



## Teaching and learning model

There are three unit plans included in the Tangaroa Blue Marine Debris Education Kit:

1. Foundation - Year 3
2. Year 4 - Year 6
3. Year 7 - Year 10

Teachers can choose to teach the whole unit or a selection of lessons within the unit as each lesson clearly shows what sub-strand of the 'Australian Curriculum: Science' it is aligned to for ease of planning. Each lesson has an orientating task with base activities that are layered to suit different student and year levels, plus extra resources and activity suggestions that link to other areas of the curriculum, such as English. Most of the lessons have more content than can be covered in a 45 minute time frame so that teachers can have plenty of ideas to choose from that best suits the learners in their classroom and extra materials for students who may finish activities quicker than others. To support ESL learners and help build students' science vocabulary, it is a good idea to create a word wall at the beginning of the unit and add new words to the wall as you go along. There is a 'key vocabulary' section in each lesson that provides suggestions for some of these words. The seven general capabilities (Literacy, Numeracy, ICT, Critical and creative thinking, Personal & social, Ethical, and Intercultural) are also embedded within each lesson and are easy to identify by educators so that students have a complete learning experience.

### Cross-curriculum Priorities:

The Tangaroa Blue Marine Debris Education Kit is unique because it has been designed to include all three cross-curriculum priorities:

1. Aboriginal and Torres Strait Islander histories and culture
2. Asia and Australia's engagement with Asia
3. Sustainability

### Aboriginal and Torres Strait Islander histories and culture:

Tangaroa Blue Foundation has had years of experience engaging with communities in Cape York and the Torres Strait Islands and has put this experience into lesson design with interconnected aspects of country/place, people and culture. Students will have opportunities to engage with visual materials, hands-on activities and creative expression through art and music. There are also suggestions within each lesson to support students from diverse language backgrounds.





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### Asia and Australia's engagement with Asia:

Lessons are designed to provide opportunities for students to recognise that people from the Asia region have made, and continue to make, significant contributions to the development of science understandings and their applications. Through marine debris clean-ups and related activities, students will learn that the Asia region includes diverse environments and to appreciate that interaction between human activity and these environments continues to influence the region, including Australia, and has significance for the rest of the world.

### Sustainability:

Relationships including cycles and cause and effect are explored, and students develop observational and analytical skills to examine these relationships in the world around them.

In this learning area, students appreciate that science provides the basis for decision making in many areas of society and that these decisions can impact on the Earth's systems. They understand the importance of using science to predict the possible effects of human activity and to develop management plans or alternative technologies to minimise those effects.

### The 5Es

The Tangaroa Blue Marine Debris Education Kit is modelled under the basis that education experiences are best when learners can build their own understanding of new ideas with teaching and learning progressing through a sequence of: Engage, Explore, Explain, Elaborate and Evaluate.

<b>ENGAGE</b>	Activity or question that captures the students' interest. Opportunity to find out what students already know and make connections to new ideas.
<b>EXPLORE</b>	Hands-on activities. Objects and phenomena are explored. Experiences that can help students understand the introduced concept and explain it in their own words.
<b>EXPLAIN</b>	Teacher builds on the students' learning with the introduction of concepts and terms that help students further develop explanations for the phenomena they have just experienced.
<b>ELABORATE</b>	Activities allow students to apply learned concepts in new contexts and build on or extend understanding and skills. Students discuss and compare ideas.
<b>EVALUATE</b>	Opportunity for students to review and reflect on their own learning and new understanding and skills. Students have the opportunity to show changes to their understanding, beliefs and skills.





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### Marine Debris Learning Cycle:

Research tells us that students learn best when learning experiences are hands-on, authentic and are related to real world activities. As a result, the Tangaroa Blue Marine Debris Education Kit is designed to be taught in conjunction with a beach or river clean-up activity with processes and outcomes connected to the community beyond the school. The clean-up, data collection activity can be repeated more than once as each year level cluster focuses on different learning outcomes based on the Australian National Curriculum. The beach (or river) clean-up activity is embedded within the greater context of the curriculum outcomes providing access to knowledge about the marine debris problem and how it fits into the big picture. Cross-curriculum priorities and general capabilities for each learning area are also a key part of each unit for the convenience of the teacher's planning. The integrated design of the Tangaroa Blue Marine Debris Education Kit enables opportunity for the learning experiences to become part of the school culture.

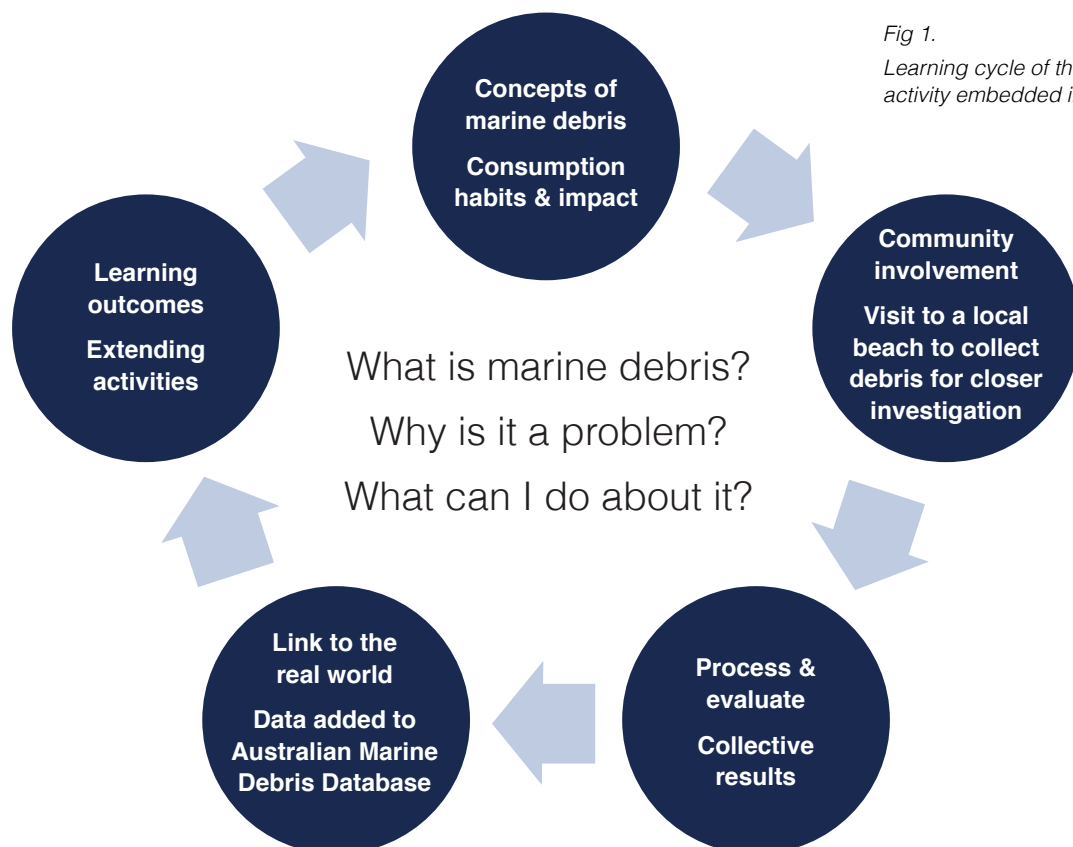


Fig 1.

Learning cycle of the beach clean-up activity embedded in each unit plan.



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FOR  
OUR  
COUNTRY



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## Creative learning and cross subject ideas:

Having creative learning outcomes as a way of expressing knowledge and sharing learning increases student interest and involvement in any activity. In response to this demand, the Tangaroa Blue Marine Debris Education Kit has been designed to leave the final few lessons open for teachers and students to choose what their creative synthesising task will be. Teachers can refer to the provided Creative Expressions PowerPoint presentation for ideas. It is important to choose the outcome with students before beginning a unit plan as it will need to be factored into lesson design. Some of the ideas in the Creative Expressions PowerPoint presentation include the use of digital media, music, art shows and links to community. Schools are encouraged to share their learning outcomes and expressions with each other on the Tangaroa Blue Foundation website

[www.tangaroablue.org](http://www.tangaroablue.org)

## Science background:

Science background information documents on marine debris have been designed to be used for lesson preparation. All the information is available in one document rather than being split up into sections for each lesson. That way, teachers can pick and choose what background information they would like students to read or can use segments to create distance education resources as necessary. These documents are available on the Tangaroa Blue Foundation website as Fact Sheets..

