**Modules**

1.a. Introduction to the environmental science course

- This module introduces the students to the topics delivered throughout the course. Students will:

* Identify the topics delivered in the environmental course
* Understand the interconnectedness of human beings and the natural world
* Communicate existing knowledge of marine life and make connections to personal experiences
* Participate in guided investigations to identify features of some marine animals
* Compare the basic features of fishes, turtles, dolphins, whales
* Identify and group marine animals using their features
* Communicate findings of observations of living things in their environment

2.a. Introduction to the environment

- This module introduces students to the environment and its features. Students will:

* Identify the difference between living and non-living things, animals and plants, human and non-human things
* Communicate findings of observations of living and non-living things, animals and plants, human and non-human things in the environment
* Be able to provide a definition of environment

2.b. The natural environment

- This module delves further in to the environment and focusses on the different natural environments of Australia. Students will:

* Locate Australia on a world map and identify which continent Australia belongs to
* Describe Australia’s climate
* Recall the different types of environments present in Australia
* Define natural environment
* Demonstrate knowledge of where different natural environments occur in Australia
* Use critical thinking to formulate ideas about different environments

3.a. Distinctive features of the ocean

- This module introduces students to the ocean and its features. Students will:

* Differentiate between aquatic and terrestrial environments
* Define photosynthesis
* Use a microscope safely and effectively to identify plankton in sea water
* Describe the phenomenon of tides
* Demonstrate understanding of tides through role-play

3.b. Salinity and ocean temperature

- This module further explores specific features of ocean water. Students will:

* Identify the differences between seawater and freshwater
* Describe factors that influence water density

3.c. Ocean currents

- This module explores and explains ocean currents. Students will:

* Recall the different currents of the world’s oceans
* Explain how currents move water around oceans
* Name the major oceans

4.a. The tide – Beach trip

- This module is an excursion to the beach to explore the phenomenon of tides. Students will:

* Recall what the tide is and describe it
* Explain what the wrack is and describe it
* Categorise items as mineral, plant, animal, human created
* Demonstrate how found items can be used for creative media

4.b. Mangroves – Mangrove trip

- This module is an excursion to mangroves to learn all about their ecological importance. Students will:

* Explain where mangroves grow and what conditions are needed for them to thrive
* Describe the ecological importance of mangrove forests
* Identify animals that use the mangrove forests
* Explain how humans use mangrove forests and why they are important to us
* Identify the associations Aboriginal and Torres Strait Islanders and people of South East Asia have with mangroves
* Evaluate ways that humans can protect mangrove forests

5.a. Birds biology and ecology

- This module introduces students to the biology and ecology of birds. Students will:

* Identify the features of a bird
* Describe the role of feathers in different environments
* Explain why birds sing
* Recall the function of nests

5.b. Birds of Australia

- This module delves further into the world of birds, focusing specifically on Australian bird species. Students will:

6.a. Cetaceans biology and ecology

- This module introduces whales and dolphins to students and focusses on the biology and ecology of cetaceans. Students will:

* Identify differences between fishes and cetaceans
* Describe differences between baleen and toothed whales
* Label external features of a humpback whale
* Understand the concept of the food chain in the marine environment

6.b. Cetaceans of Australia

-This module delves further into the world of cetaceans, focusing specifically on Australian cetacean species. Students will:

6.c. Photo identification

- This module introduces students to a core component of whale and dolphin research; photo identification. Students will:

* Explain what photo identification is and how it is used to identify individual animals
* Describe how photo identification is used in scientific research

6.d. Cetaceans – Sea trip

- This module is an excursion to the ocean to learn all about the role of a marine mammal researcher at sea. Students will:

* Have the opportunity to see whales and dolphins up close
* Discover the life of a marine scientist/ whale researcher
* Learn about humpback whales
* Participate in the research techniques used by the scientists

7.a. Sea turtles biology and ecology

- This module investigates sea turtles of Australia, focusing on their biology and ecology. Students will:

* Identify the species of sea turtles present in Australia
* Describe the external features of sea turtles
* Identify threats to sea turtles and propose possible solutions to threats
* Summarise the differences in feeding and habitat of the various sea turtle species

7.b. Sea turtles – Release trip

- This module is an excursion to see sea turtles released back in to the ocean. Students will:

* See a sea turtle released back in to the ocean after rehabilitation OR see baby sea turtles released in to the ocean after breeding programs
* Learn more about sea turtles and their conservation

(NOTE: This module can only be offered when and where sea turtle release programs are operating. Please speak with Association Eli-S for further information)

8.a. Corals and biodiversity

- This module introduces students to corals and biodiversity of coral reefs. Students will:

* Describe coral and coral reefs
* Identify the coral reefs of Australia
* List some flora and fauna of coral reefs
* Describe the importance of coral reefs
* Predict the outcome of an ocean acidification experiment

8.b. Threats to coral reefs

- This module delves further in to the coral reef world, specifically focusing on the threats to our coral reefs. Students will:

* Describe coral bleaching
* Explain how coral beaching affects coral reefs
* Summarise what ocean acidification is and why it is a threat
* Identify ways that humans can mitigate the problem of ocean acidification

9.a. The forest ecosystems of Australia

- This module introduces students to the forest ecosystems of Australia. Students will:

* Provide a definition of a forest and a tree
* Identify the different types of forest in Australia and where they occur
* Recall why trees and forests are important
* List some species of Australian trees
* List some species of Australian forest animals
* Differentiate between carnivores, herbivores, and omnivores

9.b. Human impacts on forests

- This module explores how human behaviours can impact forests and what we can do to mitigate it. Students will:

* Describe the functions of a forest
* Identify threats to forests
* Recognise the impacts these threats can have
* Learn some ways to mitigate deforestation

10.a. Fish and overfishing

- This module introduces students to the fisheries industry and focuses on the problem of overfishing. Students will:

11.a. Rubbish

- This module is all about rubbish and the threat it poses to the natural world. Students will:

* Provide a definition of rubbish
* Identify the ‘3 R’s (reduce, reuse, recycle)
* Develop plans to reduce rubbish in their environment

11.b. Recycling

- This module teaches students about recycling and why it is important. Students will:

* Define recycling
* Describe what items can be recycled
* Explain why it is important to recycle
* Categorise recycled items by material type
* Design a recycled item from recycled material

11.c. Rubbish – Beach clean-up trip

- This module is an excursion to a beach, where students will participate in a clean-up activity and learn more about the impacts of rubbish on environments. Students will:

* Recognise the impact waste has on the natural environment
* Contribute to the clean-up of the local environment

11.d. Recycling practical activity

- This module further explores recycling and focuses on how we can recycle in Australia. Students will:

* Categorise waste in to different types
* Identify ways that waste can be recycled
* Perform an audit of waste

Each module of the Eli-Scientific education program includes lesson goals that link to the Science and Technology K-6 syllabus. In the header of each module you will also see the codes and icons which link the module to the Coding and Thinking Skills and Learning Across the Curriculum from the Science and Technology K-6 syllabus (as described below).

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| --- | --- |
| **Course tools**  | **Code**  |
| Computational thinking  | ComT  |
| Design thinking  | DesT  |
| Scientific thinking  | SciT  |
| Systems thinking  | SysT  |

 **Coding of Thinking Skills**

**Learning Across the Curriculum Icons**

**Cross-curriculum priorities**

Aboriginal and Torres Strait Islander histories and cultures

Asia and Australia’s engagement with Asia

Sustainability

**General capabilities**

Critical and creative thinking

Ethical understanding

 Information and communication technology capability

Intercultural understanding

Literacy

Numeracy

Personal and social capability

**Other learning across the curriculum areas**

Civics and citizenship

Difference and diversity

Work and enterprise