MUSEUM
AUSTRALIAN NATIONAL MARITIME MUSEUM

High Tides and Good Vibes

TEACHER RESOURCE

A companion guide to the Secondary School self-guided worksheet

How to use this guide

The **High Tides and Good Vibes** Teacher Resource provides additional information and activities for you to use when taking your students on a self-guided visit through the museum. It is a companion guide to the student activity worksheet.

All activities are linked to the Australian Curriculum.

Activities 1 and 2 are on the Ground floor of the museum.

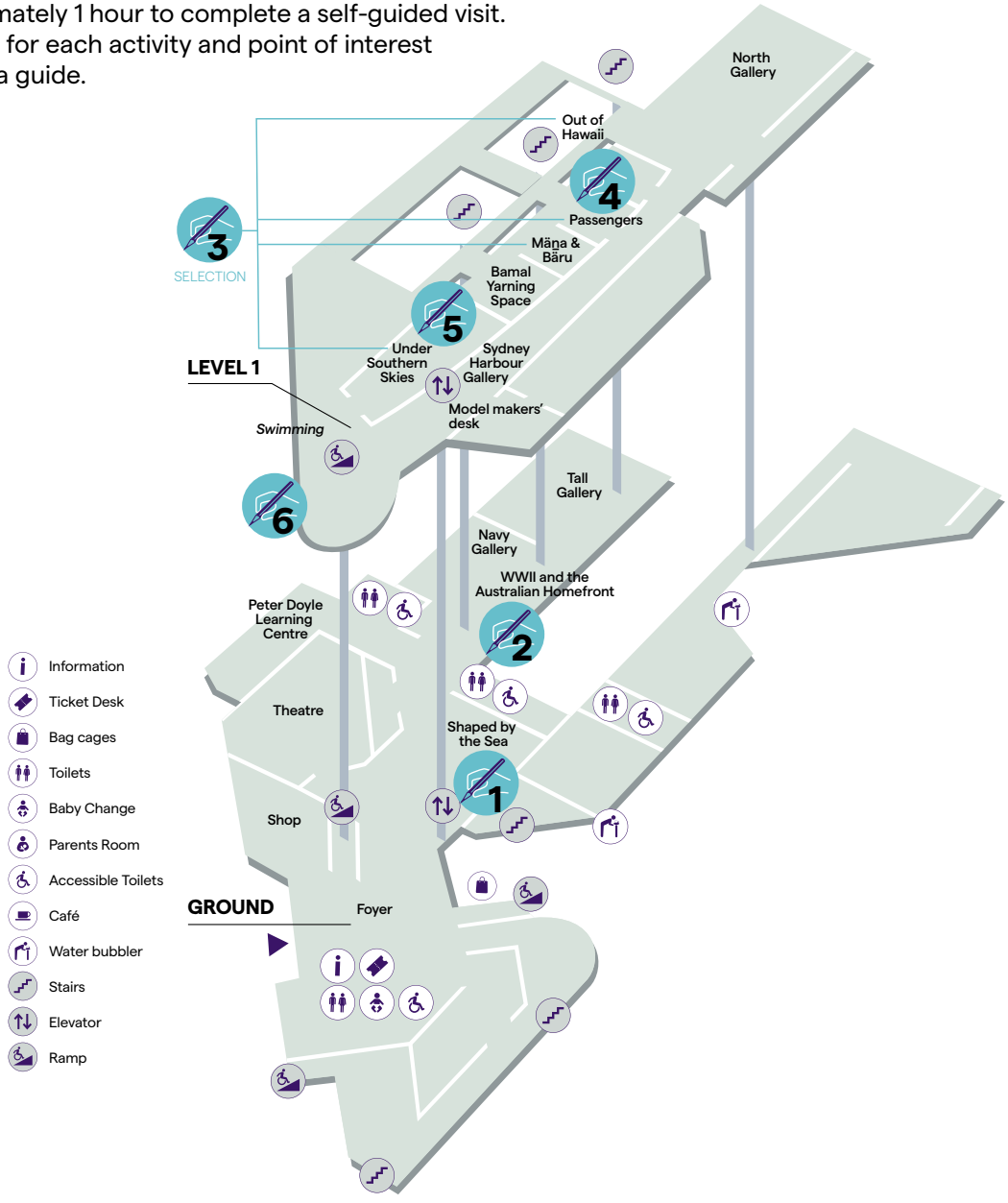
Activities 3 to 5 are on Level 1 (upper level) of the museum.

Activity 6 is located on the internal ramp of the museum.

This resource guide begins by walking from the museum foyer, down the stairs or ramp to the Ground floor and into the *Shaped by the Sea* exhibition. The resource guide moves through the Ground floor and up to Level 1 (via the stairs or lift). Then the resource guide moves through Level 1 and down the internal ramp, finishing in the museum foyer.

Please note, you do not have to follow this route. You can start your self-guided visit at any location in the museum. Each activity is self-contained and is not dependent on another activity to complete.

It takes approximately 1 hour to complete a self-guided visit. Estimated times for each activity and point of interest are included as a guide.



List of symbols


Link to Australian Curriculum


Discussion questions


Activities for students to complete individually or in small groups in the exhibitions


Extension tasks for older students or gifted and talented students


Alternative activities for students with additional support needs


Points of interest. These are additional stops. There are no activities on the student worksheets associated with these stops


Videos and digital art projections


Approximate time it will take to complete an activity or visit a point of interest

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Curriculum areas


English


Maths


Science


History


Geography


Visual Arts


Design and Technologies

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


Digital literacy


Ethical understanding


Intercultural understanding


Literacy


Numeracy


Personal and social capability

3 minutes

GROUND FLOOR:

Points of interest

***Bamal Badu* (*Earth / Water*)**
(entry to *Shaped by the Sea*)

This video is located between the foyer and the entrance to *Shaped by the Sea*. *Bamal Badu* is a 3D virtual worldscape which depicts pre-colonial Darling Harbour. This work showcases the deep-seated connection of Indigenous peoples to their land; re-creates the lifestyles of First Nations peoples; promotes the protection of native flora and fauna, and shares knowledge of bush foods and medicines.

***Dhaŋaŋ Dhukarr* (*Many Pathways*)**
(in *Shaped by the Sea* exhibition)

This immersive video installation is in the circular 'eddy' space of the *Shaped by the Sea* exhibition. The video is on a 20-minute loop and brings together the main elements of this exhibition – land, water and sky.

Dhaŋaŋ Dhukarr (*Many Pathways*) by the Mulka Project, 2023.
Photo: Marinco Kojdanovski / ANMM

8 minutes

GROUND FLOOR:

Shaped by the Sea

Walking the Reef video installation by Yidinji Dancers (2022), produced by ANMM for the exhibition *Shaped by the Sea*.
Photo: Marinco Kojdanovski / ANMM.

Aquaculture practices of early First Nations Australians and how these practices were influenced by the environment. (Year 7)

Sustainable harvesting practices and cultural protocols of First Nations Australians. (Year 7/8)

Examples of Aboriginal and Torres Strait Islander cultural revitilisation.

Object information:
Mandjabu (Barramundi fish trap)

This barramundi fish trap comes from Western Arnhem Land in the Northern Territory. It was made by Anchor Galunba and is called a mandjabu.

Materials:

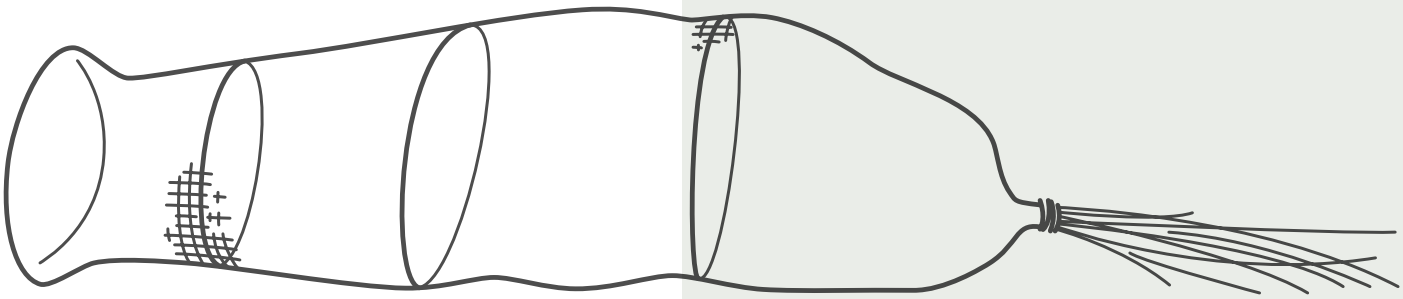
It is woven from a thin vine called milil. Manben (wood) pieces are used to make the conical shape.

Use:

Mangulaidj reeds are found in the upper reaches of rivers in Western Arnhem Land. The reeds support large fish populations. Mandjabu (barramundi fish traps) are used in the lower, tidal parts of creeks.

To use a mandjabu, a fence of stakes, paperbark, reeds and grass is placed across the narrow, tidal section of a creek. A gap is left for the barramundi to swim through.

When the tide turns, the mandjabu is installed. As the fish swim back, they are trapped. To remove the fish, the tied end of the trap is opened and the fish are collected.



Mandjabu (Barramundi Fish Trap) by Anchor Galunba, 1985.

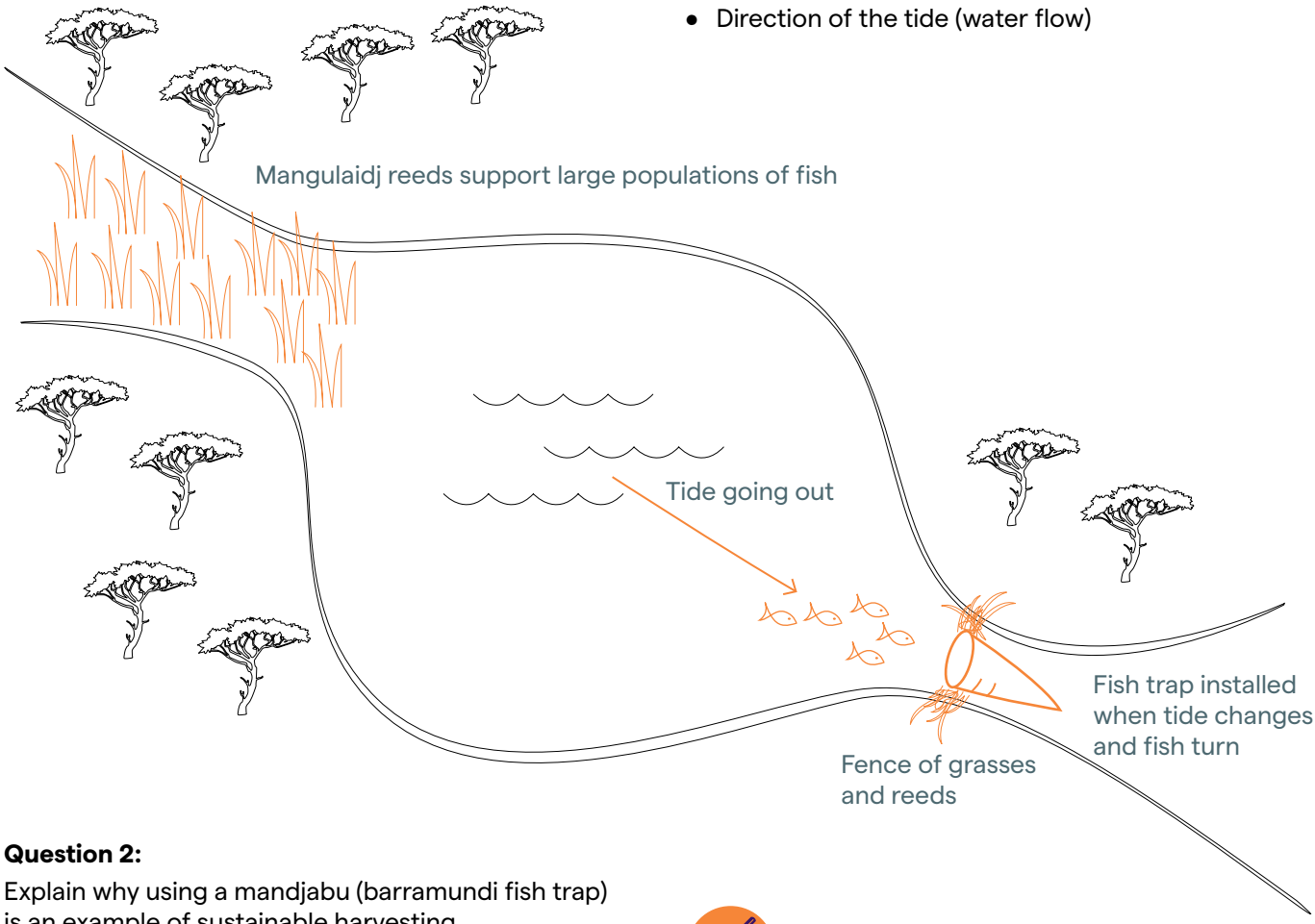
Activity 1:

Mandjabu (Barramundi fish trap)

Question 1:

Find the mandjabu. Draw these features on the river and label your diagram.

- Fish
- In the narrow part of the river: Grasses or reeds
- In between the grasses: Mandjabu (barramundi fish trap)
- Upstream of the mandjabu: Mangulaidj reeds
- Direction of the tide (water flow)



Question 2:

Explain why using a mandjabu (barramundi fish trap) is an example of sustainable harvesting.

Answer:

- When using a mandjabu, you only harvest what you need.
- These traps make use of the changing tides and the natural water flow of the river (rather than trying to control or change the river's natural course).
- The traps are made from local, natural materials. When they are no longer needed, they will easily break down and not cause harm to the land, water or fish.
- Once fish or eels have been collected from the traps, the traps can be re-tied and re-used many times again.
- The loose weave (gaps) in the mandjabu mean that only adult fish are trapped. Smaller, younger fish can swim through and grow to adult size.

Question 3:

What is cultural revitilisation and why is it important? Teacher's note: The eel trap is a useful case study for this question.

Answer:

Many Aboriginal and Torres Strait Islander traditions and knowledge have been lost or disrupted because of colonisation. Cultural revitilisation is about reconnecting with culture and sharing this knowledge so that it is not lost. Yvonne Koolmatrie has revived Ngarrindjeri weaving traditions and shares this knowledge through her artworks, such as the eel trap.

2 minutes

GROUND FLOOR:

Points of interest

HMS *Sirius* anchor
(in the Navy Gallery)

The First Fleet was made up of 11 ships and arrived in Kamay (Botany Bay) in 1788. How many First Fleet ships can you name?

Answer:

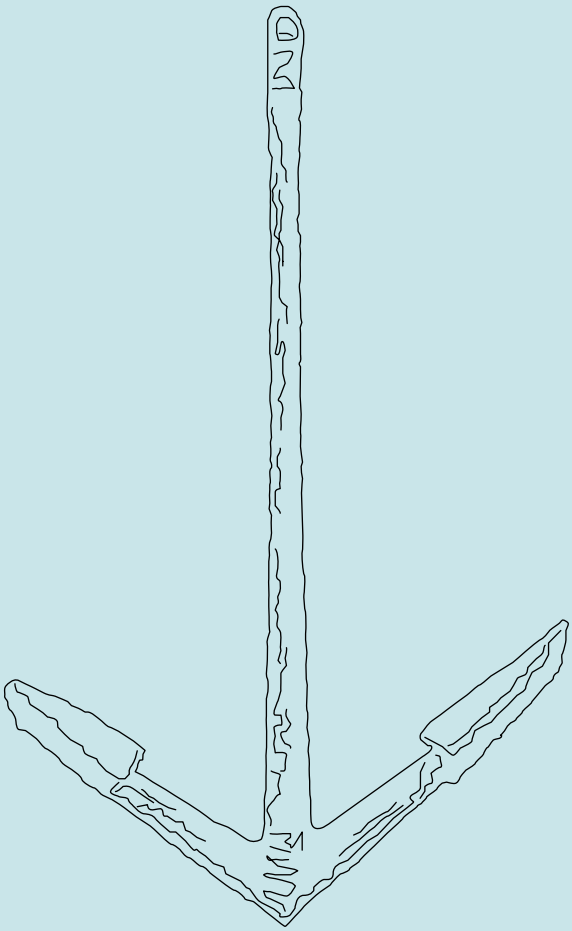
- **2 Royal Navy ships:** HMS *Sirius* and HMS *Supply*
- **3 store ships:** *Borrowdale*, *Fishburn* and *Golden Grove*
- **6 convict transportation ships:** *Alexander*, *Friendship*, *Lady Penrhyn*, *Scarborough*, *Prince of Wales* and *Charlotte*.

This anchor is from the flagship, HMS *Sirius*. A flagship is the lead ship in a fleet.

On 19 March 1790, HMS *Sirius* was wrecked on a reef off the coast of Norfolk Island.

200 years later, maritime archaeologists began diving at this incredibly dangerous wreck site. The surf and swell in this area are from the southwest. This means that surf conditions are generally rough and can change quickly.

In 1986, after 200 years under water, museum conservation treatments began on the anchor. Conservators used hammers, chisels and descaling guns to remove the thick layer of marine concretion. The anchor was then treated with electrolysis and painted with an anticorrosive coating.



Definitions:

Concretion: A stone-like encrusted clump or conglomerate which is created by natural elements such as seawater around an (often iron) artefact.

Conservation: The scientific process of preserving cultural heritage.

Electrolysis: An electrochemical process that can remove chlorides (salts) and convert corroded iron back to solid metal.

Maritime archaeology: The archaeological study of humans and their interactions with the sea.

8 minutes

GROUND FLOOR:

Navy Gallery

Photo: Andrew Frolows / ANMM

Effects of World War II (WWII) on the Australian home front, especially, the changing role of women and the Japanese midget submarine attack in Sydney Harbour. (Year 10)

Exhibition information:

The Navy Gallery explores the operations of the Royal Australian Navy (RAN) on land, in the air and under the sea, during times of war and peace.

Activity 2:

WWII and the Australian home front

Question 1:

Using the WWII display, list three effects of WWII on the Australian home front.

Possible answers:

- Bombing of Darwin.
- Japanese midget submarine attacks in Sydney Harbour.
- Shelling of Sydney and Newcastle suburbs by Japanese submarines.
- Introduction of an austerity campaign by Prime Minister Curtin e.g. ration cards.
- Women worked in factories, offices and farms. Women were replacing men who were serving overseas.
- Air raid shelters were built all over Sydney.
- Social and emotional impact on people at home because they were concerned about the safety of loved ones serving overseas.

Question 2:

Select one of the effects from your answer to question 1.

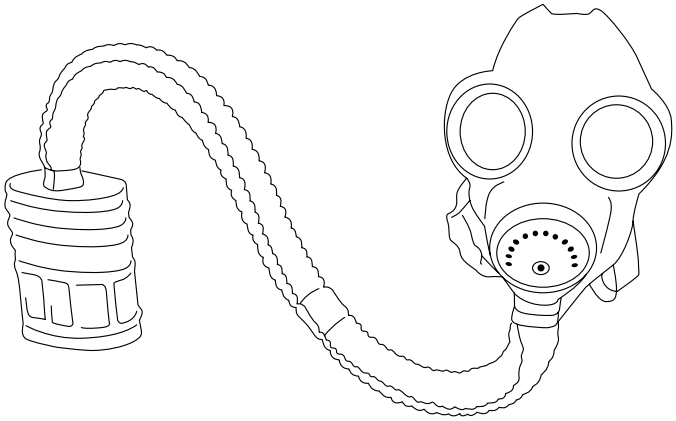
Imagine you were living in Australia during WWII. How would this effect have changed your life?

Hint: Consider positive and negative impacts, e.g. before WWII women could not work after marriage. During WWII women were allowed to work in factories, offices and farms.

In the WWII display case, find Object 9 – a WWII gas mask.

During WWII, civilians were given gas masks to wear in case of an air raid.

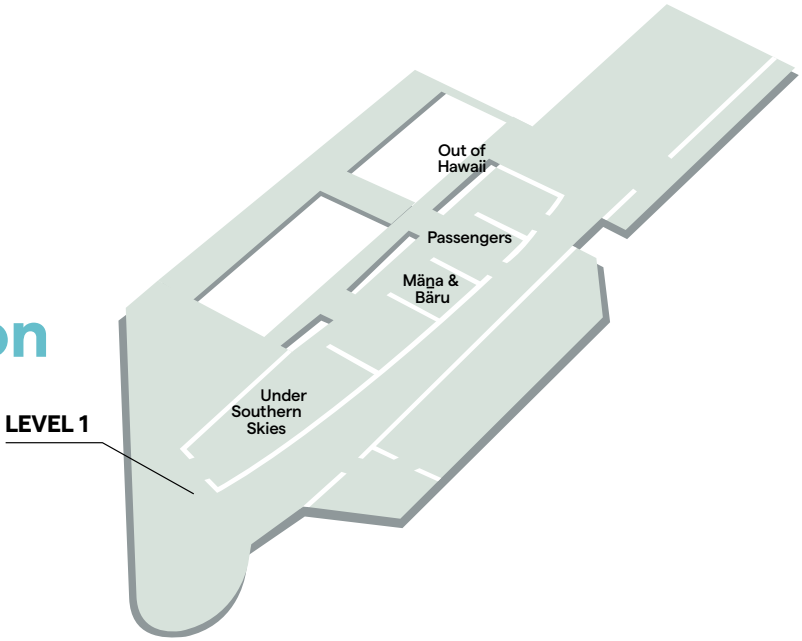
What are the similarities and differences between this WWII gas mask and the N95 masks used during Covid-19?



8 minutes

LEVEL 1:

Exhibition evaluation



Evaluate a museum exhibition and curate your own exhibition. (Year 9/10)

Activity 3:

Exhibition evaluation:
This activity can be completed individually or as a group.

To complete individually, students select one of the exhibitions listed below to evaluate. This option is recommended for groups of 10 students or fewer.

To complete in a group, the teacher selects one exhibition listed below and guides the class through the activity. This option is recommended for groups of 10 or more students.

Select an exhibition from the map above.
All exhibitions are located on Level 1.

- *Out of Hawaii – Surfing goes global*
- *Māna and Bäru*
- *Under Southern Skies*
- *Passengers*

Evaluate the exhibition using the scaffolding questions below.

Displays: How are the objects displayed? Are they in cases, on plinths or hanging up? How do the colours reflect the themes of the exhibition?	
Interpretation: the information panels which explain the displays. Is the information easy to understand and interesting? What is the take-home message?	
Accessibility and inclusion: Who is the target audience for this exhibition? Can this exhibition be enjoyed by everyone? Think about people with specific sensory preferences e.g. light, sound etc.	

Overall evaluation:
Reflect on your experience in the exhibition. Write down one positive feature, one negative feature and a suggested improvement.

Positive:

Negative:

Improvement:

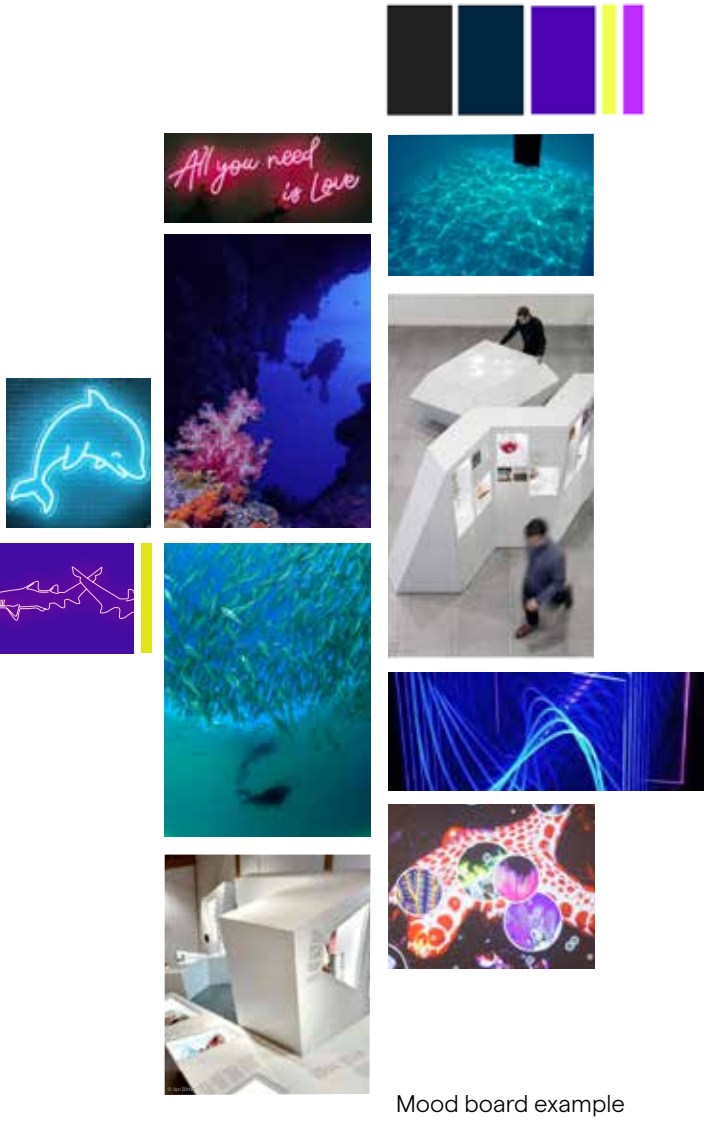
Curate your own exhibition!

Resources you will need:

- Computer
- Graph paper
- Pens, pencils and a ruler

1. Prepare an exhibition brief: What is the purpose of your exhibition? What message or story are your trying to share? Who is the target audience?

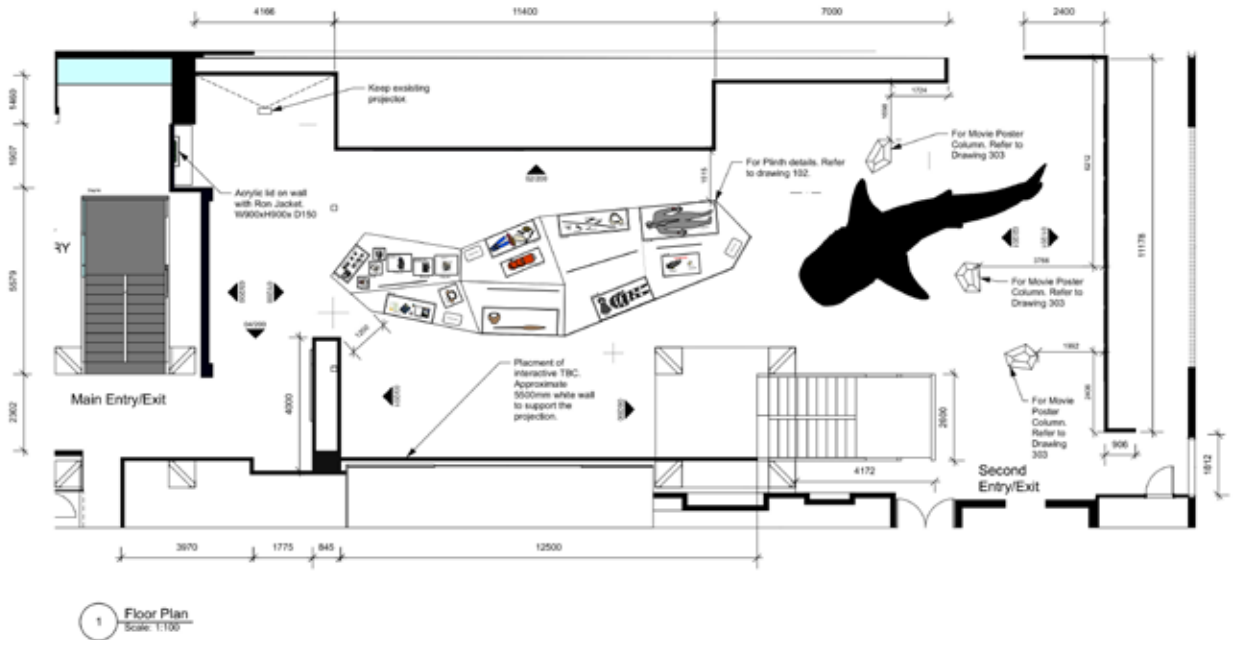
2. Object list: Using the Australian National Maritime Museum's Collection Database, develop a list of objects that will help you achieve your exhibition purpose.



Mood board example

3. Mood board: Create a mood board. Consider themes, colours, graphic design style and materials.

4. Floorplan: Floorplan: Draw a floorplan of your exhibition space using one of these scales, 1:50, 1:100 or 1:20. Think about your museum experience when placing objects. Remember to consider access and inclusion.



Floorplan example / ANMM

5 minutes

LEVEL 1:

Points of interest

Blackmores First Lady

In 1988, Kay Cottee became the first woman to circumnavigate the world solo, without stopping, without assistance, across both hemispheres and via the five southernmost capes in this sailing boat, *Blackmores First Lady*.

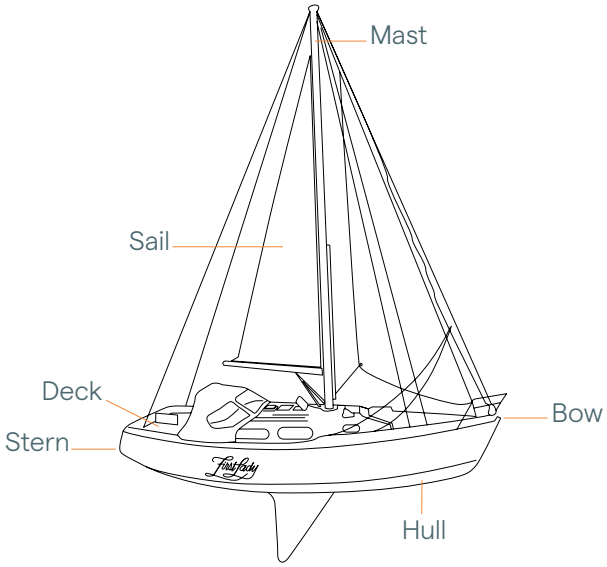
The journey lasted 189 days. During this time, she experienced treacherous seas, amazing scenery and wild winds. So that she wouldn't get lonely, Kay Cottee took her giant teddy bear, Ted, to keep her company.

Definitions:

Circumnavigate: to travel all the way around something.

Can you name the different parts of a sailing boat?

- **Hull:** the main body of the boat.
- **Deck:** the floor that covers the hull.
- **Bow:** the front of a boat
- **Stern:** the back of a boat
- **Mast:** tall post or spar on a boat, which supports the sail.
- **Sail:** a piece of fabric which is attached to the mast. A sail catches the wind and propels the boat.

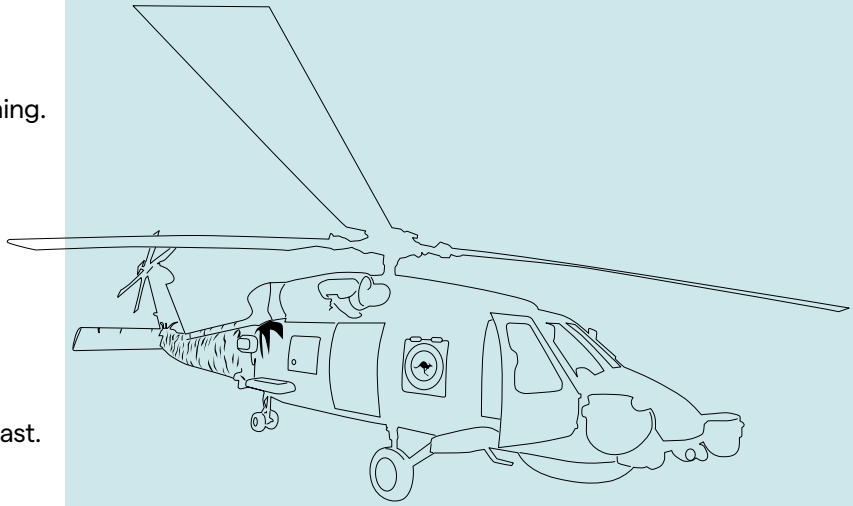


Glowing jellyfish

There are over 200 species of jellyfish worldwide. Jellyfish are an indicator species. Indicator species signal changes or imbalances in an ecosystem.

Currently, jellyfish populations are thriving because of increases in ocean water temperatures (due to climate change) and decreases in jellyfish predator populations (due to overfishing).

A lot of jellyfish in the ocean is not a problem, but it is a sign that there is something wrong in the ocean ecosystem.



S-70B Seahawk Helicopter

This S-70B Seahawk helicopter is 19.76 metres long. This helicopter was part of the Royal Australian Navy (RAN) 816 Squadron. The crest for this squadron is a Bengal tiger and the motto is 'Imitate the Action of the Tiger'.

This helicopter was deployed in the Middle East and was part of a daring rescue mission during the fatal Sydney to Hobart Yacht race in 1998.

7 minutes

LEVEL 1:

Passengers

Push and pull factors of migration. (Year 8)

Points of view, characters, events and issues in literary texts from different historical, social and cultural contexts. Create and edit texts in the epistolary form. (Years 7-10)

Cultural perspectives and worldviews.

Emotional awareness.

Diversity of Aboriginal and Torres Strait Islander cultures, languages, customs and beliefs.

Exhibition information:

Australia is a nation of migrants. Since the 18th century, convicts, child migrants, refugees and many others have braved the seas to reach it. Most Australians have at least one relative who arrived in Australia by sea. For many, this long voyage would become one of the most important journeys of their life. One that they would never forget. The *Passengers* exhibition shares the story of those who migrated to Australia by sea.

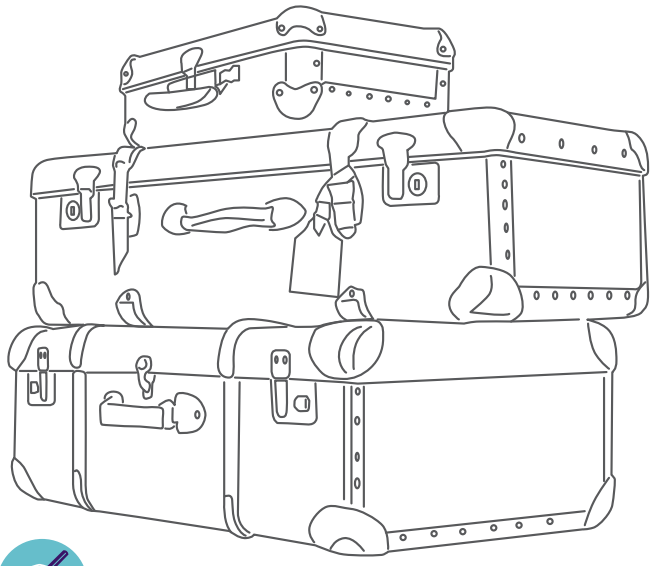
Activity information:

There are many reasons people migrate. These can be categorised into 'push' and 'pull' factors.

'Push' factors force someone away from a place, such as war or natural disasters.

'Pull' factors encourage people to move to a place, such as employment or better services.

Ask students to work in pairs or small groups to complete the following tasks.



Activity 4:

Passengers

Task 1:

Select one of the migrant stories below and answer the questions.

- **Forced Migration: Mall Karp**
- **Forced Migration: Thi Nguyen**
- **Assisted Migration: Jim Stone**
- **Departure from Genoa: Lena Gustin**

Name:

Date:

Factor: **Push** **Pull** **Both**
(please circle)

Task 2:

Imagine you are this person and you have recently arrived in Australia. Write a letter to a family member you left behind.

Describe the journey. What happened to you when you arrived in Australia? Do you feel welcome in Australia? Do you have any family or connections in Australia?

Each migrant has a special object that they brought with them to Australia. If you were leaving your home country, what special object would you take with you and why?

Scan the QR code, read some migration stories and complete the activities as a class.

https://lab.sea.museum/en/migration#portraits

- Where have they migrated from?
- Use Google Maps to create a world map of the migrants' home countries.
- What is cultural diversity? What are the benefits of cultural diversity? Do you think Australia is culturally diverse? Is Australia a safe and welcoming place for everyone?
- Think about your local community. Do the names of the streets and public places reflect the cultures of the people who live in this community? Why do you think this is the case?
- Look at the AIATSIS map of Australia. Consider the cultural diversity of Australia's First Nations peoples. Who are the traditional owners of the land where your school and home are located?
- Contact your Local Aboriginal Land Council and begin a conversation about the language, culture and customs of First Nations Australians in your area.
- The Aboriginal language groups of the Sydney area are Darug, Deerubin, Dharawal and Ku-ring-gai.

3 minutes

LEVEL 1:

Points of interest

Mäṉä the Tiger Shark by Guykuḏa Munungur, 2018.

Mäṉa and Bäru exhibition

The *Mäṉa and Bäru* exhibition contains sculptures by Yolŋu artist, Guykuda Munungurr. This exhibition is a powerful demonstration of ancestral and totemic affiliations of marine life in the Yirrkala region.

Can you find mäṉa (shark)?
Where is bäru (crocodile)?

How many sharks can you find?

Answer:

There are 4 sharks

Background information: Bäru

In 1996, Waka Munungurr found rubbish and the severed head of a bäru (crocodile) on the beach at Garrangali (Blue Mud Bay), his saltwater Country in north-east Arnhem Land. This area was created in the tracks of bäru, the crocodile.

Yolŋu Elders were distressed by the invasion of the sacred waterways and the disrespectful beheading of bäru in his own nest. Yolŋu Elders decided to paint the Saltwater Yirrkala Bark Paintings of Sea Country. These paintings reveal sacred patterns and designs, called miny'tji. It was believed that by revealing these sacred designs to the Balander (strangers or white people), understanding and respect for Yolŋu law would be advanced.

The Saltwater Yirrkala Bark paintings formed the spiritual and legal basis for the Native Title Sea Rights Claim. In 2008, the Blue Mud Bay decision was passed by the High Court of Australia, granting traditional owners exclusive access rights to the intertidal zone.

See one of the Saltwater Yirrkala Bark paintings in the *Shaped by the Sea* exhibition (on the ground floor).

Definitions:

Balander: strangers or white people. This word sounds like 'Hollander' i.e. someone from Holland.

Totem: a plant or animal that is a person's spiritual emblem. A totem defines a person's roles, responsibilities and relationships with Country and with one another.

Intertidal zone: the area of land between the high and low water mark (or high and low tide).

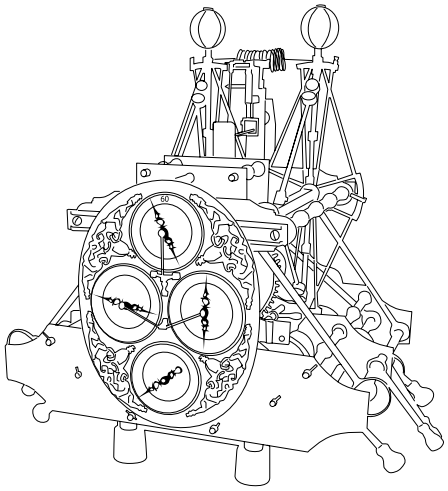
Bamal Yarning Space

The Bamal Yarning Space is a place for First Nations storytelling. Take time to sit on the sofas, relax and reflect. Be immersed in First Nations stories and learn about the importance of Sea Country for Aboriginal and Torres Strait Islander peoples.

6 minutes

LEVEL 1:

Under Southern Skies



Solve time problems across different time zones. (Year 8)

Solve conditional probability problems using 'if...then' language. (Year 10)

Object information: Marine Chronometer

Historically, mariners and navigators used marine chronometers to determine their longitude when they were at sea.

A marine chronometer is a very precise clock which can keep time accurately. Marine chronometers are not affected by changes in temperature or the motion of a ship. This makes them ideal pieces of equipment for long sea voyages.

Mariners logged their time and longitude every day to keep track of their distance travelled and location.

How to use a marine chronometer:

- When at sea, mariners would wait until the sun was at its zenith or highest point (i.e. midday). Then, they would check the time on the ship's marine chronometer which was set to Greenwich Mean Time (GMT).
- The difference in time between the ship (midday) and the marine chronometer, would help mariners to determine their longitude.

  1 hour equates to 15° of longitude.

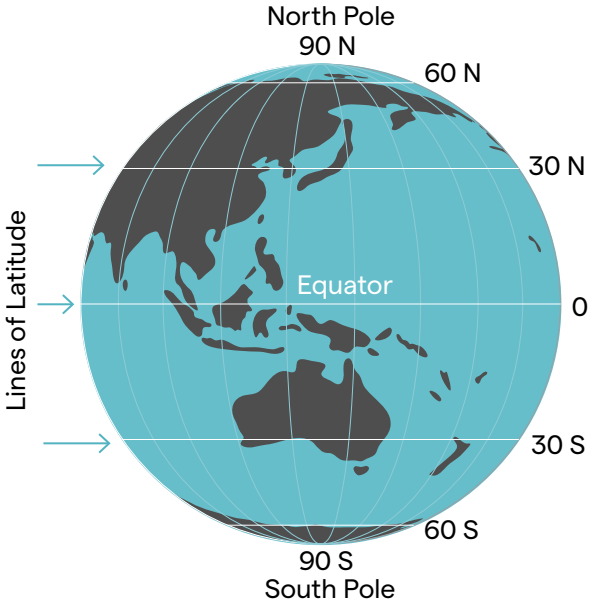
Latitude and longitude are imaginary lines around the globe which can be used to work out location and time.

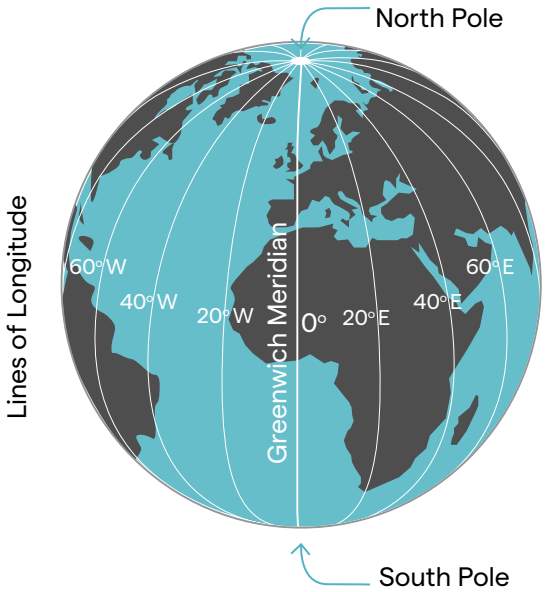
Latitude

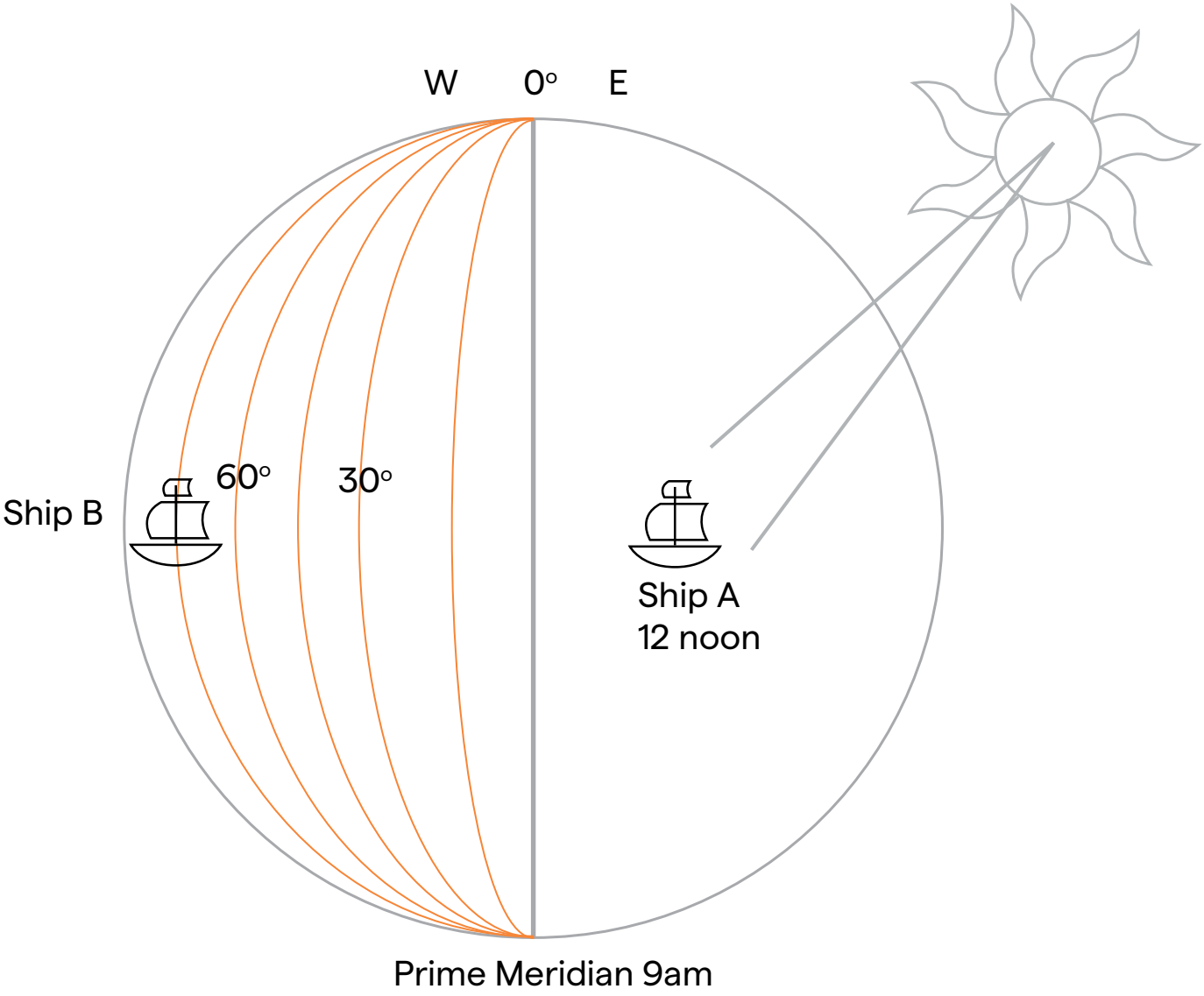
The equator is a ring around the centre of the earth. Lines of latitude are horizontal and are measured north or south of the equator.

Longitude

Lines of longitude are vertical and are measured east or west of the Prime Meridian. The Prime Meridian runs through Greenwich, England.







Activity 5:

Marine Chronometer

1. Calculating longitude:

It is midday at Ship A and the time on the marine chronometer is 9am.

What is the longitude of Ship A?

Remember, 1 hour = 15° of longitude.

Answer: 45°E

2. Calculating time:

It is 9am at the Prime Meridian, what time is it at Ship B?

Answer: 4am

A third ship is located at 90°E. The time at that location is 2:30am. What is the time on the marine chronometer on board this ship?

Answer: 8:30 pm

6 minutes

LEVEL 1:

Points of interest

Living Seawalls
Photo: Jasmine Poole / ANMM

Living Seawalls
(in Sydney Harbour Gallery)

In Sydney Harbour, 50% of the natural shoreline has been modified for urban constructions, such as pilings, pontoons or marinas. Urban coastal structures negatively impact the biodiversity and ecosystem services of coastal areas.

These Living Seawalls panels mimic the natural habitat of the shoreline ecosystem. Living Seawalls provide places for seaweeds and shellfish to colonise. They provide protection from predators for small marine animals.

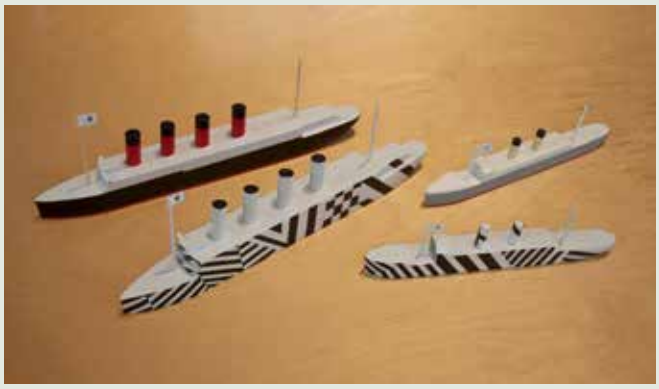
Living Seawalls have been installed around the world. There has been an increase of up to 36% in the number of fish, seaweed and invertebrates in areas where Living Seawalls are installed.

Model Makers' Desk

Stop by the Model Makers' desk and talk to one of the volunteers.

- What are you making?
- What materials and tools are you using? How did you select these items?
- What was your design process?
- What are some of the safety considerations when making models?

Photo: Jasmine Poole / ANMM



Model dazzle ships
Photo: Andrew Frolows / ANMM

7 minutes

RAMP:

Swimming shark sculpture

Interpret food webs and predict the impact of changes to biotic and abiotic factors on populations. (Year 7)

Investigate ways that artists represent or challenge ideas in their visual arts practice. (Years 7-10)

Object information: *Swimming*

Stop and look up! What do you see *Swimming* through the air?

Swimming is the name of the silver shark sculpture which is suspended over the ramp. It was created by Zou Liang in 2014.

The body of the shark sculpture is made up of a variety of marine organisms. These organisms are all part of the shark's food chain.

There are also two children balancing on the shark's tail. Humans are not part of the shark's food chain, yet the two species can co-exist.

This artwork advocates for balance in the world's ecosystems. The artwork aims to:

- raise awareness of the threat to shark populations from overfishing.
- draw attention to the practice of shark finning and the fin trade in China and south-east Asia.

Definition: Shark finning

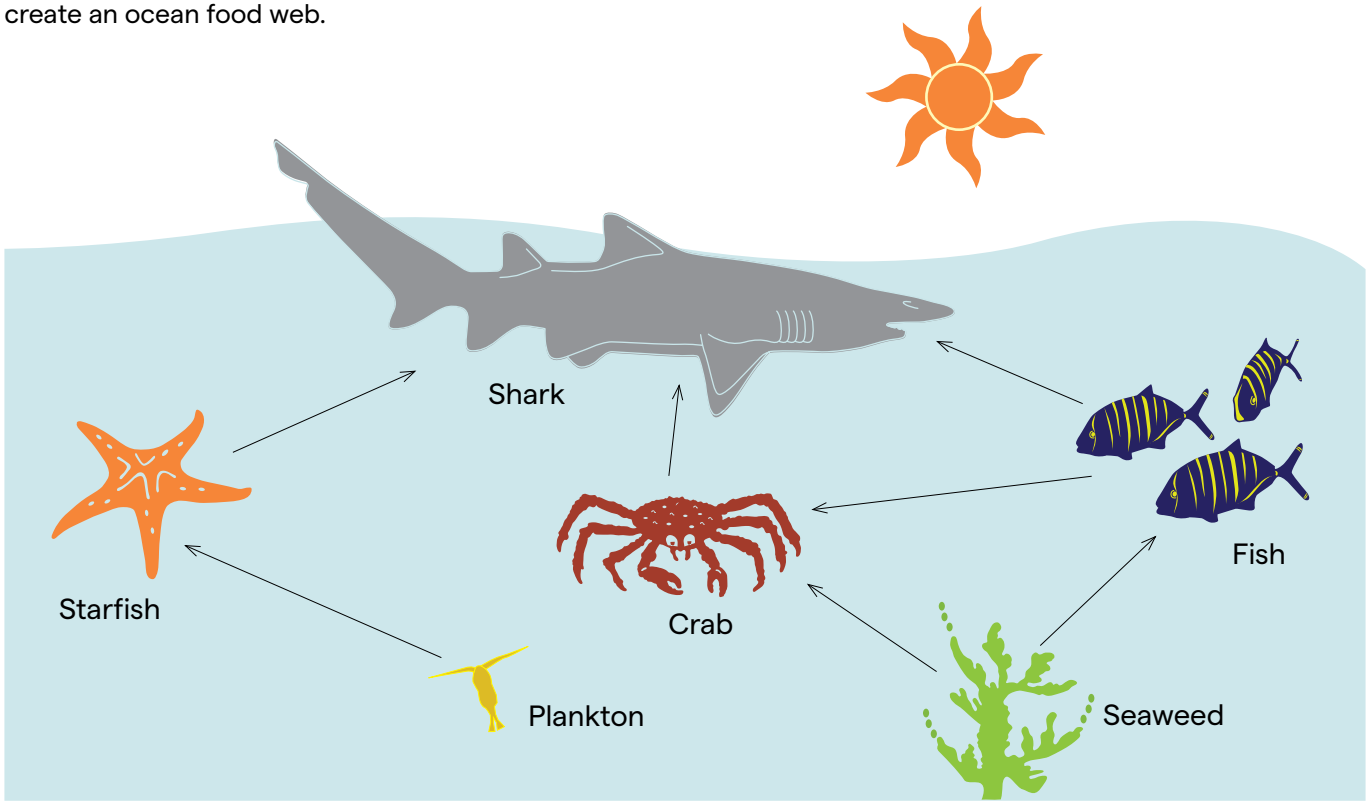
Shark finning is the removal of a shark's fins. Shark fins are considered a delicacy in Chinese cooking (e.g. shark fin soup) and are believed to have medicinal properties. When a shark's fins are removed, the shark is either sold separately from its fins or the shark is returned to the water. If a shark is returned to the water, it will die because a shark needs its fins for stability, steering and propulsion. Live shark finning is illegal in Australia.

Swimming by Zou Liang, 2014.

Activity 6:

Swimming shark sculpture

Question 1: Look at the *Swimming* shark sculpture. The marine organisms which make up the shark's body are all part of the shark's food chain. Using this artwork, create an ocean food web.



Question 2: Sharks are threatened by overfishing, bycatch and shark finning. Shark finning is the removal of a shark's fins for cooking or medicine. A shark will die if it is returned to the water without its fins.

Imagine sharks were to become extinct. Predict what you think would happen to this food web if sharks were removed.

Answer:

- Sharks keep the ocean in balance.
- If sharks were to become extinct, initially fish populations would surge. A dramatic rise in fish populations would lead to a major decrease in fish food sources (such as plankton and algae). If there is no food available for fish, fish populations would also decline and ultimately, the entire ocean ecosystem would collapse.

Question 3: There are two children balancing on the shark's tail. Why did the artist do this? **What is the message behind this artwork?**

Answer:

- The *Swimming* shark sculpture has two children balancing on its tail to demonstrate that sharks and humanity can co-exist.
- The artist is drawing attention to the issues of overfishing and shark finning.
- This sculpture is addressing the impact of humans on the health of the oceans.

The *Swimming* shark sculpture is about protecting the health of the ocean. Create your own artwork to promote caring for the ocean.

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