



Stories from the Reef

Creative Learning
2024 Teacher Resources



Stories from the Reef

Notes for Teachers

The foundation of the workshop explores Sydney Harbour underwater ecosystems, sustainability, and plastic waste. It aims to increase students' sensitivity and understanding about healthy harbours and our relationship to caring and protecting our natural environments.

Using theatre making and play skills, students create their own underwater world using recycled materials in new and unusual ways. Exploring self-expression and imaginative play, students inhabit characters you may encounter in the artificial reef, and perform imagined narratives and stories as a group.

The following Creative Learning Notes contain key themes, links to videos and suggestions for conversations and activities in the classroom before and after a visit to the performance.

We recommend using this resource as a starting point, to adapt content in a way that suits the learning needs of your students.

- **Subject areas:** English, Science, Drama, Dance and Visual Arts
- **Cross curriculum priorities:** Sustainability, Aboriginal and Torres Strait Islander Histories and Cultures
- **General capabilities:** Literacy, Critical and Creative Thinking, Personal and Social Capability, Ethical Understanding

Stories from the Reef

In this workshop, students will:

- Learn about the ecosystems of the harbour surrounding the Sydney Opera House and how artificial reefs are made and work to support new aquatic growth
- Collaborate with their classmates to create characters, small artworks and storylines that culminate in a short play or presentation
- Embody roles such as the Squid Squad (Puppet Maker), Reef Builder's Association (Reef Maker) and Ocean Ranger (Storyteller) to share tales and imaginatively engage in their learning
- Explore drama play, storytelling and movement culminating in a short performance
- Develop their ability to express themselves and communicate thoughts about their relationship to the natural world, including describing observable features of living things and their environments
- Learn about the ways the Sydney Opera House, and other organisations, can contribute to positively impacting the environment and community through sustainability projects

Teaching point: First Nations perspectives

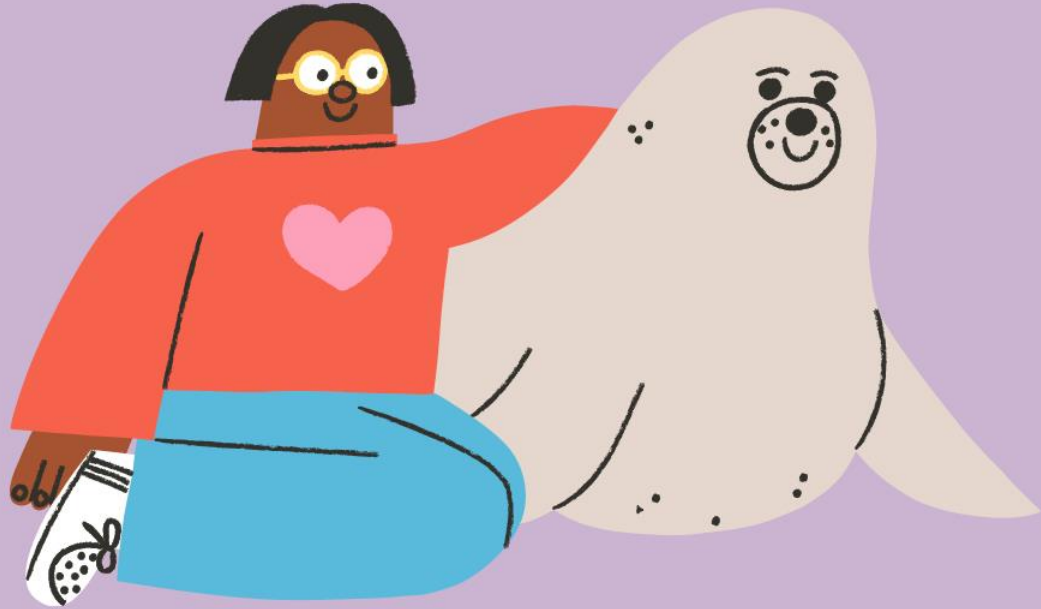
Tubowgule was a point located at the end of a long, wide ridge and surrounded by rocky shoals that mostly covered at high tide. With its proximity to the harbour, cove, a freshwater creek and mud flats, the area was rich in resources. This included oysters, mussels, fish, possums, wallabies, kangaroos and many edible plants. Shells and animal bones discarded by the Aboriginal people formed 'middens' located around Sydney Harbour.

What is the local Aboriginal name near where you are right now? What makes this place special?



The Gadigal people in Warrang/Warrane (Sydney) call the place around the Opera House 'Tubowgule' – meaning the knowledge water.

The Gadigal believe that the coming together of the saltwater (from the Pacific Ocean) and freshwater (from the Parramatta River) creates a surge of energy and nutrients right at this very spot. This makes Sydney Harbour an ideal spot for fishing, eating, gathering together and sharing stories.



The Sydney Opera House Artificial Reef Project

The Artificial Reef Project

About the Sydney Opera House's backyard

The Sydney Opera House is surrounded by water; it's kind of like the Harbour is our backyard!

Like all backyards – it's a place that we are responsible for looking after. But did you know 60% of Sydney's harbour shoreline has been replaced by seawalls, resulting in small fish and animals losing their homes?

To help restore the natural beauty of our backyard, Sydney Opera House has embarked on a three-year research project led by University of Technology Sydney Professor of Marine Ecology David Booth.

In May 2019 the modular artificial reef was installed alongside the Opera House sea wall to help bring the fish back and create a new home for them.



The Artificial Reef Project

So, what exactly is an artificial reef?

Reefs are natural structures that are comprised of coral, sand or rocks that are just above or below the surface of the sea.

On the other hand, artificial reefs are human-made structures that are made to model the characteristics of reefs. Artificial reefs are often created to encourage biodiversity in the water.

Artificial reefs can be purpose-built structures that are deliberately installed to encourage and support biodiversity in areas or at times they can be accidental e.g. a sunken ship.

The Sydney Opera House's Artificial Reef is made up of hexagonal pods constructed from marine-grade steel and concrete. Over time, the reefs have become encrusted with seaweed and sea life, providing a home and food source for smaller fish species.

Most recently, species of white seahorses were found swimming in the Artificial Reef.

Did you know there is a seal that visits the Opera House?

Sydney Fur Seals: an interview excerpt

[Read the following interview with Taronga Zoo's Andrew Moore](#) in detail to learn about Benny the Seal and the marine life who take up residence in and around Sydney Harbour.

What can you tell us about the seal that's taken up residency at the Opera House over the past few years?

He's been a regular visitor since 2014, he's a long-nosed fur seal and looking at his size, it's probably a sub-adult or an adult male and his body condition is good. The fact that he's coming back to the site and given we can be confident that it's the same animal, it's a really good reflection of the people that are viewing him.



Sydney Fur Seals

An interview excerpt

Do these seals help the biodiversity of the harbour and if so, in what ways?

Predators are certainly important in maintaining biodiversity. They might prey on other key species like squid and octopus for example, which might benefit crayfish population. Ultimately having more animals in the mix or more individuals or different species is really important in maintaining those different interactions that can occur—otherwise you might have crayfish populations increase disproportionately for example. Having that important balance of predators to keep those other populations in check is very important for a healthy situation.

What do seals get up to during the day?

Whilst they're at sea, they're moving a lot—these guys swim big distances. It's not uncommon for them to swim 100km in a day, even 1000km within a few days. So when they get back to land, with a belly full of fish, sleeping is a big part of their day. During the breeding season—between the months of November and January—males will be guarding their territories and mating with females, whilst females will be nursing their pups.

Conversation starters



Conversation Starters

Before you arrive at the workshop

Imagine your favourite beach or swimming place.

- What does it look like?
- What does it sound like?
- Who or what lives there?
- What does it smell or taste like?
- Who is with you?
- What are you doing when you are there?

How might you help look after the swimming places, natural environment and waterways near you?

From here you might like to create a drawing, postcard, or poem that you can share with a friend or someone close to you that describes this special place.



Artwork projection by Blak Douglas on the Sydney Opera House Sails for World Oceans Day 2021

Conversation starters

Read the following interview with Professors David Booth and Giglia Beretta

- What type of coral does Sydney have?
- How many species of fish live in Sydney?
- What are some of the threats to marine life in Sydney Harbour?
- Why was this project important for the biodiversity of Sydney Harbour?
- How can humans interact positively to ensure that the environment is protected?
- What do you think are the positives and negatives of building an artificial reef?



Teaching point: caring for the environment

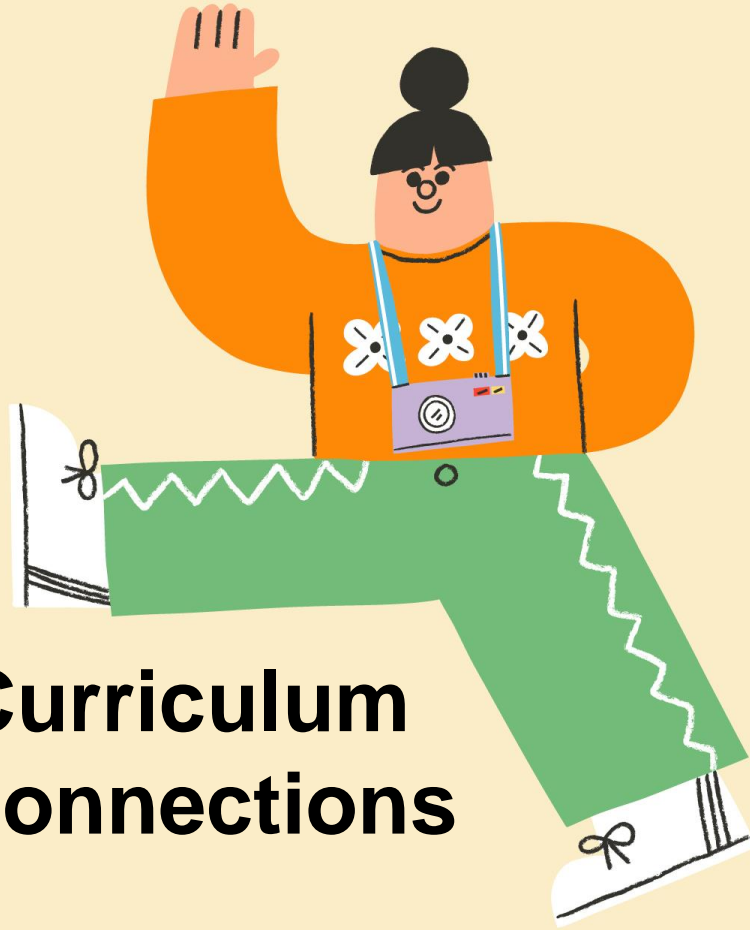
What does the environment look like around you? What are the colours, smells, textures and shapes? You might like to draw this.

What are some ways you care for the environment? Why is this important? Discuss this as a class.

Create an underwater world (or sea creature puppet) using cardboard, coloured paper and any other recycled materials you can find. This might include plastic, packaging, bottle caps, netting from fruit, and so much more.

Share your world or creature with the class and create a story together.





Curriculum connections

Curriculum Links

Connecting with the classroom

English

- ENe-1A communicates with peers and known adults in informal and guided activities demonstrating emerging skills of group interaction
- ENe-12E demonstrates awareness of how to reflect on aspects of their own and others' learning
- EN1-1A communicates with a range of people in informal and guided activities demonstrating interaction skills and considers how own communication is adjusted in different situations
- EN1-12E identifies and discusses aspects of their own and others' learning

Mathematics

- MAe-15MG manipulates, sorts and describes representations of two-dimensional shapes, including circles, triangles, squares and rectangles, using everyday language
- MAe-14MG manipulates, sorts and represents three-dimensional objects and describes them using everyday language

Science

- STe-3LW-ST explores the characteristics, needs and uses of living things
- STe-6ES-S identifies how daily and seasonal changes in the environment affect humans and other living things
- STe-2DP-T develops solutions to an identified need
- ST1-1WS-S observes, questions and collects data to communicate and compare ideas
- ST1-4LW-S describes observable features of living things and their environments

Creative Arts (Music)

- MUES1.2 Creates own rhymes, games, songs and simple compositions
- MUS1.1 Sings, plays and moves to a range of music, demonstrating an awareness of musical concepts

Curriculum Links

Connecting with the classroom

Creative Arts (Drama)

- DRAES1.1 Uses imagination and the elements of drama in imaginative play and dramatic situations.
- DRAES1.4 Responds to dramatic experiences.
- DRAS1.1 Takes on roles in drama to explore familiar and imagined situations.
- DRAS1.3 Interacts collaboratively to communicate the action of the drama with others.
- DRAS1.4 Appreciates dramatic work during the making of their own drama and the drama of others.

Creative Arts (Visual Arts)

- VAS1.1 Makes artworks in a particular way about experiences of real and imaginary things.
- VAES1.1 Makes simple pictures and other kinds of artworks about things and experiences.
- VAES1.4 Communicates their ideas about pictures and other kinds of artworks.

Resources

More about the Sydney Opera House

Sydney Opera House: Our Story

- <https://www.sydneyoperahouse.com/our-story>

How we work – strategic plans and programs

- <https://www.sydneyoperahouse.com/about-us/how-we-work>

Community projects

- <https://www.sydneyoperahouse.com/about-us/in-the-community>

Careers and opportunities

- <https://www.sydneyoperahouse.com/about-us/careers-and-other-opportunities>

Creative Learning resources

- <https://www.sydneyoperahouse.com/learn/teachers-and-students/classroom-resources>

Get in touch

Got questions? Contact us with any enquiries about our education programs for schools via phone or email.

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