appendices provided	Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals with appendices provided and justifications for survival and reproduction
EC.2	. Answers to the questions in sections: Rocky Shore Ecosystems, Rocky Shore Structure and Rocky Shore Zones	Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals with appendices provided	. Answers to the questions in sections: Biotic Features of the Rocky Shore Plants and Animals with appendices provided and justifications of human action on long term effects.

REFERENCES:

Use your class notes, rocky shore creature classification booklets, marine text book.

Example 4

Vertical time table Mercy College

Kelly

Goodingham

Marine Units 2005

Outcome ↓	Let's Get Wet * (4)	Aqua-culture * (5)	Reef Ecology * (5)	Fish & Fisheries (5)	Ocean-ography * (6)	Tourism (6)	Marine World in Crisis * (6+)
P&S .1			✓	✓	✓		
P&S .2			✓	✓			
P&S .3			✓		✓		
Industry .1				✓			
Industry .2		✓				✓	✓
Industry .3		✓				✓	
Oceanography .1					✓		
Oceanography .2					✓		
Ecology .1	✓			✓			
Ecology .2	✓	✓	✓				
Ecology .3	✓		✓				
Conservation .1	✓					✓	✓
Conservation .1	✓					✓	✓

Unit layout

MERCY COLLEGE

SCIENCE KLA

Student Name: _____ Teacher's Name: Miss Goodingham

Unit Code: SC555 Unit Name: Aquaculture

Task Name: Marine Aquarium Design

Date Given: _____ Date Due: _____

Possible Outcomes

Strand/Outcome	Level 4	Level 5	Level 6
CME E.1	Students make generalisations about the types of interaction which take place between the living and non-living parts of the environment.	Students evaluate the consequences of interactions between the living and non-living parts of environments.	Students prepare scenarios to describe the potential long-terms effects of changes in biodiversity caused by human action on ecosystems.
CME I.2	Students incorporate feedback to refine and modify systems and/or subsystems.	Students incorporate control and management mechanisms in systems that include subsystems.	Students devise ways to manage and monitor the operation of complex systems.

Dimensions

Level 4	Level 5	Level 6
Incorporate Make generalisations	Incorporate Evaluate	Design methods Prepare scenarios Describe

Example aquarium task

You work in a large aquarium shop and the director of the local childrens hospital has called your manager with a proposal.

She wants to fit each floor of the hospital out with a new aquarium with living plants and animals in it.

The purpose is to give the children something to make them smile at and take an interest in.

Your manager has divided the employees into small groups. Each group will research and design their own aquarium.

The hospital director wants you to come into the hospital, set up and maintain the aquariums.

She wants a manual with each aquarium that details every aspect of the control and management required.

The trial has concluded that

- Students found the content engaging and could achieve in either level 4, 5 or 6 from the tasks their teachers set them
- Teachers were able to design tasks to allow reporting in outcomes
- Many syllabus strands provide a pathway to senior Marine Studies and Marine and Aquatic Practices courses.
- Up to 10 schools want to implement an CME accredited subject next year
- The syllabus should be submitted to QSA for accreditation ASAP so it is available to schools by the end of the year
- Help is going to be needed for teachers to develop work programs and promote the subject in 2005

For example

Teachers will need training in writing outcomes based anticipitated evidence

Without training teachers will become frustrated, confused and revert to a non - engaging pedagogy

Anticipated Evidence

	Level 4	Level 5	Level 6
E.1	θ Student has listed all the interactions between the living and non-living parts of the aquarium that will occur.	θ Student has listed all the interactions between the living and non-living parts of the aquarium that will occur. θ Student has described the consequences that will result from these interactions. θ Student has evaluated these consequences with regard to the survival of the animals being kept in the aquarium.	θ Student has identified potential changes in biodiversity of the local ecosystem that could be caused by the aquarium. θ Student has analysed what interactions are causing these changes to occur. θ Student has described the potential long-term effects of these changes.
I .2	θ Student designs an aquaculture farm system with subsystems. θ Student has received feedback on their design and incorporated the feedback into their design.	θ Student has provided a brief description and diagram showing what the aquarium will look like once set up. θ Student has shown the subsystems that are involved in the marine aquarium, including their functions in the system. θ Student has provided a list of the aspects of the tank that need to be controlled, and what level of balance is required. θ Student has provided a clear, easy to follow manual describing how to maintain the marine aquarium, including all the subsystems.	θ Student has provided a diagram of the public marine aquarium display they have designed and has given a brief description of all the involved components. θ Student has presented all the subsystems and explained their functions in the system, including why they are necessary. θ Student has explained the level of control that is required for each subsystem to continue to function at its best. θ Student has devised ways to manage and monitor the operation of the system (the aquarium) and its subsystems and presented these in the format of a manual. θ Student has devised ways to manage and monitor the interactions that the public aquarium has with the local community.

The next steps

Accreditation - MTAQ to pay QSA for approval application

- Sheree and Bob to work fulfill all QSA requirements to have an accredited syllabus by November

Unit development

- Martin and Zoe to work on further unit development for presentation at MTAQ September conference
- Simone to travel to USA on Westfield Premiers scholarship to collect additional units and junior marine activities for 2005

Resourcing

- Bob to use contacts to see if he can get a seconded teacher to help with project development for part of 2005 before he retires

Marketing and promotions

Coast and Marine Education Level 4 - Beyond Level 6 Syllabus

A joint venture between Education Queensland and the Marine Education Industry in consultation with the Queensland Studies Authority

Available November 2004

The syllabus was developed to

Engage students from Year 8-10 with content and tasks relevant to their daily lives

Introduce students to marine education and show them a pathway into Year 11-12 Marine Studies

Report in outcomes that follow existing syllabus formats and philosophies

QSA Accredited

Courses developed from the syllabus will

use existing school equipment and curriculum resources and allow a first year graduate teacher with a love of the sea and minimal qualifications to teach the subject

$110

AMC Australian Maritime College · Yachting Queensland · Australian Government Quality Teacher Programme · Wet Paper · Queensland Government Maritime Safety Queensland · Australian Government Great Barrier Reef Marine Park Authority · QSA · Queensland Government

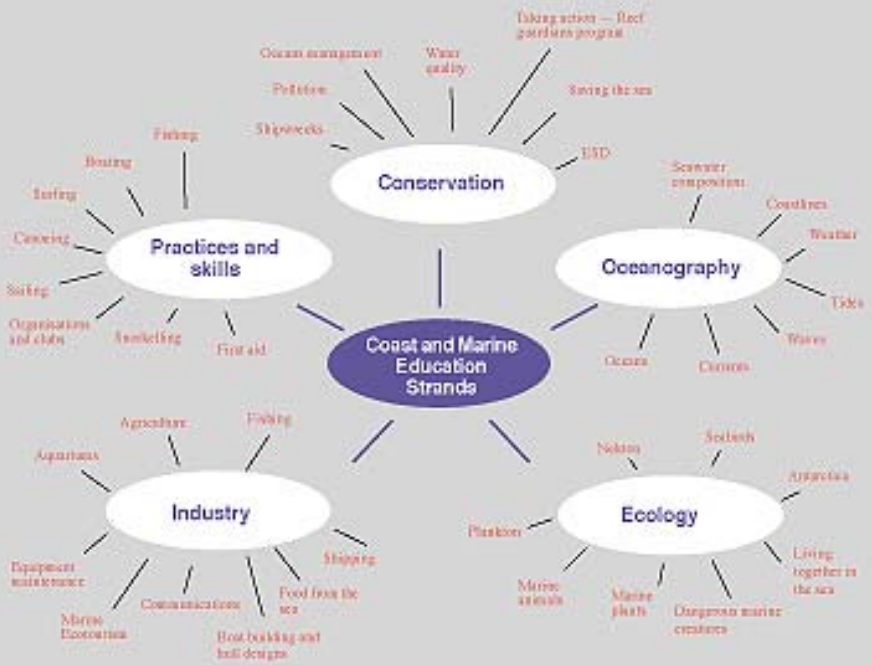
Syllabus content

The syllabus has five strands

Courses of study can be planned using learning outcomes

from a *single strand* or

from a *number of strands*.

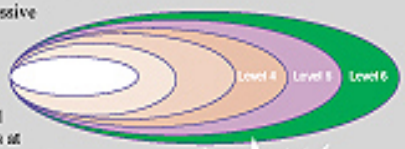


Features

- Content engages students with concepts and tasks familiar to them, in their daily lives. Students perceive tasks as "I can do this" or "I can use this"
- Content lists enable teachers to select tasks and activities to suit students' needs, interests and abilities and to take account of their prior knowledge and experiences.
- The content is NOT hierarchical or exhaustive and can be added to easily by a teacher who has a general knowledge or interest in the sea - it's teacher motivating.
- Any of the content can be addressed at ANY level and not all of the content need be addressed at every level - VERY flexible.
- Students engage with central content when they are provided with opportunities to demonstrate central learning outcomes.

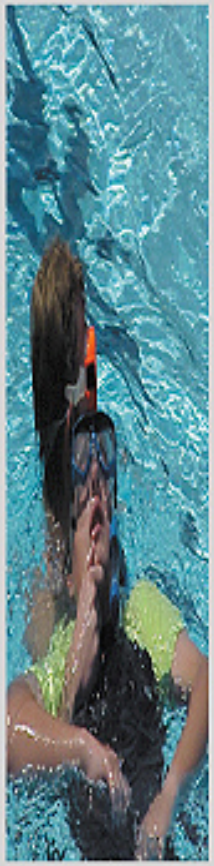
Outcomes and organisation

- The central learning outcomes are the focus for planning learning activities and assessment tasks.
- The syllabus describes learning outcomes for Level 4, Level 5, Level 6 and Beyond Level 6.
- The sequencing of the learning outcomes is such that each level is 'nested' within the following level. Learning outcomes for successive levels are conceptually related to each other, forming a continuum rather than existing simply as a number of discrete entities.



- A level statement is included for each level of each strand of the syllabus which summarises the learning outcomes at each level and provides a framework for developing the central and supplementary learning outcomes.
- A set of organisers for each strand set the parameters for the outcomes

Sample page



Learning outcomes

Practices and skills

Organisers for the learning outcomes in the practices and skills strand are:

- Safe practices involve an understanding of safe and unsafe situations, behaviours and their consequences.
- Matching approved equipment with desired use is necessary to effect skills and practices.
- Skills and strategies are required to participate in marine recreational activities.

Level 4

Level statement

- Students understand that specific equipment is required for use to perform specific skills.
- Students recognise that special skills and qualifications are needed to use that equipment.
- Students identify and explain various safe situations and behaviours.

Central learning outcomes

PS 4.1 Students participate and report on a coast and marine activity.

PS 4.2 Students compare and contrast a selection of equipment and services to meet their recreational needs.

PS 4.3 Students identify and explain situations and behaviours that are safe or unsafe when assessing personal behaviours and consequences.

Level 5

Level statement

- Students modify their performance of various skills.
- Students analyse their choice of equipment and services leading to a community award.
- Students demonstrate actions to minimise unsafe situations.

Central learning outcomes

PS 5.1 Students demonstrate specific skills in a coast and marine activity.

PS 5.2 Students analyse factors that influence their selection of equipment and services for an activity.

PS 5.3 Students demonstrate safe behaviours and actions to minimise unsafe situations.

Level 6

Level statement

- Students evaluate their own and others performances of an activity and design a promotion of an activity.
- They plan strategies to ensure everyone can participate in an activity.
- They devise strategies to respond to unsafe situations.

Central learning outcomes

PS 6.1 Students evaluate their own performance and plan strategies to ensure everyone can participate in an activity.

PS 6.2 Students use and evaluate a variety of equipment and services for an activity.

PS 6.3 Students devise and implement personal and community strategies to respond to unsafe situations.

Beyond Level 6

Level statement

- Students understand how to analyse and evaluate different levels of performance.
- Students use information on performance to design and implement strategies to improve their own and others performances.
- Students determine ways of optimising and enhancing beneficial impacts.

Supplementary learning outcome

PSS 6.1 Students analyse and evaluate performance skills required to receive a community award.

PSS 6.2 Students design a community promotion for an activity based on the equipment and services available.

PSS 6.3 Students evaluate strategies for potentially unsafe situations and behaviours in order to optimise benefits.

Interested?

Teachers fill in and return

Name _____

School _____

E mail _____

Address _____

_____ Code _____

Marine Teachers Association of Qld Inc
Coast and Marine Education Project
PO Box 540
COOLANGATTA 4225
Tel: (07) 5525 6122
Fax: (07) 5525 7066
ABN

School order No _____

Please send the following

Item code	Details	
MTAQ 1	Coast and Marine Studies Syllabus registration package includes • associate membership to MTAQ for one year • details on how to implement syllabus • registration details for MTAQ workshops • catalogue of resources • hard copy of syllabus	☐ $110 Price includes pack and post
CME 001	Coast and Marine Studies Syllabus	
CME 002	Power point presentation for school staff	
CME 003	Resource list and catalogue	
CME 004	Set of case studies	
CME 005	Curriculum exchange documents	
CME 006	Sample anticipated outcomes sheets	
CME 007	Sample task sheets	

MTAQ collects money and pays office staff to distribute resources

Schools register for $110

Then pay a $55 yearly licence

Please register me for one year and send the following

Item code	Details
MTAQ 1	Coast and Marine Studies Syllabus registration package includes • associate membership to MTAQ for one year ($55 per yr therafter) • Coast and Marine Studies Syllabus hard copy • Registration details for MTAQ workshops Syllabus elaborations disk with: • Details on how to implement syllabus • Power point presentation for school staff • Catalogue of resources and sponsors • Electronic copy of syllabus • Microsoft word copies of outcomes for classroom ready use • Resource list and catalogues • Set of case studies and photo library • Current set of MTAQ curriculum exchange documents (• Sample anticipated outcomes sheets • Sample task sheets

DRAFT

☐ **$110**

Includes $11 of gst. Price includes pack and post.

Please make cheques payable Marine Teachers Association of Queensland

TAX INVOICE

MTAQ's ABN is 70 652 509 393

There is $11 of gst in this invoice

Important syllabus information

Enquires to MTAQ Vice President

c/- Heatley Secondary College

Financial members of MTAQ may use the syllabus, implementation guide or curriculum exchange documents for a free.

Schools wishing to use the syllabus without wishing to join MTAQ need to pay a $110 per year licence fee. Please make cheques payable MTAQ Inc and post to the above address.

Resources

The MTAQ Curriculum Exchange

Marine Teachers Association of Queensland

mtaq

home | about mtaq | join us | conferences & workshops | newsletter | news | members area

Home

Contact Details

Office

Publicity Officer MTAQ
Heatley Secondary College
PO Box 64
Aitkenvale Q 4814

Phone: 07 4726 8307

Fax: 07 4726 8300

ABN: 70 652 509 393

Electronic Communications

Simone Baker

info@marineteachers.org.au

To download conference forms and read more about the 2004 Conference
Click Here

Conference 2004

Hosted by: Sunshine Coast Branch

Dates: Wed 29th Sept — Sun October 2nd 2004

Venues: Sunshine Coast

Conference Convenors

Jim Kneale and Mark Cooper
Noosa District State High School
Tulip Street
COOROY 4563
Telephone: 07 5447 6622
Fax: 07 5447 7399

MTAQ News

June News now on line

Posted: 21-Jun-2004

June news has been posted on web and all memebrs

Sign up to newsletter

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Queensland Government

Office of the
Minister for Education

02 SEP 2003

Mr Bob Moffatt
Honorary Patron
Marine Teachers Association of Queensland Inc
P O Box 540
COOLANGATTA QLD 4225

FAXED 2.9.03

Dear Mr Moffatt

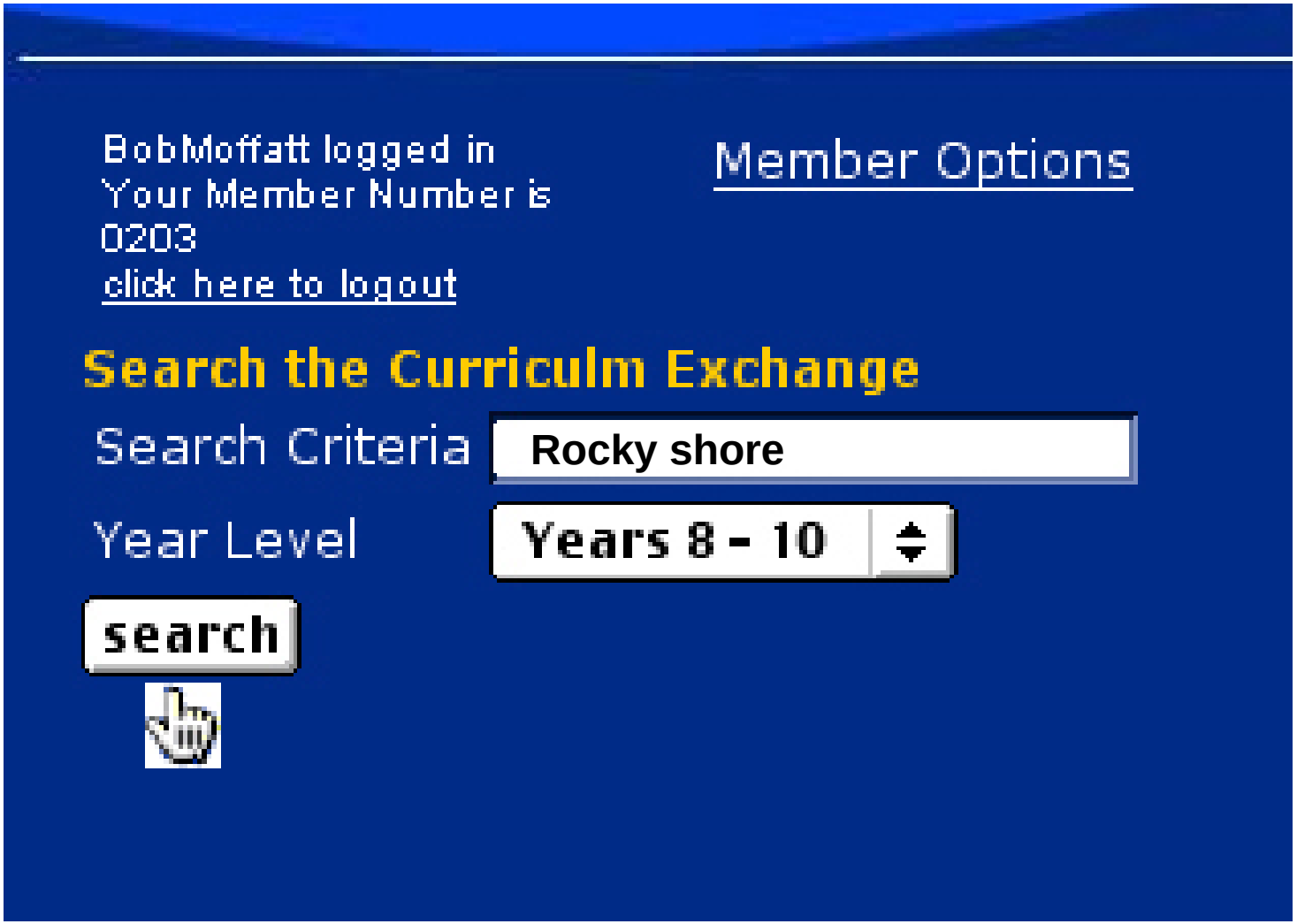
Thank you for your letter received on 14 August 2003 regarding your request for permission for Education Queensland teachers to place their Marine Education resources on your association's website at www.marineteachers.org.au. The Minister for Education, Anna Bligh MP, has asked me to respond to you on her behalf. I sincerely apologise for the delay in replying to you.

The Minister supports your request as a very productive professional exercise for teachers to share their work programs with other teachers. This is the same process that is employed through the Curriculum Exchange section of the Education Queensland website at education.qld.gov.au/tal/curriculum_exchange/.

Your members might also be interested in sending their units of work to the Education Queensland website, for the benefits of other marine educators across Queensland. For further information, please contact Ms Beryl Quayle, Information Officer, ICTs and Learning Branch on telephone (07) 3421 6490.

On behalf of the Minister, I would like to thank you and your members for all your efforts in the area of Marine Education, as I am sure the students are the beneficiaries of your professionalism.

Yours sincerely


BobMoffatt logged in
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Search Criteria
Rocky shore
Year Level
Years 8 - 10
search

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Curriculum Exchange

Years 8 - 10

Please choose a syllabus topic

- Safety
- Practices
- Industry
- Oceanography
- Ecology
- Conservation
- Admin

%>Years 11 - 12

Search Curriculum Exchange

Your search for: Rocky shore:
returned: 6 documents

Assessment outcomes for 7 units of work

Syllabus: Admin
Content area: Course outlines
File Type: Program Outline

BIOLOGY OF MARINE CREATURES BIOLOGY OF THE CORAL REEF – 3D Model of the coral polyp and Written Exam CAREERS IN THE MARINE BIOLOGY INDUSTRY FISHIN – Artificial baits – lure construction and written report 400 words CONSERVATION O THE SEA – Written Report 800 word ROCKY SHORE – Field Research Booklet MARIN PLANTS – Informative Brochure

Posted by:Sunshine Beach State High School Last updated: 9/06/2004

download document

Info sheet on some biological terms

Syllabus: Ecology
Content area: Animals
File Type: Info Sheet

BIOLOGICAL TERMS FOR ROCKY SHORE ECOLOGY.doc

Posted by:Sunshine Beach State High School Last updated: 19/02/2004

download document

Rocky Shore criteria sheet

Syllabus: Ecology
Content area: Animals
File Type: Info Sheet

CRITERIA FOR ROCKY SHORE FIELDWORK BOOKLET

Posted by:Sunshine Beach State High School Last updated: 19/02/2004

download document

Rocky shore field study booklet

Syllabus: Ecology

MERCY COLLEGE

COAST AND MARINE EDUCATION

Student Name: _____Teacher's Name: Miss Goodingham

Unit Code: SC555 Unit Name: **Rocky shore**

Task Name:

Date Given: _____

Possible Outcomes

KLA: Strand	Level 4	Level 5	Level 6
E1. Ecology	Students make generalisations about the types of interaction which take place between the living and non-living parts of the environment.	Students evaluate the consequences of interactions between the living and non-living parts of environments.	Students prepare scenarios to describe the potential long-terms effects of changes in bio diversity caused by human action on ecosystems.

Dimensions

Level 4	Level 5	Level 6
Make generalisations	Evaluate	Prepare scenarios

Task

MUD CRAB

Students Name: _____

Teacher: _____

What are my parts used for ?

Purpose

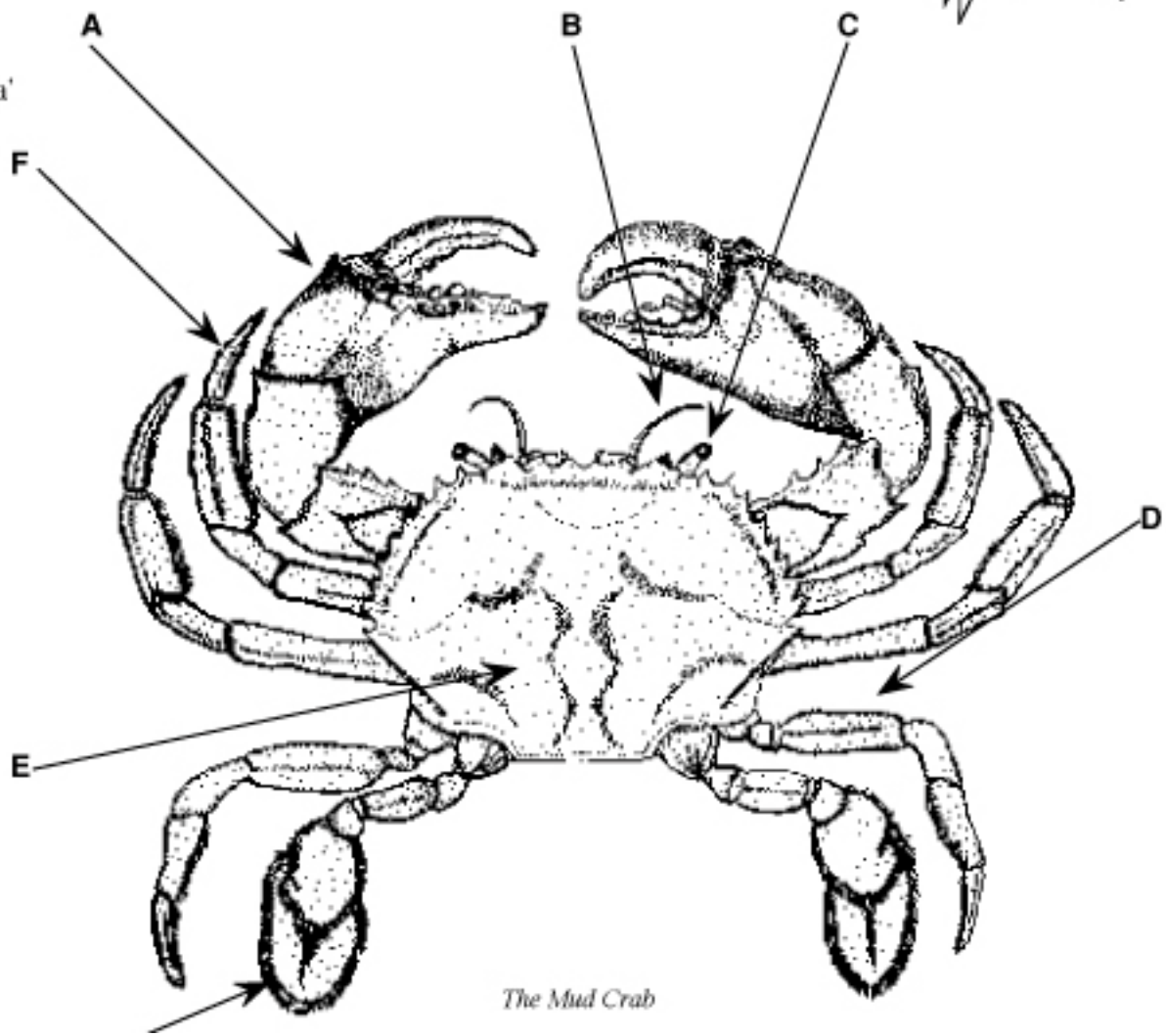
To discover the externa'
by completing a table.

What to do

Use the word list
below to complete
the table above.

Word list

Swimming leg
Eye
Antennae
Third walking le
Carapace
Claw
First walking



The Mud Crab