BRISBANE SOUTH MARINE STUDIES PROJECT
Mediterranean Drive
Benowa, Qld. 4217
P.O. Box 5733
Gold Coast Mail Centre 4217
Telephone: (075) 38 4222

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1985

Marine Studies Implementation Guide

SPECIFIC OBJECTIVES

EXCURSIONS

EXAMINATION PAPERS

NOTES

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THIS PAGE HAS BEEN PRINTED ON WATERPROOF PAPER.

Fixed to a white board of plastic that your Manual Arts department has makes a handy worksheet for snorklers, navigators or other activities that your students may do....

A4 sheets are available from the Project in 100 lots or made up to suit your own worksheet design.

MARINE STUDIES

IMPLEMENTATION GUIDE

Contents

1. WHY AN IMPLEMENTATION GUIDE?

A school subject is just that - a subject attuned to the needs of students and teachers of a particular school. While its broad aim cycles may have wider applicability, the details of the programme would need to be modified to enable implementation of the subject into another school. The purpose of these guidelines is to assist teachers in making these modifications and adjustments.

This document describes the work programme of one teacher who has specialized in this subject over many years and the strategies employed by him with many hundreds of students he has taught. The work programme and syllabus documents have been derived from a set of classroom notes that he wrote as a science teacher and are in a developmental stage.

The author would welcome comment by writing to:

The Co-ordinator
Benowa State High School Marine Studies Project
Mediterranean Drive
Benowa, Q. 4217

Section 8 shows you how to get Board Registered Status.

2. HOW MUCH TIME COULD BE ALLOWED FOR EACH UNIT?

The following unit outlines have been prepared.

A suggested grouping might be -

Unit	Title	Suggested Time
1	Navigation	17 hours
2	Boating	45 hours
3	Swimming and Diving	18 hours
4	Commercial and Recreational Fishing	30 hours
		110 hours
5	Marine Technology and Research	29 hours
6	Marine Resources: Value and Management	12 hours
7	Marine History	10 hours
8	Coastal Studies	29 hours
9	The Oceans	10 hours
10	Boat Licence and Excursion	20 hours
		110 hours

3. WHICH TEACHER SHOULD TEACH THE PROGRAMME?

A single teacher need not teach the whole course but if one did then he/she should have a good background in the Sea. Any teacher who has owned a boat of their own would be a good place to start looking because they will have experienced personally the difficulties associated with working in the Sea. Some science background would be desirable for Units 5 and 6, although not necessary as you can modify the course to suit your needs and specialiaties.

4. HOW WERE THE UNITS DEVELOPED?

It is important for teachers to appreciate how the Marine Studies Syllabus developed because -

(a) When you develop your own programme you should be aware of the science origin of the units.

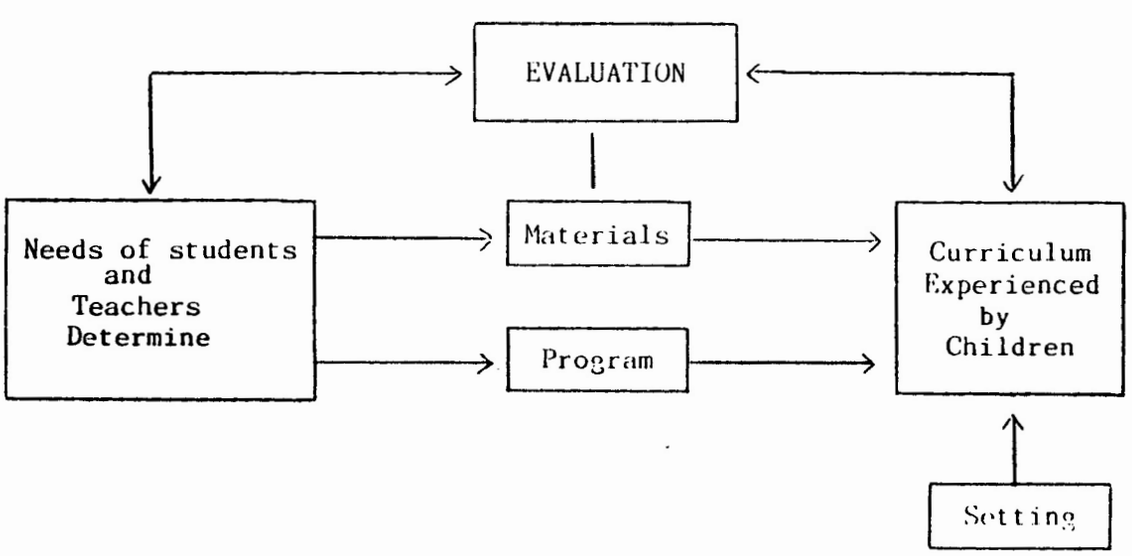
(b) When you modify your programme, you should be aware of the modifications that have already taken place to accout for such things as -

* Location of school
* Type of staff available
* Resources available
* Capital expenditure involved
* Standards of course you want

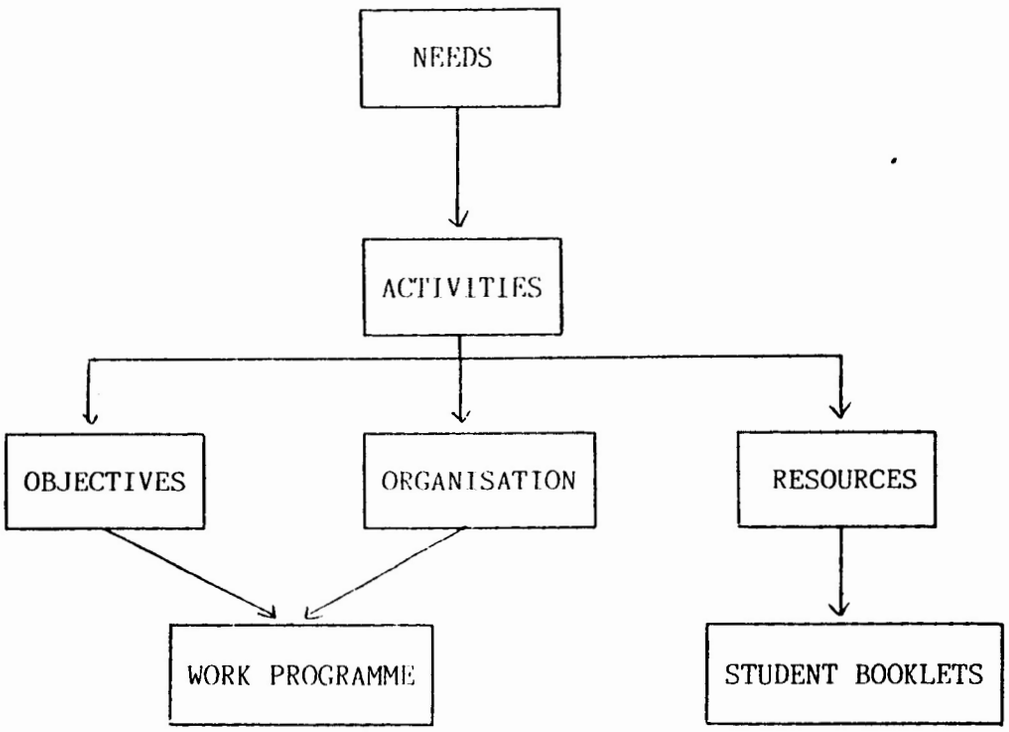
The traditional subjects have formed a part of the school curriculum for so long that it is easy to lose sight of the fact that they did begin. A work program does not suddenly spring full grown from the wind of one or more teachers. It develops from simple beginnings through a series of metamorphoses before it attains the form you see in the proceeding document. In order to fully understand that programme, you need some understanding of its origin, of the factors influencing its growth, and of the previous stages of its metamorphoses. That background is provided in the following discussion.

4.1 Curriculum Model

A written work program is not the curriculum, and should be seen as only one of the elements contributing towards it.



Since the "setting" and the "needs" tend to be beyond the control of the teacher, curriculum development by teachers is restricted to the areas of programme planning and materials production. The history of these activities for Marine Studies is outlined in Section 2.2, but the process followed can be broadly shown as:



At the outset perceived needs were met by creating relevant single activities within the context of many different units of work. When these assorted experiences were considered together it was possible to collect them into descrete units of work applicable to existing subjects. These units could then be formalised into sets of objectives, organisational schemes, and resource materials. Eventually it was recognised that there was sufficient demand for the area of study, and sufficient worthwhile learning experiences within it, to create a new subject with a definite purpose and structure, and to publish sets of student booklets. These two projects are now proceeding separately. While this document accompanies the work program, it describes the situation in a school which makes extensive use of the student booklets and therefore necessarily refers frequently to them.

4.2 How and Where the Units Were Trialled?

Briefly they had their BASE in Science but have broadened to become more general. A quick synopis is as follows -

1. 1972 - 1975
   * Development of Marine Biology Science Component
   * Unit 4 Fishing - Commerical and Recational is based on this concept

2. 1976 - 1979
   * Further development and trial of Unit 4
   * Development of Units 5 and 9
   * Trial of Units 5 and 9

3. 1980 - 1981
   * Publishing of student notes - Units 4, 5 and 9
   * Development of Unit 1, 2, 3 and 10
   * Trial of Units 1, 2, 3 and 10 various locations - River, Estuary, Open Beach, Barrier Reef

4. 1982 - 1983
* Development of Units 6 and 8
* Trial of 6 and part of 8
* Teaching of Units 1, 2, 3, 4, 5, 9 and 10

5. Note:
(a) Unit 7 has not been trialled or developed
(b) Unit 8 has not been fully developed
(c) All other Units have been trialled for the time specified and are reasonably well developed

4.3 Some Results of Trialling

The end result of this process, the work programme, has therefore benefitted from the experiences, the contributions and the comments of hundreds of students and colleagues. You can therefore say with confidence that the activities will work, that the resources are available and that the objectives are attainable. You should not assume, however, that the Benowa State High School program will provide totally for the needs of your students in your setting. The following sections provide guidance in modifying it to suit your particular context.

5. WHO SHOULD STUDY THE UNITS?

5.1 Students Interested in Marine Affairs Generally

For these students the Unit of Coastal Studies, The Oceans and Maritime History should stimilate interest and broaden their outlook on the Maritime World.

The Units on Boating, Fishing, Navigating, and Swimming and Diving should give them practical experience for adult life.

5.2 Technical Students who Seek a Career in a Marine Laboratory, Field Station or Vessel (Non Tertiary Bound)

The Units on Navigation, Marine Technology and Fishing will suit these students needs. The emphasis is on the practical application of Scientific principles. The units on Management and Work Experience should broaden out the students perspective.

5.3 Academic Students, who Want a Job in the Marine Field and Wish to Study at a Tertiary Institute

The core of Marine Studies is Boating and Boat skills. Few would argue that this is a necessary prerequisite for a course at or associated with the Sea. So for Academic students are concerned, these units would greatly benefit students seeking a career at sea.

A Professional Marine Biologist spends most of his field work under water. Student considering this career need to be made aware of what is involved working with marine life underwater.

5.4 Students Who Do Not Wish to Do the Whole Programme

It may be possible for part of the programme to be done as a Single (44 hour semester. Minimum Board Registered time).
e.g. Boating may be done in Semester 1 as a life skill and received accreditation for that. Then, Catering for two semesters and finish with a Semester of Manual Arts or Production and Performance. See Page for how to fill out a Board Registered Minimum Time Subject.

6. WHAT ARE THE UNITS ABOUT?

An attempt has been made to balance the practical with the applied to cater for the student needs. Eg:

Practical Units	Suggested Time
1. Navigation	17 hours
2. Boating	45 hours
3. Swimming and Diving	18 hours
4. Commercial and Recreational Fishing	30 hours
	110 hours

At the end of these units the student whould be able to cope with living and working in the marine environment.

Applied Units	Suggested Time
5. Marine Technology and Research	29 hours
6. Marine Resources: Value and Management	12 hours
7. Marine History	10 hours
8. Coastal Studies	29 hours
9. The Oceans	10 hours
10. Marine Excursion and Boat Licence	20 hours
	110 hours

At the end of these units, the student should have a broader perspective of the Marine Environment.

As a combination of these units the Global Aims should be attainable in the adult life of the student. That is to say, who the student pursues his interest in the Maritime World, he will come to use some or all of the General Objectives studied in the Units.

7. HOW IS THE SAMPLE WORK PROGRAMME ORGANISED?

7.1 The Framework

This shows how the unit has been put together and why it has been put together in this way. It lists the core and some optional ideas you may like to try out. These ideas could be related or left as discrete units. A suggested time is also given.

7.2 Sections

These refer to the sections in the resource on which the unit is based. A suggested time is also given to show the relative weighting afforded to topics. Note: 1 week approximately is 5 x 40 minute periods.

7.3 Evaluation

A basic plan is given which will have to be amended or added to as the unit is taught. This ensues that the evaluation is a valid one. The syllabus gives ideas on Core Sound Achievement status and criteria.

7.4 Resources

This section refers to the text resources from which the objectives have been written.

7.5 Specific Objectives

These are listed in a form in which they can be distributed to students.

This is basic to the philosophy of the programme

These are with the C (Content), P (Process), S (Skill), A (Attitude).

7.6 What the Objectives mean?

Cec Burr (of the Science Teachers Association of Queensland) gives the following guides as to how the objectives could apply to a Science class. The notes below are reprinted (with permission) and may prove useful. They are shown only as a guide and teachers may wish to ignore them completely as they may be unapplicable to say a Manual Arts teacher teaching the subject.

"This booklet of objectives represents a clear statement of what you should be able to do as a result of studying your science course.

There are four sets of objectives.

1. Attitude Objectives
2. Laboratory Skills Objectives
3. Content (or Fact) Objectives
4. Process (or Understanding) Objectives.

1. Attitude Objectives

These objectives describe how it is expected that you might think and behave in a general way with respect to your fellow students, your laboratory, your apparatus. It also includes your approach to your work, and people and the environment generally.

There are two groups of Attitude Objectives:

(a) General Attitudes

(b) Attitudes specific to parts of the course. You should try to achieve the level of thought written into these objectives. Your teacher will discuss them with you at various times during the year. The objectives are to be achieved over both semesters. This set of objectives will not be tested in your examinations. However, your teacher will keep a check on whether or not you achieve them.

2. Laboratory Skills Objectives

These objectives tell you what you should be able to do in the laboratory and how you should record and report your observations etc. of your experiments.

There are two groups of these objectives:

(a) Apparatus Manipulation Skills i.e. you learn the correct way to use appartus.

(b) Laboratory Process Skills, i.e. you learn what to do with your observations and conclusions from your experiments.

Your teacher will discuss with you which of the Manipulative SKills and which of the Laboratory Processes are set for Semester I, Semester II, or for the whole year.

3. Content (Fact) Objectives

These objectives state clearly what you have to learn i.e. what you have to commit to memory. They are grouped in Chapters (or Topics) and the relevant page in the text or other resources (i.e. Teacher notes, film strips etc.) is listed in a column beside the objective. It is possible that your teacher could give you extra notes and/or reosurce references.

4. Process (Understanding) Objectives

To achieve these objectives, you have to apply your thinking ability to the facts you have learned.

It will be this area of thinking, and application of knowledge that will make your science course interesting and challenging.

* Reprinted from Science Teachers Association of Queensland Journal "The Science Teacher", September, 1983.

Step 1 Read the chapter (or part of the chapter) two or three times.

Step 2 Learn the chapter summary. This is best done by reading it through a couple of times then writing it out. (If you really know it, you can write it out without looking at it!!).

Step 3 Go to the Content Objectives. Read one objective at a time and write down what the objective tells you to do.

Step 4 Check your answer from the page in the Chapter or from your notes. If your answer is wrong, write out the correct answer three times. If it is correct, go on to the next objective.

Step 5 Go to the Process (Understanding) Objectives. Read one objective at a time write down what the objective tells you to do.

N.B. You might need help from someone at home, or a fellow student or your teacher to "set a question" based on the objective. (This is not a difficult task! Try to do it, as it will help you in your examinations).

Step 6 Check your answer from the Chapter or from your notes.

Step 7 Learn the spelling for the chapter. These are in the last content objective of each chapter (or topic).

Step 8 Try to set yourself (or ask for help) extra "understanding" questions."

8. HOW TO GAIN BOARD REGISTERED STATUS FOR YOUR SCHOOL

8.1 If you want to use the entire program major study

1. Fill out the forms as indicated over on page (x) and staple them to pages 2 - 24 of the Syllabus. Call this you workbook and send in to the Board of Secondary School Studies one year in advance to use this course for this purpose.
2. You may begin teaching this sample work program now, but will have to wait until your students are in year 12 before the Board recognises the course.
3. NOTE WELL: YOU MUST TELL THE BOARD ONE YEAR IN ADVANCE.

8.2 If you wish to use only part i.e. minor study

1. Fill out the forms as indicated over on page (x) and staple only the pages from 2 - 24 of the Syllabus you require.
2. You may begin teaching but will have to wait a year.
3. DONT FORGET: YOU MUST ADVISE THE BOARD A YEAR IN ADVANCE OF YOUR INTENT.

BOARD OF SECONDARY SCHOOL STUDIES

TITLE PAGE

WORK PROGRAM

SAMPLE

FORM R1

APPLICATION FOR ACCREDITATION					
The school has the resources necessary to implement the attached Work Program and agrees to abide by the procedures and conditions laid down by the Board of Secondary School Studies for Accreditation of the Work Program and for Certification of student achievement. The timetabled school time devoted to the study and assessment of this subject as stated satisfies the minimum time allocation required by the Board. Signed:..... Principal Date:.....	SCHOOL			School Code	
	SUBJECT			~~Junior~~ * Senior *	
	DISTRICT				
	~~BOARD SUBJECT~~*	BOARD-REGISTERED SCHOOL SUBJECT*			
	SEMESTER UNITS	MAJOR STUDY*		~~MINOR STUDY~~*	
	SEMESTER	1	2	3	4
	UNIT				
	TIME ALLOCATION:				
	*Strike out whichever is inapplicable				

ACCREDITATION	OFFICE USE ONLY
The attached Work Program has been reviewed according to the procedures established by the Board of Secondary School Studies and is accredited for implementation for the school named above. Board Certificates may be issued under this Accreditation at the end of the years indicated.	Years of Certification 19..... 19..... 19..... Signed:..... John A. Pitman, Executive Officer Board of Secondary School Studies Date:.....

Three copies of this Title Page are to be completed, two of which should be attached to the two copies of the Work Program submitted for Accreditation. The third copy can remain in the school attached to another copy of the Work Program. After the Work Program has passed through the review procedures, one copy of the Work Program will be returned to the school with comments from the District Review Panel, and the other will be passed on to the State Review Panel and the Board Office. This copy will be returned to the school when the Work Program has received accreditation from the Board and will be the school's official record of that Accreditation.

BOARD OF SECONDARY SCHOOL STUDIES

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	DISTRICT				
	~~BOARD SUBJECT*~~	BOARD-REGISTERED SCHOOL SUBJECT*			
	SEMESTER UNITS	~~MAJOR STUDY*~~		MINOR STUDY*	
	SEMESTER	1	2	3	4
	UNIT				
	TIME ALLOCATION:				
	*Strike out whichever is inapplicable				

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8.5 Notes from the Board

The Form R1 must be signed to indicate the attached Work Program is the official application for accreditation from the school in that subject. The name of the school should be stated in full to avoid any confusion with schools of like name. The school code is that which is supplied by the Board and is always a three digit number from 001 to 660.

Therefore the principal of the school signs the declaration:

"That the school has the resources necessary to implement the attached Work Program...". For the subject described within the work program to appear on the Board Certificate, the Principal certifies that the school 'agrees to abide by the procedures and conditions laid down by the Board of Secondary School Studies for accreditation of achievement".

When accrediation is sought for a Senior Board-Registered School Subject Minor Study, the number of semester units should be shown by placing a figure 1 for Semester 1, a figure 2 for Semester 2 and so on.

The Time Allocation should show clearly that the work program will be offered to students in accord with the Board minimum time requirements. These minimum requirements are expressed in "timetabled school time devoted to the study and assessments of this subject...". It is insufficient to state a number of weeks unless the time per week is also provided. The principal signs the time allocation declaration along with the declarations described above.

■ CN484
BOAT YARD OPERATION

Entry: No special requirements.

Duration: 3 hours/week for 17 weeks for each of 3 subjects; evening.

This service course aims to provide a basic knowledge of design theory and office practices. It is especially suitable for Boatbuilders and Shipwrights who wish to enter into managerial positions. It covers organisation, design, and construction of vessels.

College where available: IT

■ CN732
OUTBOARD MOTOR SERVICE COURSE

Entry: Any person:

(a) who has completed a motor mechanics apprentice course or trade;

OR (b) who is employed in the marine industry to install, maintain or repair outboard marine engines.

Duration: 6 hours/week for 15 weeks.

A service course for qualified motor mechanics or persons working in the marine industry, to develop skills for the maintenance, service and repair/overhaul of marine outboard motors and ancillary equipment.

Colleges where available: BH, BU, CN, RK, SB.

■ CN738
MARINERS COURSE IV

Entry: No special requirements. Those requiring Certificate of Competency should contact the Department of Harbours and Marine for additional requirements.

Duration: 3 days full-time day attendance

A miscellaneous course to meet the educational requirements of the Department of Harbours and Marine Certificate of Competency for Launchmaster, Principal-in-Charge, Master Grade III (Fishing) and Coxswain.

Colleges where available: BU, CN, GL, GC, IP, SB

■ CN739
MARINERS COURSE III

Entry: No special requirements. Those requiring Certificate of Competency should contact the Department of Harbours and Marine for additional requirements.

Duration: 2 weeks full-time day attendance.

A miscellaneous course to meet the educational requirements of the Department of Harbours and Marine Certificate of Competency for Master Grade III, Master Grade IV, Master Grade II (Fishing), Master Grade IB (Fishing), Mate Grade II, Mate Grade III and Master Class V (Trading and/or fishing).

Colleges where available: BU, CN, GC, IP, MK, MB, SB, TV.

■ CN740
MARINERS COURSE II

Entry: No special requirements. Those requiring Certificate of Competency should contact the Department of Harbours and Marine for additional requirements. The educational requirements for CN739 should be met.

Duration: 120 hours

A miscellaneous course to meet the educational requirements of the Department of Harbours and Marine Certificate of Competency for Master Grade I, Master Grade II, Master Grade IA (Fishing), Mate Grade I and Master Grade IV.

Colleges where available: BU, CN, GC, IP, SB.

■ CN741
MARINE ENGINE DRIVER GRADE II

Entry: No special requirements. Those requiring Certificate of Competency should contact the Department of Harbours and Marine for additional requirements.

Duration: 3 weeks full-time day attendance

A miscellaneous course to meet the educational requirements of the Department of Harbours and Marine Certificate of Competency for Harbour and River Engine Driver (Motor) First Grade, Harbour and River Engine Driver (Motor) Second Grade and Engine Driver Grade II.

Colleges where available: CN, SB

■ CN850
BOATS, BOAT TRANSPORTATION AND MARINE ENGINES

Entry: No special requirements.

Duration: 6 hours/week for 17 weeks, evening.

A service course to provide students with the fundamental operating principles and maintenance requirements of boats, boat engines, boat trailers and four wheel drive vehicles.

College where available: IT

■ CN852
INTRODUCTORY COURSE FOR SEAGOING PERSONNEL

Entry: No special requirements.

Duration: 6 hours/week for 10 weeks; evening.

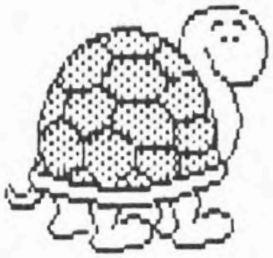
A miscellaneous course for people with little or no previous sea experience to enable them to be more useful crew members. It provides an introduction to modern fishing technology and management and maintenance of fishing vessels.

Colleges where available: BU, CN, GC, IP, SB

MARINE STUDIES
AUGUST 1982

NOTE: There are new courses coming out each year. For further information contact your nearest T.A.F.E. College.

MARINE STUDIES WORKBOOK



SAMPLE WORK PROGRAMME

1. PREFACE

Because Marine Studies is such a new subject to be taught in schools, there exists no simple textbook in Australia. In its wisdom, the Science Teachers' Association of Queensland has produced a set of Marine Science Notes to fill this gap for the time being.

The attached work programme and specific objectives are drawn almost exclusively from this series. The programme strategies recognise the need for a set of notes for student use so that their learning may be enhanced by:

(i) home work assignments
(ii) spelling lists
(iii) project ideas
(iv) specific objectives to help them grasp the subject matter

Also it is seen that the notes can provide an anchor for the teacher in times of rough weather, for example during the task of establishing the course, or when resources are not available. These notes are by no means the final word in Marine Education, but are designed as a beginning, to be adapted to particular situations and enlarged with experience. Any comments would be gratefully appreciated by the author.

2. GLOBAL AIMS

The aim of Marine Studies Education in our Secondary Schools is to provide learning experiences which will assist students to:

(1) develop a knowledge and understanding of our maritime interests and environment

(2) develop an awareness of the usefulness and value of the sea and coastal zone.

(3) develop an awareness of the responsibility for wise management in the course of present use and preservation for the future, and the regulations developed to achieve that.

(4) develop an ability to use the Marine Environment wisely.

(5) develop a competence in basic Maritime Skills.

(6) develop an ability to communicate attitudes and values about our maritime interests and environment.

(7) develop a new "water ethic" amongst Australians so future generations can benefit from the wise management of its resources.

3. RATIONALE

An important aim of Secondary Education is for schools to offer learning experiences in, and for, life. Since 75% of Australians and over 80% of Queenslander live within one hour's drive from the ocean, a study of the marine environment is of great relevance to our societal life style, and even a necessity when we consider that there are over 86,000 registered power boats in Queensland.

Marine studies offers students an opportunity to develop an awareness and understanding of those aspects of the marine environment which will play an important part in their lives, be it in a recreational, or an occupational capacity. Significant aspects of the marine environment include:

(a) natural resources
(b) influence on weather and climate
(c) involvement in trade and shipping
(d) potential for recreational use
(e) historic significance
(f) potential for specialist technology development
(g) potential employment prospects
(h) defence

The marine environment is an important component of the biological and physical world in which we exist. Many aspects of human endeavour are linked to the marine environment and its resources may be utilised for the benefit of mankind, both now and in the future. The circling sea is the source of water that makes possible all life on earth, and some scientists and engineers believe that the oceans hold the key to the future needs of mankind in the form of food and mineral resources.

The Marine Studies Course seeks to provide students with the opportunity to aquire the basic set of skills which are essential for working at sea as well as providing a coordinated approach towards the study of all those facets of modern life which interact in the marine environment.

4. ORGANISATIONAL NOTES

(a) The following units of work have been prepared. In most cases, audio visual material is also available.

NAVIGATION
BOATING
SWIMMING AND DIVING
COMMERCIAL AND RECREATIONAL FISHING
MARINE TECHNOLOGY AND RESEARCH
MARINE RESOURCES: VALUE AND MANAGEMENT
MARINE HISTORY
THE COAST
THE OCEANS

A specification has also been written for Coastal Camping and Reef Biology

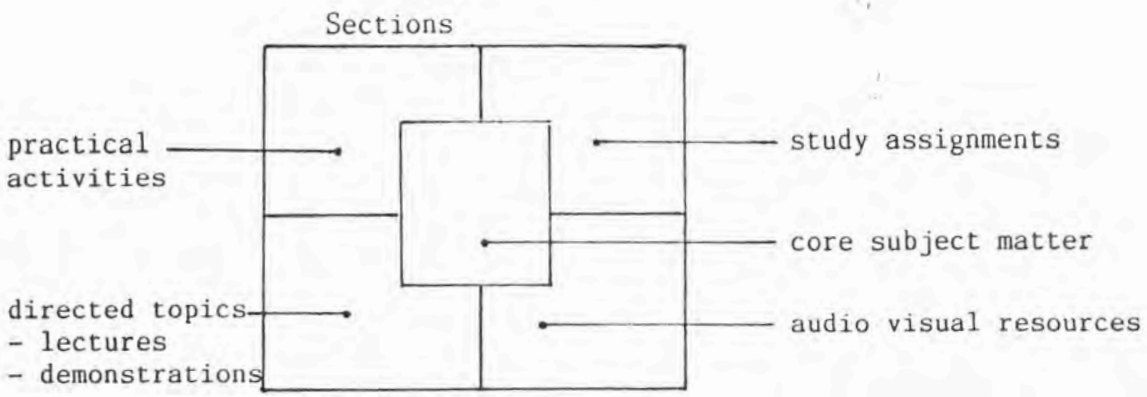
(b) Course Outline: a programme proposal

Total Course Time: 220 hours

APPROX TERM	GRADE 11		GRADE 12	
	CORE	OPTIONS	CORE	OPTIONS
1	Navigation (18 hours)		Marine Technology (15 hours) and Pollution (8 hours)	Excursion (10 hours)
2	Boating (24 hours)	Boat Licence (13 hours)	Managing Marine Resources (12 hours)	The Reef (10 hours)
3	Fishing (29 hours)	Work Experience (8 hours)	The Coast (24 hours)	Coastal Camping (11 hours)
4	Snorkelling (10 hours)	SCUBA certificate (8 hours)	The Oceans (10 hrs) History (10 hours)	
TOTAL GRADE 11 110 HOURS			TOTAL GRADE 12 110 HOURS	
			TOTAL Course 220 HOURS	

(c) Unit Format

Each unit has the following organisation:



- outline (as above)
- a page of specific objectives written under Content, Process, Skills, Objectives
- a list of possible assignments, directed topics or practical activities
- the main ideas of the section and possible review questions

This format is the one used by F.U.S.E. in South Australia, and was initially developed because the project group at F.U.S.E. strongly believed that it is the teacher's and/ or student's decision to choose the appropriate learning mode. While there are a variety of learning modes, the project group developed a simple classification.

Core Subject Matter — The section objectives and a variety of activities which go most of the way towards the achievement of objectives appropriate to the average student.

Some objectives may be omitted or modified for less academically motivated students. Additional activities from the other areas will need to be chosen for the more able students.

Practical Activities — These activities are designed or suggested to expand or give practice to ideas encountered in the core and further develop the objectives of the module.

Study Assignments — These activities encourage the use of the School's resource centre and can be used for extended reporting, creative writing and project work. The nature of the Communication will depend on the ability of the students.

Directed Topics — These are suggestions for lectures, teacher directed lessons, whole class or small group discussion.

Audio Visual Material — In some sections not all of these components are included. This does not mean that there are no activities appropriate, but no suitable ones came to mind at the time of writing. Suggestions for modification and/or additions will be welcomed.

Most units have the following contents:

- Framework: core and options
- Sections with suggested time allocation
- Evaluation ideas
- Resources
- Unit Outlines
- Objectives
- Main ideas
- Review questions

5. ASSESSMENT

There are two components as stated in this syllabus:

A. Performance
B. Written
C. Testing Programme Summary & Exit level Criteria

A. The Performance Component

Major emphasis will be placed on assessing Student performance in:

Unit 1 Navigation
Unit 2 Boating
Unit 3 Snorkeling
Unit 4 Fishing
Unit 5 Technical Design

- In this component a check list or performance test will be given
- The performance component will test content, process and skill.
- Each student will practice the subject matter in the course then be tested individually or in a small group
- Each student will be given a chance to repeat the performance test
- Examples of the criteria for each unit test follow. (Note: these are examples to give an indication of standards)

Performance Test Criteria: UNIT 1: NAVIGATION

1. Answer questions correctly on general navigation equipment
2. Use instruments correctly
3. Take bearings at sea accurately
4. Make simple calculations at sea
5. Can steer a compass course at sea
6. Knows 'rules of the road'
7. Answers questions on Tides correctly
8. Relates weather forecasts to expected sea conditions
9. Knows system of Bouyage

Performance Test Criteria: UNIT 2: BOATING

1. Correctly answers questions relating to boating terms.
2. Ties knots to satisfactory standard
3. Able to mix fuel, and uses lubricants correctly
4. Takes all necessary safety precautions
5. Able to start motor and handle craft under power confidently
6. Sails boat correctly using wind to best advantage
7. Uses trailer well and knows maintenance
8. Can identify dangerous situations and weather forecasts
9. Displays courtesy and respect for other people's property
10. Knows how to buy a boat

Performance Test Criteria: UNIT 3: SNORKELING

1. Can adjust face mask, flippers, gear and snorkel
2. Safely enter the water with gear on
3. Fin for 100m satisfactorily
4. Dives correctly
5. Performs mouth to mouth resuscitation and external cardiac massage
6. Swims 200m
7. Writes underwater
8. Able to rescue from water
9. Displays knowledge of dangerous conditions
10. Able to get into a boat from the water

Performance Test Criteria: UNIT 4: FISHING

1. Set up a fishing rig or trap for fish
2. Catch a fish
3. Gut, clean fillet and cook a fish
4. Use a book to identify fish caught
5. Use a book to obtain legal size
6. Maintain an aquarium
7. Locate a Habitat Reserve on a chart.

Performance Test Criteria: UNIT 5: MARINE TECHNOLOGY

1. Construct and demonstrate a device which will sample water under water at a predetermined depth
2. Operate a burette, balance and microscope effectively.
3. Use a device to measure some non-living parameter in the environment (e.g. depth sounder).
4. Identify a variety of instruments and match them to a particular task.
5. Record data accurately

Performance Test Criteria: UNIT 6: MARINE RESOURCES

1. Apply for a permit in writing by locating appropriate authority, writing, posting letter and getting a reply
2. Behaving in a way that is consistent with the regulations of a selected area.

Performance Test Criteria: UNIT 7: MARINE HISTORY

1. Demonstrate use of a Library Catalogue
2. Write a letter seeking research information

Performance Test Criteria: UNIT 8: THE COAST

1. Use a phone book, newspaper or pamphlet to obtain rent, tariff and information facilities on Coastal accommodation
2. Given a model of a coastline, point out the effects of certain engineering structures on sand movements.
3. Debate an issue on a proposed coastal development in a convincng manner.

Performance Test Criteria: UNIT 9: THE OCEANS

1. Keep a newspaper folio on ocean features, research and laws of the sea.
2. Use laboratory equipment to detect pollution; measure oxygen concentration
3. Use field equipment to monitor pollution

Note: These are suggested criteria and will be modified each year with updating of the course.

SAMPLE CHECKLIST

Navigation Performance Tests

	SOUND	HIGH	VERY HIGH
1. Knowledge of			
* 1. Navigation Equipment	✓		
* 2. Marine Compass	✓		
* 3. The Chart	✓		
* 4. Layoff a Course	✓		
* 5. Plotting a Course	✓		
* 6. Weather Forecasts	✓		
* 7. Tides and Currents	✓		
* 8. Emergency	✓		
9. Lights and Lighthouses	✓	✓	
10. One Option Project	✓	✓	✓
2. Ability to			
* 1. Interpret Readings	✓		
* 2. Solve Simple Problems	✓	✓	
3. Solve Labour Problems	✓		
* 4. Plot a Course	✓		
* 5. Write Simple Reports	✓		
6. Interpret Tide Tables	✓	✓	
7. Apply Boating Rules	✓	✓	✓
8. Interpret a Weather Map	✓	✓	✓
3. Skill			
* 1. Use Parallel Rules	✓		
* 2. Use Divides and Charts	✓		
* 3. Read and Barometer	✓		
* 4. Steer a Course	✓		
* 5. Send and Receive a Mayday	✓		
6. Use a Radio	✓	✓	
7. Use a Sextant	✓	✓	✓
8. Draw up a Weather Map	✓	✓	✓

* Contained in Award

B. The Written Component

Criteria:

- spell words correctly
- select appropriate alternatives in multiple choice questions
- select relevant conten and answer questions logically and systematically

Note: When objectives are reassessed in this component an improved student performance should be given credit. For example, in navigation, if a students's ability in performing a task improved over time then the later assessment would be taken.

C. Testing Programme Summary

GRADE	UNIT	TEST	
11	Navigation	Performance Test 1 (10 mins) Written test (30 mins)	30 marks
	Boating	Performance Test 2 (30 mins) Written test (1 hr)	60 marks
	Fishing	Performance Test 3 (30 mins) Written test (30 mins)	30 marks
	Snorkeling	Performance Test 4 (10 mins) Written test (30 mins)	30 marks
12	Technology	Design of instrument Report	30 marks 30 marks
	Management	Written examination	30 marks
	The Reef	Assignment	30 marks
	The Coast	Performance Test 5 (15 mins) Debate	30 marks
	The Oceans	Folio	10 marks
	History	Folio	10 marks

Exit Level Criteria (from a profile over 2 years)

VERY HIGH LEVEL:	The student will have achieved 85% ± X% of performance test objectives, and passed the written components of the course.
HIGH LEVEL:	The student will have achieved 70% ± X% of performance test objectives and passed the written components of the course.
SOUND LEVEL:	The student will have chieved 50% ± X% of performance test objectives and passed the written components of the course
LOW LEVEL:	The student will have achieved 30% ± X% of performance test objectives and passed the written components of the course.
VERY LOW LEVEL:	The student will have achieved less than 30% ± X% of performance test objectives and failed the written components of the course.

Note: "X" is a number between 1 and 7 depending on the quality of the performance, ± test objectives at the time, the standard of the written components, and allowing for any unforseen circumstances

A pass on the written component shall be 50%

A student may sit for a Performance Test again.

GLOBAL ASSESSMENT

a) The student global assessment will be in one of five categories -

Very High Achievement
High Achievement
Sound Achievement
Limited Achievement
Very Limited Achievement

b) The student global assessment might be expressed in terms of -

- demonstrated knowledge of facts
- demonstrated understanding of procedures, processes, systems and methods
- demonstrated understanding of concepts and principles
- demonstrated ability to complete, plan, make decisions, solve problems
- demonstrated ability to take responsibility
- demonstrated self reliance and confidence
- demonstrated technical skills

c) Typical of the Keywords which may be used to indicate different levels of achievements are:

Very High: Consistent, almost always, Advanced, Very High, Highest, Exceptionally, Very Deep Insight

High: Frequent, Significant, Mostly High, Deep Insight

Sound: Routine, Basic, Reasonable, Satisfactory, Proficient, Some Insight, Sound

Limited: Occasionally, Some, Unsatisfactory, Litte, Ineffeciently, Inappropriably, Haphazardly, Limited

Very Limited: Inconsistently, Very Little or No, Minimal, Unable To, Exhibit Great Difficulty, Showed Little Evidence of, Very Limited.

BENOWA STATE HIGH SCHOOL
A School that Strives and Cares

MARINE STUDIES WORKBOOK 1985

CONTENTS

April 1985

DRAFT ONLY

1. Global aims and objectives

As this document has been prepared from the "draft MARINE STUDIES STEP SYLLABUS ", the philosophy contained within that document has formed the basis for this more detailed course of study. Hence the global aims and objectives should be read as an appendix to this course of study.

The philosophy behind the course is based on the premise that for non tertiary bound post compulsory education students, we need a course of study that will prepare our youth for adulthood.

We are aiming not at TAFE nor University, but at a course that will be useful to the everyday adult.

The course work, the building that the students will occupy, the resources that the students use have all been selected with this in mind.

The emphasis is on the students doing and succeeding, rather than listening or watching.

2. Course information

2.1 The curriculum materials are able to be handled by physically handicapped people This course studies those aspects of adult life that relate to the sea.

2.2 The course is highly developmental and experimental. This document will go out of date almost as it is written so particular attention is drawn to the date on the front of the cover. If you have read an old document, be warned, it may be totally different from this one.

2.3 Nine units have been selected and minor variations will occur year by year depending on the availability of specialist staff.

Eg: This year we have a sailing specialist and have introduced a new unit because staff are able to teach this unit. We hope to train a partime staffmember who can run a second class next year and so provide the logistical backup to keep sailing alive.

2.4 Timetable this year:

Per	Mon	Tue	Wed	Thu	Fri	Notes:
1						
2		x				5 pairs per week
3						
4			x			Also after extending
5					x	
6	x					
7	x					SAILING

```
4
5          xx
6        xxxx
7        xxxx
.      xxxxxx
.      xxxxxx
.      xxxxxx
```

==========

Teacher: Tony Failes, 10 years experience, owns own yacht

No of students: 24

Period length: 40 mins

Periods / wk: 5

2.5 Year 11 Programme

Semester 1

Unit 1 Navigation & Communications	Weeks 1 - 10
Unit 2 Sailing	Weeks 11 - 19
Ocean Voyage/Work Experience	Week 20

By the end of Semester 1, students should be able to crew on the "Ocean Venturer" for 5 days/nights or be able to participitate in Work Experience in the Maritime industry and be able to demonstrate prior to that voyage/work experience

(a) Basic seamanship skills
(b) Sound Knowledge of Boats
(c) Sound Navigation skills and
(d) Competance in using Marine Radios

The aim of Week 20 is to allow students the opportunity to demonstrate to the Marine Community the skills they have/have not learned...A type of diagnostic self evaluation.

Many students soon realise that they have still much to learn and are humbled by the un-predictibility and shear force of the Marine Environment.

Semester 2

Unit 3 Boating	Weeks 1 - 10
Unit 4 Sea Survival/Diving	Weeks 11 - 20

Hopefully, the students now realise that they have a lot more to learn and need certification. The aim of this Semester is to make them qualified.

In Unit 3 they obtain their Speed boat drivers licence and ski Licence as well as try out for one or two of the following certificates:

AUWF SCUBA certificates/AYF yachting certificates/SLSA Surf Bronze medallian/ Telecom limited operators Radio licence

2.6 YEAR 12 Programme

Semester 1

Unit 5 Marine Technology	Weeks 1 - 10
Unit 6 Maritime History	Weeks 11 - 14
Unit 7 Marine Management	Weeks 15 - 18

Semester 2

Unit 8 Ocean studies	Weeks 1 - 10
Unit 9 Excursion	Weeks 11 - 20

By the end of year 12 students should be fully self suffivient in Marine Studies and be capable of self survival on a deserted island somewhere in the Pacific. [North West]

Students will be given the opportunity to perform their skills in this part of the course in the last week of term 3.

2.7 Exit Statement

* has completed a course of study in Marine Studies at our school and has obtained the following certificates/licences/awards

Speed Boat Drivers Licence
SLSA Surf Bronze Medallion
SLSA Advanced Resuscitation Certificate
SLSA IRB Rescue Boat certificate
SLSA Instructors certificate
SLSA Examiners Certificate
AUWF PADI Diving Certificate
AUWF FAUI Diving Certificate
AUWF Snorkeling Certificate
Telecom Limited Radio Operators Certificate

AYF Elementary certificate TL1
AYF Intermediate Certificate TL1
AYF Assistant Instructors Certificate TL1
AYF Instructors Certificate TL1
AYF Sailing Masters Certificate TL1
AYF Grade 1,2,3 Racing Certificate TL2
AYF Class Coach Certificate
AYF Club Coach Certificate
AYF Powerboat handling Certificate TL3
AYF Rescue Boat handling Certificate TL3
AYF Introductory Day Skipper Certificate TL4
AYF Day Skipper Practical Course TL4
AYF Yatchmaster Offshore Practical Sailing Certificate TL4
AYF Introductory Race (Sail/Power) Certificate TL5
AYF Yachhmasters Ocean Theory (Sail/Power) Certificate
AYF Yachtmasters Offshore Theory (Sail/Power) Certificate

* has also gained a statement of attendenance/attainment in the TAFESEC course (CN 650 Introductory Course to seagoing personnel) and finally

* has also achieved a *** (Very High/High/Sound/Limited/Very Limited) level of achievement as demonstrated by an overall percentage of %%% in the school testing programme.

2.8 The Building and equipment resources

(i) A few words about the building

1. Our Marine Studies building is at last complete with internal modifications to be made in the next 5 months.

2. We have to yet decide how to best use the building but part of the use has been set aside for Marine Studies classes.

3. There is a classroom which doubles as a workshop/navigation/radio room at present. When the extensions are complete in 86 we should have additional teaching space.

4. The building was built for $25,000 for Marine Studies students who needed a classroom in which you could start motors, clean fish, make radio calls, learn home welding, fibreglass surfboards, spread charts out to navigate on so what is see is what you get for that money with that philosophy in mind. There are no lights, and the students will get wet if the roll-a-doors are down. Also there will be people working in the workshop starting motors, and flushing engines. It will be an interresting educational experience.

(ii) Equipment resources

It has taken many years of hard work to purchase the gear. We have one rule which all students are adhere to:

"Don't cost us money"

The following is the equipment available to Multistrand Science Teachers

Unit 1: Navigation and Marine Communicatons.
---
14 sets parallel rules/ dividers/ Moreton bay charts/
As many hypothetical bay charts as you need
12 Davis handbearing compasses
2 Moran Mini compasses
1 Pair binoculars
2 Marine Radios with aerials

Unit 2: Sailing

At present we are borrowing the Robina Sailing Club boats.
Contact is Phil Knight. (Merrimac SHS)

Unit 3: Boating
---

5 10ft Stessl boats and safety gear
5 Mariner outboards and tanks
1 Dehavilin 12ft old boat
1 Johnson 25 hp outboard motor
1 Mariner 25 hp outboard motor
1 ZED inflatable boat
1 Trailer to fit above
1 Ford Falcon Utility to move above
Logistical support to move gear(Refer to Marine Studies Infrastructure booklet appendixed)

Unit 4: Snorkeling
---

24 sets face masks/ snorkels/ flippers
22 sets wet suits
6 storage crates for above
Phys Ed has a model ear (?) Demonstration Manikin
First Aid kit for dangerous Marine Animals
Underwater Boards
Underwater Paper for student worksheets

Unit 5: Marine Technology
---
5 sets water sampling bottles
5 sets secchi discs
1 set fishing gear

Unit 6: Maritime History

No resources at this stage

Unit 7: Marine Management
---

2 Marine aquariums stocked with reef fish

Unit 8: Ocean and Coastal Studies

None at this stage

Unit 9: Excursion
---

22 Sets	Tents
6 sets	Camp stove systems
12	Eskeys
8	BBQ plates
4	tarpaulins
various	Camping equipment

2.9 Text Resources

Text resources are varied. There are notes, books and photocopied articles. None of which are to be kept by students because of the timew and effort that has gone into developing the units. If we keep our units, then we can buy more equipment.

The following is the stock list as per date of publication:

Unit 1 Navigation and Communications
---

30 sets	STAQ Notes Unit 1 Navigation
30 sets	Navigation and Marine Communication Readers which contain the Telecom OEC Notes (for what they are worth) and the Southport AIR SEA RESCUE Notes (Which are quite good) and Chapter 1 of Togills out of print book on Navigation equipment.

Unit 2 Snorkeling and Diving
---

30 sets	STAQ Notes Snorkeling
30 sets	Gold Coast Underwater federation notes on SCUBA Diving Science

Unit 3 Sailing

None purshased as yet

Unit 4 Boating
---

30 sets	Introduction to Boating
1 copy	Small ships manual
1 copy	Tide tables

Unit 5 Marine Technology
---

30 sets STAQ Field Methods

Unit 6 Marine History

None purchased yet

Unit 7 Marine Management
---

60 sets Reef Ed Notes
Various Unesco Reef Notes Fiji
25 Books The Great Barrier Reef Bennett, (Held In Library)
Variuos Photocopied articles
60 sets Marine Ecology Thurman & Webber
7a. The Marine Environment Ch 6
7b. Marine Organisms Chs 8,9 & 10

Unit 8 Ocean/ Coastal Studies
---

30 sets Oceanography FUSE booklets
Various Photocopied articles from oceanography texts
30 sets HMSS Unit on Transportation

2.10Videos

Note: We are going to make single topic videos this year so be prepared to have your lesson recorded for posterity and sale.

Unit on Sea Survival
---

1. Surf Survival Aust Surflifesaving Assoc
2. Simple Harmonic Motion cut
3. Crystals and their structures cut

Unit on Ocean Studies
---

1. The living planet, " The Oceans"
2. Film, "Plankton and the open sea"
3. The living Planet," The coastal zone"
4. The living planet #1,"Continental Drift"
5. The living Planet,"The oceans" Beginning of and end of.

Unit on Marine Technology

1. Film Plankton and the open sea.

Unit on Marine Management

1. The great barrier reef: State affair tape
2. Beach Protection Authority Videos on:
   (a) Noosa Beach Restoration,
   (b) The great Dune Show,
   (c) Kirra Point Groyne Restoration,
   (d) They can be saved.

3. Syllabus match

SYLLABUS CODE	Unit Code
A. NAVIGATION	1. Navigation and Communications
B. BOATING	2. Sailing
C. SWIMMING AND DIVING	3. Boating & Licence
D. COMMERCIAL AND RECREATIONAL FISHING	4. Sea Survival/Diving
E. MARINE TECHNOLOGY AND RESEARCH	5. Marine Technology
F. MARINE RESOURCES, VALUE AND MANAGEMENT	6. Marine History
G. MARINE HISTORY	7. Marine Management
H. COASTAL STUDIES	8. Ocean/Coastal Studies
I. THE OCEAN	9. Excursion
J. BOATLICENCE AND EXCURSION	

SUMMARY OF TIME UNIT TOPIC MATCH

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	TOTAL
A	30									30
B		15	15							30
C			30							30
D				15						15
E				15						15
F										
G										
H										
I										
TOTALS										

4. Learning experiences

Because our school is new, our resources are continually being updated and expanded. At present we are building a Marine Centre in the school which, has

a roof and is now at the lock up stage. The learning experiences for the children will be constantly changing while setting up the course.

Learning experiences are designed to maximise the hands on concept, which in the past has shown to help most students achieve at the sound level. Some of these are listed below:

Teacher directed lessons, small group work, Giving seminars, watching videos, films and audiovisual, snorkeling in the pool and tweed river, operating a power boat in the canals, siling on small boats and large, camping in isolated wilderness areas, snorkeling on remote reefs, navigating on moreton bay, working in a workshop to inspect and operate small motors and repairing surfboards.

5. Assessment Programme

(a) Supervised exams and assignments

Code	Name	When	Unit	Time	School Marks	Weight
YEAR 11						
T1	Test 1	Midsem I	1	60 mins	60	5%
T2	Test 2	Endsem I	1&2	90 mins	90	10%
T3	Test 3	Midsem II	3or4	60 mins	60	5%
T4	Test 4	Endsem II	3&4	90 mins	90	20%
YEAR 12						
T5	Test 5	Midsem III	5,6	60 mins	60	10%
T6	Test 6	Endsem III	5-7	90 mins	90	20%
T7	Test 7	Midsem IV	8	60 mins	60	10%
T8	Test 8	Endsem IV	9	120 mins	60	10%
Prac Exam		Endsem IV	9	20 mins	40	10%

(b) Skills

During the course students will be required to complete the following skills tests:

1. Navigation
2. Snorkeling
3. Radio
4. Knotts
5. Boating
6. Lab technique
7. Field technique
8. Camping and boating

Students will be rated on a satisfactory/unsatisfactory basis.

Notes

(a) All tests will be closed book and supervised
(b) Mid semester tests are to be based on that half of semester work
(c) The end of semester test will be based on the whole of semester work.
(d) As a general rule the tests over the two years will sample the objectives in the ratio

Content 40%
Process 20%
Skills 40%

(e) Simple processes refer to those that require a limited number of steps and which are closely related to the learning experience of the student.
(f) Higher process refer to those more complicated operations which involve a number of steps and include novel situations.

6. Determining the levels of achievement

UNDER REVIEW;

THIS MAY CHANGE, AS PERFORMANCE TESTS ARE WRITTEN. IT IS NOT A TRUE REFLECTION OF THE PHILOSOPHY OF THE COURSE.

DRAFT STATEMENT ONLY;

(a) Marks for the 2 years will be added according to the weights shown above to obtain an overall %. A profile over the two years work shall be computed for each student and shown as a percent. The exit level of achievement shall be based on the following criteria when considering both the profile and the added weighted scores:

Very High Achievement	VHA	>80+/-X % in the overall testing programme
High Achievement	HA	>65+/-X % in the overall testing programme
Sound Achievement	SA	>45+/-X % in the overall testing programme
Limited Achievement	LA	>25+/-X % in the overall testing programme
Very Limited Achievement	VLA	<25+/-X % in the overall testing programme

NOTE;

(a) The final judgement shall be at the discretion of the school, and factors such as successfully completing set tasks on time, bookwork, homework, and standards of assignment work shall be used in the final analysis of students who fall into the borderline category.

(b) The opportunity for the student to improve has been allowed for in the assessment programme as follows:

(i) The midsemester tests have been given less value
(ii) The end semester tests are set on the whole semesters work
(iii) Each semester will be regarded as a separate unit
(iv) The ratio of marks from yr 11 to yr 12 is 40 to 60
(v) Skills are not tested till Semester IV.

AGAIN THIS IS NOT WHAT WE ARE REALLY ABOUT AND IS ONLY TO BE USED TO FALL BACK ON SHOULD THINGS NOT GO TO PLAN.

7. Criteria for levels of achievement

Very High Achievement	VHA	>80+/-X % in the overall testing programme
High Achievement	HA	>65+/-X % in the overall testing programme
Sound Achievement	SA	>45+/-X % in the overall testing programme
Limited Achievement	LA	>25+/-X % in the overall testing programme
Very Limited Achievement	VLA	<25+/-X % in the overall testing programme

Students will also receive a comment on their overall practical skills as indicated in the exit criteria.

8. School Reports

At the end of Grade 12 each student will receive a school report card with an exit level statement in one of the following levels:

NOTE: The computer will insert the students name for *

(i) Very High Achievement

* has demonstrated a very high level of understanding of all aspects of the course as demonstrated by an achievement of more than 80% in the testing programme over two years and uses marine equipment with skill and care.

(ii) High Achievement

* has demonstrated a high level of understanding of all aspects of this course with less emphasis on the higher processes as demonstrated by an achievement of more than 65% in the testing programme over the two years and has reached a satisfactory standard in using marine equipment.

(iii) Sound Achievement

* has demonstrated a sound level of understanding of various aspects of the course with a decreased emphasis on the simple as well as the higher processes as demonstrated by an achievement of more than 45% in the testing

programme and has reached a satisfactory standard in using marine equipment.

(iv) Limited Achievement

* has demonstrated some understanding of the course material, in particular in the Content and Simple Process objectives as demonstrated by an achievement of more than 25% in the testing programme and has reached a satisfactory standard in using marine equipment.

OR * has demonstrated some understanding of the course material, in particular in the Content and Simple Process objectives as demonstrated by an achievement of more than 25% in the testing programme but has not reached a satisfactory standard in using marine equipment

(v) Very Limited Achievement

* has a very limited understanding of the course material as demonstrated by a achievement of less than 25% in the testing programme over the two years but has reached a satisfactory standard in using marine equipment and equipment.

OR * has a very limited understanding of the course material as demonstrated by an achievement of less than 25% in the testing programme over the two years and has failed to reach a satisfactory standard in using marine equipment.

To issue the school report card a computer sheet will be used as follows

(i) Very High Achiever COMMENT ABC

1. A * has demonstrated a very high level of understanding of all aspects of the course
2 B ! as demonstrated by an achievement of more than 80% in the testing programme over two years
3 C ! and uses marine equipment with skill and care.

(ii) High Achiever COMMENT DEFG

4. D * has demonstrated a high level of understanding of all aspects of this course
5. E ! with less emphasis on the higher processes as demonstrated by an achievement
6. F ! of more than 65% in the testing programme over the two years and
7. G ! has reached a satisfactory standard in using marine equipment.

(iii) Sound Achiever COMMENT HIJK

8. H * has demonstrated a sound level of understanding of various aspects of the course
9. I ! with a decreased emphasis on the simple as well as the higher processes
10. J ! as demonstrated by an achievement of more than 45% in the testing programme and
11 K ! has reached a satisfactory standard in using marine equipment.

(iv) Limited Achievement COMMENT LMNO OR LMNP

12 L * has demonstrated some understanding of the course material, in particular
13 M ! in the Content and Simple Process objectives as demonstrated by an achievement
14 N ! of more than 25% in the testing programme
15 O ! and has reached a satisfactory in using marine equipment.
16 P ! but has not reached a satisfactory standard in using marine equipment

(v) Very Limited Achievement COMMENT QRS OR QRT

17 Q * has a very limited understanding of the course material as demonstrated
18 R ! by an achievement of less than 25% in the testing programme over the two years
19 S ! and has failed to reach a satisfactory level in using marine equipment.
20 T ! but has reached a satisfactory standard in using marine equipment.

---

add these if you wish.

21 U * is inconsitent in completing written tasks on time

22 V * is often late in completing tasks.

23 W spare

24 X spare

25 Y spare

26 Z spare

9. Certificate information

Information for end of course school certificate.
This course provides a basic knowledge for people with little or no knowledge about the sea to enable them to become more useful users of the marine environment.
Four topics are studied over the four semesters:

NAVIGATION AND MARINE COMMUNICATIONS

This topic introduces students to coastal navigation and teaches the skills necessary to navigate Moreton Bay and The Broardwater on the

Gold Coast. Associated with the unit is a course on the 27mhz band radio which is used by the local boating fraternity and the volunteer coast guard and air sea rescue organisations. Students are introduced to these accociations and are encouraged to participitate when they leave school. Small ships forecating and an introduction to radar are also taught.

SNORKELING AND DIVING

Students are introduced to both snorkeling and SCUBA and the associated physiology knowledge that each demands. Students also learn technique and are required to reach a high level of physical fittness.

BOATING

Students become proficient in using small aluminium dingies. They are taught small motor maintenance to a level required by the harbours and marine speedboat drivers examination. Trailer maintenance and small motor repairs are also taught as well as boat ramp proceedures.

FISHING

Students learn the basics of the fishing industry as well as practical fishing skills. Knowledge of the technology associated with the industry is required as well as knowledge of the maintenance and management of gear. Cooking and preparation of fish species is taught.

CERTIFIN

end of part A

MULTISTRAND SC.
WORKBOOK

B E N O W A S T A T E H I G H S C H O O L
A School that Strives and Cares

MULTISTRAND SCIENCE WORKBOOK 1985

CONTENTS Page

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APRIL 1985

DRAFT only

1. Global aims and objectives

As this document has been prepared from the "draft Multistrand Science syllabus", the philosophy contained within that document has formed the basis for this more detailed course of study. Hence the global aims and objectives should be read as an appendix to this course of study.

The major thrust for this document is towards a more relevant science course for our senior science students and is designed around a theme. Because of its close proximity to the sea and coastal zone the theme our school has chosen relates to this fact. The eight units developed all are related to the marine environment.

2. Course information

(a) Units (5 x 40 minute periods)

Notes: Most units are 8 weeks long

YEAR 11

Unit 1 Navigation, Marine Communications and transportation.

Unit 2 The Science of diving/fishing

Unit 3 Coastal Physics and engineering

Unit 4 Coastal Biology

YEAR 12

Unit 5 Physical properties of seawater.

Unit 6 Chemical properties of seawater

Unit 7 Reef Ecology

Unit 8 Oceanography

(b) Classes, Units and Organisation

YEAR 11

In the student study guide booklet appendixed, is a philosophy behind each of

the following booklets. It i advised that you peruse thesse documents before reading on.....

SEMESTER ONE

UNIT 1

1a. Navigation	Weeks 1 - 6
1b. Marine Communications & Transportation	Weeks 7 - 9

UNIT 2

Diving and Snorkeling	Weeks 1 - 9

Notes:
---

1. There are 4 classes on one line this year with 1 class on a separate line. So that resources can be maximised and teachers can specialise in their fields of experise the four classes timetabled at once will operate as follows:

(a) Two classes study Unit 1 and 2 classes study Unit 2 for 10 weeks. A mid Semester test will be given after 10 weeks.
(b) After the test, the students swap teachers to receive instruction from the specialist teachers

2. The teacher "off line" may start at Unit 1 or 2 but must have finished both by the end of Semester and use the same Mid Semester test as the other specialist teachers.

3.It is hoped also that agreement can be reached so that students may go back to their Term 3 teacher for a few lessons to "Brush up" basic concepts before the end of Semester examination.

4. Navigating and Snorkeling skills are to be tested by a checklist at the end of the Semester after students have had sufficient time to practice the skills. If insufficient time has been allowed due to time lost etc. then some attempt to test the skills must be made but students who rate unsatisfactory should not have this held against them. This must be a group decision agreed to by all.

5. Practical Sessions have been arranged for a double on a Monday afternoon so that students can walk to the pool for snorkeling. A day has been set aside for students to practice their Open water snorkeling and if students are ready they may be Checklist - tested on this day. On the same day Navigation students will go to Moreton Bay to practice their Skills. If some students are ready for checklist - testing then they may be tested.

6. For information relating to Marine Excursions and Checklist - Testing, refer to the booklets appendixed.

SEMESTER 2

A similar arrangement is to be agreed to for Semester 2, with the four teachers "On Line" to specialise and to swap students at the end of Term 3. It is hoped also that agreement can be reached so that students may go back to their Term 3 teacher for a few lessons to "Brush up" basic concepts before the end of Semester examination.

UNIT 3

Marine Biology — Weeks 1 - 9

UNIT 4

Coastal Physics — Weeks 1 - 9

Notes:

1. It may be possible to run excursions in each of the units:

2. A, "Hastings Point Revisited" excursion would tie in nicely with what basic concepts learnt in Grade 9 with the year 11 work. Also it would allow the students to practice their Snorkeling skills while undertaking individual study projects. I would envisage a overnight camp where all students can undertake individual projects. It would have to run into or off a weekend because the camp would have to be repeated for the other group in the other term. Alternatively a single day trip is possible.

3. Similarily, a "Beach Protection Authority " camp would be relevant to the students who study Unit 4. Camp Currigee on Stradbroke Is is ideal with showers, campsites and easy acces to the Beach and the Beach Protection Authority Research site. Again if a camp was organised then it would have to run into of off of a weekend. Alternatively a single day trip is possible.

YEAR 12

This year we have 2 classes on at the same time and we are operating a similar programme as in year 11.

The programme is highly experimental because of the rapid development of newely aquired resources and funding. Also this year we are trialling sets of curriculum material developed in Hawaii and attempting to modify them to Queensland conditions. We found that this is difficult and have modified our ideas considerably.

SEMESTER 1

UNIT 6

The Chemical properties of seawater. Weeks 1 - 9

UNIT 8

Oceanography Weeks 1 - 9

SEMESTER 2

UNIT 5

Physical properties of seawater ½ Weeks 1 - 7

UNIT 7

Reef Ecology Weeks 1 - 7

Note:
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1. Semester 2 is always short for Year 12
2. In 1986 I wish to run the Barrier Reef trip at the end of term 3 for all Grade 12 students as well as the Multistrand Science Students. It is designed as an experience for the students who deserve it and I wish to build it into the overall school Philosophy as such. Eg: Could be a reward for homestead co-ordinators, school captains etc.

(c) Building and equipment resources

(i) A few words about the building
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1. Our Marine Studies building is at last complete with internal modifications to be made in the next 5 months.

2. We have to yet decide how to best use the building but part of the use has been set aside for Multistrand Science classes.

3. There is a classroom which doubles as a workshop/navigation/radio room at present. When the extensions are complete in 86 we should have additional teaching space.

4. The building was built for $25,000 for Marine Studies students who needed a classroom in which you could start motors, clean fish, make radio calls, learn home welding, fibreglass surfboards, spread charts out to navigate on so what

is see is what you get for that money with that philosophy in mind. There are no lights, and the students will get wet if the roll-a-doors are down. Also there will be people working in the workshop starting motors, and flushing engines. It will be an interresting educational experience.

(ii) Equipment resources

It has taken many years of hard work to purchase the gear. We have one rule which all students are adhere to:

"Don't cost us money"

The following is the equipment available to Multistrand Science Teachers

Unit 1: Navigation and Marine Communicatons

14 sets parallel rules/ dividers/ Moreton bay charts/
As many hypothetical bay charts as you need
12 Davis handbearing compasses
2 Moran Mini compasses
1 Pair binoculars
2 Marine Radios with aerials

Unit 2: Snorkeling

24 sets face masks/ snorkels/ flippers
22 sets wet suits
6 storage crates for above
Phys Ed has a model ear (?) Demonstration Manikin
First Aid kit for dangerous Marine Animals
Underwater Boards
Underwater Paper for student worksheets

Unit 3: Coastal Physics and Engineering

4 ASEP stream trays and sand

Unit 4: Marine Biology

8 sets Dissecting equipment/ trays/ boards
16 Junior School Microscopes
2 sets Plankton samples
2 PLankton nets
Sets of Plastic embedded Marine Specimens
2 Marine Aquariums

Unit 5: Chemical Properties of Seawater

8 sets burettes stands and glassware

5 sets water sampling bottles
5 sets secchi discs
5 10ft Stessl boats and safety gear
5 Mariner outboards and tanks
Logistical support to move gear(Refer to Marine Studies Infrastructure booklet appendixed)

Unit 6: Physical Properties of Sea Water

8 sets of scientific glassware and equipment

Unit 7: Reef Ecology

2 Marine aquariums stocked with reef fish

Unit 8: Oceanography

1 set cardboard cutouts
8 sets squers and oranges

(d) Text Resources

Text resources are varied. There are notes, books and photocopied articles. None of which are to be kept by students because of the timew and effort that has gone into developing the units. If we keep our units, then we can buy more equipment.

The following is the stick list as per date of publication:

Unit 1 Navigation and Communications

120 sets	STAQ Notes Unit 1 Navigation
120 sets	Navigation and Marine Communication Readers which contain the Telecom OEC Notes (for what they are worth) and the Southport AIR SEA RESCUE Notes (Which are quite good) and Chapter 1 of Togills out of print book on Navigation equipment.

Unit 2 Snorkeling and Diving

120 sets	STAQ Notes Snorkeling
120 sets	Gold Coast Underwater federation notes on SCUBA Diving Science

Unit 3 Coastal Physics

120 sets STAQ Notes Coastal Physics
120 sets HMSS Notes Hawaii Fluid Earth (Ch 3. Waves & Beaches pps 83-127)
Various Photocopied notes from beach protection authority,
Various Photocopied notes from Fundamentals of Physics
Various Tides Notes:VIMS Marine Studies Centre Booklet on Tides

Unit 4 Marine Biology
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120 sets STAQ Notes Coastal Biology
Various Photocopied articles Below High Water, Rocky shore ecology
Various HMSS Living Ocean Hawaii Photocopied articles

Unit 5 Chemical Properties of Sea Water
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60 sets STAQ Notes " Estuarine Chemistry"
60 sets STAQ Notes " Field Methods"
60 sets HMSS Notes Fluid Earth Notes Hawaii

Unit 6 Physical Properties of Sea Water
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60 sets Fluid Earth Notes Hawaii
60 sets Ch 2 HMSS Physical Properties of Sea Water
60 sets Ch 5. HMSS Booklet on Transportation from "The fluid earth" pps183-213.

Unit 7 Reef Ecology
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60 sets Reef Ed Notes
Various Unesco Reef Notes Fiji
25 Books The Great Barrier Reef Bennett, (Held In Library)
Variuos Photocopied articles
60 sets Marine Ecology Thurman & Webber
7a. The Marine Environment Ch 6
7b. Marine Organisms Chs 8,9 & 10

Unit 8 Oceanography
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30 sets Oceanography FUSE booklets
Various Photocopied articles from oceanography texts
60 sets Oceanography Booklet Containing the following sections
Prologue Thurman & Webber, " The History & Scope of Oceanography
Ch 1 Thurman & Webber The Geological setting of the Oceans
Ch 3 Thurman & Webber The Ocean floor
Ch 1 HMSS The Earth and Ocean Basins
CSIRO Notes on Ocean Currents

Ocean Notes on Currents John Noy

(e) Videos

Note: We are going to make single topic videos this year so be prepared to have your lesson recorded for posterity and sale.

Unit 3 Coastal Physics

1. Surf Survival Aust Surflifesaving Assoc
2. Simple Harmonic Motion cut
3. Crystals and their structures cut
4. Beach Protection Authority Videos on:
   (a) Noosa Beach Restoration,
   (b) The great Dune Show,
   (c) Kirra Point Groyne Restoration,
   (d) They can be saved.

Unit 4 Marine Biology

1. The living planet, " The Oceans"
2. Film, "Plankton and the open sea"
3. The living Planet," The coastal zone"

Unit 5 Chemical Properties of Sea Water

1. Film: 35mm Plankton and the open sea

Unit 7 Reef Ecology

1. The great barrier reef: State affair tape

Unit 8 Oceanography

1. The living planet #1 "Continental Drift"
2. The living Planet,"The oceans" Beginning of and end of.

3. Syllabus match

SYLLABUS CODE

A. The nature of science	30hrs
B. Science technology & society	30hrs
C. Man resources & environment	25hrs
D. Personal health	30hrs
E. Science for recreation	15hrs
F. Ecology	25hrs
G. Atmospheric environment	30hrs
H. Energy	30hrs
I. Matter and Materials	25hrs

UNIT CODE all units are studied for 30hrs

1. Navigation & marine communications
2. The science of diving
3. Coastal physics
4. Coastal biology
5. Physical properties of seawater
6. Chemical properties of seawater
7. Reef ecology
8. Oceanography

SUMMARY OF TIME UNIT TOPIC MATCH

Note: C = Core time; O = Option time.

	NAVIG		DIVING		C PHYS		M BIOL		E.CHEM		F.ERTH		REEFEC		OCEOG		
	Unit1		Unit 2		Unit 3		Unit 4		Unit 5		Unit 6		Unit 7		Unit 8		Totals
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C O
A	-	-	5	-	-	-	-	-	5	5	5	5	5	-	-	-	20 10
B	-	-	-	-	-	-	10	5	10	5	-	-	-	-	-	-	20 10
C	-	-	-	-	10	10	-	-	-	-	-	-	-		5	-	15 10
D	-	-	10	5	-	-	-	-	-	-	-	-	5	5	-	5	15 15
E	5	-	5	5	-	-	-	-	-	-	-	-	-	-	-	-	10 5
F	-	-	-	-	-	-	10	5	-	-	-	-	5	-	-	5	15 10
G	10	10	-	-	-	-	-	-	-	-	10	-	-	-	-	-	20 10
H	5	-	-	-	10	-	-	-	-	-	-	-	-	5	10	-	25 5
I	-	-	-	-	-	-	-	-	-	5	10	-	-	5	-	5	10 15
Sub Total	20	10	20	10	20	10	20	10	15	15	25	5	15	15	15	15	150 90
TOTAL	30		30		30		30		30		30		30		30		240

4. Learning experiences

Because our school is new, our resources are continually being updated and expanded. At present we have built out of school and departmental funds ther shell of a Marine Centre in the school which, when completed, will become the centre for the course. During the year additions will be made by the students to the inside of the building which will mean units may vary depending on the evolutionary nature of the resources. The learning experiences for the children will be constantly changing while setting up the course.

Learning experiences are designed to maximise the hands on concept, which in the past has shown to help most students achieve to the sound level. Some of these are listed below:

Teacher directed lessons, small group work, laboratory and practical work using scientific apparatus, Giving seminars, watching videos, films and audiovisual, snorkeling in a pool and river, operating power boats in canals, camping in isolated wilderness areas, snorkeling on remote reefs, navigating in bays and sheltered waterways, working in a workshop to inspect and operate small motors and repairing surf craft, swimming in the sea and using surfcraft in the sea.

5. Assessment Programme

Most tests are on computer and can be easily accessed by use of the Bankstreet Witer programme. See the teacher in charge for further information and copies of tests.

(a) Supervised exams and assignments

Code	Name	When	Unit	Time	School Marks	Weight
YEAR 11						
T1	Test 1	Midsem I	1	60 mins	60	5%
T2	Test 2	Endsem I	1&2	90 mins	90	10%
T3	Test 3	Midsem II	3or4	60 mins	60	5%
T4	Test 4	Endsem II	3&4	90 mins	90	20%
YEAR 12						
T5	Test 5	Midsem III	5	60 mins	60	10%
T6	Test 6	Endsem III	5&6	90 mins	90	20%
T7	Test 7	Midsem IV	7	60 mins	60	10%
T8	Test 8	Endsem IV	8	90 mins	60	10%
Prac Exam		Endsem IV	1-8	20 mins	40	10%

(b) Skills

During the course students will be required to complete the following skills tests:

1. Navigation
2. Snorkeling
3. Radio
4. Knotts
5. Boating
6. Lab technique
7. Field technique

Students will be rated on a satisfactory/unsatisfactory basis.

In addition a practical exam will be given at the end of semester IV which will count in the exit formula.

Notes

(a) All tests will be closed book and supervised
(b) Mid semester tests are to be based on that half of semester work
(c) The end of semester test will be based on the whole of semester work.
(d) As a general rule the tests over the two years will sample the objectives in the ratio

Content 40%
Process 30%
Highter Process 30%

(e) Simple processes refer to those that require a limited number of steps and which are closely related to the learning experience of the student.
(f) Higher process refer to those more complicated operations which involve a number of steps and include novel situations.

6. Determining the levels of achievement

(a) Marks for the 2 years will be added acording to the weights shown above to obtain an overall %. A profile over the two years work shall be computed for each student and shown as a percent. The exit level of achievement shall be based on the following criteria when considering both the profile and the added weighted scores:

Very High Achievement	VHA	>80+/-X % in the overall testing programme
High Achievement	HA	>65+/-X % in the overall testing programme
Sound Achievement	SA	>45+/-X % in the overall testing programme
Limited Achievement	LA	>25+/-X % in the overall testing programme
Very Limited Achievement	VLA	<25+/-X % in the overall testing programme

NOTE;

(a) The final judgement shall be at the discretion of the school, and factors such as successfully completing set tasks on time, bookwork, homework, and standards of assignment work shall be used in the final analysis of students who fall into the borderline category.

(b) The opportunity for the student to improve has been allowed for in the assessment programme as follows:

(i) The midsemester tests have been given less value
(ii) The end semester tests are set on the whole semesters work
(iii) Each semester will be regarded as a separate unit
(iv) The ratio of marks from yr 11 to yr 12 is 40 to 60
(v) Skills are not tested till Semester IV.

7. Criteria for levels of achievement

Very High Achievement	VHA	>80+/-X % in the overall testing programme
High Achievement	HA	>65+/-X % in the overall testing programme
Sound Achievement	SA	>45+/-X % in the overall testing programme
Limited Achievement	LA	>25+/-X % in the overall testing programme
Very Limited Achievement	VLA	<25+/-X % in the overall testing programme

Students will also receive a comment on their overall practical skills as indicated in the exit criteria.

8. School Reports

At the end of Grade 12 each student will receive a school report card with an exit level statement in one of the following levels:

NOTE: The computer will insert the students name for *

(i) Very High Achievement

* has demonstrated a very high level of understanding of all aspects of the course as demonstrated by an achievement of more than 80% in the testing programme over two years and uses scientific apparatus with skill and care.

(ii) High Achievement

* has demonstrated a high level of understanding of all aspects of this course with less emphasis on the higher processes as demonstrated by an achievement of more than 65% in the testing programme over the two years and has reached a satisfactory standard in using scientific apparatus.

(iii) Sound Achievement

* has demonstrated a sound level of understanding of various aspects of the course with a decreased emphasis on the simple as well as the higher processes as demonstrated by an achievement of more than 45% in the testing programme and has reached a satisfactory standard in using scientific apparatus.

(iv) Limited Achievement

* has demonstrated some understanding of the course material, in particular in the Content and Simple Process objectives as demonstrated by an achievement of more than 25% in the testing programme and has reached a satisfactory standard in using scientific apparatus.

OR * has demonstrated some understanding of the course material, in particular in the Content and Simple Process objectives as demonstrated by an achievement of more than 25% in the testing programme but has not reached a satisfactory standard in using scientific apparatus

(v) Very Limited Achievement

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* has a very limited understanding of the course material as demonstrated by a achievement of less than 25% in the testing programme over the two years but has reached a satisfactory standard in using scientific apparatus and equipment.

OR * has a very limited understanding of the course material as demonstrated by an achievement of less than 25% in the testing programme over the two years and has failed to reach a satisfactory standard in using scientific apparatus.

To issue the school report card a computer sheet will be used as follows

(i) Very High Achiever COMMENT ABC

1. A * has demonstrated a very high level of understanding of all aspects of the course
2 B ! as demonstrated by an achievement of more than 80% in the testing programme over two years
3 C ! and uses scientific apparatus with skill and care.

(ii) High Achiever COMMENT DEFG

4. D * has demonstrated a high level of understanding of all aspects of this course
5. E ! with less emphasis on the higher processes as demonstrated by an achievement
6. F ! of more than 65% in the testing programme over the two years and
7. G ! has reached a satisfactory standard in using scientific apparatus.

(iii) Sound Achiever COMMENT HIJK

8. H * has demonstrated a sound level of understanding of various aspects of the course
9. I ! with a decreased emphasis on the simple as well as the higher processes
10. J ! as demonstrated by an achievement of more than 45% in the testing programme and
11 K ! has reached a satisfactory standard in using scientific apparatus.

(iv) Limited Achievement COMMENT LMNO OR LMNP

12 L * has demonstrated some understanding of the course material, in particular
13 M ! in the Content and Simple Process objectives as demonstrated by an achievement
14 N ! of more than 25% in the testing programme
15 O ! and has reached a satisfactory in using scientific apparatus.
16 P ! but has not reached a satisfactory standard in using scientific apparatus

(v) Very Limited Achievement COMMENT QRS OR QRT

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17 Q * has a very limited understanding of the course material as demonstrated
18 R ! by an achievement of less than 25% in the testing programme over the two years
19 S ! and has failed to reach a satisfactory level in using scientific apparatus.
20 T ! but has reached a satisfactory standard in using scientific apparatus.

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add these if you wish.

21 U * is inconsitent in completing written tasks on time

22 V * is often late in completing tasks.

23 W spare

24 X spare

25 Y spare

26 Z spare

To help students and parents understand the new system, a computer report will be issued at the end of each diagnostic test. As a guide the following percentages will be used to compute the levels of achievement.

In the CONTENT AREA

VHA>80% Has an very good Knowledge of laws principles and facts
HA 65% Has a good Knowledge of laws principles and facts
SA 45% Has a sound Knowledge of laws principles and facts
LA 25% Has some Knowledge of laws principles and facts
VLA<25% Has very little Knowledge of laws principles and facts

In the PROCESS AREA

VHA >80% Is very proficient in applying this Knowledge
HA 65% Is proficient in applying this Knowledge
SA 45% Is competent in applying this Knowledge
LA 25% Has difficulty in applying this Knowledge
VLA <25% Has great difficulty in applying this Knowledge

NAVIGATION SPECIFIC OBJECTIVES

B E N O W A S T A T E H I G H S C H O O L

A School that "Strives and Cares"

Grade 11 Multistrand Science

This booklet contains the specific objectives, general study outlines, study assignments, practical assessment and certification that will occur in Semester One this year.

At the end of Semster you will be examined on the whole of thia booklet and it is imperative that you keep your notes to study from, for the examination.

You will be assessed on your Navigation/Snorkelling or Assignment Skills this Semester, and these play an important role in your exit level of achievement.

UNIT 1 NAVIGATION AND MARINE COMMUNICATIONS

Sections

- Section 1: Characteristics of the coastal zone
- Section 2: Coastal Navigation
- Section 3: Practical Navigation
- Section 4: Estuarine Navigation
- Section 5: Small Ships Forecasting
- Section 6: Marine Communications

UNIT 2 THE SCIENCE OF DIVING

Sections

- Section 1: Snorkeling techniques
- Section 2: Snorkeling Physics
- Section 3: Snorkeling Physiology
- Section 4: Snorkel diver's body under stress
- Section 5: Dangerous Marine Life
- Section 6: The Open Sea and Snorkeling
- Section 7: Certification, Assignments and Practical Work

This booklet will help you pass the examinations.

Section 1A: Specific Objectives Characteristics of the Coastal Zone

All resource references notes refer to the STAQ Unit Notes on Navigation, unless otherwise specified.

	OBJECTIVE	RESOURCE
1.C	Recall the characteristics of the coastal zone nearest your school	Map of Chart of Local Area
2.C	Recall other features of the coastal zone	P 5
3.C	Define the coastal zone	P 5
4.P.	Distinguish between continental shelf and continental slope	P 6
5.P.	Give reasons for the ice ages	P 6
6.P.	Explain what happened to the seas of the world during the ice ages	P 7
7.P.	Explain how our Barrier Reef formed	P 7
8.C.S	Locate on a map the coral cays of the Capricorn Section of the Great Barrier Reef	Chart P 8
9.C.P.	Distinguish between an exposed shore and a sheltered shore, and locate and give examples of each in your local area	P 9
10.C.	State five reasons why our coastline is important	Class Discussion
11.P.	You will be expected to apply your knowledge into new situations	Study
Assignments		P 14

12.C. You will be expected to spell and know the meaning of the following words

OCEAN BASIN	CURRENTS	FRINGING REEF
BREAKERS	WAVE CUT PLATFORM	TRADE WINDS
CONTINENTAL SHELF	WAVE CUT TERRACE	CORAL CAY

Section 1 B. Navigation Equipment

All resource reference material refers to the Brisbane South Marine Studies Publication

" Marine Sience Readings: Navigation and Communication"

	OBJECTIVE	RESOURCE
1.C	Recall the uses of the Master Compasss, Handbearing compass, sextant, chronometer	P2,3
2.C	Recall the uses of the radio direction finder, depth sounder, radar, the log, charts and parallel rules	Ps 3,4,5, 7
3.C.	Recall the uses of protractors, pencils, stopwatch, dividers, log book and notice to mariners	Ps 7,8,9, 10
4.P.S	Use each of the following with precision and accuracy a. compass b. chronometer c. a log d. chart e. set of parallel rules f. pencils and ruler g. stopwatch h. dividers, log book i. notice to mariners	Class Practice with instruments and charts
5.P	You will be expected to apply your knowledge to new situations	Examination
6.C	You will be expected to spell correctly and know the meaning of the following words NAVIGATION, EQUIPMENT, COMPASS, SEXTANT CHRONOMETER, ECHO SOUNDER, THE LOG, CHART RADAR, KNOT, PARALLEL RULE, DIVIDER RADIO DIRECTION FINDER, PROTRACTOR, PUBLICATION	

Directed topics

Students will need individual practice with the instruments.
In the development of this course, funds have been limited.
Students and classes will have to share or use the wooden rules made up by Dave Watts.

Section 2: Specific Objectives Coastal Navigation

All resource references notes refer to the STAQ Unit Notes on Navigation, unless otherwise specified.

OBJECTIVE	RESOURCE
1C. Define an Estuary	P17
2C. Define Navigation	P17
3C. Recall three important Navigation instruments	Teacher Notes
4C. Define a chart and a Mercator Projection	P's 18/19
5C. Define Latitude and Longitude and locate each on a chart	P19
6SP. Perform an exercise on charting your classroom/School. At the end of this exercise you should be able to: (a) Use a protractor (b) Use a pair of set squares to substitute for parallel rules (c) Find your point in the room/school grounds by obtaining 3 bearings (d) locate N,S,E,W, by using a compass (e) compare your location with others in the room/ school grounds	P19/20
7CS Define the terms Latitude/Longitude/Nautical Mile and locate/measure on a chart	P23,24
8CPS Perform an exercise on Hypothetical Bay. As a result of this exercise you should be able to: (a) Locate chart features (b) Calculate Distance, Speed and Time (c) Plot the position on the chart (d) Calculate bearings (e) Lay off a course	P26/27
9CP Locate the compass rose on a nautical chart	P27
10CP Define and calculate Magnetic Variation	P27
11P Distinguish between the terms True and Magnetic bearing	P27
12P Perform an excercise on laying off a course. As a result of this exercise you should be able to: (a) Lay off a full course (b) Calculate ETA AND ETD of course (c) Take into consideration drift and tide	P28/29 Teacher Notes
13C Define the term soundings	P30
14CP Perform an Experiment on hypothetical bay. As a result of this experiment you should: (a) have a better understanding of soundings (b) be able to cut out cardboard so as to make a contour map of hypothetical bay (c) relate soundings to latitude and longitude	P30/31 Teacher Notes Experiment to be set up
15CP Define the region of the Continental Shelf for your local area.	P32
16CP Read an article on the history of Flinders, and the discovery of Oxley Creek	P33/34
17P You should be able to apply your knowledge into new situations	P35
18C You should be able to spell and use correctly the following words: NAVIGATION, CHART, COMPASS, ROSE, COURSE, DISTANCE, SPEED, TIME, NAUTICAL MILE, MAGNETIC, VARIATION, KNOT, SOUNDINGS, BUOYAGE, LATITUDE, LONGITUDE, ESTUARY	

All resource reference notes refer to the Brisbane South Marine Studies Publication "Marine Science Readings: Navigation and Communication"

OBJECTIVES	RESOURCE
Objectives for Excursion	MV Heritage
There are two parts:	
PART A: The Boat Group:	
Students should be able to:	
1C Locate the following on the chart of Moreton Bay (a) The Water Tower on Manly Hill (b) The chimney at Litton (c) The D'Arcy and Hybers Lights (d) The soundings around Manly (e) St. Helina Island (f) The RQYS boat Harbour at Manly	Chart of Moreton Bay These are available on board the "Heritage"
2PS Anchor at a predetermined point and locate position by using the cocked hat method	
3S Use a set of parallel rules and hand bearing compass to achieve 2 above	Parallel Rules
4S Radio bearings to a group "on shore" using the correct method	
5PS Plot a course to the Hybers light, and calculate time, Distance and Speed	Chart
6S Radio that course to the "Shore Group"	
7S Take "Running Fixes" on that course to determine position	Handbearing compass
8C Recall the type of marks on the course that relate to the cardinal and lateral systems of buoyage	
9A Realise that working at sea is slow and difficult and that great co-operation is necessary to succeed as a group.	
PART B: The "Shore Group"	
Students should be able to:	
1.C State 3 facts about Marine Radio Communications	P11
2.C Recognise the following parts on the 27mhz radio (a) Handset (b) On/Off (c) Squelch (d) Channel selector (e) Channels 88,91,94 etc (f) Fuse (g) Aerial and carry case (h) Battery and charging sockets	Kelvin will bring two 27mhz radios
3.SP Use the radio to send and receive messages. In doing so use correctly the following words (a) Romeo (b) say again (c) standy (d) affirmative (e) over (f) out	
4C. Recall the standard verbal request for a radio check	P27
5S. Perform 17 above	Students
6.C. Define the term "skip"	
7C. Recall the radio silence periods	P15

Section 4: Specific objectives: The Buoyage system

All resource references notes refer to the STAQ Unit Notes on Navigation, unless otherwise specified.

	OBJECTIVE	RESOURCE
1C.	Recall the shapes of the markers for the lateral and Cardinal systems of Buoyage	P 45
2P	Distinguish between the two systems mentioned above	Pamphlet
3C	Recall the system of pilotage when entering and leaving a port.	Buoys, Beacons, Marks
4C	Recall the shapes of all markers on a chart of the local area	P46-48
5C	Recall the simple rules for boating	Tide Book
6C	Recall the international code signals.	Tide Book
7P	Interpret the boating rules to new situations	Teacher Notes
8A	Discuss reasons for boating rules and adopt a code of behaviour on the water that is consistent with them	
9P	Given a chart, plot a safe course into a unfamilar harbour	
10P	You should be able to apply your knowledge into new situations	P49
11C	You should be able to spell and use correctly the following words:	

BUOYAGE CARDINAL LATERAL
PORT STARBOARD ISOLATED DANGER MARK

Section 5: Specific Objectives: Weather and Small Ship Forecasts

All resource reference notes refer to Science Teachers Association of Queensland Notes on Navigation.

		OBJECTIVES	RESOURCE
1.	C.	Recall the main functions of the structure of the atmosphere.	Ch 5 Navigation
2.	C.	Recall the main features of a weather map.	P54
3.	P.	Interpret the meaning of the folliwng terms in a weather map: TROUGH, FRONT, HIGH, LOW, DEPRESSION, ISOBARS, RAIN FALL, JET STREAM, MILLIBAR	P54
4.	P.	Make simple predictions from a location map e.g. cold, hot windy, humid	
5.	S.	Use a Thermometer, Barometer and Hydrometer	P55
6.	A.	Value the importance of the small ships forecast for yactsmen and the boating fraturnity in general.	
7.	C.	Recall 5 cyclone warning signals	P55
8.	C.P.	Describe some sea conditions	
9.	C.	Describe the formation, structure, movement of air associated with a cyclone.	
10.	A.	Be aware of the safety procedures to follow in a cyclone.	P56
11.	P.	You will be expected to apply the knowledge you have gained in this topic to new situations.	
12.	C.	You will be expected to spell and use correctly the following words HUMIDITY FRONT CYCLONE TROUGH MILLIBARS DEPRESSION	

DIRECTED TOPICS:

It may be worthwhile doing some simple experiments in the laboratory to demonstrate Condensation and Evaporation. Also there is a need for students to understand a barometer and some simple pressure equipment may be considered desirable.

FURTHER REFERENCEE

ASEP Weather unit is useful.

MARINE RADIO SPECIFIC OBJECTIVES

Section 6. Specific Objectives Marine Communications

All resource reference notes refer to the Brisbane South Marine Studies Publication "Marine Science Readings: Navigation and Communication"

	OBJECTIVES	RESOURCE
1.C	State 3 facts about Marine Radio Communications and explain the single side band method of operation	P11 P11
2.C	Recognise the following parts on the 27mhz radio (a) Handset (b) On/Off (c) Squelch (d) Channel selector (e) Channels 88,91,94 etc (f) Fuse (g) Aerial and carry case (h) Battery and charging sockets	Kelvin will bring two 27mhz radios
3.SP	Use the radio to send and receive messages. In doing so use correctly the following words (a) Romeo (b) say again (c) standy (d) affirmative (e) over (f) out	
4.C.	Define the term "skip"	P12
5.C.P.	Define the term Hz and explain the difference between Hz and Khz	Teachers Notes
6.P.	Explain what 27 khz means and the difference between it and other frequencies Eg: 2182	Notes P12
7.C.	List the obligations of a Marine Radio Operator	P12
8.P.	Explain the need for radio discipline, voice discipline speed and rhythm in voice proceedures	P13

The following are optional for 1985

9.P.	Write a paragraph on the radio telegram service	P14
10C.	Recall the radio silence periods	P15
11P.	Write a paragraph on the search and rescue operation of radio Your paragraph should include mention of the following	P15
	(a) Distress proceedure (b) Alarm Signal (c) Distress call and message (d) Acknowledgement (e) Termination (f) Safety Signals	P15 P16

12C	Write down the radio telephone facilities at the Southport Air Sea Rescue	P20
13P	Read the Marine Frequencies and Purposes of MF and HF	P20
14C	State a situation example verbally of a radio message	P24
15P	Discuss the situation in 14 above	P24
16C	Recall the common meanings to the following words (a) Romeo (b) say again (c) standy (d) affirmative (e) mayday (f) pan (g) securetay (h) over (i) out	P25
17C.	Recall the standard verbal request for a radio check	P27
18S.	Perform 17 above	Students to use Radio
19P	Discuss the Analysis of a variety of messages	P 28
20C	Recall the Phonetic Alphabet letters and numerals	P 29
21P	Discuss the advanced radio operators course	P 30
22P	You will be expected to apply your knowledge into new and unfamilar situations	Examination

23C You will be expected to spell and know the meaning of the following words

ALPHA	HOTEL	OSKA	SIERRA
BRAVO	INDIA	PAPA	WHISKY
CHARLIE	JULIETT	QUEBEC	YANKEE
DELTA	KILO	ROMEO	ZULU
ECHO	LIMA	TANGO	
FOXTROT	MIKE	UNIFORM	
GOLF	NOVEMBER	VICTOR	

PAN	HOW DO YOU READ	RELAY THROUGH
RELAY TO	ROMEO	SECURERITE
STANDBY	STATION CALLING	AFFIRMATIVE
BEARING	CORRECTION	MAYDAY
OUT	OUT TO YOU	

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See also Appendix

SNORKELING SPECIFIC OBJECTIVES

Section 1: Specific Objectives Diving Techniques

All resource references refer to the Gold Coast TAFE Diving Notes, "The Science of Diving"

	OBJECTIVE	RESOURCE
1C.	Recall the following basic requirements of safe snorkeling	P 6-7
2C.	Recall the golden rules of diving	P 59,68
3C.	Recall basic snorkeling gear (Wet suit, Mask, Snorkel, etc	Teacher Demo
4P.	Predict common problems that may occur with snorkeling gear	Notes
5P.	Discuss safety and general first aid proceedures	P 74
6S.	Demonstrate general first aid and safety proceedures	P 74
7C.	Recall First aid and rescue proceedures	Notes
8C.	Recall safe ways to enter and leave a boat	Notes
9P.	Predict dangerous snorkeling situations for a local area	Notes
10C.	Recall dangerous snorkeling situations caused by	
	*Currents	
	*Waves	
	*Tides	
	*Rocks and Coral	Teacher
	*Caves	Notes
11S.	Go Snorkeling in a pool. As a result of this activity students should be able to:	
	*Adjust a face mask, wet suit, snorkel, flippers	Gullivers
	*Clear ears, mask under water	Pool
	*Fin with head down for the length of a pool	Double
	*Retrieve an object from the bottom of a pool	Period
	*Talk while treading water	
	*Rescue a patient from water	
	*Write your name under water	
12P.	You should be able to apply your knowledge to new situations	Class Discussions
13C.	You should be able to spell and know the meaning of the following words:	

SNORKEL	FLIPPERS	HYPERVENTILATING
DAN BOUY	INVERTEBRATE	SIGNALLING

Section 2: Specific Objectives Snorkeling Physics

All resource references refer to the Gold Coast TAFE Diving Notes, "The Science of Diving"

OBJECTIVE	RESOURCE
1C. Explain why light travels slower in water and describe the unusual effects for diver in relation to angles, size, colours, and sound	P 12
2.CP Recall and use correctly the Units of mass, density, weight	P14
3.C Recall the standard MNE MONICS for (A) ABC (B) EAR (C) ECM,ECC (D) ECP	P15
4.C Recall the composition of the air and state its comparison with expired air	P15
5.P Discuss the difference between the pressure of Air and Water above and below the ocean	P22
6.P Graph a table of depth and pressure	P23
7.P Explain the meaning of and be able to spell correctly each of the following terms ATMOSPHERIC PRESSURE — ABSOLUTE PRESSURE WATER PRESSURE — PARTIAL PRESSURE GUAGE PRESSURE — AMBIENT PRESSURE	P 27
8.CP State and Use correctly Boyles Law	P28
9.P Explain the significance of Boyles Law for divers	P28
10P Perform simple calculations involving P1,V1 AND P2,V2	P30
11P Explain how a divers lungs will burst due to pressure	P32
12P Write a summary of Boyles Law and Diving	P33
13CP State Daltons Law and expalin how partial pressures affect a diver	P35
14P Draw a graph of the total pressure exerted by a mixture of gases related to depth	P38
15P Explain the significance of Daltons Law to Divers	P36,37
16CP State and explain the significance of Henry's Law to divers	P42

17CP	State and explain the significance of Charle's Law to divers	P43
18C	State Archimedes' Principle and how it relates to the laws of floatation	P 112
19C	Draw a diagram of a diver to illustrate the weight a diver displaces in water	P 112
20P	Answer a series of questions on Archidemes Principle	P 113 P 114
21P	You will be expected to apply your knowledge to new and unfamilar situations	Examination

22C You will be expected to spell and use correctly the following words

MASS	ATMOSPHERE	COMPOSITION
VOLUME	EXPIRED	NEWTON
DENSITY	BAROMETRIC	TORR
METRE	BARS	GUAGE
KILOGRAM	ABSOLUTE	PARTIAL
CENTIMETRE	AMBIENT	DEFINITION
PRESSURE	FORMULA	BOYLES LAW
WEIGHT	SCUBA	DALTON'S LAW
SNORKEL	NITROGEN	OXYGEN
BREATHING	CARBON DIOXIDE	HYPERVENTILATION
CIRCULATION	HENRY'S LAW	DISSOLVED
EXPIRED	SOLUBILITY	COEFFICIENT
RESUSITATION	LIQUID	CHARLE'S LAW
ARCHIMEDES' PRINCIPLE	BUOYANT	UPTHRUST

Section 3: Specific Objectives Snorkeling Physiology

All resource references refer to the Gold Coast TAFE Diving Notes, "The Science of Diving"
Another handy reference is the surflifesaving manual: Particularly the Section on Resuscitation.

THIS SECTION IS DEVELOPMENTAL AND NEEDS WORKING OVER.

OBJECTIVE	RESOURCE
1C. Recall the structures of the following organs	P52/57
*Ear, Nose and Throat	
*Teeth and lungs	Teacher
*Eustachian Tube	Notes
*Heart/Lungs schematic diagram	P45/46/48
*Digestive system	
2C. Draw a fully illustrated diagram of the Ear	Teacher Notes
3C. Draw a fully labelled diagram of the heart/lung system	
4C. Recall the chemical effects inside the body that affect cause nitrogen narcosis/skin cancer and	Teacher
5C. Recall the effects that animal toxins have on the chemical system: Jelly fish, blue ringed octopus,coral, cone shell	Notes
6P. Present arguments in support of preventitive action against skin cancer, heart attack, being stung by dangerous animals	Teacher Notes
7C. Recall and demonstrate on excursions, good health habits in relation to 6 above	
8S. You should be able to use a resuscitation manakin. As a result of this activity you should be able to:	Phys Ed Manikin
(a) Demonstrate mouth to mouth, mouth to nose	
(b) Demonstrate external cardiac compression	
(c) Identify the various parts of the manakin	
9A. Realise that snorkeling is a demanding sport and that there is a need to keep physically fit and maintain a good diet	
10A Experience the difficulties in working underwter	
11P You should be able spell and know the meaning of the words:	
PHYSIOLOGY ORGAN SKELETON LIGAMEN	
MUSCLE PELVIS PLASMA CARTILAGE	
RESPIRATION ATRIUM E.A.R E.C.C.	
EUSTACHIAN PLATLETS BRONCUS DIAPHRAM	
....	

Section 5: Specific Objectives Dangerous Marine Life

Unless otherwise stated all resource refernces refer to the Gold Coast Underwater Clubs notes on "The Science of Diving"

	OBJECTIVES	RESOURCES
1.C	List the general first aid proceedures for injuries involving dangerous marine life	P74,75,76,77
2.C	Recall the definition of Medical Aid	P78
3.C	Make up a chart of dangerous marine life	Ps78/79
4.C	List the dangerous marine life that bites or cuts and the first aid proceedures for each	P 80
5C	List the dangerous marine life that is venemous(stings) and describe the first aid for each	P 81/82/83
6P	Describe the safety precautions for	
	a. Sea snakes	P 81
	b. Cone Shells	P 81
	c. Blue ringed octopus	P 81
	d. Stonefish	P 82
	e. Butterfly Cod	P 82
	f. Stingray	P 82
	g. Crown of thorns	P 82
	h. Sea Urchin	P 82
	i. Sea wasp	P 83
	j. Portugese man of war	P 83
	K. Sea anemone	P 83
	l. Stinging hydroid, Fire Coral, Coral	P 83
	m. Sharks	
	n. Crocodiles	
	o. Killer whales	
	p. Moray Eels	
	q. Barracuda	
	r. Surgeon fish	P 80
7P	Write an assignment of 600 words on one of the marine organisms mentioned above; Discuss such things as (a) Common Marine Habitats (Facts about the life of this particular Marine organism) (b) Safety precautions when diving/snorkeling in their presence (c) the life cycle of the Marine Organism (d) Common Marine Habitats (e) Safety	
8P	You should be able to apply your knowledge to new situations	Examination

9C You should be able to spell and know the meaning of the following words

SHOCK	OXYGENATED BLOOD	ABC
EAR	ECC(ECM(	RECOMPRESSIONS
DECOMPRESSIONS	CONSTRICTIONS	TOURNIQUET
NEMATOCYST	BARRACUDA	MOLLUSC
IMMOBILIZATION	VENEMOUS	

Section 6: Specific Objectives The open sea and snorkeling

	OBJECTIVE	RESOURCE
1P.	Discuss the advantages and disadvantages of wreck diving	P 84
2P.	Discuss the safety equipment necessary for small boats going offshore in Queensland Waters	P 85
3P.	(optional) Discuss in general terms, remembering that this will be done later in the course, the importance of:	
	(a) Weather	
	(b) Tides	
	(c) Charts	
	(d) General Rules of the road	P 86
4P.	Discuss the nature of the sea itself in relation to	
	(a) The international divers flag	P 87
	(b) Preparing for a dive	
	(c) Visibility	
	(d) Tides and currents	P 88
	(e) Rough weather	
	(f) Warnings on swell conditions and tide changes	P 89
	(g) Hints on boating generally	P 90
	(h) Some additional safety rules	P 91

Note: The sections on SCUBA pp's 115-135 are not examinable. You should however read them for your own general knowledge and interest.

Section 7: Study Assignments/Certificates/Practical Examinations

Part A: Snorkeling Qualifications/Certificates

All students should endeavor to obtain the Australian National Qualification System, "Record of Diving Qualifications" book. $3.00

The standards contained in this booklet are those approved by the Australian Coaching Council for the National Coaching Accredition Scheme.

Standards in SCUBA Diving are controlled by Australian Government leglislation and if you keep this booklet and go futher with your diving you may:

(a) Purchase SCUBA Diving equipment
(b) Fill your SCUBA tank anywhere in the world from a commercial filling agent.

The examination for the snorkel diver is the same as the booklet:

Pre-requisites:

1. Age limit 10 years
2. The student must be medically fit for strenuous water sport activities.

Preliminary Swimming Test

Swim 200 metres without swimming aides and without stopping. At the end of the swim, tread water for one minute with one hand out of the water.

Theory Test

Students must satisfactorily pass a written examination on the following topics:

A. Anoxia, hyperventillation, carbon dioxide build up, exhaustion, hypothermia.
B. Safety regulations
C. Actions in emergencies
D. Equipment

Practical Tests:

All test will be conducted in open water by a qualified instructor or instructor of higher grade. Students must use a snorkel, mask and fins.

1. Demonstrate neutral buoyancy
2. Swim 15 metres underwater
3. Swim 50 metres on the surface without a mask, using a snorkel
4. Clear a flooded mask underwater
5. Swim 50 metres and dive to recover an "Unconsious ", snorkel diver lying at a depth of 3 metres.
6. Tow a patient 25 metres applying simulated expired air resuscitation and then remove the patient from the water. Continue with resuscitation and simulated external cardiac massage. Show action for vomit, and place patient in recovery(coma) position.

Part B: Study Assignments:

This could be done as an alternative to the Diving Certificate and may suit the unfit and non outdoor types who consistently have notes to avoid the snorkeling or for medical reasons cannot participite.

1. What contributions have Jacques Cousteau and James Piccard, made to a greater understanding of the underwater world ?

2. List the types of equipment that SCUBA diver use and say what each is used for.

3. What is Hyperventillation, and why is it dangerous ?

4. List the types of sunburn cream that are on the market today and make a value judgement on which types you would use.

5. Make a list of the clothing you would take on a days snorkeling.

6. Why is spear fishing a highly controlled sport ?

7. What is the observers job on a boat ? What should he/she look for ? On where should the diving flag be placed when snorklers are in the water ?

8. Why was decompression a problem for early divers ? How did staying underwater help ? How does a decompression chamber function ?

9. What is an aquanaut ? Find out about the Ammerican Aquanaut programme .

10 What is the difference between a Bathyscape and a Bathysphere ? What is their purpose and how do they work ? Outline a brief history of their development .

11 What gas mixtures do divers breathe ? Why can't they breathe pure Oxygen ?

12 How do divers communicate underwater ?

BOATING SPECIFIC OBJECTIVES

6 week Boating course DRAFT COPY

Unit Description:

This is an 8 week introductory course on the theory and practical applications of small power boats.

Unit Time:
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2 hours Practical per week and 80 minutes theory

Aims:
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1. To increase general knowledge and safety.
2. To teach elementary seamanship skills, basic boat care and general maintenance skills.
3. To have all students obtain their boat licence.

Brief Description:

Students will have boats delivered to the Broadwater on Friday afternoons for a 6-7week course in Boating.

Subject Matter:

Safety, Nautical terms, Loading, Unloading, Storage of craft, operation on still water and sea, Care and maintenance of motor, Use of Charts, Compasses and Weather Forecasts, Knowledge of rules and markers, incident and emergency proceedures, obtaining boat licence.

Weekly programme

Section	Week(s)	Details
Section 1	1	Getting started, preparing to go out.
Section 2	2/3	The outboard motor, operation and maintenance
Section 3	4/5	Out on the water by yourself, rules & regulations
Section 4	6	Pioltage theory and applications, Individual practice for your boat licence
Section 5	7	Boat Licence Exams(Theory)
Section 6	8	Boat Licence Exams(Practical)

Weekly programme (Practical Lessons)

The following breakup would be suggested and could be varied lesson by lesson as weather/conditions varied or as ability/aptitude of students was assessed.

Each lesson is designed for approx 2 hrs. This is actual time and time has not been allowed for travelling or loading and unloading boats.

WEEK 1: Students should be able to demonstrate/describe/perform:

(a) How to unload and load the trailer, Knots on the trailer
(b) How to load and unload the ute, where everything goes,
(c) The parts of the boat, where the oars are and where they stay,
(d) The parts of the outboard motor, How to attach the outboard motor and fuel tank
(e) General safety, General Rules.
(f) Unloading, Starting Up, Steering, Care and Storage.
(g) Launching, Basic Operation and Boat Handling
(h) Use of Safety Equipment, Water Survival, First Aid.
(i) Flushing of motors, cleaning of boats and loading of trailer and ute.

WEEK 2: Students should be able to demonstrate/describe/perform:

(a) Knots used on the trailer in theory lessons in class.
(b) Skills learnt from week 1: (students to demonstrate individually,)
(c) Rowing, and rescue of stranded craft, towing.

WEEK 3: Students should be able to demonstrate/describe/perform:

(a) Knowledge of the parts of the outboard motor:
(b) Knowledge of maintenance, changing a shear pin, spark plug,
(c) Skills in using (a) and (b) above individually

WEEK 4:Students should be able to demonstrate/describe/perform:

(a) Boat Handling Under Power,Anchoring, Mooring, Docking
(b) Practical Application in emergencies.

WEEK 5: Students should be able to demonstrate/describe/perform:

(a) Operate correctly the 25hp Mariner.
(b) Demonstrate the following for licence examination:
    1. Starting of motor
    2. Slow water handling, manouvering
    3. Planing the boat
    4. Looking over shoulder while turning
    5. Crossing of the wake in figure of eight
    6. Approaching of a life jacket in the water from leeward side manouvering vessel towards jacket, ability to put motor into neutral and keep motor running and recovery from stern of vessel
    7. Moor at a jetty against tide and wind
    8. The difference between 4 and 6 knotts
    9. Pass the theory examination before the practical test.

WEEKS 6/7: Students should be able to demonstrate/describe/perform in the examination (a) and (b) above.

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D Specific Programme Details

WEEK 1 — GENERAL SAFETY:

a) How to board, alight.
b) How to load, unload; correct stowage
c) Rules of "Road".
d) Video.
e) Applicable nautical terms - parts of boat,motor,trailer,anchor, waterway, mooring, jetty.
f) The outboard motor.

GETTING STARTED

a) Requirements regarding safety equipment and use of.
   - Examination of safety kit and use of lifejackets.
b) Water survival, Swamping.
c) Applicable first aid - water immersion, marine stings etc.
d) Use of knots - clove hitch, safety knots.
e) Launching, rowing, paddling.
f) Starting and steering.

WEEK 2 — LOADING, UNLOADING, CARE AND STORAGE

a) Attachment of motor,tilt, reverse, removal.
b) Washing, flushing,storing (Boat and motor)
c) Replacement of shearer pin, O-ring,removal, cleaning and replacement of spark plug.
d) Methods of fueling, mixing correct ratio, starting, checking, flushing.
e) Anchors - Purpose and types, practical rules for use of.
f) Trouble shooting.

BASIC OPERATION AND BOAT HANDLING

a) Slow power control,"Finding out what happens."
b) Beaching - Judgement,allowing for wind,tide,currents,etc.
c) Recognition of landmarks.
d) Worksheet for homework.

WEEK 3. — SPECIFIC KNOWLEDGE

a) Use of forecasts,charts applicable to waterway, tide charts.
b) Rules of waterways with regards to speed (Emphasis on area and motor capabilities) etiquette, cleanliness,swimmers,fishermen,

shoreline,divers,skiers.
c) Understanding of markers and symbols, including use of "Leads"
d) Worksheet for homework.
e) Marine radio.

NIGHT PROCEDURE, DANGEROUS WATER CONDITIONS

a) Channels, sandbanks, rocks - recognition of discernable water behaviour.
b) Night lighting requirements.
c) Compass bearing and position fixing, recognition of landmarks.
d) Choosing Captain and crew, defining duties.
e) Practicable application according to area (on land)
f) Worksheet for homework.

WEEK 4 TROUBLE SHOOTING

a) Engine won't start.
b) Engine stops.
c) Engine works but propeller will not turn.

BOAT HANDLING IN EMERGENCY SITUATIONS:

a) Turning,planing,figure eights.
b) Practical anchoring, mooring, docking.
c) Retrival of floating objects.
d) Submerged craft.
e) "Man Overboard".
f) Propeller - Understanding/care.
g) Fishing lines/ropes/towing line-care and handling.

WEEK 5 REVISION OF SAFETY AND PRACTICAL PROCEDURES

a) Laws,safety procedures,practical to date, including sandbank recognition - (SURPRISE)!!
b) Video.
c) Worksheet for homework.

WEEK 6: LICENCE TESTING AND ASSESSMENT

MAKE SURE ALL CANDIDATES FILL OUT THEIR APPLICATION FORMS PRIOR TO TEST OR TAKE FORMS AND PENCIL.
MAKE SURE ALL CANDIDATES HAVE PAID FOR THEIR LICENCE COURSE INSTRUCTOR TO PAY IN BULK

a) Testing officer arrives at ski gardens and asks group of 4, 25 oral questions each
b) Group is taken out and tested on the following:
    1. Ability to start motor
    2. Ability to plane boat
    3. Mooring ability
    4. Ability to turn craft and perform figure 8
    5. Recovery of object from water
    6. Ability to bring boat to shore
c) If candidate is successful, candidate must pay the licence fee, unless already paid) and complete the application for licence form.

1.8 Additional Notes/ Comments:

Licence costs $17.00.

Students pay $2.00 per week for package deal.

Weekly programme (Practical Lessons)

The following breakup would be suggested and could be varied lesson by lesson as weather/conditions varied or as ability/aptitude of students was assessed.

Each lesson is designed for approx 2 hrs. This is actual time and time has not been allowed for travelling or loading and unloading boats.

WEEK 1: Students should be able to demonstrate/describe/perform:

(a) How to unload and load the trailer, Knots on the trailer
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(h) Use of Safety Equipment, Water Survival, First Aid.
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WEEK 2: Students should be able to demonstrate/describe/perform:

(a) Knots used on the trailer in theory lessons in class.
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(c) Rowing, and rescue of stranded craft, towing.

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(a) Knowledge of the parts of the outboard motor:
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    6. Approaching of a life jacket in the water from leeward side manouvering vessel towards jacket, ability to put motor into neutral and keep motor running and recovery from stern of

vessel
7. Moor at a jetty against tide and wind
8. The difference between 4 and 6 knotts
9. Pass the theory examination before the practical test.

WEEKS 6/7: Students should be able to demonstrate/describe/perform in the examination (a) and (b) above.

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D Specific Programme Details

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d) Video.
e) Applicable nautical terms - parts of boat,motor,trailer,anchor, waterway, mooring, jetty.
f) The outbound motor.

GETTING STARTED

a) Requirements regarding safety equipment and use of.
- Examination of safety kit and use of lifejackets.
b) Water survival, Swamping.
c) Applicable first aid - water immersion, marine stings etc.
d) Use of knots - clove hitch, safety knots.
e) Launching, rowing, paddling.
f) Starting and steering.

WEEK 2 — LOADING, UNLOADING, CARE AND STORAGE

a) Attachment of motor,tilt, reverse, removal.
b) Washing, flushing,storing (Boat and motor)
c) Replacement of shearer pin, O-ring,removal, cleaning and replacement of spark plug.
d) Methods of fueling, mixing correct ratio, starting, checking, flushing.
e) Anchors - Purpose and types, practical rules for use of.
f) Trouble shooting.

BASIC OPERATION AND BOAT HANDLING

a) Slow power control,"Finding out what happens."
b) Beaching - Judgement,allowing for wind,tide,currents,etc.
c) Recognition of landmarks.
d) Worksheet for homework.

WEEK 3. SPECIFIC KNOWLEDGE

a) Use of forecasts,charts applicable to waterway, tide charts.
b) Rules of waterways with regards to speed (Emphasis on area and motor capabilities) etiquette, cleanliness,swimmers,fishermen, shoreline,divers,skiers.
c) Understanding of markers and symbols, including use of "Leads"
d) Worksheet for homework.
e) Marine radio.

NIGHT PROCEDURE, DANGEROUS WATER CONDITIONS

a) Channels, sandbanks, rocks - recognition of discernable water behaviour.
b) Night lighting requirements.
c) Compass bearing and position fixing, recognition of landmarks.
d) Choosing Captain and crew, defining duties.
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BOAT HANDLING IN EMERGENCY SITUATIONS:

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b) Practical anchoring, mooring, docking.
c) Retrival of floating objects.
d) Submerged craft.
e) "Man Overboard".
f) Propeller - Understanding/care.
g) Fishing lines/ropes/towing line-care and handling.

WEEK 5 REVISION OF SAFETY AND PRACTICAL PROCEDURES

a) Laws,safety procedures,practical to date, including sandbank recognition - (SURPRISE)!!
b) Video.
c) Worksheet for homework.

WEEK 6: LICENCE TESTING AND ASSESSMENT

MAKE SURE ALL CANDIDATES FILL OUT THEIR APPLICATION FORMS PRIOR TO TEST
OR TAKE FORMS AND PENCIL.
MAKE SURE ALL CANDIDATES HAVE PAID FOR THEIR LICENCE
COURSE INSTRUCTOR TO PAY IN BULK

a) Testing officer arrives at ski gardens and asks group of 4, 25 oral questions each
b) Group is taken out and tested on the following:
    1. Ability to start motor
    2. Ability to plane boat
    3. Mooring ability
    4. Ability to turn craft and perform figure 8
    5. Recovery of object from water
    6. Ability to bring boat to shore
c) If candidate is successful, candidate must pay the licence fee, unless already paid) and complete the application for licence form.

1.8 Additional Notes/ Comments:

Licence costs $17.00.

Students pay $2.00 per week for package deal.

BRISBANE SOUTH MARINE STUDIES PROJECT
Mediterranean Drive
Benowa, Qld. 4217
P.O. Box 5733
Gold Coast Mail Centre. 4217
Telephone: (075) 39 4222

INFRASTRUCTURE BOOKLET

C O N T E N T S

FIRST DRAFT PROPOSALS APRIL 1985

As these materials are draft proposals they will be constantly updated. For copies of the computer discs and programme send 2 blank discs for copying.

Section 1. General Information

1.1 Benowa, Keebra, Merrimac and Woodridge State High Schools are operating Marine Studies Programmes in Term 2 this year. Miami is proposing a course to start in term 3. They will be sharing the boats, car, navigation and diving equipment. Much co-operation and planning will be necessary for the gear to be used effeciently and effectively.

1.2 Benowa State High's programme is complex because 9 classes and about 250 students are involved each week in Board, Board Registered and TAFE-SEC classes.

Keebra Park's programme is more straightforeward with 70 Board Registered students involved on a Friday afternoon.

Woodridge has 2 classes for 3 hours each day on Tuesdays and Thursdays who are sitting for their baot licence in a 12 hour course. However this clashes with one of the Benowa programmes and boats are going to be hired from Jacobs Well boat hire.

Merrimac has one class of Transition Students who are going to do a 18 hour boating course on a Monday afternoon.

1.3 To make things easier to timetable, each class has been given a code [!,@,#,$,%,',&,*,?,+,=,]

The codes are summarised below:

Code	Programme Short Name
$	Benowa 12 Multistrand Science Tues Morn class
&	Benowa Wednesday afternoon licence class
+B	Keebra Park Friday Aft Boating Class
+Sn	Keebra Park Friday Aft Snorkeling Class
+SS	Keebra Park Friday Aft Surf Survival Class
='	Merrimac 11T boating class
*	Woodridge Tuesday Morning Boating
#	Woodridge Thursday Morning Boating
@	Benowa 11 Marine Studies Sailing class
%	Benowa 11 CBL students Sailing
'	Merrimac Surfsurvival class
?	Miami Snorkeling/Diving

1.4 Details of Classes

Benowa State High School

Tony Failes	Groups Coded & , @ , %	Mondays, Tuesdays,Wednesdays
Bob Moffatt	Groups Coded # , *	Tuesdays and Thursdays
David Read	Groups Coded $	Tuesdays 8.00-10.20
Sue Cerato	Groups Coded $	Tuesdays 8.00-10.20
Marg Evans	No code	Navigation Class
Dave Gorwyn	No code	Snorkeling Class
Steve McCabe	No code	Snorkeling class

Merrimac State High School

Neil Hart	Groups Coded =	Mondays	12.00-3.00
Neil Evans	Groups Coded =	Thursdays	12.00-2.20
Steve Thompson	Group coded •		

Keebra Park State High School

Graham Cox	Group Coded +B	Friday	12.00-3.00
Barry Dixon	Group Coded +Sn	Friday	12.00-3.00
Ros Franklin	Group Coded +SS	Friday	12.00-3.00

Woodridge State High School

Russell Chiffey	Group Coded *	Tuesday	8.45-10.45
Ian Buchan	Group Coded #	Thursday	8.45-10.45

2. Part Time Staff and Assistants Involvement

2.1 Part Time Staff

Mr. Col Reinhardt has been employed under the TAFE-SEC scheme from the Technology Budget under the control of Mr. Bill Johnson of TAFE. He has been employed to teach the TAFE-SEC Course "Introductory Course to Sea Going Personnel " to Benowa State High School Students.

He also can test students for their boat licence for no charge. Students passing the test are given the permit slip which, if they present to Harbours and Marine and pay $17.00, can receive their boat licence. Students who are not 16 may sit for the test, pass and then hold onto their permit. When they turn 16 they can then obtain their licence.

Cols Proposed Working Dates: (51 hours)

(a) Teaching
April 16th to $, 22nd to =, 23rd to $,29th to = and 30th to $,
May 6th to =, 7th to $,14th to $, 21st to $, 28th to $,
June 4th to $,

(b) Testing
Merrimac = on May 30, June 6 and 13
Keebra + on May 31, June 7 and 14
Benowa & on June 12 (to be increased)

2.2. Deckhand (Teacher Aide)

Peter Montgommery is a x Marine Studies student from Benowa State High School in 1984. In first term he worked many hours for no money and helped drive the car, flush the motors, maintain the car, deliver boats and materials, mark equipment and perform all the duties of a deckhand. I intend paying him this term from some method because he is an invaluable and necessary addition to the project team. Deckhands are paid about $5.00 in the hand.

Peters Proposed Working Dates: (45 hours)

April	17&,19+,24&,26+
May	13=,15&.17+,20=,22&,24,+27=,29&,31+
June	5&,19&

Peter will deliver the equipment to you in the same way a Lab Assistant delivers equipment to a Science Teacher. Studenst will be expected to do the bulk of cleaning up, but Peter will have all the stuff ready and will put all the stuff away. [Eg: Diving gear will be delivered, kids use, wash up and stack away. Peter checks in, repairs if necessary, and puts away.]

2.3. Co-ordinator.

I want to do just that. See people, write programmes, help with teaching, assist as many teachers as possible so that they become self reliant with the gear, and get the syllabus proposal accepted and then begin the task of co-ordinating the development of it.

If money comes our way, then co-ordinate the spending of it and the task of stocktaking etc.

My committed dates are:

Tuesday and Thursday for 6 weeks with Woodridge High.
April 23/25/30
May 2/7/9/14/16/21/23/28/30
Possibility of involving training the new Secondary Teacher at Jacobs Well and definiely making Woodridge self sufficient.

And remember that I am still Science Subject Master at Benowa State High School

NOTES

1. Peter Montgommery will deliver boats for Merrimac, Benowa and Keebra
2. Bob Moffatt to the Logan, Albert or Coomera Rivers with Woodridge
3. Tony Failes will arrange car pool for the @ students to Broadwater.
4. Tony Failes to arrange car pool for the % students
5. Keebra also use 25 wetsuits, masks snorkels, surfboards
6. Graham Cox to run the Boating unit complete, Col to test at end.
7. | indicates 8am start.
8. ## means double, %%% means triple.
9. All gear to be returned to Benowa Centre at times and conditions as advised by Peter or Col.
10. All damage/loss etc must be reported so that new gear can be purchased immediately.
11. Steve McCabe and Dave Gorwyn are to run the Snorkeling afternoons Rex Neale has 3 hours left to help with snorkeling excursion
12. Marg Evans to run Navigation trip
13. Kel Rodgers to run Radio course for all Marine Science Students

3. Programme summary:

WEEK	Monday am	Monday pm	Tuesday am	Tuesday pm	Wednesday am	Wednesday pm	Thursday am	Thursday pm	Friday am	Friday pm
1.April 15-19	@@		\$\$\$	%%%		&& ••		Lunch		+++
2.April 22-26	@@ ===		\$\$\$	%%%		&& ••	#####			+++
3.A/May 29-3	@@ ===		\$\$\$	%%%		&& ••	#####			+++
~~Friday May 3rd~~ Reverse Navigation / Snorkeling Excursion Marg Evans/ David Gorwyn/Steve McCabe to Co-ordinate										
4.May 6-10	@@ ===		\$\$\$	%%%		&& ••	#####			+++
5.May 13-17	@@ ===		\$\$\$	%%%		&& ••	#####			+++
Maroon Teacher Here Mon/Tues/Wed with sailing boat Proposed Canoe Seminar Mon/Tues Afternoon										
6.May 20-24	@@ ===		\$\$\$	%%%		&& ••	#####			+++
7.May 27-31	@@ ===		\$\$\$			&& ••	#####			+++
(a) Tony Failes off with 17 BSHS Marine Studies for Ocean Sailing to Bundaberg on board the "Ocean Venturer" with Peter Holm [MOEC] (b) Possible Benowa State High CBL TAFE-SEC students camp to Slipping Sands (c) Possible work experience for Merrimac (d) Boat Licence Testing Starts May 30th.										
8.June 3-7			\$\$\$	%%%		&& ••		===		+++
(a) Boat Licence Testing continues										
9.June 10-14				%%%		&& ••		===		+++
(a) Boat Licence Testing continues										
10June 17-21 (a) Semester Examinations (b) Repair of equipment (c) Boat Licences finalised (d) Surf Bronze Examinations (e) Telecom Marine Radio Licence Test										

\$	Benowa 12 Multistrand Science Tues Morn class
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=	Merrimac 11T boating class
*	Woodridge Tuesday Morning Boating
#	Woodridge Thursday Morning Boating
@	Benowa 11 Marine Studies Sailing class
%	Benowa 11 CBL students Sailing
•	Merrimac Surfsurvival class
?	Miami Snorkeling/Diving

4.Term 3 and 4 advance information:

4.1 Keebra Park to North West Is 29th July: 7 days.

4.2 Retreival Students to North West Is/Lady Elliott Is October 13th Depart 1 wk

4.3 Miami could start Diving August 14th - October 13th [10 weeks]

4.4 Dakabin State High School to trial the Country Kids Vacation programme idea in term 3 as well as conduct trials in Marine Studies Activities for 1986.

5. School/ Project Committes

5.1 Benowa State High School

(a) School P & C Marine Studies Sub Committee

This committee manages the registered buisness, "Benowa Marine" which provides survival funds to the project in times when funds do not exist. Its function is to ensure a financial backstop but control of the funds is ruled with an iron fist to make sure only essential items are purchased.

The committee is elected each year at the Annual General Meeting of the P & C. This years office bearers are:

Chairman:	Bob Moffatt
Secretary:	Sylvia Wright
Treasurer:	Sue Oats
Admin Rep:	Mel Phillips
Staff Rep:	Dave Read
Spec Advisor:	Kel Rodgers

(b) School Committee [Schools of Excellence]

M. Phillips, R. Moffatt, M. Wilson, D. Waterman, L. Bovill.

Section 2 Detailed School Programme information (see separate file)

Section 3 Application for Deckhand [Marine Studies Teachers aide]

To the Regional Director of Education

BENOWA STATE HIGH SCHOOL

1.1 Code Name: $ Dave Reads/Sue Ceratos Tues Morn class

1.2 Proper Name: Grade 12 Multistrand Science Unit 5(b) Field Methods Practical work.

1.3 Brief Description: A 12 hour course for academic year 12 Marine Science students designed to enrich their Unit 5(a) Estuarine Chemistry Unit.

1.4 Aims:

1. To introduce Grade 12 Multistrand Science students to a small boat that a Marine Scientists uses to collect Scientific Data from the sea.

2. To teach basic boating skills so that students could hire a boat, fully fuelled and in the water, start it,and safely operate it in the Broadwater or Canals.

3. To have students use a secchi disc, water sampling device, beam trawl and plankton net to obtain Scientific data from the Broadwater and Benowa Canals.

4. To develop a programme for next year that will involve students making a Scientific study of the chemical and physical properties of the seawater in canals and estuaries in term 1 as part of UNIT 5.

5. To allow students the opportunity to collect water samples and analyse them in the laboratory for Salinity, pH, oxygen, TSS. and TDS. as per UNIT 5 Field Methods.

6. To provide the opportunity for students to go further to obtain their boat licence. This would be done after school hours and arranged with Col Reinhardt.

1.5 Information

1. Firstly students will have to learn to use the boats so that it is safe to take them out on the water.
2. The teacher will be assisted by Col Reinhardt, who has worked with students before to teach basic seamanship skills as outlined below. I have wangled money for Col's wages.
3. Once the students have the skills, the teacher takes over explaining how the water is sampled.

4. Peter Montgommery has been employed to deliver the boats to the teacher and to clean up afterwards.
5. The students are to pay $4 for the package and collect the money in bulk at the beginning of the course. [We have to buy special chemicals, fuel the boats and car, maintenance etc.]

1.6 Weekly programme Term 2

Class & Day	Details
12 MSS Read Tues Tues 8 am-10.25am	16th April Starting, Petrol, Safety gear, boat handling, clean up proceedures.
12 MSS Read Tues 8 am-10.25 am	23rd April Anchoring, Rowing, More practice, some students onto 25hp, introduction to gear.
12 MSS Read Tues Tues 8 am-10.30	30th April Secchi disc, Water sampling, plankton trawl, more practice. Canals.
12 MSS Read Tues Tues 8 am-10.30	7th May Repeat at Broadwater + tidal studies.
12 MSS Cerato Tues Tues 8 am-10.25am	14th May Starting, Petrol, Safety gear, boat handling, clean up proceedures.
12 MSS Cerato Tues 8 am-10.25 am	21st May Anchoring, Rowing, More practice, some students onto 25hp, introduction to gear.
12 MSS Cerato Tues Tues 8 am-10.30	28th May Secchi disc, Water sampling, plankton trawl, more practice. Canals.
12 MSS Cerato Tues Tues 8 am-10.30	4th June Repeat at Broadwater + tidal studies.

1.7 Notes:

Week 1:	Lesson 1 David Read's class	April 16th	Benowa Canals Bikes
Week 2:	Lesson 2 David Read's class	April 23rd	Benowa Canals Bikes
Week 3:	Lesson 3 David Read's class	April 30th	Benowa Canals Bikes
Week 4:	Lesson 4 David Read's class	May 7th	Broadwater Car Pool
Week 5:	Lesson 1 Sue Cerato's class	May 14th	Benowa Canals Bikes
Week 6:	Lesson 2 Sue Cerato's class	May 21nd	Benowa Canals Bikes
Week 7:	Lesson 3 Sue Cerato's class	May 28th	Benowa Canals Bikes
Week 8:	Lesson 4 Sue Cerato's class	June 4th	Broadwater Car Pool
Week 9:	Spare if needed		
Week 10	Examination		

1.8 Additional Notes/ Comments:

Lesson 1. Col Reinhart will bring the boats and have them ready for you. He will instruct the students and you are to listen very carefully. Col will be in charge and teach the students. You are to help where necessary.

Lesson 2. The students get to practice the skills they learnt last week and gain more confidence with the boats. Col will be with you again. If you feel confident after that time Peter Montgommery will bring the boats and you will be in charge.

Lesson 3. You will explain the sampling task (you see now the students have learnt the boats and you are now demonstrating the Scientific Apparatus) All this will happen in the Canals. The boats will now contain a captain who should know what to do but all students should be able to perform the task and the roles should swap so that each person in the group has a chance to perform all the tasks of captain and crew.

Lesson 4. If all goes well you should be able to have the students arrive at the broadwater, and conduct a 2 hour chemical analysis of seawater study of a local area and collect sufficient samples of seawater to study back at the laboratory.

Additional Notes/ Comments:

Benowa State High

PO Box 5733
Gold Coast Mail Centre
Bundall Q 4215

SAMPLE LETTER

15th April 1985

Dear Parents,

Re; Boating Course Term 2

As part of this Semesters work your son/daughter is studying Estuarine Chemistry. During the course samples of water from the local canals will be taken and studied in the laboratory for their chemical composition.

To make the collection of samples a reality it is proposed to teach basic boat handling skills so that your child may make collections of water samples in the water safely and successfully.

The programme we propose is as follows:

Class & Day	Details
12 MSS Read Tues Tues 8 am-10.25am	16th April Starting, Petrol, Safety gear, boat handling, clean up proceedures.
12 MSS Read Tues 8 am-10.25 am	23rd April Anchoring, Rowing, More practice, some students onto 25hp, introduction to gear.
12 MSS Read Tues Tues 8 am-10.30	30th April Secchi disc, Water sampling, plankton trawl, more practice. Canals.
12 MSS Read Tues Tues 8 am-10.30	7th May Repeat at Broadwater + tidal studies.
12 MSS Cerato Tues Tues 8 am-10.25am	14th May Starting, Petrol, Safety gear, boat handling, clean up proceedures.
12 MSS Cerato Tues 8 am-10.25 am	21st May Anchoring, Rowing, More practice, some students onto 25hp, introduction to gear.
12 MSS Cerato Tues Tues 8 am-10.30	28th May Secchi disc, Water sampling, plankton trawl, more practice. Canals.
12 MSS Cerato Tues Tues 8 am-10.30	4th June Repeat at Broadwater + tidal studies.

The cost of the 4 week programme is $4.00 which includes costs of petrol, oil, transport of boats, materials and chemicals. It would be appreciated if the money could be paid at the beginning of the course so that materials and petrol can be purchased before hand.

Should your child wish to obtain his/her boat licence as a result of this course then we are willing to arrange this after school.

yours faithfully

D. Read / S. Cerato
Class Teachers

R. Moffatt
Co-ordinator

M. Phillips
Principal

1.1 Code Name: & Benowa Wednesday afternoon licence class

1.2 Proper Name: Recreational boating.

1.3 Brief Description:

Safety, Nautical terms, Loading, Unloading, Storage of craft, operation on land still water and sea, Care and maintenance of motor, Use of Charts, Compasses and Weather Forecasts, Knowledge of rules and markers, incident and emergency proceedures.

1.4 Aims:

1. To increase general knowledge and safety.
2. To teach elementary seamanship skills, basics boat care and general maintenance skills.
3. To have all elegible students obtain their boat licence.
4. To trial the Marine Studies unit "Fishing"

1.5 Information

Tony Failes to run the entire programme with no support assistance

1.6 Weekly programme

The following breakup would be suggested and could be varied lesson by lesson as weather/conditions varied or as ability/aptitude of students was assessed.

Each lesson is designed for approx 2 hrs. This is actual time and time has not been allowed for travelling or loading and unloading boats.

WEEK 1: General safety, General Rules, Video, The Outboard Motor.

WEEK 2: Use of Safety Equipment, Water Survival, First Aid, Rowing.

WEEK 3: Loading, Unloading, Starting Up, Steering Under Power, Care and Storage.

WEEK 4: Launching, Basic Operation and Boat Handling.

WEEK 5: Specific Understanding of Knowledge,Rules and Assistance Available.

WEEK 6: Trouble Shooting - Simulation Exercises.

WEEK 7: Understanding of Broardwater Procedures and Regulations.

WEEK 8: Boat Handling Under Power,Anchoring, Mooring, Docking and Practical Application of Emergency Procedures.

WEEK 9: Revision of Practical and Emergency Procedures, Video.

WEEK 10:Licence Testing, Final Assessment.

SAMPLE LETTER

Benowa State High School
PO Box 1433
Gold Coast Mail Centre Q

Dear Parents,

Re: Wednesday afternoon Recreational Boating

As you are aware your child has selected this course as part of the school sports and recreation programme. I now wish to supply the following details:

Times: 1 - 3pm on most days. Occassionally we will extend this time till 5pm to allow for asdditional activities. Students will be advised a week in advance if this is to occur.

Cost; $1.00 per week for petrol, oil, hire of boats.
An additional $27.00 will be required if students want their boat licence

Dress: Normal sports uniform is required and on hot sunny days a HAT.

Transport: Students may ride or walk to the venue, which is the canal site opposite skateworld., or the Broardwater.

CAR POOL: Some students will travel by car pool (see sep. letter)

yours faithfully

T. Failes
Teacher

M. Phillips
Principal

CAR POOL LETTER

Dear Parents,

To help transport students to the Broadwater each Wednesday afternoon, we propose a car pool. No fares will be charged but students may like to donate some money to the driver to defray petrol costs. We seek your permission for your child to travel with:

NAME OF DRIVER:..... REGO NUMBER:.....

TIME DEP. SCHOOL:..... TIME ARR. SCHOOL:.....

..... TEAR OFF SECTION.....

I give permission for my child ..... to travel with ..... on the following dates;.....

Parents Signature:.....

1.1 Code Name: +B Keebra Park Friday Aft Boating Class

1.2 Proper Name: 8 week Boating course

1.3 Brief Description: Students will have boats delivered to the Broadwater on Friday afternoons for a 8week course in Boating.

1.4 Aims:

1. To increase general knowledge and safety.
2. To teach elementary seamanship skills, basics boat care and general maintenance skills.
3. To have all students obtain their boat licence.

1.5 Information

1. Safety, Nautical terms, Loading, Unloading, Storage of craft, operation on land still water and sea, Care and maintenance of motor, Use of Charts, Compasses and Weather Forecasts, Knowledge of rules and markers, incident and emergency proceedures, obtaining boat licence.

2. Graham Cox to run the entire programme. Peter Montgommery to deliver the boats. Students are to learn how to clean boats at the Broadwater and flush motors so that we can get away at 3.15 on Fridays.

1.6 Weekly programme

The following breakup would be suggested and could be varied lesson by lesson as weather/conditions varied or as ability/aptitude of students was assessed.

Each lesson is designed for approx 2 hrs. This is actual time and time has not been allowed for travelling or loading and unloading boats.

WEEK 1: General safety, General Rules, Video, The Outboard Motor.
: Use of Safety Equipment, Water Survival, First Aid, Rowing.

WEEK 2: Loading, Unloading, Starting Up, Steering Under Power, Care and Storage.

WEEK 3: Launching, Basic Operation and Boat Handling.

WEEK 4: Specific Understanding of Knowledge,Rules and Assistance Available.

WEEK 5: Trouble Shooting - Simulation Exercises.

WEEK 6: Boat Handling Under Power,Anchoring, Mooring, Docking and Practical Application of Emergency Procedures.

WEEK 7: Revision of Practical and Emergency Procedures, Video.

WEEK 8: Licence Testing, Final Assessment.

D Specific Programme Details

WEEK 1 — GENERAL SAFETY:

a) How to board, alight.
b) How to load, unload; correct stowage
c) Rules of "Road".
d) Video.
e) Applicable nautical terms - parts of boat,motor,trailer,anchor, waterway, mooring, jetty.
f) The outboard motor.

GETTING STARTED

a) Requirements regarding safety equipment and use of.
   - Examination of safety kit and use of lifejackets.
b) Water survival, Swamping.
c) Applicable first aid - water immersion, marine stings etc.
d) Use of knots - clove hitch, safety knots.
e) Launching, rowing, paddling.
f) Starting and steering.

WEEK 2 — LOADING, UNLOADING, CARE AND STORAGE

a) Attachment of motor,tilt, reverse, removal.
b) Washing, flushing,storing (Boat and motor)
c) Replacement of shearer pin, O-ring,removal, cleaning and replacement of spark plug.
d) Methods of fueling, mixing correct ratio, starting, checking, flushing.
e) Anchors - Purpose and types, practical rules for use of.
f) Trouble shooting.

BASIC OPERATION AND BOAT HANDLING

a) Slow power control,"Finding out what happens."
b) Beaching - Judgement,allowing for wind,tide,currents,etc.
c) Recognition of landmarks.
d) Worksheet for homework.

WEEK 3. — SPECIFIC KNOWLEDGE

a) Use of forecasts,charts applicable to waterway, tide charts.
b) Rules of waterways with regards to speed (Emphasis on area and motor capabilities) etiquette, cleanliness,swimmers,fishermen, shoreline,divers,skiers.
c) Understanding of markers and symbols, including use of "Leads"
d) Worksheet for homework.
e) Marine radio.

WEEK 4 NIGHT PROCEDURE, DANGEROUS WATER CONDITIONS

a) Channels, sandbanks, rocks - recognition of discernable water behaviour.
b) Night lighting requirements.
c) Compass bearing and position fixing, recognition of landmarks.
d) Choosing Captain and crew, defining duties.
e) Practicable application according to area (on land)
f) Worksheet for homework.

WEEK 5 TROUBLE SHOOTING

a) Engine won't start.
b) Engine stops.
c) Engine works but propeller will not turn.
d) More paractice.

WEEK 6 BOAT HANDLING IN EMERGENCY SITUATIONS:

a) Turning,planing,figure eights.
b) Practical anchoring, mooring, docking.
c) Retrival of floating objects.
d) Submerged craft.
e) "Man Overboard".
f) Propeller - Understanding/care.
g) Fishing lines/ropes/towing line-care and handling.

WEEK 7 REVISION OF SAFETY AND PRACTICAL PROCEDURES

a) Laws,safety procedures,practical to date, including sandbank recognition - (SURPRISE)!!
b) Video.
c) Worksheet for homework.

WEEK 8: LICENCE TESTING AND ASSESSMENT

MAKE SURE ALL CANDIDATES FILL OUT THEIR APPLICATION FORMS PRIOR TO TEST OR TAKE FORMS AND PENCIL.
MAKE SURE ALL CANDIDATES HAVE PAID FOR THEIR LICENCE

a) Testing officer arrives at Broadwater and asks group of 4, 25 oral questions each
b) Group is taken out and tested on the following:
    1. Ability to start motor
    2. Ability to plane boat
    3. Mooring ability
    4. Ability to turn craft and perform figure 8
    5. Recovery of object from water
    6. Ability to bring boat to shore
c) If candidate is successful, candidate must pay the licence fee, unless already paid) and complete the application for licence form.

1.8 Additional Notes/ Comments:

Licence costs $17.00.

Students pay $1.00 per week for package deal.(An additional delivery fee may have to be made)

K E E B R A P A R K S T A T E H I G H S C H O O L

1.1 Code Name: +Sn — Keebra Park Friday Aft Snorkeling Class

1.2 Proper Name: — Snorkeling Certificate

1.3 Brief Description: — Students will ride/car pool to the Broadwater to learn snorkeling for 3 hours.

1.4 Aims: — To have all students obtain their Australian Underwater Ferderation Snorkeling certificate.

1.5 Information — Peter Montgommery will pick up and deliver the equipment.

1.6 Weekly programme

Term 2

Week	Details
1	Introductory Activities, safety, equipment checks.
2	Diving, first aid, resuscitation, rescue of diver.
3	Long snorkel
4	Examiantion

1.7 Notes:

A delivery charge of $2.00 per week may have to be made.

K E E B R A P A R K S T A T E H I G H S C H O O L

1.1 Code Name: +SS Keebra Park Friday Aft Surf Survival Class

1.2 Proper Name: Surf Survival/Bronze Medallian

1.3 Brief Description:

Students ride to the Broadwater or come by car pool and learn all the necessary elements to obtain the SLSA surf bronze medallian.

1.4 Aims:

To have all students obtain their surf survival certificate and as many as possible their surf bronze.

1.5 Information

The Southport Surf Club at present is loaning the rescue boards and the resuscitation manikins are borrowed.

1.6 Weekly programme

Term 2

Week	Details
1	Elementary swimming and rescue
2	Run Swim Run
3	Board rescue
4	Examination

1.7 Notes:

Peter Montgommery will pick up and deliver the surfrescue boards.

Students will swap after 4 weeks to do snorkeling.

1.8 Additional Notes/ Comments:

This changes from Term 1.

Please Note

Pages 17–24

Standard Seating
as per Benown SHS

M A R I N E S T U D I E S E X C U R S I O N

Full Name: Introduction to Navigation and Boating

Brief Name: The Broadwater

Programme Developed by: T. Failes 28/2/85

Venue: Biggera Creek to Currigee

Type of Excursion: Single day

Itinerary:

8.30	Bus to Biggerra Creek
9.00 - 11.00	On shore preparation of vessel and inspection of slipway including lecture by Gary Doomboss on boat construction and maintenance, slipping cleaning and antifouling
11.00	Depart Biggera Creek and Navigate to South Stradbroke
12.00	Anchor at Currigee, dingy unload and lunch on shore followed by island walk
1.30	Depart for Biggera Creek
2.00	Arrive Biggera Creek, Mooring Proceedures and clean up vessel
2.30	Depart to school by bus

Objectives for Excursion

Students should be able to:

1.S. Launch a dingy from a trailer
2.C.P. Identify mooring lines: bow-line, stern-line, springs and explain the function of each.
3.S. Lay out an anchor chain and decide on an appropiate anchor type to use for the anticipitated anchorage.
4.S. Stow gear correctly
5.S.P. Use a Marine Toilet

6.P. Listen to a talk from a Marine Slipway operator and inspect slipway equipment. As a result of this inspection students should be able to display an understanding of:
(a) How a boat is slipped, cleaned and antifouled
(b) Why antifouling is necessary
(c) Problems associated with osmosis in fibreglass boats, woodworm in wooden vessels, and electrolysis in steel hulls
(d) The different types of building materials used in boat construction

7.CPS Board a vessel and travel to and from a predetermined point. As a result of this, students should be able to:
(a) Cast off correctly
(b) Identify port and starboard bouys and beacons
(c) Interpret the direction of bouyage from a chart
(d) Identify various parts of a boat viz: port, starboard side bow, stern, transom, wheelhouse etc.
(e) Steer a compass course
(f) Read a depth sounder
(g) Move about a boat with care ("One hand for the boat and one hand for yourself ! "
(h) Moor a boat alongside a jetty (ie: assist with mooring lines)
(i) Help stow gear and general boat cleaning

Cost: $8.00 per head.(approx)
---

a. $125 for the boat
b. $25 for the slipway talk
c. $35 for the Bus

Details: Bill Baumer will organise the boat, the slipway talk and the bus
---

Letter Home:

Dear Parents,

Re: Grade 11 Introduction to Marine Studies Excursion
==========

As part of this Semesters work your child is studying Navigation and The Science of Diving. We propose to conduct a series of introductory Marine Studies Excursions in order that the course work may take on a more realistic meaning. Students will have the opportunity to meet some of the people who live and work in the Maritime Industry as well as gaining practical experience. The excursion has Department of Education approval and the support of the school P & C association.

Students going to Moreton Bay will be travelling by bus arriving at Manlu boat harbour and then onto the M.V. "Heritage" which will be skippered by the staff of the Darling Point Special School. There they will gain practical experience in Navigation and Marine Radio operation.

Students going to The Broadwater will travel by bus, have a short slipway talk and inspection, and then board the M.V. Baumann for practical seamanship activities, lunch at Currigee, and return to clean and moor the boat before departing for school.

Students going to Tallebudgera Creek will be travelling by bus and snorkelling on the National Park side of the Creek opposite the National Fittness Camp. Dr. R. Neale will be assisting the class and students will learn practical resuscitation, snorkelling and diving techniques. Students also will be required to swim to and climb into a " rubber duckie" and will be required to be in the water for up to an hour. Wet suits, face masks, snorkels and flippers will be provided to students without charge. THERE IS NO NEED FOR PARENTS TO GO OUT AND PURCHASE DIVING GEAR.

Dates: February 25th/ May 6th.

Staff Participitating: Mrs Cerato, Mrs Evans, Mr. Moffatt, Mr. Rodgers,
Mr. Gorwyn, Mr. McCabe, Mr. Failes, Mr. Baumann,
Dr. Neale, Mrs Oats

Cost:

Moreton Bay	$9.00
The Broadwater	$8.00
Tallebudgera Crk:	$3.00

What to Bring

A Cut lunch, a drink, a hat, some burn cream. Tallebudgera Crk people towel, snorkelling gear (if you own it) and SWIMMERS UNDER YOUR UNIFORM.

What to wear:

All students are to wear either sports or school uniforms. No uniform No go ! No refund as we have had to budget to meet costs with no allowance made for losses caused by people turned away through their own fault.

Payment of Money/Return of Consent Form

Plese return the consent form attached alsong with the correct money/cheque to our Laboratory assistants Mrs. Oats or Mr. Rodgers in the Natural Science Block. There is a limit of numbers and the deadline form payment is ...

yours faithfully

R. Moffatt
Subject Master

M. Phillips
Principal

Excursion Evaluation

Benowa State High School

Grade 11 Marine Studies

The Broadwater Excursion Revision Questions

Answer each of the following questions on your own paper.

1. Label the mooring lines in Diagram 1 below:

Diagram 1

3 marks

2. Label the parts of the boat shown in diagram 2 below:

Diagram 2

4 marks

3. From Diagram 3 below, choose the most appropiate anchor from the list for each of the anchorages atated:

Diagram 3

PLOUGH DANFORTH ADMIRALIY FISHERMANS

4 marks

a. sandy bottom
b. mud bottom
c. tempory anchorage
d. coral

4. What is anti-fouling and of what use is it ?

2 marks

5. Explain why brass nails and screws are used in boat construction

1 mark

6. Name one major maintenance problem associated with
   a. fibreglass hulls
   b. wooden hulls
   c. steel hulls

3 marks

7.What is the shape and colour of
   a. port hand beacons
   b. starboard hand beacons

2 marks

8. When leaving a harbour, which beacons should be on your port side ?

1 mark

9. What does a yellow cross marker mean ? 1 mark

10 When sailing in shallow estuaries, why is it better to do so when the tide is rising ?

1 mark

For diagrams see the diagram book 1985, Grade 11 Marine Studies

---

Diagram 1 Boat and Jetty with lines a) b) & c)

Diagram 2 Boat with a), b), c) & d)

Diagram 3 The 4 anchors mentioned

M A R I N E S T U D I E S E X C U R S I O N

Full Name: Introduction to Snorkelling $ Diving

Brief Name: Tallebudgera Creek

Programme Developed by: D. Gorwyn, S. McCabe, G. Boulter
R. Neale, R. Moffatt 28/2/85

Venue: Tallebudgera Creek

Type of Excursion: Single day

Itinerary:

	8.30	Bus to Tallebugerra Creek
	9.30 - 10.00	Short swimming excercise for getting used to current. Group split into two.
Group A	10.00 - 11.00	Buddy diving, propper fitting of equipment dangers of hyperventillation, equalization of ear pressure, clearance of mask and snorkel.
Group B	10.00 - 11.00	Rescue and Resuscitation on shore. One person drag, laying down of the patient, ABC of Resus, EAR, ECC, recovery position, minor first aid short test
	11.00	Morning tea
	11.30 - 12.30	Groups A and B swap.
	12.30 - 1.30	Lunch
	1.30 - 2.30	Simulated mass rescue/ free snorkel
	2.30	Depart to school by bus

Objectives for Excursion

Students should be able to:

1. S Fit and adjust face mask, snorkel, flippers and wetsuit(optional)
2. S Clean facenmask prior to and during use
3. S Snorkel 50m without lifting head

4. S Dive to a depth of 3 metres, compensating for ear pressure on dive
5. S Retreive interesting objects for surface observation
6. A Develop an interest in underwater observation
7. P Recognise dangerous swimming situations
8. P Assess a drowing situation and act quickly
9. S Rescue a patient from deep water by hip/chin/hair/clothing carry
10 S Drag the patient up beach and lay patient down correctly
11 S Assess the patient using the SLSA ABC technique
12 S Demonstrate correct EAR and ECC techniques
13 SP Describe and demonstrate correct sequence for 12 above
14 A Demonstrate a mature attitude in the test that follows
15 S Demonstrate correct recovery positon
16 P Answer simple first aid questions
17 CP Recall and point out to others, dangerous animals/ situations that may occur while snorkeling
18 C Recognise the divers flag

Cost: $3.00 per head.(approx)
----

a. $70 for the bus.
b. $50 for the instructor

Details: Bill Baumer (531237) will organise the bus,
------- Rex Neale (305555) for the diving instruction.

Letter Home:

Dear Parents,

Re: Grade 11 Introduction to Marine Studies Excursion
==========

As part of this Semesters work your child is studying Navigation and The Science of Diving. We propose to conduct a series of introductory Marine Studies Excursions in order that the course work may take on a more realistic meaning. Students will have the opportunity to meet some of the people who live and work in the Maritime Industry as well as gaining practical experience. The excursion has Department of Education approval and the support of the school P & C association.

Activities
==========

Students going to Moreton Bay will be travelling by bus arriving at Manlu boat harbour and then onto the M.V. "Heritage" which will be skippered by the staff of the Darling Point Special School. There they will gain practical experience in Navigation and Marine Radio operation.

Students going to The Broadwater will travel by bus, have a short slipway talk and inspection, and then board the M.V. Baumann for practical seamanship activities, lunch at Currigee, and return to clean and moor the boat before departing for school.

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Dates: February 25th/ May 6th.
=====

Staff Participitating: Mrs Cerato, Mrs Evans, Mr. Moffatt, Mr. Rodgers,
==========
Mr. Gorwyn, Mr. McCabe, Mr. Failes, Mr. Baumann,
Dr. Neale, Mrs Oats

Cost:
=====

Moreton Bay	$9.00
The Broadwater	$8.00
Tallebudgera Crk:	$3.00

What to Bring
==========

A Cut lunch, a drink, a hat, some burn cream. Tallebudgera Crk people towel, snorkelling gear (if you own it) and SWIMMERS UNDER YOUR UNIFORM.

What to wear:
==========

All students are to wear either sports or school uniforms. No uniform No go ! No refund as we have had to budget to meet costs with no allowance made for losses caused by people turned away through their own fault.

Payment of Money/Return of Consent Form
==========

Plese return the consent form attached alsong with the correct money/cheque to our Laboratory assistants Mrs. Oats or Mr. Rodgers in the Natural Science Block. There is a limit of numbers and the deadline form payment is ...

yours faithfully

M A R I N E S T U D I E S E X C U R S I O N

Full Name: Introduction to Navigation & Communications

Brief Name: Moreton Bay

Programme Developed by: M. Evans, S. Cerato, K. Rodgers, G. Simkins

Venue: Manly, Darling Point Special School

Type of Excursion: Single day

Itinerary:

Objectives for Excursion

Students should be able to:

1. S

Cost: $8.00 per head.(approx)

a. $145 for the bus.
b. $120 for the boat

Details: Bill Baumer (531237) will organise the bus,

Geoff Simkins for the boat.

Letter Home:

BENOWA STATE HIGH SCHOOL
Mediterranean Drive
Benowa Q 4217

BOAT LICENCE QUALIFYING

THIS IS TO CERTIFY THAT

_____

can perform the following skills:

* Launch start and operate under power a 5 hp outboard motor
* Launch start and operate under power a 25 hp outboard motor
* Execute turns and manoeuvre under power
* Recover an object from the water
* Successfully moor at a jetty
* Change a sheer pin. split pin and other routine maintenance tasks
* Operate and use a boat trailer
* Tie a variety of knots
* Obtain a boat licence

_____ _____

K. Gilbert, Principal R. Moffatt, Science Subject Master

BENOWA STATE HIGH SCHOOL
MARINE STUDIES PROJECT
Mediterranean Drive
Benowa Q 4217

Phone: (075) 394222
(075) 394187 (A/H)

NAVIGATION AWARD

THIS IS TO CERTIFY THAT _____ OF GRADE 11F

HAS REACHED A LEVEL OF ACHIEVEMENT AS SHOWN BY THE AWARDS BELOW

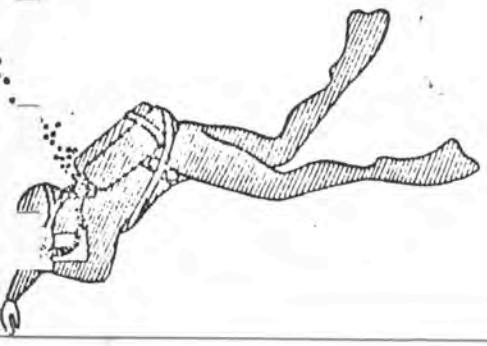
ABILITIES	LEVEL OF ACHIEVEMENT AWARDED
1. *Knowledge of Navigation instruments terms and proceedures*	_____
2. *Abilities to solve mathmetical problems, and interpret tables*	_____
3. *Practical navigational skills at sea*	_____
4. *Attitudes towards navigational rules and regulations*	_____

Criteria

Very High achievement	85%+	Limited achievemtnt	30%+
High achievement	70%+	Very limited achievement	30%-
Sound achievement	50%+	Attitudes rated satisfactory/unsatisfactory only	

Objectives sampled

See over page.



R. MOFFATT

SUBJECT MASTER

BENOWA STATE HIGH SCHOOL
MARINE STUDIES PROJECT
Mediterranean Drive
Benowa Q 4217

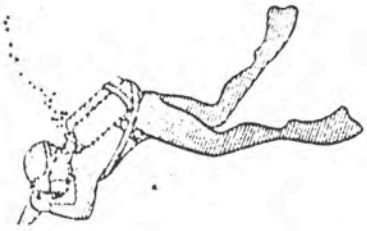
Phone: (075) 394222
(075) 394187 (A/H)

RADIO AWARD

KNOWLEDGE OF RELEVANT COMPONENTS	☐
CORRECT PRETALK CHECK	☐
TRANSMISSION AND RECEPTION OF MESSAGE	☐
USE OF PHONETIC ALPHABET	☐
MINOR REPAIRS AND ADJUSTMENTS	☐

R. MOFFATT

SCIENCE MASTER



BENOWA STATE HIGH SCHOOL
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Mediterranean Drive
Benowa Q 4217

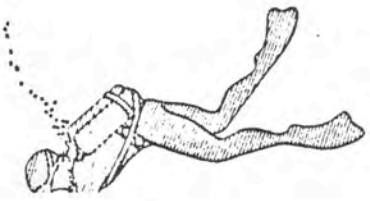
Phone: (075) 394222
(075) 394187 (A/H)

SNORKELLING AWARD

KNOWLEDGE OF RELEVANT EQUIPMENT	☐
CORRECT ENTRY INTO WATER	☐
SNORKEL AND DUCK DIVE FOR 50 meters	☐
COMPENSATE FOR PRESSURE	☐
PERFORM RESCUE FROM WATER	☐
WRITE UNDER WATER	☐
RECOVER OBJECTS FROM UNDERWATER	☐

R. MOFFATT

SCIENCE MASTER



BENOWA STATE HIGH SCHOOL
MARINE STUDIES PROJECT
Mediterranean Drive
Benowa Q 4217

Phone: (075) 394222
(075) 394187 (A/H)

KNOT'S AWARD

RECOGNISE BASIC KNOTTS OF SEAMANSHIP ☐

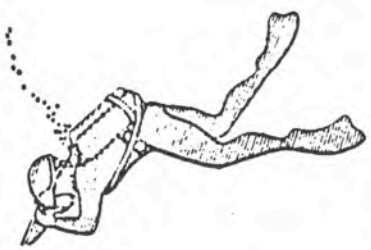
TIE THE FOLLOWING TO A SATISFACTORY STANDARD

SHEAT BEND	☐
SHEEPSHANK	☐
CLOVE HITCH	☐
BOWLINE	☐
FIGURE OF 8	☐
REEF KNOTT	☐

APPLY THE ABOVE TO NEW SITUATIONS ☐

R. MOFFATT

SUBJECT MASTER



STRIVING
BENOWA HIGH
CARING

SCIENCE DEPARTMENT

BENOWA STATE HIGH SCHOOL
Mediterranean Drive
Benowa Q 4217

MARINE STUDIES CERTIFICATE

This is to certify that

.....

has performed to the following levels of achievement

COURSE TOPIC	LEVEL OF ACHIEVEMENT GAINED
NAVIGATION	
RADIO COMMUNICATIONS	
SNORKELING	
SMALL CRAFT OPERATIONS	
SMALL MOTOR MAINTENANCE	
BOATING KNOWLEDGE	
CAMPING & BOATING EXCURSION	

YEAR 11 ALTERNATE COURSE 1984

R. MOFFATT
Class Teacher

K. GILBERT
School Principal

AT THE TIME OF ISSUE OF THIS CERTIFICATE THE STUDENT COULD PERFORM THE FOLLOWING SKILLS

NAVIGATION

[] Answers questions correctly on navigation equipment
[] Uses instruments correctly
[] Takes bearings and makes calculations accurately
[] Navigates successfully Lateral and Cardinal systems of Bouyage
[] Relates weather forcasts to expected weather conditions accurately

RADIO COMMUNICATIONS

[] operates 27mhz radio oberserving correct proceedure
[] knows phonetic alphabet
[] carries out routine maintenance
[] sound local geographical knowledge
[] can diagnose simple first aid problems over the radio
[] can make phone calls associated with radio requests and send telegrams

SNORKELING

[] adjusts gear and maintains in correct storage conditions
[] swims and dives correctly in accordance with safety manuals
[] knows correct safety and first aid proceedures for diving accidents
[] knows correct first aid proceedures for treating injuries for dangerous marine life
[] demonstrates correct safety and first aid proceedures

SMALL CRAFT OPERATIONS

[] knows answers to over 80% of questions on speed boat drivers licence test
[] obeys the boating rules while boating
[] demonstrates correct use of 5hp motor
[] demonstrates correct use of 25hp motor
[] demonstrates safe and sensible operation of small craft in coastal waters
[] knows correct safety equipment for predetermined boating excursion
[] has obtained a speed boat drivers licence for Queensland waters

SMALL CRAFT MAINTENANCE

[] demonstrates sound knowledge of boating terms
[] demonstrates correct routine maintenance tasks
[] knows common boat motor problems and acts correctly to make minor repairs
[] demonstrates correct storage proceedures for boats, motors and trailers
[] performs routine maintenance tasks on trailer and towing vehicles

BOATING KNOWLEDGE

[] knows over 50% of answers to questions on written test
[] knows over 75% of answers to questions on written test
[] knows over 85% of answers to questions on written test

CAMPING AND BOATING EXCURSION

[] plans equipment for 3 day camp to stradbroke Island from Surfers Paradise
[] purchases correct food for 3 days camping in wilderness area
[] prepares and cooks a variety of camping foods in a variety of conditions
uses successfully a variety of camping equipment
[] recall and pack correctly safety equipment for 3 day EXCURSION
[] operates correctly communications equipment

BENOWA STATE HIGH SCHOOL

A School that "Strives and Cares"

SNORKELING EXAMINATION

Candidates Name:.....Teacher.....

This is to certify that the candidate has reached the following standard.

Preliminary Swimming Test

Swim 200 metres without swimming aides and without stopping. At the end of the swim, tread water for one minute with one hand out of the water.

Practical Tests:

All tests will be conducted in open water by a qualified instructor or instructor of higher grade. Students must use a snorkel, mask and fins.

1. Demonstrate neutral buoyancy
2. Swim 15 metres underwater
3. Swim 50 metres on the surface without a mask, using a snorkel
4. Clear a flooded mask underwater
5. Swim 50 metres and dive to recover an "Unconsious ", snorkel diver lying at a depth of 3 metres.
6. Tow a patient 25 metres applying simulated expired air resuscitation and then remove the patient from the water. Continue with resuscitation and simulated external cardiac massage. Show action for vomit, and place patient in recovery(coma) position.

Examiners Initials:.....

Note: The theory Part of this exam will be done at a later date and if successfull candidates they may obtain a diving log book for $3 and have theie certificate recorded by the examiner.

Theory Test

Students must satisfactorily pass a written examination on the following topics:

A. Anoxia, hyperventillation, carbon dioxide build up, exhaustion, hypothermia.
B. Safety regulations
C. Actions in emergencies
D. Equipment

BENOWA STATE HIGH SCHOOL
MARINE STUDIES PROJECT
Mediterranean Drive
Benowa Q 4217

Phone: (075) 394222
(075) 394187 (A/H)

9th February 1984

The Regional Director of Education
Brisbane South Region
Mt. Gravatt- Q.

Dear Sir

Re: Proposal to establish a Regional Marine Studies Project

Application is made for up to $15,000 to be spent establishing a Marine Studies programme for interrested schools and TAFE colleges in the Brisbane South region.

The aims of the programme would be to provide the opportunity for students to complete a formal Marine Studies programme including the following topics:

Navigation
Boating
Swimming and Diving
Recreational and Commercial Fishing
Marine Technology and Research
Marine Resource Management
Marine History
Coastal Studies
Practical Oceanography

The resources applied for would enable students to gain practical skills to a level of competence that will enable them to obtain their boat licence, repair and maintain a small outboard motor, navigate inshore waters of Moreton Bay, repair marine equipment using fibreglass and other important maritime skills that will increase self confidence and responsibility.

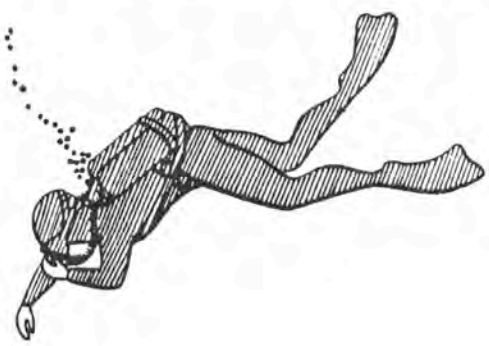
In addition the programme will focus on the local surfboard industry and teach students how to earn a living fixing surfboard dings. This particular unit is a viable one as nearly all surfboard manufacturers on the coast would welcome trained personel in this area. There is also no apprenticeship in surfboard manufacture.

I have much pleasure in attaching the relevant documentation and hope that the programme gets the green light.

Yours faithfully

R. Moffatt
Co-Ordinator

K. Gilbert
Principal



LOCATION OF PROJECT

It is proposed to develop the project at Benowa State High because of its current involvement in Marine Studies.

It is proposed to modify the locker area of the first year centre to act as a storage and workshop area where students can learn their maritime skills. Here a workshop will be set up with the help of staff from the Marine section of the local TAFE college.

Students will walk to the nearby canals where they learn their practical skills in Boating and Navigation. A trailer will transport their equipment and the necessary boating gear.

Students will learn their swimming and diving skills in the pool that is "over the road" from the school.

After the students have passed their boat licence they will further develop their practical skills in the Broadwater or at the Jacobs Well Field Study Centre.

There will be no student learning activities near the Southport Bar, Jumpin Bar or within 2 nautical miles of any bar in the Brisbane South Region.

BUDGET DETAILS

BUDGET SUMMARY

Priority 1	Boats and Safety	$ 8,029.93
Priority 2	Building Modifications	$ 1,770.00
Priority 3	Workshop Equipment	$ 1,278.70
Priority 4	Transport Equipment to Water	$ 1,256.00
Priority 5	Navigation Module	$ 828.00
Priority 6	Fibreglass Module	$ 1,297.47
	TOTAL BUDGET	$ 14,460.10

EXPLANATORY DETAILS

(a) Suppliers

Code	Supplier	Address Phone	
1	State Stores	PO Box 33 North Quay	
2	Sportsmans Warehouse	PO Box 5690 Bundall	389077 (075)
3	Keith Tickle Marine	Ashmore Road Bundall	380344 (075)
4	Inflatable Boats	PO Box 34 Inala	3431122
5	Chain Store	K Mart Pacific Fair	
6	Benowa Marine	PO Box5733 Bundall	394222 (075)
7	Burfords Plastics	Leanord Pd Burleigh	343220 (075)
8	Stessl Alloy Craft	PO Box 5689 Bundall	322288 (075)
9	P.Schmidt Builder	28 Avanti St Mermaid Waters	523290 (075)

(b) * Means a quotation has been obtained and a copy can be found in the attached pages on the suppliers page. It will have a blue highlight.

(c) A 25hp Marina Outboard motor would be required for the safety boat so that craft that broke down could be towed in an emergency.

(d) Registration of boats is in the ministers' name and no budget has been allowed for this. The question of 3rd party insurance also has to be investigated. Also the registration of the trailor has to be allowed for.

PRIORITY 1 — Supply of student boats, teachers safety boat, motors and associated safety equipment.

Qty	Details of Item	Supplier	Unit Price	Total Price
5	Stessl 10ft Aluminium Dingies	8	420.00	2100.00*
1	Zodiac ZED 12'6" Inflatable Safety Boat	4	1665.00	1665.00*
6	Ancho rs c/w 2m chain, 27m Rope	2	21.90	131.40*
1	V sheet	2	5.45	5.45*
1	Pack of Flares	2	14.58	14.58*
5prs	Oars,Stops & Rowlocks	3	26.50	132.50*
25	Marlin Bouyancy Vests	2	32.00	800.00*
20m	Reflectorised Tape for Vests	2	2.00	40.00
12	Floatable storage containers	2	24.00	288.00*
6	Signal Mirrors	3	2.00	12.00*
6	Torches & Batteries	5	6.00	36.00
5	Johnson J59 4½hp Longshaft Outboards	1	415.00	2075.00
6	Plastic Fuel Tanks, 5gall	3	46.00	276.00*
12	Buckets with lids	1	5.00	60.00
6	10m Lengths rope for buckets	5	6.00	36.00*
2	GME 6x Marine band Radios c/w Aerial	3	179.00	358.00*
			Total Priority 1	8029.93

PRIORITY 2 — Conversion of locker area first year centre to security store & Workshop maintenance area.

Supplier — Code 9 Paul Schmidt Builder

(a) Relocate gates from outside locker area First Year Centre to foyer and install industrial Roll-a-Door to space created. $ 1080.00

(b) Supply and fit Motor Stands and Benches for student/Aide work area. $ 690.00

Total Priority 2 $ 1770.00

PRIORITY 3 Supply of maintenance equipment for student workshop.

Qty	Details of item	Supplier	UnitPrice	Total Price
6	Motor Flushes	3	13.00	78.00*
6	Hoses and fittings	5	12.00	72.00
6	Brushes	5	10.00	60.00
6	Sets of tools(Spanners,Screwdriversetc)	5	40.00	240.00
6	Storage crates(Ropes,cahins,anchors)	2	35.00	210.00*
6	Johnson Workshop Manuals	5	15.00	90.00
6	Cleaning Fluids	5	10.00	60.00
6	Draining trays	6	10.00	60.00
1	Transport Wheel	6	20.00	20.00
1	44 gall drum & Pump(for fuel storage)	6	90.00	90.00
88galls	Outboard Standard Fuel	6	2.40	211.20
5galls	Outboard oil	6	17.50	87.50
		Total Priority 3		1278.70

PRIORITY 4 Supply One (1) only Stessl Trailer to carry boats, motors, safety gear, petrol tanks and safety boat.

$ 1,256.00

Supplier: Stessl Alloy Craft

Total Priority 4 $ 1,256.00

PRIORITY 5 Supply of Navigation Equipment for student use in classroom and local waterway situations.

Qty	Details of Item	Supplier	Unit Price	Total Price
14	Handbearing compasses	3	27.00	378.00*
14	Plastic Parallel Rules	3	8.80	123.20*
14	Double handed dividers	3	6.00	84.00*
14	Harbours and Marine Charts	3	6.00	84.00*
16	Compass for Practical Navigation	2	26.50	159.00*
		Total Priority 5		828.20

PRIORITY 6 Supply of fibreglass equipment and materials for student use in workshop area to rear of Natural Sciences Block on proposed Biology Court Area.

Qty	Details of Item	Supplier		
44galls	Resin	7	12.00	549.31
14	Repair Stands	6	12.00	168.00
14	Brushes	7	10.00	140.00
44galls	Acetone	7	190.74	190.74
1	Deposit on drum	7	25.00	25.00
1	Pump for acetone	7	38.42	38.42
1	Roll tar paper	7	70.00	70.00
100	Sheets wet&dry paper	7	00.46	46.00
14	Old Badly dinnged surfboards	6	5.00	70.00
		Total Priority 6		$1297.47

28th February, 1984

The Regional Director,
Department of Education,
P.O. Box 250,
MT. GRAVATT. Q. 4122

Dear Sir,

Re: Proposed Student Business "BENOWA MARINE"

Permission is requested for the formation of a Small Business within Benowa State High School called "Benowa Marine" to administer the affairs of the Brisbane South (?) Marine Studies Project that is receiving funding from the S.T.E.Project. The business would also manage the funds of the project after funding ceased.

The objectives of the business would be:

* To teach Grade 11 students in our Alternate Course and in other such courses from other schools how to run a small business by practical example and involving them in decision making processes.

* To administer some monies during the funding stage. The reason being a practical solution to a problem of invoicing and safety. I have discussed this with Mr. D. Reinhart and he sees no problem as long as we are a Registered Business. For example, to buy 88 galls of petrol, 44 galls of acetone and 44 galls of resin at once and store it at school would be foolhardy and inviting a dangerous situation. Benowa Marine would invoice the S.T.E.P. project for the total sum agreed in the funding and then the students would be given the opportunity to be involved in the purchasing of the goods as required on a smaller and safer basis.

* To make a profit by fixing surfboards from the local community during school time and using the profits to ensure that sufficient recurrent expenditure is available to continue the programme. Involvement with the T.A.F.E. College will occur in the development of this aspect.

* To undertake fundraising programmes to ensure that the programme can continue and has a steady flow of money once funding stops. Details of this would be worked out at a later date before any ventures were attempted but I have attached two sample ventures to illustrate what we could do. This would involve some departments within the school.

I attach some details of how the business would operate and have discussed the matter with Mr. Connell. We would be happy to answer any enquiries about this project.

Yours faithfully,

....
D. MORFAM K. G. GILBERT

FORMATION DETAILS

STAGE 1, 1984

SETTING UP TEACHING SKILLS, ORGANISING GEAR

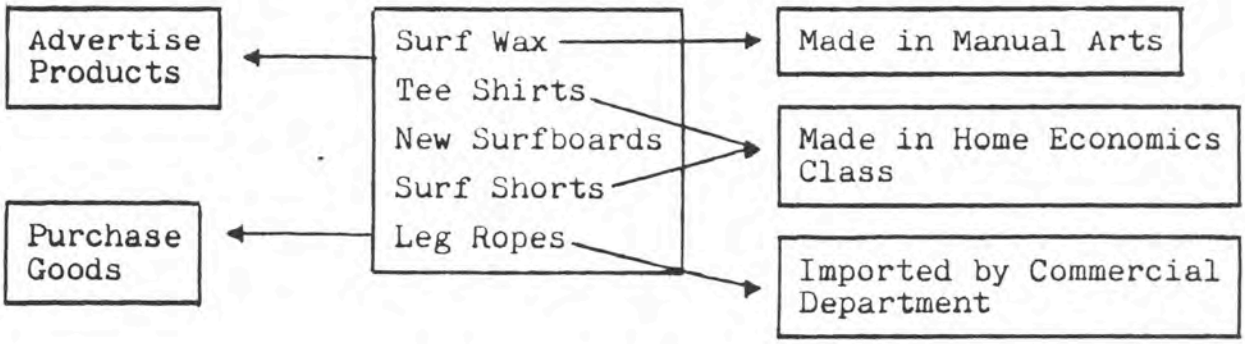
1. Teacher and Students form Executive. → Fill our required Legal Documents, Pay $32.00. → Register as Small Business

2. Executive
* Appoints Accountant → Commercial Department (Keeps Books)
* Organises Subcontractor → Manual Arts Department (Small jobs to set up centre)
* Appoints Auditor → Could be nominated by Regional Director or P. & C. Auditor or School Auditor.

3. Business begins to establish itself
Students involved in:
- Repairs to motors, surfboards, boats and equipment.
- Purchasing oil and petrol for Boats - Receiving goods, paying accounts.
- Contracting for small jobs:
  - Shelves for Marine Workshop.
  - Drip trays.
  - Motor stands.
- Commercial Department teaches Bookkeeping, Accountancy.

4. S.T.E.P. Funding Stops. → Audit Done
- Business Established.
- Equipment purchased and organised.

THE SURF SHOP VENTURE - 1985/86



Could be: * Short Term fund raising venture.
e.g. Canvass Tee Shirt Line,
Take Orders, Collect Money,
Thats it. Make $20 - $30 profit.

* Longer Term: Students learn to run a small shop or be shop assistants.

Once again the emphasis is on an Educational Outcome but if profits can be made all the better.

Project ongoing or terminates in 1986

BENOWA MARINE

(075) 394 222
MEDITERRANEAN DRIVE,
BENOWA, QLD, 4217.
All Correspondance to:
BOX 5733.
GOLD COAST MAIL CENTRE 4217.

S A M P L E

* Multi order/invoice form.
* Performs all operations of small business on the one form.
* Very typical of most small businesses.
* Used by many teaching institutes in small business management.

ORDER NO.: _____

JOB NO.: _____

QUOTE NO.: _____

INVOICE

RECEIPT

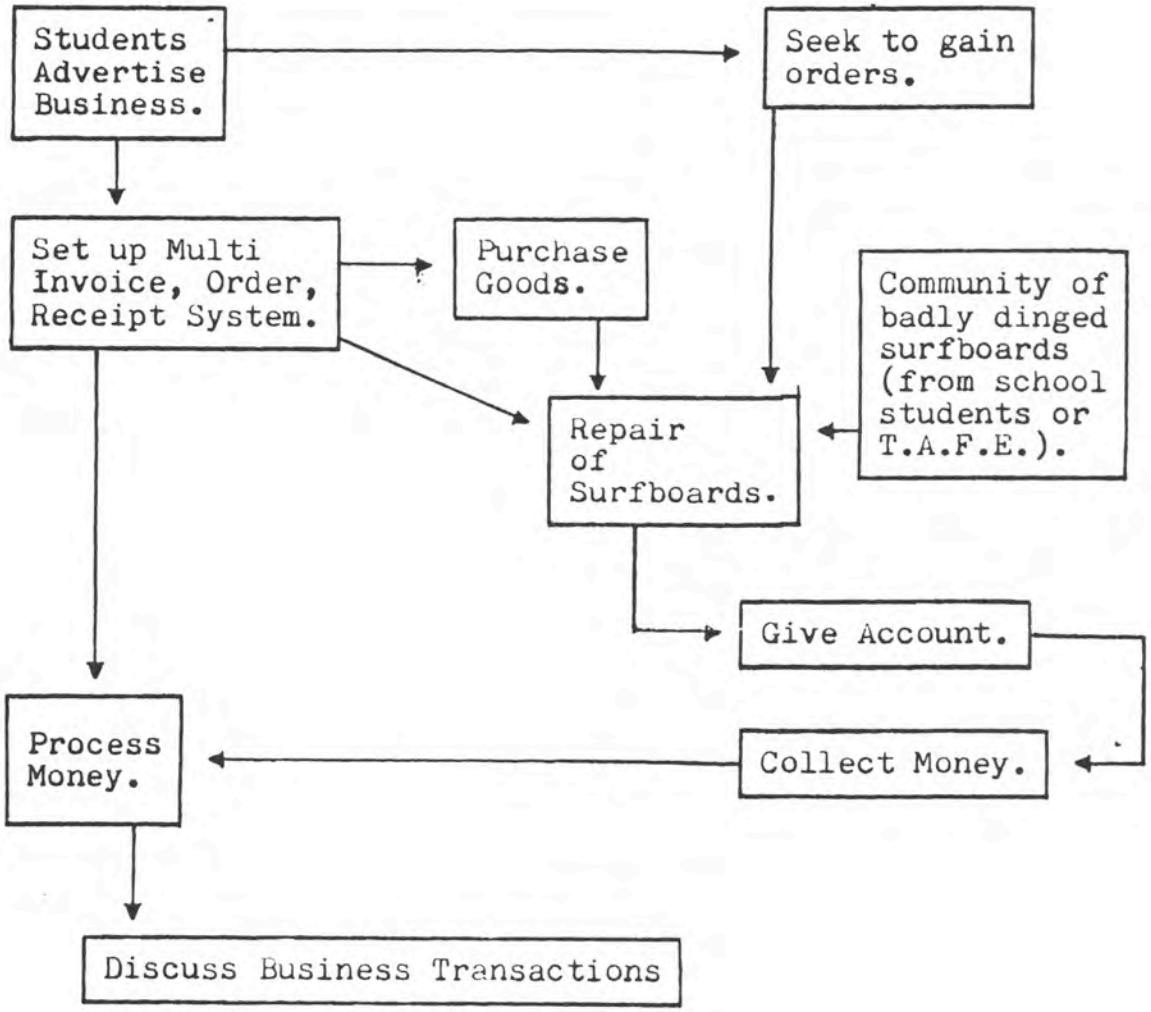
LEDGER

JOURNAL

COMPUTER

BUSINESS PHASE - 1984/1985

THE SURFBOARD VENTURE



BENOWA HIGH SCHOOL PARENTS & CITIZENS ASSOCIATION

PRESIDENT: Roger Brewster
Ph. 381 755 Bus.
501 660 A.H.

SECRETARY: Leslie Ponti
Ph. 323 782

17th July, 1986

Mr. R. Moffatt,
Benowa State High School,
Mediterranean Drive,
BENOWA. QLD. 4217

Dear Bob,

On behalf of the P & C Association and the students of the school, I would like to express our deep appreciation for your personal commitment and untiring efforts in relation to the Marine Studies program.

The P & C Association has benefitted financially from your generous loan of the copyright over the Marine Studies classroom notes. The sale of notes to other schools has defrayed the costs of establishing the Marine Studies program here at Benowa as well as assisting many other schools in Queensland to begin their school programs.

This letter acknowledges the return of the copyright over the following classroom notes to yourself as owner:

Navigation, snorkelling, coastal physics, fisheries biology, estuarine chemistry, oceanography, science of diving, field methods, boating and marine radio.

The P & C Association will continue to be able to sell copies of the sea notes which will continue to operate under the Marine Studies Sub Committee. The Association acknowledges that these notes were produced in school time and therefore remain the property of the Education Department.

Finally, we are very pleased that the inaugural Castrol Sea Safety Award was made to you. It is a fitting tribute and worthy honour to your entrepeneurial achievement.

Yours faithfully,

Roger J Brewster

ROGER J. BREWSTER
PRESIDENT

SCIENCE TEACHERS ASSOCIATION OF QUEENSLAND
(Incorporated in Queensland)
c/- Brisbane Education Centre PO Box 84 Spring Hill 4000

Mr Bob Moffatt
c/- Benowa Marine
Benowa S H S

Dear Bob,

STAQ acknowledges that the "Marine Science" units which it first published were exclusively your work and that copyright resides in you. You are therefore free to authorise any other publisher to produce those units.

Accordingly, I advise that STAQ Publications will sell out its remaining stock of units and will then not offer the materials for further sale. The Council believes that the best interests of members will be served by advising them that you are now the sole distributor.

May I take this opportunity to wish you well in your innovative venture with Benowa Marine.

Yours sincerely,

Bob McAllister

Circa 1983