

ADELAIDE  
FESTIVAL **AF**

# CREATE<sup>4</sup> ADELAIDE

**EDUCATION PACK**

# WELCOME TO CREATE4ADELAIDE!

Create4Adelaide is a large-scale, year-long project that encourages young people to develop their creative skills and engage with climate change. This is a creative, participatory project with and for young people, conceived by **Sabir** and delivered by **Adelaide Festival**.

Create4Adelaide gives young people across South Australia the opportunity to be part of something big: to express themselves artistically, to think outside of the box, and to engage with important issues around climate change in a local setting.

The project started with a vote in early 2023 where 2,000 people voted on their top climate priorities for South Australia. The top three priorities were announced in April 2023.

Students are now invited to create artistic responses to these three climate priorities, either working to create something as a class, in a group, in a pair or as an individual.

**Create4Adelaide will open a call for artworks on 1 August 2023.** This is when young people can submit works to Create4Adelaide using the hashtag #Create4Adelaide or by uploading it at [create4adelaide.au](https://create4adelaide.au)

**The open call for artworks closes on 30 September 2023.**

Young people will be invited to vote on the submitted artworks. The top voted works will be part of a digital and physical exhibition in the 2024 Adelaide Festival.

## INFORMATION FOR TEACHERS

This education pack has been created for teachers who want to bring Create4Adelaide into the classroom. It provides tools and resources related to the three priorities and gives examples of how young people can artistically respond.

We are also able to provide workshops and support to a limited number of schools. If you would like to request a Create4Adelaide workshop, please fill out the form at [bit.ly/c4a-workshops](https://bit.ly/c4a-workshops)

If you have any questions or require more information, please contact Create4Adelaide's Project Manager, Caitlin Ellen Moore, via email at [cmoore@adelaidefestival.com.au](mailto:cmoore@adelaidefestival.com.au)

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## ABOUT CREATE4ADELAIDE

Conceived by Sabin and delivered by Adelaide Festival, Create4Adelaide is a new project that encourages young people to develop their creative skills and engage with local climate change priorities.

The challenge of the project will be for students to create artworks that reflect one of the three priorities and communicate their message about building a better future. The top three climate priorities, as voted by young people across South Australia, are:

- Extinction of animals and plants
- Extreme weather events (bushfires, floods, droughts)
- Pollution of our air and waterways

## A FESTIVAL FOR THE FUTURE

Create4Adelaide is delivered by Adelaide Festival, the first major arts festival in Australia to be certified carbon neutral. Adelaide Festival is proud to be a part of a city that is leading the transition to a low carbon economy, and feels it is important to be part of the community leading climate change action to help our environment and our economy.

**Find out more about our commitment to sustainability [here](#).**

## INSPIRED BY CREATE4GLASGOW

Create4Adelaide isn't the first project of its kind. In 2021, Sabin conceived Create4Glasgow, a project delivered by the City of Glasgow to get the local community to engage with COP26.

**Learn more about Create4Glasgow [here](#).**

**“We don’t want one Greta Thunberg,  
we want thousands of them.”**

– Andrea Reid, Senior Education Officer, Glasgow City Council

# HOW TO GET INVOLVED

## THE EXCITING THING IS THAT YOU'VE ALREADY TAKEN YOUR FIRST STEPS!

This resource has been created to help you to bring Create4Adelaide into your classroom. Although there are multiple ways to get involved with this project over the course of the year, creating art in response to the three climate priorities is the easiest way to get your students involved.

This resource provides support as students explore, develop ideas and create artworks. It includes:

- information on climate change
- activities to explore climate change
- activities to support students to develop artworks related to one of the three priorities – from ideation to creation
- a curated list of links to resources
- a glossary of climate change words and terms
- climate psychology information to support student wellbeing as they research and explore issues around climate change

The suggested activities can be used flexibly and each activity can be modified depending on the year level and ability of your students. Each activity provides the opportunity for students to:

- identify prior knowledge
- engage with new material, information and skills
- work independently or in groups to meet the challenge of the task
- seek feedback from peers as they progress on the artwork challenge
- refine the product
- present the artwork to the class
- submit the artwork to [create4adelaide.au](https://create4adelaide.au)

**We strongly encourage you to submit any art created through these activities - whether it's visual art, poetry, film, music or another form of artistic expression – to Create4Adelaide at [create4adelaide.au](https://create4adelaide.au)**

**Please note:** Create4Adelaide only accepts digital artwork submissions. Photographs or videos of visual arts objects, student activities or protests, or similar physical items or activities are accepted - and encouraged!

## CREATE4ADELAIDE TIMELINE

### FEBRUARY – MARCH 2023

Young people were invited to vote on their climate change priorities in Adelaide and South Australia.

### APRIL – AUGUST 2023

Young people get creative with inspiration and support from their teachers and local artists! This is the peak time for workshops.

### AUGUST – OCTOBER 2023

An open call will be launched to invite young people to submit their artworks.

### NOVEMBER – DECEMBER 2023

Young people will choose the artworks they want represented at the 2024 Adelaide Festival.

### MARCH 2024

Exhibition in the 2024 Adelaide Festival!

# AUSTRALIAN CURRICULUM CONNECTIONS

There are numerous opportunities for teachers and students to make connections to the General Capabilities in the Australian Curriculum: **Literacy, Numeracy, ICT, Critical and Creative Thinking, Personal and Social Capability, Ethical Understanding** and **Intercultural Understanding**.

Cross-curriculum priorities are only addressed through learning areas and do not constitute curriculum on their own, as they do not exist outside of learning areas. Instead, the priorities are identified wherever they are developed or have been applied in content descriptions. They are also identified where they offer opportunities to add depth and richness to student learning in content elaborations. They will have a strong but varying presence depending on their relevance to the learning area.

[www.australiancurriculum.edu.au/f-10-curriculum/cross-curriculum-priorities/](http://www.australiancurriculum.edu.au/f-10-curriculum/cross-curriculum-priorities/)

The two most obvious cross-curriculum priorities that link to Create4Adelaide are :

## **Aboriginal and Torres Strait Islander Histories and Cultures**

First Nations communities of Australia maintain a deep connection to, and responsibility for, Country/Place and have holistic values and belief systems that are connected to the land, sea, sky and waterways.

## **Sustainability**

Engagement across all four sectors of priority: Systems, world views, design and futures. Sustainability addresses the ongoing capacity of Earth to maintain all life. Sustainable patterns of living seek to meet the needs of the present generation without compromising the needs of future generations.

## HOW DO WE DEFINE CLIMATE CHANGE?

Climate change is any change in the climate lasting for several decades or longer, including changes in temperature, rainfall or wind patterns.

Long-term air and ocean temperature records clearly show the Earth is warming. The global average temperature has already risen by 1.1°C since the time before the Industrial Revolution.

To learn more about climate change in an Australian context, please visit [climatecouncil.org.au/resources/what-is-climate-change-what-can-we-do](https://climatecouncil.org.au/resources/what-is-climate-change-what-can-we-do)

## WHAT IS CAUSING CLIMATE CHANGE?

Shortly, the excessive amount of greenhouse gases entering the Earth's atmosphere due to human activity is causing our climate to heat dramatically. Changes observed in Earth's climate since the mid-20th century are driven by human activities, particularly fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth's atmosphere, raising Earth's average surface temperature.

According to the Intergovernmental Panel on Climate Change (IPCC), "Since systematic scientific assessments began in the 1970s, the influence of human activity on the warming of the climate system has evolved from theory to established fact."

To find more about the science behind climate change, please visit [climate.nasa.gov/evidence/](https://climate.nasa.gov/evidence/)

## CLIMATE CHANGE AND YOUNG PEOPLE

In recent years, there has been a marked increase in the vocal demand from the world's youth for leaders worldwide to take just and equitable climate action. They have also demanded that present and future generations develop the knowledge, skills and attitudes to address climate change through education.

2022 | 18,800 young people<sup>1</sup> completed the Mission Australia Survey. The environment was identified as the most important issue for them today that needs to be addressed.

2021 | In an international survey of 10,000 young people from 10 countries, 59% respondents<sup>2</sup> said they were very or extremely worried about climate change.

We've seen young people take to the streets to fight for their future with movements like School Strike 4 Climate. From 2019 - 2022 millions of people have participated in SS4C. The most recent ones in Australia took place in March.

<sup>1</sup>Mission Australia Youth Survey 2022

<sup>2</sup>[thelancet.com/action/showPdf?pii=S2542-5196%2821%2900278-3](https://www.thelancet.com/action/showPdf?pii=S2542-5196%2821%2900278-3)



## MENTAL HEALTH

Research indicates that there are significant negative impacts of climate change on the mental health of young people. Eco-anxiety - the chronic fear of environmental doom - is an emerging and valid phenomenon with reported feelings of sadness, anxiety, anger, powerlessness, helplessness and guilt.

Feeling empowered, like they have a voice, and promoting participation in nature-based interventions have been identified as the actions that will support young people to navigate these uncertain times. Learn more about [eco-anxiety here](#) and [here](#).

Discussing climate change can trigger different responses for different people. Every young person will react differently, depending on their age, personality, background and life experiences.

It will be important to:

- have a range of coping strategies for students to utilise
- use age-appropriate language when discussing content
- be mindful of reactions to information
- be sensitive to levels of anxiety.

There are many young people in Australia who may have experienced the direct impacts of climate change, particularly in the context of extreme weather events. Where can you turn to?

- UNICEF has created a guide about how to talk to children about disasters. [How to talk to your children about natural disasters](#) .
- Kids Helpline has some information to help children cope with natural disasters. [Coping with natural disasters | Kids Helpline](#)
- Beyond Blue on natural disasters and your mental health. [Natural disasters and your mental health - Beyond Blue](#)
- Climate Council's A New Guide for Parents: Managing Eco-Anxiety in your Kids [A new guide for parents: managing eco-anxiety in your kids | Climate Council](#)

# ACTIVITY

## WHAT DO YOUR STUDENTS KNOW ABOUT CLIMATE CHANGE?

Working in small groups, students will talk about what they know about climate change and record it on sticky notes. Each group will take their sticky notes and place them on a wall under the following large headings:

→ cause

→ effect

→ science

→ personal opinion

As a **whole class**, students will observe which headings have the most responses.

## FINDING OUT WHAT STUDENTS KNOW

The most direct way to identify student misconceptions is to create opportunities to share prior knowledge. This can be done in many ways including small groups and class discussions.

## GETTING TO KNOW MORE ABOUT CLIMATE CHANGE

As a whole class or in small groups, students will watch one or more of the following videos.

**ABC BtN story – Understanding Climate Change**  
[youtube.com/watch?v=trAn4B30xwA](https://www.youtube.com/watch?v=trAn4B30xwA) (5:34)

Suitable for Year 4 – Year 9

A story that takes a closer look at what climate change is and what scientists around the world are doing.

**The Australian Museum – What is climate change?**  
[youtube.com/watch?v=O8aS1nKO75E](https://www.youtube.com/watch?v=O8aS1nKO75E) (8:33)

Suitable for Year 7 – Year 12

The Australian Museum interviewed a variety of people to answer the question, what is climate change? Not surprisingly, this simple question revealed a wide range of answers. Interviewees range from spokespeople from Schools Strike 4 Climate to the Deputy Chair of Farmers for Climate Action.

**GreenTV – Climate Change Movie**  
[youtu.be/H6uDiJng-uo](https://youtu.be/H6uDiJng-uo) (10:06)

Suitable for Year 4 – Year 12

An Australian animated film featuring two bats discussing climate change. The film takes a fun and creative approach to explain the basics of climate change by exploring the impacts and effects of human activity.

**The Nature Conservancy – The Ice Cream Cake**  
[youtube.com/watch?v=WJv-7ZSzbvQ](https://www.youtube.com/watch?v=WJv-7ZSzbvQ) (2:13)

Suitable for Year 4 – Year 12

The ice cream cake skit uses parody to highlight the conflicting views on climate change.

# ACTIVITY

## LEARN ABOUT CONNECTION TO COUNTRY

As a whole class, watch the BTN special **Connection to Country** (22:00):  
[Connection to Country Special – Behind The News](#)

This BTN Special is about Australia's First Nations peoples and their connection to Country. It talks about native title and land rights, Welcome to Country ceremonies and how the names of places can help us to recognise the importance of connection to Country for First Nation peoples.

After watching the video, hold a class discussion using the following questions as discussion starters:

- What do you think about what you saw in the video?
- What does this video make you wonder?
- What are three questions you have about the story?
- What did you learn from this video?

Learn about SEED, Australia's first Indigenous youth climate network, and the power of youth and First Nations led activism. Visit their website at [Seed Mob](#).

## ARTIST EXAMPLE

### THE BUTTERFLY EFFECT BY ALBERT PARK PRESCHOOL AND CITY OF PORT PHILLIP

Albert Park Preschool partnered with their local council over a six-year period to completely eradicate its carbon footprint. They achieved this goal and are the first certified carbon neutral Early Childhood Education and Care Service in Australia.

Albert Park Preschool combined action with art, creating an installation of dozens of handcrafted butterflies made from hessian and non-toxic paint, documenting their journey towards sustainability. All of this is underpinned by a promise to Bundjil, the creator deity of the Boonwurrung people.



# ACTIVITY

## CREATE A PORTRAIT

In 2022, FineActs invited nine eco-conscious artists to create portraits of their climate hero:

### Team Earth — Fine Acts

Using the Team Earth project as inspiration, students will use research and create a portrait of a climate change hero!



## SUGGESTIONS:

- **Bob Brown** has led the national debate on issues including climate change and conservation
- **Daisy Jeffrey** led the organisation of the School Strikes across Australia in 2019
- **Tim Flannery** is one of Australia's leading writers on climate change
- **Rikki Dank** is a Gudanji, Wakaja Rrumburniya activist around fracking
- **Dr Virginia Marshall** is the winner of the WEH Stanner Award for the best thesis by an Indigenous author, titled, "A web of Aboriginal water rights: Examining the competing Aboriginal claim for water property rights and interests in Australia"
- **Izzy Raj-Seppings** is a member of School Strike 4 Climate and helps organise strikes in her local area
- **A hero in your local community!**

## DISCUSSION STARTERS

- What is the first thing you notice about this person?
- What do their facial expressions tell you about the person, or their posture or gestures?
- What do you think the person would like their portrait to communicate?
- What settings do you often see this person in?

## MAKING THE PORTRAIT

1. Research and select the hero to create
2. Make a list of the accomplishments and traits of the hero
3. Decide on the art elements to use to best present the hero including:
  - The proportion of the person to the background
  - Colours that might bring out the character of your hero
  - Words or a quotation to describe the person.
4. Decide on a medium to use. Don't be afraid to get creative with collage, paint, charcoal, digital...
5. Get creating!

**Learn more about portraits  
from the Art Gallery of SA:**

**What's in a face? – AGSA**

# THE AUSTRALIAN CURRICULUM – CONTENT DESCRIPTIONS

## THE ARTS – VISUAL ARTS

### Foundation – Year 2

Create and display artworks to communicate ideas to an audience ACAVAM108

### Year 3 and 4

Identify intended purposes and meanings of artworks using visual arts terminology to compare artworks, starting with visual artworks in Australia including visual artworks of Aboriginal and Torres Strait Islander Peoples ACAVAR113

### Year 5 and 6

Explain how visual arts conventions communicate meaning by comparing artworks from different social, cultural and historical contexts, including Aboriginal and Torres Strait Islander artworks ACAVAR117

### Year 7 and 8

Experiment with visual arts conventions and techniques, including exploration of techniques used by Aboriginal and Torres Strait Islander artists, to represent a theme, concept or idea in their artwork ACAVAM118

### Year 9 and 10

Develop and refine techniques and processes to represent ideas and subject matter ACAVAM12

## ADDITIONAL RESOURCES

- **United Nations Climate Change** – [unfccc.int/](https://unfccc.int/) About the Secretariat – The UNFCCC secretariat (UN Climate Change) is the United Nations entity tasked with supporting the global response to the threat of climate change. UNFCCC stands for United Nations Framework Convention on Climate Change.
- **Climate Change and Aboriginal and Torres Strait Islander Health** – Discussion Paper Prepared for the Lowitja Institute and the National Health Leadership Forum – November 2021 [Climate Change and Aboriginal and Torres Strait Islander Health](#)
- **Caring for country means tackling the climate crisis with indigenous leadership – 3 things the new government must do** [Caring for Country means tackling the climate crisis with Indigenous leadership: 3 things the new government must do](#) The Conversation – 1 June 2022
- **Australian Youth Climate Coalition** – [www.aycc.org.au/](https://www.aycc.org.au/) The Coalition is Australia's largest youth-run organisation, their mission is to build a movement of young people leading solutions to the climate crisis.
- **Australian Academy of Science** – What is climate change? [1. What is climate change? | Australian Academy of Science](#)
- **Intergovernmental Panel on Climate Change** – [www.ipcc.ch/](https://www.ipcc.ch/) The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change.
- **Global Climate Change** – NASA – [climate.nasa.gov/](https://climate.nasa.gov/)



# **THE TOP 3 PRIORITIES FOR ADELAIDE**

# #1: EXTINCTION OF ANIMALS AND PLANTS

Extinction is the permanent disappearance or elimination of a species. Australia has the worst mammal extinction rate of any country in the world. Since colonisation, we've lost a number of unique wildlife – like the Thylacine – and are on track for the loss of more due to multiple, complex reasons, including loss and fragmentation of habitat, the introduction of feral species (particularly rabbits, cats and foxes), human activity, and changes to traditional fire patterns.

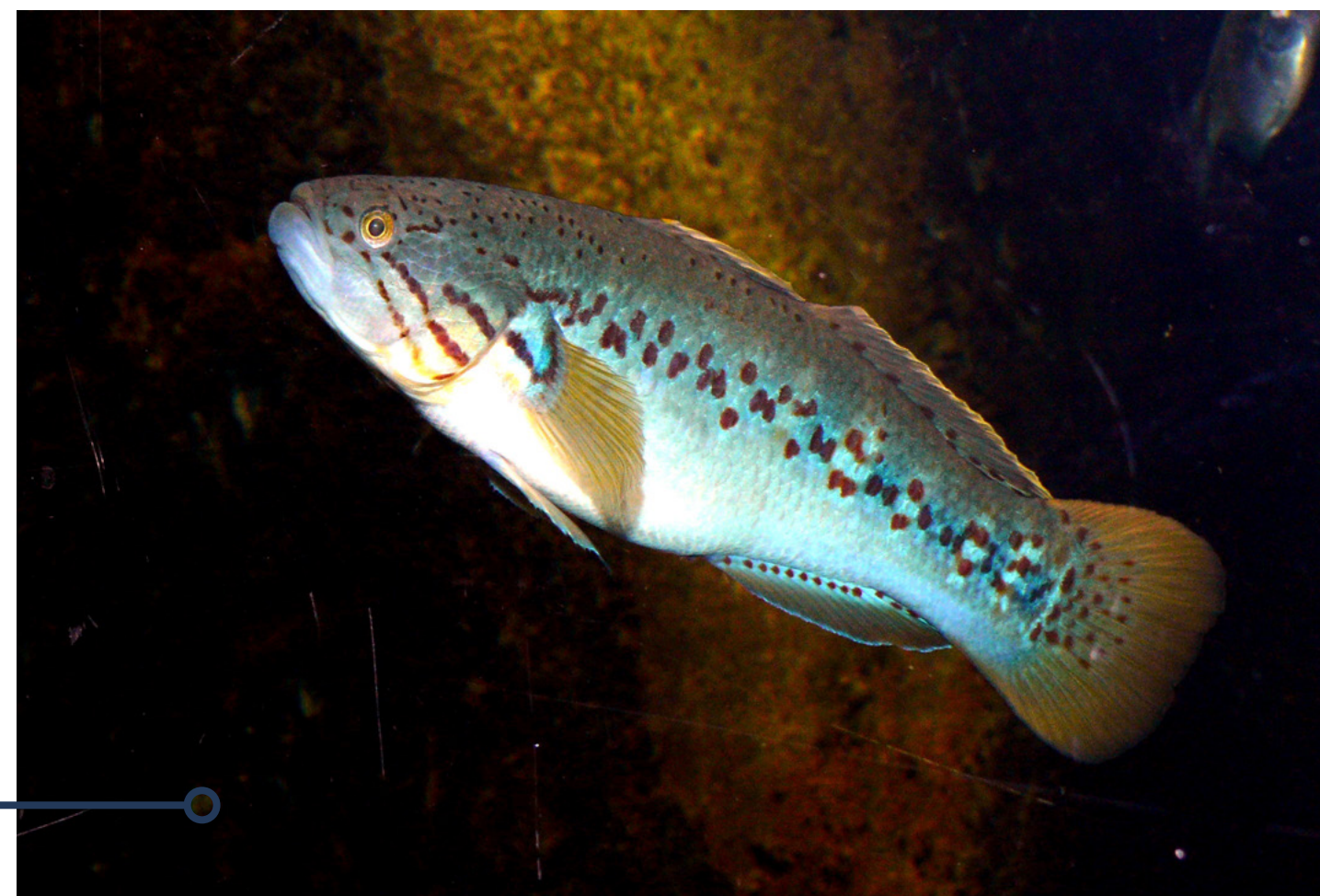
Australia's biodiversity has a special place in the world's natural heritage. We have **20 UNESCO World Heritage sites** including the Great Barrier Reef and the Gondwana Rainforests, both places at risk due to climate change. Our biodiversity is home to more than one million species of plants and animals, but protecting the biodiversity of our country is a major challenge.

According to **IUCN's Red List**, 838 animals and 1390 plants are listed as vulnerable, endangered or critically endangered species in Australia.

## THREATENED SPECIES NEAR ME

To find out what species of animals and plants are endangered near you, head to **Threatened Australians** and type in your postcode. A collaboration between University of Queensland for Biodiversity and Conservation Science, Queensland University of Technology Design Lab and web designers from Wando Labs, this project aims to make people aware of the threatened plants and animals in their local community.

Meet the Southern Purple Spotted Gudgeon! Classified as critically endangered in South Australia, and endangered in Victoria and New South Wales, this fish hadn't been seen in Adelaide Wetlands for 100 years. In 2021, this fish was introduced to the Oaklands Wetland and is thriving!<sup>3</sup>



<sup>3</sup> [natureglenelg.org.au/a-century-later-southern-purple-spotted-gudgeon-are-back-in-adelaide/](https://natureglenelg.org.au/a-century-later-southern-purple-spotted-gudgeon-are-back-in-adelaide/)

Watch the following BTN story to find out what is happening globally in relation to the extinction of animals and plants. **Extinction Report – Behind The News**

# ACTIVITY

## MAKING A SHORT FILM

Individually or in small groups, students will search on the Threatened Australians website and find a plant or animal that is threatened.

Once students or small groups have found the animal or plant they want to be the voice for, they will undertake a film-making project to look at:

- Information about the plant or animal
- Why they are facing extinction
- Where they are found
- What can be done to help them

## BE THE VOICE TO SPREAD THE WORD ABOUT YOUR PLANT OR ANIMAL

We all love stories – we love listening to them, watching them, being a part of and telling them. This activity will encourage students to make a short film about their endangered plant or animal, to tell the story of them and what can be done to help them.

Before getting started, students will discuss what they think a documentary film is.

**Working in small groups, students will discuss and record:**

- Documentaries they have watched or heard about
- The features of a documentary – what makes them different from narrative films

Finding a story worth telling is the beginning of the journey. To turn the story into a documentary will involve a lot of research, interviewing, filming, and editing and relationship-building.

**Here's a couple of examples of documentaries and short films:**

**Learning On Country by Anangu students from the Mimili Community on the APY Lands**

[youtube.com/watch?v=Pe5o7Ua0hk4](https://www.youtube.com/watch?v=Pe5o7Ua0hk4)

This documentary was collectively created by students from the Mimili Anangu School and was awarded the Best South Australian Middle School Film prize in the Adelaide Film Festival Youth Statewide Schools Filmmaking Competition 2021. In awarding the prize, the judges said: “This wonderful work full of beautiful imagery is a loving and insightful look at the remote community of Anangu. It takes a simple act – cooking and eating – and turns it into a rich, visceral experience.”

**Three Seconds by Spencer Sharp featuring Prince Ea**  
[youtube.com/watch?v=sacc\\_x-XB1Y](https://www.youtube.com/watch?v=sacc_x-XB1Y)

This short film was 1st Prize Short Film Winner of the Film4Climate Global Video Competition 2016 presented by Connect4Climate. Three Seconds is a short motivational piece to get younger and older generations alike to stand up for trees and a clean future. This spoken word piece by artist Prince Ea was designed to put into perspective our existence on earth's timeline and to excite viewers for the fight against the status quo that too often disregards Mother Nature.

## CREATING A FILM

Students will then begin work on their own film. Our partners at the Adelaide Film Festival have special resources for teachers and students to help young people create their own films. Start creating by checking out How To Make A Film Series:

[How To Make A Film Series - Adelaide Film Festival](#)

# THE AUSTRALIAN CURRICULUM – CONTENT DESCRIPTIONS

## THE ARTS – MEDIA ARTS

### Foundation – Year 2

Use media technologies to capture and edit images, sounds and text for a purpose ACAMAM055

### Year 3 and 4

Plan, produce and present media artworks for specific audiences and purposes using responsible media practice ACAMAM064

### Year 5 and 6

Explain how visual arts conventions communicate meaning by comparing artworks from different social, cultural and historical contexts, including Aboriginal and Torres Strait Islander artworks ACAVAR117

### Year 7 and 8

Plan, structure and design media artworks that engage audiences ACAMAM069

### Year 9 and 10

Plan and design media artworks for a range of purposes that challenge the expectations of specific audiences by particular use of production processes ACAMAM076

## SCIENCE

### Foundation

Living things have basic needs, including food and water ACSSU002

Science involves observing, asking questions about, and describing changes in, objects and events ACSHE013

### Year 1

Living things have a variety of external features ACSSU017

Science involves observing, asking questions about, and describing changes in, objects and events ACSHE021

### Year 2

Science involves observing, asking questions about, and describing changes in, objects and events ACSHE034

### Year 3

Science knowledge helps people to understand the effect of their actions ACSHE051

### Year 4

Science knowledge helps people to understand the effect of their actions ACSHE062

### Year 5

Scientific knowledge is used to solve problems and inform personal and community decisions ACSHE083

### Year 6

Scientific knowledge is used to solve problems and inform personal and community decisions ACSHE100

### Year 7

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available ACSHE119

### Year 8

Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations ACSHE135

### Year 9

Values and needs of contemporary society can influence the focus of scientific research ACSHE228

### Year 10

Values and needs of contemporary society can influence the focus of scientific research ACSHE230

# #2: EXTREME WEATHER EVENTS (BUSHFIRES, FLOODS, DROUGHTS)

Extreme weather has always occurred, but climate change is influencing all extreme weather events in Australia. The severity and frequency of extreme weather events have nearly doubled since the 1960s. There are three types of extreme weather events that this priority focuses on: **bushfires, floods and droughts.**

## BUSHFIRES

A bushfire is a generic term for an unplanned vegetation fire. Large areas of Australia are very fire-prone, and much of our vegetation is adapted to periodic fires. Bushfires are a major driver of change in natural ecosystems. Significant changes, whether driven deliberately by human management or by climate change, can cause major changes in ecosystems.

Climate experts have issued ongoing warnings to governments about the ongoing and increasing impact of climate change to Australia. A report by the Climate Council and Emergency Leaders for Climate warned governments at all levels to prepare for a potentially devastating fire season in 2023.

### Black Summer

On 4 September 2019, the first fires of what would become Australia's catastrophic 2019-20 "Black Summer" bushfires began. Due to the unusual intensity, size, duration, and uncontrollable dimension, it was considered a megafire.

Collectively and individually, Australians mourned the impact of Black Summer:

- 33 people died
- 3 billion animals died
  - 143 million mammals
  - 2.46 billion reptiles
  - 180 million birds
  - 51 million frogs
- 3000 homes destroyed
- 17 million hectares of land decimated.

Experts say the regeneration of Australia's lost biodiversity will take many, many years, and will require human intervention, especially if weather conditions remain unfavourable.

What's the state of climate in 2022? Check out this video from the Bureau of Meteorology: **State of the Climate 2022**

**FACT:** The projections for the future indicate a significant increase in dangerous fire weather for southeast Australia by 2100. (SOURCE: Climate Commission)

## FLOODS

Flooding is a type of extreme weather. Flooding happens when there is heavy rainfall in a short amount of time and water overflows its natural or artificial banks onto land that is usually dry.

We've seen the impacts of flooding across regional areas in New South Wales, Victoria, South Australia and Tasmania in the last few months and years. Floods have a huge impact on agriculture, transport, manufacturing and wholesale industries.

### Lismore Floods

The most severe and recent example of flooding can be seen in Lismore, NSW. Lismore has a long history of flooding, with at least 138 events in the past 152 years. The case of flooding in early 2022

is an event Lismore is still recovering from, with talks on how to prepare as climate change will continue to cause extreme flooding.

Find out more: [Lismore preparing for higher floods under climate change](#)

## DROUGHTS

Drought is defined as a period of abnormally long dry weather compared to the normal pattern of rainfall. Australians are no stranger to droughts, having experienced major droughts that affected large parts of the country. Drought can have severe economic, environmental and social impacts.

Climate change is driving an increase in the intensity and frequency of hot days and heatwaves in Australia, increasing the severity of droughts.

### Millennium Drought

Many South Australians remember the Millennium Drought, one of the worst droughts on record in this country. Occurring from 1996-2010, south-east Australia experienced its lowest 13-year rainfall record since 1865. The peak of the drought saw major impacts on the Murray River and Adelaide was placed on Level 3 water restrictions

**FACT:** Australia's warmest year on record was 2019. The eight years from 2013–20 all rank among the 10 warmest years on record. SOURCE: State of the Climate 2020: Bureau of Meteorology

**FACT:** "During the Millennium Drought 57,000 ha of planted forest in Australia were lost. This is equivalent to the area of 28,500 cricket pitches." (SOURCE: Climate Council)

# ACTIVITY

## STORIES OF EXTREME WEATHER EVENTS

The chances are that students will have heard stories about the recent extreme weather events in

Australia. These stories might be their own, stories heard from friends or family or stories told by other young people (see videos listed below). The most direct way to identify student misconceptions is to create opportunities to share prior knowledge. This can be done in many ways including small group and class discussions.

### Stories of extreme weather events from young people

Fires & Floods – 2019

[www.abc.net.au/btn/classroom/fires-and-floods/10790336](http://www.abc.net.au/btn/classroom/fires-and-floods/10790336)

Bushfire Rookie Reporters – 2020

[www.abc.net.au/btn/classroom/bushfire-rookie-reporters/11910364](http://www.abc.net.au/btn/classroom/bushfire-rookie-reporters/11910364)

Black Summer Aftermath – 2020

[www.abc.net.au/btn/classroom/black-summer-aftermath/12295732](http://www.abc.net.au/btn/classroom/black-summer-aftermath/12295732)

Flooded School – 2023

[www.abc.net.au/btn/classroom/flooded-school/101923230](http://www.abc.net.au/btn/classroom/flooded-school/101923230)

## WHAT DO STUDENTS KNOW ABOUT EXTREME WEATHER EVENTS?

Working in small groups, students will discuss what they know about extreme weather events and record what they know on sticky notes. Each group will take their sticky notes and place them under the following large headings on a wall:

- cause
- effect
- science
- personal opinion

As a whole class, students will observe what headings have the most responses.

## FLOODS OF FIRE

Music making is an incredible way of telling a story! Floods of Fire is a collaborative project established by the Adelaide Symphony Orchestra (ASO) to provide space for composers, musicians and members of the community to tell stories about flood and fire events through music. Find out more:

[www.aso.com.au/2021/10/10/adelaide-symphony-orchestra-presents-a-participatory-community-engagement-project-floods-of-fire/](http://www.aso.com.au/2021/10/10/adelaide-symphony-orchestra-presents-a-participatory-community-engagement-project-floods-of-fire/)

The ASO commissioned South Australian film makers Randy Larcombe and Suzi Ting to document the Floods of Fire creative workshops.

As a whole class, students will watch the story of the development of Floods of Fire:

[www.youtube.com/watch?v=VoWS4XUxHx8](http://www.youtube.com/watch?v=VoWS4XUxHx8)

After watching the video, hold a class discussion using the following questions as discussion starters:

- What surprised you about this story?
- What did it make you wonder?

# ACTIVITY

## POETRY FOR PROTEST

Poetry is used to convey ideas and emotions. Researchers believe that the earliest forms of poetry were sung and passed on as an oral history. Poetry has also been used as a form of protest.

### Protest poetry:

- exposes fault with some existing current event or circumstance.
- combines the qualities that make up any great poem with a genuine passion about the subject.
- stimulate a reader's interest and empathy and sometimes spur them into action.

The activities and ideas in this section will help students to write their own protest poetry.

### Examples

Solli Raphael - The youngest (aged 13) winner of the Australian Poetry Slam held at the Sydney Opera House. His poem 'Evolution' went viral, with 3.5 million views in the first 24 hours.

**Solli Raphael - Australian Poetry Slam Champion 2017 - Youth - "Evolution"**

**We Can Be More - a 13-year-old poet's campaign to save the world | Solli Raphael | TEDxSydney**

The Australian Poetry Slam is the largest performing writers' program in the Southern Hemisphere. Check out some of their previous winners and performers

for inspiration from some of Australia's emerging performers. **Australian Poetry Slam - YouTube**

POEM FOREST from Red Room Poetry - Created by Red Room Poetry, in partnership with Wollongong City Council, this project has invited students and teachers to use their words to make positive climate action.

**POEM FOREST Lower Primary Winner Angel A Reads 'Flowers In The Field Of The Future'**

### Word wall

Students will create a "word wall" inspired by the videos. This involves writing down some of the words the video used or words that came to students' minds while watching. These words are then stuck to a wall for students to consider and use as inspiration as they write their own protest poetry.

### Exploring ideas for protest poetry

Students can begin their exploration by writing their own individual poems about extreme weather events using one or more of the following ideas.

### Anaphora

Anaphora is the repetition of a word or sequence of words at the beginning of successive clauses, phrases, or sentences. It is one of many rhetorical devices used by writers to emphasise their message or make their words memorable.

Working with a partner or individually, students will:

- Think of a word or phrase associated with flood, fires or drought, referring to the world wall (see above) if inspiration is needed.
- Write a poem using their chosen word or phrase as many times as possible, repositioning it, and playing with its uses.
- Read the poem and experiment with the rhythm.
- Pair up with another individual or pair to share poems.

As an optional follow-on activity, students will bring in a visual art element. To do this, students will:

- Collect images that communicate the word or phrase used in the poems, using magazines, online images, newspapers, their own drawings and different fonts styles/types/sizes.
- Create a collage using the collected images on a piece of A3 card.

As a class, the students will then create a gallery of the completed collages. Students will complete a gallery walk of the creations and use the following questions as discussion starters for each collage:

- What feelings, sensations or emotions does the collage evoke?
- What title would you give the collage?
- What connections did you make to the collage?

### Free verse poetry

A free verse poem is a poem that doesn't rely on any particular form, meter, or rhyme scheme, yet still conveys powerful feelings and ideas.

Students will write a free verse poem, using the following questions as guidance:

How would you describe the place you call home (not your house, but your city and/or the surrounding environment)?

- What does this setting make you think of?
- What does this place mean to you?
- What does this place enable you to do?
- Do you want this poem to be from your own perspective or from the perspective of someone else (e.g. a grandparent, a friend, a person from another time in the past or future)? If choosing someone else's perspective, how might their perceptions of your home city or environment be different?
- How do you think our relationships with the places we live impact our lives, the lives of others, the strength of our communities, and the fate of our world?

# IDEA

## SONGS FOR PROTEST

Protest songs, like protest poetry, are usually written to be part of a movement for cultural or political change; songs that draw people together and inspire them to take action or reflect.

This activity is designed to be added on to either the Anaphora or Free Verse Poetry activities above. It is a cross-curriculum exercise with the Music Department.

Students will create a song based on the poem they wrote based on the above activity. There are many online resources for older students to work on this on their own.

### Examples:

Spinifex Gum – Yurala [youtu.be/6Zu0d74lOV8](https://youtu.be/6Zu0d74lOV8)

Little Green - The Night [youtu.be/iaKmSfvhEx4](https://youtu.be/iaKmSfvhEx4)

Montaigne - READY Montaigne - [www.youtube.com/watch?v=Qgn4vgNdxGY](https://www.youtube.com/watch?v=Qgn4vgNdxGY)

Beastie Boys – It Takes Time To Build [youtu.be/4jUd9z4RUqE](https://youtu.be/4jUd9z4RUqE)

Midnight Oil – Beds are Burning [youtu.be/ejorQVy3m8E](https://youtu.be/ejorQVy3m8E)

# THE AUSTRALIAN CURRICULUM – CONTENT DESCRIPTIONS

## ENGLISH

### Foundation

Create short texts to explore, record and report ideas and events using familiar words and beginning writing knowledge ACELY1651

### Year 1

Create short imaginative and informative texts that show emerging use of appropriate text structure, sentence-level grammar, word choice, spelling, punctuation and appropriate multimodal elements, for example illustrations and diagrams ACELY1661

### Year 2

Create short imaginative, informative and persuasive texts using growing knowledge of text structures and language features for familiar and some less familiar audiences, selecting print and multimodal elements appropriate to the audience and purpose ACELY1671

### Year 3

Plan, draft and publish imaginative, informative and persuasive texts demonstrating increasing control over text structures and language features and selecting print, and multimodal elements appropriate to the audience and purpose ACELY1682

### Year 4

Plan, draft and publish imaginative, informative and persuasive texts containing key information and supporting details for a widening range of audiences, demonstrating increasing control over text structures and language features ACELY1694

### Year 5

Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing text structures, language features, images and sound appropriate to purpose and audience ACELY1704

### Year 6

Plan, draft and publish imaginative, informative and persuasive texts, choosing and experimenting with text structures, language features, images and digital resources appropriate to purpose and audience ACELY1714

### Year 7

Plan, draft and publish imaginative, informative and persuasive texts, selecting aspects of subject matter and particular language, visual, and audio features to convey information and ideas ACELY1725

### Year 8

Create imaginative, informative and persuasive texts that raise issues, report events and advance opinions, using deliberate language and textual choices, and including digital elements as appropriate ACELY1736

### Year 9

Create imaginative, informative and persuasive texts that present a point of view and advance or illustrate arguments, including texts that integrate visual, print and/or audio features ACELY1746

### Year 10

Create sustained texts, including texts that combine specific digital or media content, for imaginative, informative, or persuasive purposes that reflect upon challenging and complex issues ACELY1756

# THE AUSTRALIAN CURRICULUM – CONTENT DESCRIPTIONS

## THE ARTS – MUSIC

### Foundation – Year 2

Create compositions and perform music to communicate ideas to an audience ACAMUM082

### Year 3 and 4

Create, perform and record compositions by selecting and organising sounds, silence, tempo and volume ACAMUM086

### Year 5 and 6

Rehearse and perform music including music they have composed by improvising, sourcing and arranging ideas and making decisions to engage an audience ACAMUM090

### Year 7 and 8

Develop musical ideas, such as mood, by improvising, combining and manipulating the elements of music ACAMUM093

### Year 9 and 10

Improvise and arrange music, using aural recognition of texture, dynamics and expression to manipulate the elements of music to explore personal style in composition and performance ACAMUM099

# #3: POLLUTION OF OUR AIR AND WATERWAYS

## AIR POLLUTION

In the **2021 Australia: State of the Environment report**, air quality was given a very good score. While it's true that Australia has relatively low levels of air pollution compared with other countries, climate change will increase pressure on air quality. Bushfires, like the 2019-20 "Black Summer" fires, expose large areas of Australia to dangerous levels of smoke. Events like these have a substantial impact on air quality.

You can learn more about air quality in Australia and around the world by heading to AQI, a database that provides real time air quality information.  
**AQI Australia's Air Quality Index: Real-time Air Pollution Level**

## WATER POLLUTION

However, in the same 2021 Australia: State of the Environment **report**, the state of water did not receive a good score.

Coastal water (waterways, beaches and shorelines)  
Overall grade: poor. Overall trend: deteriorating.

Inland water  
Overall grade: poor. Overall trend: deteriorating.

Marine environments  
Overall grade: good. Overall trend: deteriorating.

Nearshore reefs are in poor condition and deteriorating as a result of the effects of climate change and cumulative pressures.

Many other countries around the world also have poor water quality scores.

Effects of water pollution issues in Australia include:

- Ingestion of toxic materials by shorebirds, turtles, and other marine organisms
- Coral bleaching and deterioration of coral ecosystems
- Kelp forest loss
- Destruction of habitats; sometimes the exclusive ones
- Increased mortality among invertebrates
- Bioaccumulation of toxic microplastics

## THE FOLLOWING ARE THE PRIMARY TYPES OF WATER POLLUTANTS:

| Pollutants                                                | Examples of Types                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Microbes                                                  | Pathogenic and non-pathogenic micro-organisms. For example, E. coli.                                                                                                                                                                                                                      |
| Plastics                                                  | Single-use plastic bags, containers, wrappers, etc.                                                                                                                                                                                                                                       |
| Heavy Metals                                              | Manganese, lead, arsenic, chromium and copper. Some of these heavy metals are essential for healthy biochemical function, however metals such as lead, chromium and arsenic can be toxic when ingested in small or large quantities.                                                      |
| Debris and build-up leaf litters during blackwater events | Leaves, grass and organic material off riverbanks and floodplains.                                                                                                                                                                                                                        |
| Industrial and agricultural chemicals                     | Sulphur, asbestos, noxious solvents, polychlorinated biphenyls, lead, mercury, nitrates, phosphates, acids, alkali, dyes, pesticides, benzene, chlorobenzene, carbon tetrachloride, toluene and volatile organic chemicals such as sulphur.                                               |
| Bushfire Events                                           | Particulate carbon as well as salts, nutrients, trace metals and other contaminants present within ash. Metals such as manganese, iron, copper and zinc usually increase as a result of ash from burnt vegetation. Flows can temporarily reduce dissolved oxygen resulting in fish kills. |

# ACTIVITY

## WHAT DO STUDENTS KNOW ABOUT AIR AND WATER POLLUTION?

Working in small groups, students will discuss what they know about pollution of our air and waterways and record what they know on sticky notes. Each group will take their sticky notes and place them under the following large headings provided on a wall:

- cause
- effect
- science
- personal opinion

As a whole class, students will observe what headings have the most responses.

As a whole class, students will watch the BTN report on the Global Water Crisis: [www.abc.net.au/btn/classroom/global-water-crisis/102164306](http://www.abc.net.au/btn/classroom/global-water-crisis/102164306)

Students may also watch one of the following BTN reports to understand more about water-related issues in Australia:

- Murray-Darling Wetlands **Murray-Darling Wetlands – Behind The News**
- Darling River Fish Deaths **Darling River Fish Deaths – Behind The News**

Working in small groups, students will discuss and record what they:

- learned from watching the video/s
- found surprising about the video/s
- wondered about while watching the video/s

As a whole class, students will:

- Share the key points from their small group discussions.
- Compare what they now know with the initial information on their sticky notes.
- Think about what they still need to know.

# ACTIVITY

## PLASTIC AS A POLLUTANT

### Background information

Plastic is one of the major pollutants of waterways and oceans. Since their commercial development in the 1930s and 1940s, the modern world has become hugely reliant on plastics.

Plastic pollution threatens food safety and quality, human health & contributes to climate change. Over 280 million tonnes of plastic are produced each year and approximately 10 tonnes of plastic end up in the ocean every year.

The South Australian government legislated for the reduction of single use and other plastic products (Waste Avoidance) Act 2020. It was the first legislation of its kind in Australia.

The object of the Act is to:

- promote and support better waste management practices including the reduction of marine litter;
- promote and support the principles of the waste management hierarchy; and
- promote and support the principles of the circular economy.

### The Majestic Plastic Bag

A mockumentary (humorous documentary-style film) titled The Majestic Plastic Bag shows the reality of plastic bag pollution:

**The Majestic Plastic Bag – A Mockumentary**

## Banned in South Australia

**March 2021** – single-use plastic straws, cutlery & stirrers.

**March 2022** – expanded polystyrene cups, bowls, plates & clamshell containers. Oxo-degradable plastic products are prohibited from production, manufacture, supply & sale in SA.

**Sept 2023** – Plastic stemmed cotton buds to be phased out. Single use plastic bowls & plates. Plastic pizza savers.

**Sept 2024** – plastic produce bags to be phased out. Single – use plastic beverage containers & their lids. Plastic confetti, plastic bread tags, EPS trays used for meat, fruit & other food items.

**Sept 2025** – plastic fruit stickers, plastic soy sauce fish, and pre-packaged and attached products.

Get more information from:  
[www.replacethewaste.sa.gov.au](http://www.replacethewaste.sa.gov.au)

As a class, students will walk around the school or local community and complete an environmental scan of litter that contains plastic in the community by:

- Identifying
- Gathering evidence (this could include photos)
- Analysing

What single-use plastic litter did students find that was not disposed of correctly? This could include:

- Packaging
- Balloons
- Plastic bags
- Disposable wipes
- Beverage container

Students might not find any litter. But does that mean that everyone is reducing their consumption of single-use plastic?

Students may be unaware of some items that can contain plastic. Ask students if they can think of any less obvious items that contain plastic. The following are some items they might list:

- **Chewing Gum:** Plastic began to be added to chewing gum around the 1960s. Adding plastic made production of chewing gum more economical.
- **Clothing:** All clothing made from fibres, such as microfibre fleece, polyester, acrylic and nylon, is made from plastic. Every time these items of clothing are washed microplastics are released into waterways.
- **Drink cans:** Drink cans are lined with plastic resin, usually epoxy. This stops the drink contained

within from corroding the aluminium.

- **Glass jars with lids:** The lids of glass jars contain a layer of plastic on them. They are lined with plastisol, a PVC product. The purpose of the plastisol is to produce a vacuum seal and to help the lid resist corrosion from acidic ingredients.
- **Glitter:** There are many types of glitter - glitter for cosmetic and craft purposes, glittery greetings cards, present labels, wrapping paper - and every one of them is a source of microplastic.
- **Produce stickers:** The stickers stuck to every banana, apple, orange are made of plastic.
- **Tea bags:** Many brands of teabags are heat-sealed with polyethylene, a plastic that will not break down in compost.
- **Tetra paks:** Tetra paks are cartons used for long-life milk, juice and plant-based milks. You might think they are made from waxed cardboard. However, the cartons are made from wood in the form of paperboard, as well as thin layers of aluminum and polyethylene plastic.
- **Sunscreen:** Approximately 72% of sunscreens contain microplastics.
- **Squeeze packets:** Squeeze packets for things like yoghurt or baby food are also made of plastic.

# ACTIVITY

## THE BIG PLASTIC COUNT

In May 2022, Greenpeace led an experiment involving almost 100,000 homes in the UK. What the experiment revealed was that on average a household throws out 66 items of single-use plastic packaging in one week - that's approximately 3,432 items in one year.

Individually, students will collect all of the single-use plastic their household uses in one week and bring it to school. Students and teachers will need to make sure plastic items brought to school are clean and safe.

Students will collect the items in a space on the school grounds. Given the numbers indicated by Greenpeace, there may be many items collected over the course of a week. The impact that this will create visually will be a great discussion starter for students.

As artists, students can raise awareness of the single plastic pollution crisis and make a positive social and eco-impact. For this activity, students will create an art piece with the plastic they collected throughout the week to make a statement that the whole school or community can see.

Working with a partner or in small groups, students will research and look at other artists who use recycled materials to create artworks.

### EXAMPLES

13 Incredible Artists Using Recycled Materials in Their Art  
[causeartist.com/incredible-recycled-art-materials-creations/](https://causeartist.com/incredible-recycled-art-materials-creations/)

10 Artists working in recycled art  
[blog.artsper.com/en/get-inspired/top-10-of-recycled-art/](https://blog.artsper.com/en/get-inspired/top-10-of-recycled-art/)

Recycled Art – Exploring Impressive Art Made from Recycled Materials  
[artincontext.org/recycled-art/](https://artincontext.org/recycled-art/)

# ARTIST EXAMPLE

## & ACTIVITY

### ERUB ISLAND AND GHOST NETS

Erub Island is in the eastern section of the Torres Strait, right on the edge of the Great Barrier Reef. The 400 people that live there are surrounded by reef and traditional rock fish traps. The tiny island is known internationally thanks to the Erub Arts Collective and their ghost nets.

**Ghost Nets of the Ocean** use reclaimed fishing nets that have been abandoned or lost to create works of art and large-scale installations, sending a conservation message to the world. In 2017, their works took over the Studio at the Art Gallery of South Australia bringing into focus the irreparable harm that discarded fishing nets cause to marine life.

As a whole class, students will watch:

**TARNANTHI 2017 – Erub Arts Collaborative 'Ghost Nets of the Ocean'**

Students will then respond to the following questions:

- What did you see in the story?
- What did this story make you wonder?
- How did this story make you feel?
- What are three questions you have about the story?

Learn more by heading to [Erub Arts](#).



# THE AUSTRALIAN CURRICULUM – CONTENT DESCRIPTIONS

## THE ARTS – VISUAL ARTS

### Foundation – Year 2

Create and display artworks to communicate ideas to an audience ACAVAM108

### Year 3 and 4

Identify intended purposes and meanings of artworks using visual arts terminology to compare artworks, starting with visual artworks in Australia including visual artworks of Aboriginal and Torres Strait Islander Peoples ACAVAR113

### Year 5 and 6

Explain how visual arts conventions communicate meaning by comparing artworks from different social, cultural and historical contexts, including Aboriginal and Torres Strait Islander artworks ACAVAR117

### Year 7 and 8

Experiment with visual arts conventions and techniques, including exploration of techniques used by Aboriginal and Torres Strait Islander artists, to represent a theme, concept or idea in their artwork ACAVAM118

### Year 9 and 10

Develop and refine techniques and processes to represent ideas and subject matter ACAVAM127

## SCIENCE

### Foundation Year 1

Share observations and ideas ACSIS012

### Year 1

Represent and communicate observations and ideas in a variety of ways ACSIS029

### Year 2

Represent and communicate observations and ideas in a variety of ways ACSIS042

### Year 3

Represent and communicate observations, ideas and findings using formal and informal representations ACSIS060

### Year 4

Represent and communicate observations, ideas and findings using formal and informal representations ACSIS071

### Year 5

Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts ACSIS093

### Year 6

Communicate ideas, explanations and processes using scientific representations in a variety of

ways, including multi-modal texts ACSIS110

### Year 7

Communicate ideas, findings and evidence-based solutions to problems using scientific language, and representations, using digital technologies as appropriate ACSIS133

### Year 8

Communicate ideas, findings and evidence-based solutions to problems using scientific language, and representations, using digital technologies as appropriate ACSIS148

### Year 9

Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations ACSIS174

### Year 10

Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations ACSIS208

# THE LANGUAGE OF CLIMATE CHANGE

The concepts and language of climate change originated with the scientific community. Subsequently, information is often communicated about climate change using scientific and technical language.

There are words students will need to know and understand to be able to communicate effectively about climate change and to design their artworks.

At all year levels, developing a vocabulary in relation to climate change will be an incremental process in which there are degrees of knowing words.

Language is essential for:

- Identifying and posing questions
- Planning
- Reflecting
- Processing
- Analysing
- Interpreting
- Designing
- Communicating

The glossary and the activities in this resource provide strategies for exploring the language by asking students to:

- Watch informative videos.
- Discuss ideas and terms with each other.
- Write their own definitions for words.
- Construct word walls.
- Compare and construct definitions.

NOTE: The glossary is not an exhaustive list. As students explore climate change, their knowledge and understanding will grow and they will be able to add to the list.

| TERM                           | DEFINITION                                                                                                                                                                                                                                                                     |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Abiotic</b>                 | The non-living part of an ecosystem that shapes an environment, e.g. temperature, light or water. In a marine ecosystem, this would include salinity and ocean currents.                                                                                                       |
| <b>Adaptation (biological)</b> | The characteristic of an organism that improves ability to be able to survive and/or reproduce.                                                                                                                                                                                |
| <b>Adaptation (humans)</b>     | Changes made by humans to cope with effects of climate change, e.g. building flood defences or planting new crops that will thrive under new conditions.                                                                                                                       |
| <b>Adaptive capacity</b>       | The capacity of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.                                                                                                            |
| <b>Afforestation</b>           | The act or process of establishing a forest, especially on land not previously forested.                                                                                                                                                                                       |
| <b>Air pollution</b>           | The solid and liquid particles and certain gases suspended in the air. These particles and gases can come from car and truck exhaust, factories, dust, pollen, mould spores, volcanoes and bushfires. The solid and liquid particles suspended in our air are called aerosols. |
| <b>Alternative energy</b>      | Energy derived from non-traditional sources, e.g. solar, hydroelectric or wind. An alternative energy source especially avoids the use of fossil fuels or nuclear power.                                                                                                       |

|                                               |                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Anthropogenic</b>                          | Relating to or resulting from the influence of human beings on nature, e.g. pollution or environmental change.                                                                                                                                                                                                          |
| <b>Atmosphere</b>                             | The layers of gases surrounding the Earth, held in place by the gravity of Earth. Note: A planet retains an atmosphere when the gravity is great and the temperature of the atmosphere is low.                                                                                                                          |
| <b>Australian Carbon Credit Units (ACCUS)</b> | A financial instrument awarded to eligible energy efficiency, renewable energy generation and carbon sequestration projects that result in a reduction of Greenhouse Gas (GHG) emissions. One Australian Carbon Credit Unit represents the avoidance or removal of one tonne of carbon dioxide equivalent (tCO2-e) GHG. |
| <b>Biodiversity</b>                           | The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable.                                                                                                                                                                |
| <b>Biofuel</b>                                | Fuel produced over a short time from plants, agricultural or domestic or industrial biowaste.                                                                                                                                                                                                                           |
| <b>Biomass</b>                                | Matter from recently living organisms used for bioenergy production, e.g. wood, wood residues, energy crops, agricultural residues and organic waste from industry and households.                                                                                                                                      |
| <b>Biosphere</b>                              | All parts of Earth where life exists – all the ecosystems.                                                                                                                                                                                                                                                              |
| <b>Biotic</b>                                 | Of or relating to life, especially caused or produced by living beings.                                                                                                                                                                                                                                                 |

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Blackwater</b>                       | Occurs when floods wash leaves, grass and organic material off riverbanks and floodplains into waterways. High levels of organic matter in waterways, combined with warm weather, can cause oxygen levels in the water to drop, harming or killing fish and other creatures in the river. This is known as hypoxic (low oxygen) blackwater. Hypoxic blackwater events affect water quality in the Murray-Darling Basin, harm fish and other aquatic life. |
| <b>Blue carbon</b>                      | The CO2 sequestered in coastal and marine ecosystems. Mangroves, salt marshes and seagrass are particularly good at sucking CO2 from the air via photosynthesis and storing it in biomass and sediment. Seaweed aquaculture is another way to store carbon, storing up to 10 times as much carbon as forests – they are also the most threatened ecosystem on the planet.                                                                                 |
| <b>Carbon capture and storage (CCS)</b> | Relates to the capture, transport and storage of greenhouse gas emissions from fossil fuel power stations, energy intensive industries and gas fields by injecting the captured greenhouse gases back into the ground.                                                                                                                                                                                                                                    |
| <b>Carbon dioxide (CO2)</b>             | A heat-trapping gas, or greenhouse gas, that comes from the extraction and burning of fossil fuels (such as coal, oil and natural gas), from wildfires, and from natural processes like volcanic eruptions.                                                                                                                                                                                                                                               |
| <b>Carbon footprint</b>                 | A measure of the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation or community.                                                                                                                                                                                                                                                                                               |

|                             |                                                                                                                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Carbon offset</b>        | An action intended to compensate for the emission of carbon dioxide into the atmosphere as a result of industrial or other human activity, especially when measured and traded as part of a commercial scheme. |
| <b>Carbon sequestration</b> | A natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.                                                                                       |
| <b>Carbon sinks or</b>      | Anything that absorbs more carbon from the atmosphere than it releases, e.g. plants, the ocean or soil.                                                                                                        |
| <b>CO2 sinks</b>            | Anything that releases more carbon into the atmosphere than it absorbs, e.g. the burning of fossil fuels or volcanic eruptions.                                                                                |
| <b>Carbon source</b>        | Any alteration in the climate over a period of time, including that which occurs naturally, as well as the change due to human activity.                                                                       |
| <b>Climate change</b>       | Acknowledgement of the inequitable outcomes of climate crisis. Climate change does not affect everyone in the same way, leading to inequalities between places, people and generations.                        |
| <b>Climate justice</b>      | A computer simulation of the Earth's climate system, including the atmosphere, ocean, land and ice. Used to recreate the past climate or predict the future climate.                                           |
| <b>Climate model</b>        | Someone forced to leave their home due to sudden or long-term changes to their environment because of climate change.                                                                                          |
| <b>Climate refugee</b>      | The five components of Earth's climate responsible for the climate and its variation – atmosphere, hydrosphere, cryosphere, lithosphere and biosphere.                                                         |

|                          |                                                                                                                                                                                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Climate system</b>    | A process where corals become white due to stressors, such as changes in temperature, light or nutrients. The coral polyps expel the zooxanthellae that live inside their tissue, causing the coral to turn white. |
| <b>Coral bleaching</b>   | The surface of the Earth where water is in solid form, including sea ice, lake ice, river ice, snow cover, glaciers, ice caps, ice sheets and frozen ground.                                                       |
| <b>Cryosphere</b>        | The action of clearing a wide area of trees.                                                                                                                                                                       |
| <b>Deforestation</b>     | A decline or loss of soil fertility, due to natural occurrences or human activities, resulting in loss of vegetation cover.                                                                                        |
| <b>Desertification</b>   | The generalised sense that the ecological foundations of existence are in the process of collapse.                                                                                                                 |
| <b>Eco-anxiety</b>       | A chronic fear of environmental doom.                                                                                                                                                                              |
| <b>Ecological grief</b>  | Other relevant terms include ecological grief, solastalgia, and ecological trauma.                                                                                                                                 |
| <b>Ecological trauma</b> | The sense of loss that arises from experiencing or learning about environmental destruction or climate change.                                                                                                     |
| <b>Ecosystems</b>        | The experience of witnessing, consciously or not, the pervasive abuse and destruction of the natural world.                                                                                                        |
| <b>Ecotourism</b>        | An interconnected, complex system consisting of all organisms and the physical environment in which they exist. These abiotic and biotic components are linked through nutrient cycles and energy flows.           |
| <b>El Niño</b>           | Travel and holidays that have the least possible impact on the local ecosystem and local people.                                                                                                                   |

|                                     |                                                                                                                                                                                                                                 |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Emissions</b>                    | A climate pattern that describes the unusual warming of surface waters in the eastern Pacific Ocean.                                                                                                                            |
| <b>Endangered species</b>           | The production and discharge of something, especially gas or radiation.                                                                                                                                                         |
| <b>Energy conservation</b>          | A species at serious risk of extinction.                                                                                                                                                                                        |
| <b>Energy efficiency</b>            | Using energy more efficiently or using less energy.                                                                                                                                                                             |
| <b>Environment</b>                  | Using less energy to provide the same service.                                                                                                                                                                                  |
| <b>Environmental sustainability</b> | Everything around us on Earth – air, soil, water, plants, and animals make up the environment. This includes everything that is living (biotic) and non-living (abiotic).                                                       |
| <b>Extinction</b>                   | Fulfilling the needs of current and future generations while ensuring a balance between economic growth, environmental care and social well-being.                                                                              |
| <b>Extreme weather</b>              | The permanent disappearance or elimination of a species.                                                                                                                                                                        |
| <b>Fossil fuels</b>                 | Weather events that are severe or unseasonal, e.g. flash floods or heatwaves.                                                                                                                                                   |
| <b>Glacier</b>                      | Fuel made from decomposing plants and animals. These fuels are found in the Earth's crust and contain carbon and hydrogen, which can be burned for energy. Coal, oil, and natural gas are examples of these fuels.              |
| <b>Global average temperatures</b>  | A slow-moving mass or river of ice formed by the accumulation of crystalline ice, snow, rock, sediment and often liquid water that originates on land and moves down a slope under the influence of its own weight and gravity. |
| <b>Green carbon</b>                 | Temperatures of the Earth's surface tracked over a 30 year period to detect changes.                                                                                                                                            |

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|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Greenhouse gases (GHG)</b>                           | Carbon stored in the biosphere, taken up from the atmosphere by plants through the process of photosynthesis. Green carbon ecosystems, such as those in natural forests, play a key role in impacting the levels of greenhouse gas concentrations in the atmosphere.                                                                      |
| <b>Hydrosphere</b>                                      | Gases that cause global warming by trapping the sun's energy, including carbon dioxide (CO2) and methane. CO2 is released when oil, gas and coal are burned in homes, factories and to power transport. Methane is produced through farming and landfill.                                                                                 |
| <b>Intergovernmental Panel on Climate Change (IPCC)</b> | All the waters on the Earth's surface, such as lakes and seas, and water over the Earth's surface, such as clouds.                                                                                                                                                                                                                        |
| <b>La Niña</b>                                          | A panel that provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.                                                                                                                                                                             |
| <b>Lithosphere</b>                                      | A weather pattern that occurs in the Pacific Ocean. Sometimes called El Viejo, anti-El Niño, or simply ‘a cold event’. In this pattern, strong winds blow warm water at the ocean's surface from South America to Indonesia. As the warm water moves west, cold water from the deep rises to the surface near the coast of South America. |
| <b>Marine ecosystems</b>                                | The rigid outer part of the earth, consisting of the crust and upper mantle.                                                                                                                                                                                                                                                              |
| <b>Megafire</b>                                         | Aquatic environments with high levels of dissolved salt. The big three marine ecosystems are seagrass, mangroves and salt marshes                                                                                                                                                                                                         |

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|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mitigation</b>                                   | A wildfire that devastates an extremely large area. They are characterised by their intensity, size, duration and uncontrollable dimension.                                                                                                                                                                                    |
| <b>Nature-based offset</b>                          | Actions to limit the long-term risk to human life and property from natural hazards, e.g. a target to limit emissions.                                                                                                                                                                                                         |
| <b>Nature-based solutions to the climate crisis</b> | Uses natural means to remove carbon from the atmosphere. These offsets include planting trees or restoring wetlands and mangroves.                                                                                                                                                                                             |
| <b>Net zero</b>                                     | Nature-based solutions are actions to protect, sustainably manage, or restore natural ecosystems, that address societal challenges such as climate change, human health, food and water security, and disaster risk reduction effectively and adaptively, simultaneously providing human well-being and biodiversity benefits. |
| <b>Paris Agreement</b>                              | Refers to the balance between the amount of greenhouse gases (GHGs) that are produced and the amount that is removed from the atmosphere. Scientists say net zero needs to be reached by 2050.                                                                                                                                 |
| <b>Particulate matter</b>                           | An international treaty on climate change, often referred to as the Paris Accords or the Paris Climate Accords. Adopted in 2015 by 196 parties, the agreement covers climate change mitigation, adaptation and finance. It is a legally binding treaty on climate change.                                                      |
| <b>or particle pollution</b>                        | Extremely small solid particles or liquid droplets that are in the air. These particles may include dust, dirt and soot.                                                                                                                                                                                                       |

|                       |                                                                                                                                                                                                                   |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Permaculture</b>   | Growing food with an ecological design that works with people, the natural environment and ecosystems.                                                                                                            |
| <b>Pollutants</b>     | A material introduced into an environment that may harm organisms.                                                                                                                                                |
| <b>Recycling</b>      | The process of converting waste into reusable material/s.                                                                                                                                                         |
| <b>Restoration</b>    | The action of returning something to a former owner, place or condition.                                                                                                                                          |
| <b>Sea level rise</b> | The increase in the level of oceans, caused by the effects of global warming, e.g. glaciers and ice sheets melting.                                                                                               |
| <b>Sequestered</b>    | Isolated or set apart.                                                                                                                                                                                            |
| <b>Solastalgia</b>    | The distress specifically caused by environmental change.                                                                                                                                                         |
| <b>Sustainability</b> | Maintaining something forever. Environmental sustainability is fulfilling the needs of current and future generations while ensuring a balance between economic growth, environmental care and social well-being. |
| <b>Weather</b>        | Atmospheric conditions, like a rainy day or warm weather, happening over a few hours, days, or weeks. Climate is the average weather conditions in a place over 30 years or more.                                 |
| <b>Wildfire</b>       | A fire that is burning strongly and out of control on an area of grass, forest or bushes.                                                                                                                         |

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