

# ‘Orangutan survival’ at Sydney Zoo

## Teacher Toolkit Stage 2



### OUTCOMES CONTRIBUTED TO:

GE2-1

GE2-3

GE2-4

ST2-2DP-T

ST2-1WS-S

ST2-4LW-S



# Welcome to the Sydney Zoo Teacher Toolkit

We hope we can help you and your students find inspiration in wildlife through Sydney Zoo.

**'Bringing Nature into a classroom can kindle a fascination and passion for the diversity of life on earth and can motivate a sense of responsibility to safeguard it'.**

**Sir David Attenborough**

## What is in this toolkit:

- ✔ Syllabus-linked pre-visit activities
- ✔ Resources for guided and self-guided visits to the Zoo to ensure your students get the most out of their visit
- ✔ Post-visit, syllabus-linked class project
- ✔ Links to provide further information

## Resources required to best use this toolkit:

- ✔ Computer and screen or smartboard
- ✔ Internet access
- ✔ Access to playground/outdoors area where possible

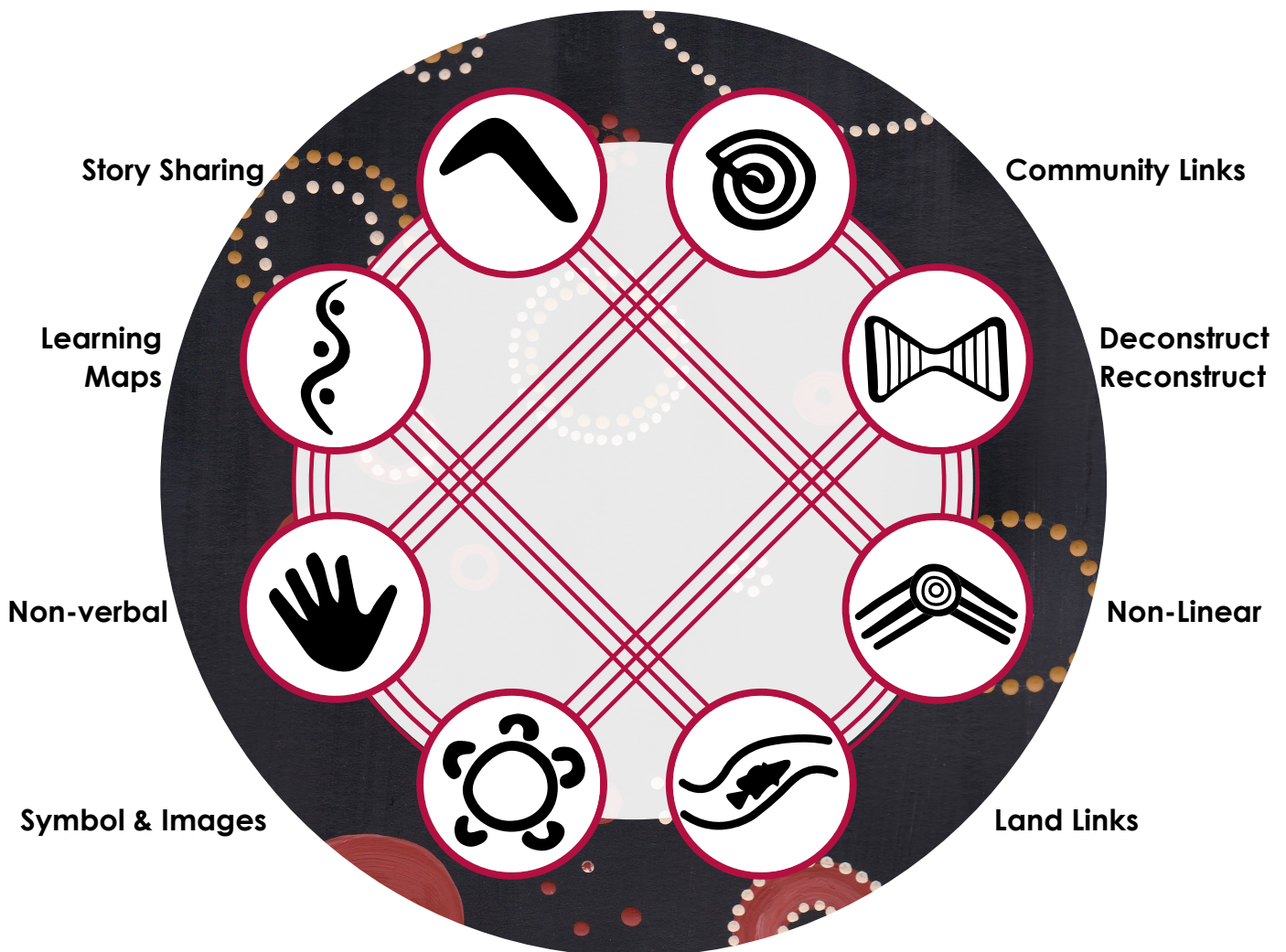
**Sydney Zoo acknowledges the Darug nation, their people, past, present and their future generations.**

# Outcomes and content

Stage	Outcomes	Content
Stage 2	<p><b>Geography</b> A student:</p> <p><b>Skills:</b> Acquiring geographical information Processing geographical information Communicating geographical information</p> <p><b>Tools:</b> Maps Fieldwork Spatial technologies Visual representations</p> <p><b>Content</b> <b>GE2-1</b> examines features and characteristics of places and environments <b>GE2-3</b> examines differing perceptions about the management of places and environments <b>GE2-4</b> acquires and communicates geographical information using geographical tools for inquiry</p>	<p><b>Key inquiry questions</b></p> <ul style="list-style-type: none"> <li>• How and why are places similar and different?</li> <li>• What would it be like to live in a neighbouring country?</li> <li>• How do people's perceptions about places influence their views about the protection of places?</li> </ul> <p><b>Content</b> <b>Australia's neighbours</b> Students:  <ul style="list-style-type: none"> <li>• investigate Australia's neighbouring countries and their diverse characteristics (ACHGK016)</li> </ul> <b>Climate of places</b> Students:  <ul style="list-style-type: none"> <li>• investigate the climates of different places, for example: (ACHGK017)</li> </ul> <b>Similarities and differences between places</b> Students:  <ul style="list-style-type: none"> <li>• investigate the settlement patterns and demographic characteristics of places and the lives of people who live there (ACHGK019)</li> </ul> <b>Different environments</b> Students:  <ul style="list-style-type: none"> <li>• investigate the natural characteristics of Australia and one country in Asia (ACHGK020)</li> </ul> <b>Significance of environments</b> Students:  <ul style="list-style-type: none"> <li>• investigate the importance of natural vegetation and natural resources to the environment, animals and people (ACHGK021, ACHGK022, ACHGK024)</li> </ul> </p>
	<p><b>Science and Technology</b></p> <p><b>Skills</b> A student: <b>ST2-1WS-S</b> questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations <b>ST2-2DP-T</b> selects and uses materials, tools and equipment to develop solutions for a need or opportunity</p> <p><b>Knowledge and Understanding:</b> A student: <b>ST2-4LW-S</b> compares features and characteristics of living and non-living things</p>	<p><b>Skills Focus</b> <b>Working Scientifically</b> <b>Planning and conducting investigations</b></p> <ul style="list-style-type: none"> <li>• plan scientific investigations with guidance</li> <li>• use appropriate materials and equipment safely (ACSIS054, ACSIS065)</li> <li>• participate individually and collaboratively with clear roles and goals</li> </ul> <p><b>Processing and analysing data</b></p> <ul style="list-style-type: none"> <li>• suggest possible reasons for findings (ACSIS215, ACSIS216)</li> </ul> <p><b>Design and Production</b> <b>Identifying and defining</b></p> <ul style="list-style-type: none"> <li>• define a need or opportunity according to functional and aesthetic criteria</li> <li>• consider potential resources in defining design needs and opportunities</li> <li>• investigate and research materials, components, tools and techniques to produce design solutions (ACTDEP014)</li> </ul> <p><b>Researching and planning</b></p> <ul style="list-style-type: none"> <li>• identify and define a design problem with consideration of practical and aesthetic needs</li> <li>• consider sustainable use of resources and time constraints in planning design solutions</li> <li>• develop, record and communicate design ideas and decisions using appropriate technical terms</li> </ul> <p><b>Content</b> <b>Survival of living things</b> <b>Inquiry question:</b> How are environments and living things interdependent? Students:  <ul style="list-style-type: none"> <li>• describe how living things depend on each other and the environment to survive (ACSSU073)</li> </ul> </p>

# Aboriginal Pedagogy

## 8Ways of Learning







TELL A STORY. MAKE A PLAN.  
THINK AND DO. DRAW IT. TAKE IT OUTSIDE.  
TRY A NEW WAY. WATCH FIRST, THEN DO.  
SHARE IT WITH OTHERS

From the 8Ways website <https://www.8ways.online/>

Sydney Zoo has developed this lesson package with a focus on Aboriginal Pedagogy for delivery of all content. Context for each lesson is provided in the lesson plans.



# Recommended pre-visit lesson outline

Location & Duration	Outcomes & 8Ways	Learning Activity	Resources
Classroom 60+ minutes	GE2-1 GE2-4	8Ways context- explain to students that a learning map is a way to map their journey through the topic. Students can place goals and main ideas in their learning map to show the knowledge and skills they will be obtaining through activities on the way. It is a visual representation of a learning journey. Students will use geographical tools to find the location of Sydney Zoo and their own school in the landscape.	
	8Ways <b>Learning maps</b>	<b>Activity 1:</b> <b>Explain</b> that the class will be going on an excursion to Sydney Zoo to investigate Orangutans, one of our closest living relatives. <b>Look up</b> the Sydney Zoo Map. <b>Brainstorm</b> the kinds of things you will be learning at Sydney Zoo and about Orangutans and create a learning map with a start and finish.	<b>Map</b> <a href="https://sydneyzoo.com/zoo-map">https://sydneyzoo.com/zoo-map</a> <b>Activity sheet</b> 'Learning map'
	8Ways <b>Land Links</b>	<b>Activity 2:</b> <b>Google Maps</b> Using Google Maps as a class or in small groups/individually. - Students find their school's location - Students find Sydney Zoo (700 Great Western Highway, Bungarribee) - How far away is the Zoo from school? How can you travel from one to the other? <b>SixMaps</b> - Students find their school's location in Sydney (can use search tool on top left to search for suburb or other location) - Zoom out to see the extent of green areas and built up areas around Western Sydney <b>Explain</b> that the dark green around Sydney are the national parks and areas of natural vegetation in the Blue Mountains. Can you find large areas of green inside Sydney? What is Sydney mostly made up of? (human made roads, buildings etc). - Lots of missing habitat for local wildlife, <b>Brainstorm</b> what could be done to help?	<b>Link</b> Google Maps <a href="https://www.google.com/maps">https://www.google.com/maps</a> <b>Link</b> Six Maps <a href="https://maps.six.nsw.gov.au/">https://maps.six.nsw.gov.au/</a>
 	8Ways <b>Non Verbal</b>  8Ways <b>Symbols</b>	<b>Activity 3:</b> Mapping Sydney Zoo – keep Six Maps open for this activity. Print out <b>Activity sheets</b> 'Mapping Sydney Zoo' (single sided) <b>Enquiry:</b> What is a map? - Can be a photo, drawing/sketch, diagram showing a specific area - Needs to have specific interpretation (so a simple photograph is not enough) - Can be big (global map) or small (school map) <b>What do maps have to have?</b> - BOLTS Border, Orientation (north pointer), Legend, Title, Scale  <b>Students</b> to add BOLTS to the Sydney Zoo map. Use Six Maps and as a class decide on the scale. Can use the measuring tool. Use Six Maps to determine which direction is North – the orientation of Six Maps is North. <b>Students can bring this map to Sydney Zoo on their visit to extend on their learning – using it to navigate and explain direction and distance from exhibits.</b>	<b>Activity sheet</b> 'Mapping Sydney Zoo'  <b>Link</b> Six Maps <a href="https://maps.six.nsw.gov.au/">https://maps.six.nsw.gov.au/</a>

# Mapping Sydney Zoo

Every good map has **BOLTS** – **B**order, **O**rientation, **L**egend, **T**itle and **S**cale.

Use the **BOLTS** below to make your map of Sydney Zoo.

## Border

A **border** is an important part of a map. Draw a border around the map.

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Having **orientation** is important to anyone reading the map so they know which direction one location is from another. Discover which direction North is at Sydney Zoo by using SixMaps then cut and paste this North pointer onto your map pointing in the right direction.

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## Legend

A **legend** shows what different colours or symbols mean. Cut this out and glue it to your map on one side. Underneath it add 3 items – Paths (use one colour) these can be drawn on in the white spaces between animals. Water – on the far left of the map is a large dam. A symbol for your favourite animal.

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## Title

A **title** gives the map meaning. It makes sure that people know what the map is showing. Add your own title to the top of the map.

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Using a **scale** means you can measure how far two places are from each other on the map and know the distance in the real world. In this case each block is 1 cm long. Use Sixmaps to find out the real-life measurements of Sydney Zoo. Glue this **scale** onto your map.

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This is supposed to be a map of Sydney Zoo but it is missing a few important features. You will need to help us and add these features to this map.

# Map of Sydney Zoo

Example of completed task






This is supposed to be a map of Sydney Zoo but it is missing a few important features. You will need to help us and add these features to this map.



# Optional pre-visit

## 'Sumatra' lesson outline

Location & Duration	Outcomes & 8Ways	Learning Activity	Resources
60+ minutes	GE2-1 GE2-4	8Ways context: connecting students with a place. Students will compare two landscapes – their own local landscape and that of Sumatra. Drawing activities.	
	8Ways <b>Land Links</b>	<p><b>Activity 1:</b> Look out of your classroom window – what do you see?</p> <ul style="list-style-type: none"> <li>• <b>Activity Sheet</b> 'Habitat windows' Students to look out the windows and draw the habitat they see in the first 'window'. Human made views are also habitat.</li> <li>• <b>Discuss</b> how nature can co-exist with manmade environments for example, little plants growing between cracks in the concrete.</li> <li>• <b>Look up</b> images of different kinds of habitats (either as a class or individually) and define what you think the habitat outside your classroom looks like – a lot of remaining forest in Western Sydney is Cumberland Plain Woodland.</li> <li>• <b>Brainstorm</b> as a class what kinds of animals might live there.</li> </ul>	<p><b>Activity sheet</b> 'Habitat windows'</p>
	8Ways <b>Non verbal</b>		
	8Ways <b>Non verbal</b>	<p><b>Activity 2:</b> 'Imagine you are in a classroom in Sumatra, an island of Indonesia.'</p> <ul style="list-style-type: none"> <li>• <b>Brainstorm</b> thoughts about Indonesia and Sumatra – what do students already know and what do they want to know. <ul style="list-style-type: none"> <li>- where is Indonesia?</li> <li>- what do you think it looks like there?</li> <li>- what animals live there?</li> </ul> </li> <li>• <b>Look up</b> images of Sumatra.</li> <li>• <b>Students draw</b> a Sumatra habitat in the second 'window'.</li> </ul>	<p><b>Activity sheet</b> 'Habitat windows'</p>
		<p><b>Activity 3:</b> Students individually or as a class go to the website: Atlas of Deforestation. <b>Borneo is another island in Indonesia and similar impacts can be seen on Sumatra.</b></p> <ul style="list-style-type: none"> <li>• Zoom out and see where Sumatra and Borneo are compared to Australia</li> <li>• Use the tool 'Simple Deforestation Viewer' on the bottom right to show students the changes on the island since 1973.</li> <li>• Compare the Six Map of NSW and the map of the island of Sumatra what kinds of habitat exists across the two places?</li> <li>• Students complete the table comparing Sumatra and Australia</li> <li>• Students research the climate and land use in both places</li> <li>• <b>Discuss</b> each comparison as a class once completed</li> </ul>	<p><b>Activity sheet</b> 'Sumatra'</p> <p><b>Link</b> Atlas of Deforestation <a href="https://www.cifor.org/map/atlas/">https://www.cifor.org/map/atlas/</a></p> <p><b>Link</b> Six Maps <a href="https://maps.six.nsw.gov.au/">https://maps.six.nsw.gov.au/</a></p>
		<p><b>Activity 4:</b> <b>Watch</b> the trailer for 'Orangutan Jungle School'. <b>Discuss</b> with students what they saw:</p> <ul style="list-style-type: none"> <li>• Cute baby Orangutans</li> <li>• Why are they there? Is it normal for humans to raise them?</li> <li>• Why do they need a jungle school?</li> <li>• Can these animals go back to the wild?</li> </ul>	<p><b>Video</b> Jungle School trailer <a href="https://www.youtube.com/watch?v=qCqWNhnJqtY">https://www.youtube.com/watch?v=qCqWNhnJqtY</a></p>



# Habitat windows

Draw the habitat you see outside your classroom window.


Draw the habitat you would see outside your window in Sumatra.


# Sumatra



-  – NSW 800,640km<sup>2</sup>
-  – Sumatra 473,481km<sup>2</sup>

	Sumatra	NSW
Climate/Typical weather		
Habitat type(s)		
Native animals		
How do people use their environment? Eg. food		

# Visiting Sydney Zoo

Take your students on a self-guided adventure or book a workshop at Sydney Zoo! Download and print the Stage 2 Activity Booklet 'People of the Forest' to support student learning about Orangutans while visiting Sydney Zoo.

Check out the Sydney Zoo Orangutan exhibit to watch our close relatives in action and learn about their threats and conservation efforts to save them from extinction.

## Pre-visit checklist:

- ✔ Pre-visit activities
- ✔ Behaviour expectations of students while visiting Sydney Zoo
  - Follow instructions of your teacher and zoo staff
  - Take only photographs and memories, leave only footprints and smiles
  - If you get lost, find a staff member in uniform and tell them you need help
  - Have a lot of fun and ask lots of questions!
- ✔ Ask students to prepare low waste/waste free lunches if possible. We love seeing the students' being low waste/waste free – please brag about this to us
- ✔ Wet-weather preparation if the forecast is not favourable (some of our animals love wet days so don't worry about them hiding away)

## Pre-visit checklist:

- ✔ Check-in at Group Bookings desk
- ✔ Find allocated bag storage area for student bags if required
- ✔ Enjoy your visit with us and please ask any staff for assistance if required

We recommend allocating small groups to adult supervisors.  
**Download** our 'survival guide for teachers'



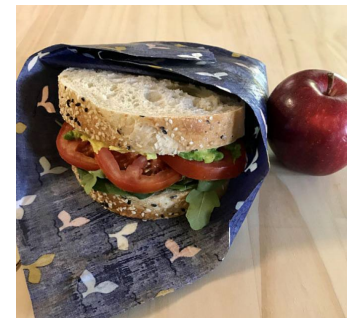
# What is a low or no waste lunch?

- Sourcing foods that have minimal or no packaging and using reusable containers to carry food.
- Bringing your own reusable drink bottle and refill it.
- Carrying your own reusable cutlery set.

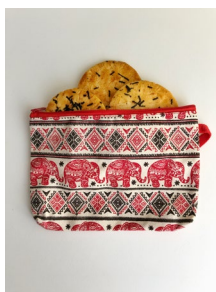


## Examples

- ✔ Sandwiches - without clingwrap, they can stay fresh in a suitable reusable container or beeswax reusable wrap.



- ✔ **Fruit** - apples, bananas and mandarins are easy to eat and/or peel at school or the Zoo, the core and skin can go in the organic bins.
- ✔ **Nuts, dried fruit, biscuits, popcorn etc.** in a small reusable container, buy them in bulk to reduce packaging and put servings into small containers for snacks.



# Optional post visit project lesson outline

## Syllabus Inquiry Questions:

**Living World:** How can we improve a local environment to encourage living things to thrive?

**Features of Places:** How can we care for places?

How can spaces within a place be used for different purposes?



Location & Duration	Outcomes & 8Ways	Learning Activity	Resources
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This project may extend over several lessons, days, or weeks

GE2-1  
GE2-3  
GE2-4  
ST2-1WS-S  
ST2-2DP-T  
ST2-4LW-S

8Ways context for this project encompasses multiple methods. Brainstorming and creating a learning map of the process for project completion; breaking down each task and modelling for students; getting students to take action; approaching any problems from multiple angles with the class; creating land links for students by taking their learning outside; sharing what they are doing with the wider community of school and hopefully Sydney Zoo.



8Ways  
**Learning maps**

### Premise:

While visiting Sydney Zoo you will have learned about sustainability, threats to the Orangutans and conservation efforts. What can students do to help? If you have not already shown students, 'Orangutan Jungle School' can help students understand what is happening to Orangutans in Sumatra and Borneo. Use the 'project planning scaffold' sheet to help with structuring your plan with students. At Sydney Zoo we ask what can people Choose, Change or Contribute to, to help wildlife.

Butchers paper or smartboard/ whiteboard.

### Project Planning Scaffold

### Video

Jungle School trailer

<https://www.youtube.com/watch?v=qCqWNhnJqtY>



8Ways  
**Deconstruct/ Reconstruct**

### Activity 1:

Set up a brainstorming session for students. Either on some butchers paper or on the board as a class.

- What do students know about the threats to Orangutans?
- What are some ongoing efforts to conserve them?
- What do students need/want to know more about?
- What can students do at school or at home to help?



8Ways  
**Symbols Actions**



8Ways  
**Land links**

### Activity 2

Use the brainstorm learning map from Activity 1 to decide as a class what you would like to do as a project to help Orangutans. Some examples:

- an awareness campaign within the school and community to tell people about their major threats and easy ways to help e.g. sustainable palm oil – Roundtable on Sustainable Palm Oil
- change what is served at the canteen (if research finds items containing unsustainable palm oil)
- fundraise for Orangutan causes via a school competition or event
- Write letters to their favourite food companies if they are not already using sustainable palm oil and ask them to change.

### Recommended Links:

<https://rspo.org/>

[www.orangutan.org.au](http://www.orangutan.org.au)

[www.orangutans.com.au](http://www.orangutans.com.au)

[www.orangutanfoundation.org.au](http://www.orangutanfoundation.org.au)



8Ways  
**Non-linear**



8Ways  
**Community links**

### Activity 3

Students research the project they wish to undertake, they will need to have a deeper understanding of the cause and the threats to Orangutans to better complete this project. Questions to consider:

- What threat will your campaign focus on? (e.g. palm oil)
- Who is already helping this situation? Can you contact them for more information or to get guidance for the project? External stakeholders are a great way to broaden student experiences (see example organisations in 'Resources').
- What is feasible at school? Time, resources, costs, permissions – students can ask these questions of the administration themselves through a submission, a great example of communication skills

# Optional post visit project lesson outline (continued)

## Learning Activity

## Resources

### Activity 4

Assign roles for the project if applicable

- write down everything that is needed to complete the project
- assign students to each task
- if parents or external people are coming in to help your project assign students to each adult
- **model** each task for the students (break down tasks and show students how to complete tasks)

### Activity 5

#### Complete project!

This may take an hour or it may be broken up over several sessions.

### Activity 6

#### Remember to take photos and videos throughout.

If you would like to share your project with the wider community, Sydney Zoo would LOVE to hear from you

[education@sydneyinfo.com](mailto:education@sydneyinfo.com)

# Project planning scaffold for use as a class



**What is the  
problem/opportunity?**



**Can we Choose  
something more  
sustainable, Change  
something or Contribute  
time or funds?**



**Research first then  
create a plan**



**Create your project with  
appropriate tools,  
materials and safe  
practices**



**Evaluate your project –  
did you do what you set  
out to do?**

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# Word bank

Word	Definition
<b>Aboriginal and/or Torres Strait Islander Peoples</b>	<p>Aboriginal Peoples are the first peoples of Australia and are represented by over 250 language groups, each associated with a particular Country or territory. Torres Strait Islander Peoples are represented by five major island groups, and are associated with island territories to the north of Australia's Cape York which were annexed by Queensland in 1879.</p> <p>An Aboriginal and/or Torres Strait Islander person is someone who:</p> <ul style="list-style-type: none"> <li>• is of Aboriginal and/or Torres Strait Islander descent</li> <li>• identifies as an Aboriginal person and/or Torres Strait Islander person, and</li> <li>• is accepted as such by the Aboriginal and/or Torres Strait Islander community(ies) in which they live.</li> </ul>
<b>adaptation</b>	The process of change by which a species becomes better suited to its environment.
<b>built environment</b>	The manufactured artefacts and surroundings that provide the setting for human activity.
<b>characteristics</b>	<p>A set of distinguishing aspects (including attributes and behaviours) of a living thing, object or material. The characteristics of living things are often used to classify them and might include how they move or reproduce.</p> <p>When discussing materials the characteristics are the qualities used by humans to determine their use and the way people work with them. They might include colour, hardness and opacity.</p>
<b>classification</b>	A category into which something is organised.
<b>climate change</b>	A long-term change in regional or global climate patterns eg annual precipitation, frequency of weather events.
<b>climate graph</b>	A graph showing average monthly temperature (by a line) and precipitation (by columns) for a location.
<b>climatic zones</b>	Refers to areas of the Earth that have similar temperatures. The major zones are hot, temperate and polar and are generally demarcated by lines of latitude. Within each zone there are different climates because of the effects of the distribution of continents and oceans and the circulation patterns of the atmosphere and oceans.
<b>conclusions</b>	An opinion or judgement based on evidence.
<b>Country/Place</b>	<p>Country is a space mapped out by physical or intangible boundaries that individuals or groups of Aboriginal Peoples occupy and regard as their own. It is a space with varying degrees of spirituality.</p> <p>Place is a space mapped out by physical or intangible boundaries that individuals or groups of Torres Strait Islander Peoples occupy and regard as their own. It is a space with varying degrees of spirituality.</p>
<b>cultural groups</b>	People belonging to or identifying with a nationality, ethnic group, religion or social group with a distinct culture.
<b>culture</b>	The customs, habits, beliefs, social organisation and ways of life that characterise different groups and communities.
<b>designed solution</b>	A product, service or environment that has been created for a specific purpose or intention as a result of design thinking, and design and production processes.
<b>diversity</b>	Differences that exist within a group, for example, age, sex, gender, gender expression, sexuality, ethnicity, ability/disability, body shape and composition, culture, religion, learning differences, socioeconomic background, values and experiences.

# Word bank

Word	Definition
<b>environment</b>	The living and non-living elements of the Earth's surface and atmosphere. Where unqualified, it includes human changes to the Earth's surface eg croplands, planted forests, buildings and roads.
<b>features</b>	The tangible elements of a place or environment.
<b>field sketches</b>	Annotated line drawings created to record features of an environment during fieldwork activities.
<b>habitat</b>	The natural home or environment of an animal, plant, or other organism.
<b>investigate</b>	Carry out a systematic or formal inquiry to discover and examine information.
<b>investigation</b>	A scientific investigation is a systematic inquiry applying the processes of planning a course of action, safely manipulating tools and equipment in collecting and interpreting data, drawing evidence-based conclusions and communicating findings.
<b>landscape</b>	A landscape is an area, created by a combination of geological, geomorphological, biological and cultural layers that have evolved over time eg riverine, coastal or urban landscapes.
<b>natural environment</b>	An environment in which humans do not make significant interventions, for example ocean environments or national parks.
<b>natural resources</b>	Resources provided by nature. Resources can be classified as renewable, non-renewable and continuous. Also known as environmental resources.
<b>natural vegetation</b>	The vegetation that has evolved in an area over time.
<b>perception</b>	People's assessment of places and environments.
<b>seasonal calendar</b>	The classification of the weeks or months of the year into seasons eg spring, summer, autumn and winter, or wet and dry, or the classifications of Aboriginal cultures.
<b>sketch map</b>	A labelled drawing outlining the main geographical features of a place.
<b>small-scale map</b>	A map showing a large area of the Earth's surface with little detail eg world map where one centimetre on the map scale represents a large distance on the land.
<b>sustainable</b>	Supporting the needs of the present without compromising the ability of future generations to support their needs.
<b>weather</b>	The condition of the atmosphere at a point in time eg temperature, humidity.



INFO@SYDNEYZOO.COM : 1800 843 966

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