MARINE ZONE

UNIFY Series: Years 7-9 STEM

BIG IDEA

Marine Zone transforms your students into citizen scientists. These citizen scientists develop a rich understanding of the purpose and process of scientific inquiry and mathematical investigation as they examine the ecology of the Moreton Bay catchment area. Students identify questions, make predictions, conduct investigations, collect, analyse and use data, explain phenomena, critically evaluate experimental design and draw evidence-based conclusions. The IMPACT Centre has partnered with Moreton Bay Environmental Education Centre (MBEEC) to produce *Marine Zone.*

NB: This program includes an exciting research voyage on-board *Inspiration* with MBEEC, leaving from Manly Boat Harbour east of Brisbane. The voyage is highly recommended. Schools who cannot attend should contact the IMPACT Centre to discuss potential program participation.

Marine Zone helps schools to build staff and student capability simultaneously. Key teachers and leaders can access the *IMPACT STEM Team.* Your web conference supervisor can co-teach with our online teacher.

SELECTION CRITERIA

- ✓ Selection criteria for the UNIFY Series is largely subjective.
- ✓ Many schools use *Marine Zone* and other UNIFY Series programs as an enrichment opportunity for mid-to-high achieving students.
- ✓ Teacher judgement and student interest in science and the environment should assist selection.

AUSTRALIAN CURRICULUM

See page 2 for Australian Curriculum links and other important details.

THE COURSE:

LESSON OVERVIEW (*dependent on excursion booking dates)		
NO.	TITLE	CONTENT
1	Welcome to *Marine Zone*	▪ Introduction to technology tools and the course
2	Introduction to eLearn	▪ Working in the eLearn environment ▪ Introduction to STEM – scientific inquiry skills
3	Pre-Assessment	▪ eLearn Test - pre-assessment ▪ Interpreting data skills
4	Introduction to Moreton Bay	▪ Moreton Bay – past, present, future ▪ Explore impact of human activity on the Moreton Bay catchment area (cause/effect)
5	Scientific Method of Investigation	▪ Investigate how scientists work ▪ Pose scientific questions - marine investigation ▪ Formulate hypotheses and predictions
6	Research Voyage Briefing	▪ Research Field Trip briefing – Moreton Bay ▪ Planning investigations – fair testing and variables
7	Research Voyage *	▪ Research Field Trip – Moreton Bay aboard *Inspiration* (no iConnect web conference)
8	Data Analysis I	▪ Field trip reflection ▪ BRUV analysis and processing data
9	Data Analysis II	▪ Determine patterns, trends & anomalies ▪ Draw inferences
10	Evaluating & Concluding	▪ Evaluate scientific investigation process and suggest improvements ▪ Draw evidence-based conclusions
11	Post Assessment	▪ eLearn Test - post-assessment
12	Where to from here?	▪ Review, consolidate and extend on project learning – celebrate success

MARINE ZONE

Years 7-9

UNIFY Series
Round 3 only

'Students have learnt important inquiry and analytical skills based on data analysis. They have covered marine ecosystems and also learnt essential digital technology skills. It was a very practical course and students got a lot of time working in their breakout rooms. Students enjoyed the course and learnt a lot.'

Supervisor - 2016

'Marine zone has been amazing because we have been able to not just learn about how to create a hypothesis, analysis data, learn about biodiversity, the different zones and the food chain but we have watched amazing videos from real people under the water to see what it's like!'

Student - 2016

How it Works	**Participation Costs**	**Secondary Main Page**	**Register Now!**

Australian Curriculum

Science

Science Inquiry Skills

Planning and conducting:
- Decide which variable should be changed and measured in fair tests and accurately observe, measure and record data, using digital technologies as appropriate (ACSIS104)

Processing and analysing data and information:
- Compare data with predictions and use as evidence in developing explanations (ACSIS218)

Evaluating:
- Reflect on and suggest improvements to scientific investigations (ACSIS108)

Science As A Human Endeavour

Nature and development of science:
- Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE098)

General Capabilities / Cross-Curriculum Priorities

Literacy

Comprehending texts through listening, reading and viewing
- Comprehend texts
- Navigate, read and view learning area texts
- Interpret and analyse learning area texts

Composing texts through speaking, writing and creating
- Compose spoken, written, visual and multimodal learning area texts
- Compose texts

Word Knowledge
- Understand learning area vocabulary

ICT Capability

Managing and operating ICT
- Select and use hardware and software

Creating with ICT
- Generate solutions to challenges and learning area tasks
- Use ICT effectively to record ideas, represent thinking and plan solutions

Communicating with ICT
- Select and use appropriate ICT tools safely to share and exchange information and to safely collaborate with other.

Numeracy

Using Measurement
- Estimate and measure with metric units

Interpreting statistical information
- Interpret data displays

Recognising and using patterns and relationships
- Recognise and use patterns and relationships

Sustainability – Cross-Curriculum Priority

The sustainability of ecological, social and economic systems is achieved through informed individual and community action that values local and global equity and fairness across generations into the future.

Critical and Creative Thinking

Inquiring – identifying, exploring and organising information and ideas
- Identify and clarify information and ideas
- Organise and process information

Generating ideas, possibilities and actions
- Seek solutions and put ideas into action
- Consider alternatives

Analysing, synthesising and evaluating reasoning and procedures
- Apply logic and reasoning
- Evaluate procedures and outcomes

NAPLAN Online – ICT Skills Guide

NAPLAN Online requires students to confidently use a computer or device in at least seven ways. As shown below, IMPACT Centre projects develop all seven of these skills and are an excellent way to prepare your students for online testing.

1. Locate and select an answer from a list – YES	5. Read and comprehend digital texts – YES
2. Type an answer – YES	6. Plan and compose text using word processing – YES
3. Read the screen and navigate web pages – YES	7. Listen using a headset – YES
4. Manipulate objects on screen – YES	**NB:** See DET's NAPLAN Online ICT Skills Guide for details.

Assessment

Pre and Post Assessment:
1. Pre and post tests
2. Investigation Template – during lessons
3. Captain's Log (Portfolio)

Reporting

- Pre and post assessment data are provided to schools, along with student attendance data.
- Qualitative report card comments are provided to schools. We recommend their inclusion as an OLA on semester report cards.

How it Works	Participation Costs	Secondary Main Page	Register Now!

Contact Details: Phone (07) 3727 2888 or email admin@impact.eq.edu.au