

The Living World at Sydney Zoo

Teacher Toolkit Early Stage 1 Stage 1

Outcomes contributed to:

GEe1-1

GEe1-2

GE 1 - 2

GE 1 - 3

Ste-1WS-S

Ste-2DP-T

Ste-3LW-ST

ST1 - 1 WS- S

ST 1 - 2 DP- T

ST 1 - 4LW- S



Welcome to the Sydney Zoo Teacher Toolkit

Our vision is to secure a sustainable future for wildlife through making connections between your students and our animals.

‘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

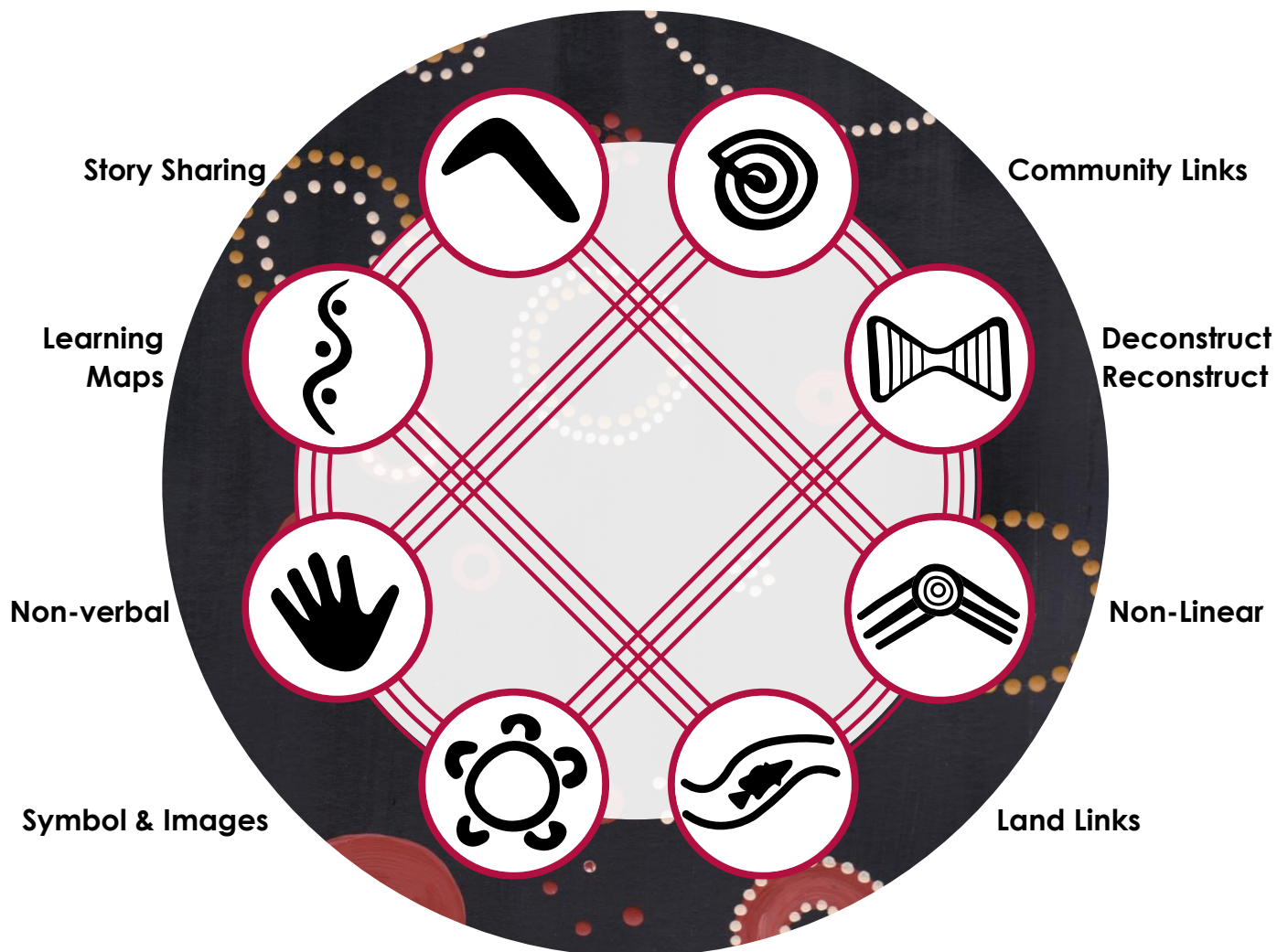
Stage	Outcomes	Content
Early Stage 1	Geography A student: GEE-1 identifies places and develops an understanding of the importance of places to people GEE-2 communicates geographical information and uses geographical tools	Key inquiry questions - What are places like? - How can we look after the places we live in? Content Important places Students: - investigate the importance of places they live in and belong to (ACHGK002, ACHGK004) Locating places Students: - Investigate how the location of places can be represented (ACHGK001)
Early Stage 1	Science and Technology Skills A student: STe-1WS-S observes, questions and collects data to communicate ideas STe-2DP-T develops solutions to an identified need Knowledge and Understanding A student: STe-3LW-ST explores the characteristics, needs and uses of living things	Skills Focus Working Scientifically Planning and conducting investigations - make observations using senses through participation in guided scientific investigations - record observations using drawings, simple digital recording methods, oral descriptions and/or simple visual representations (ACSIS011) - work cooperatively with others to investigate ideas - develop safe skills when using materials and equipment Communicating - share observations and ideas based on guided investigations (ACSIS012) Design and Production Identifying and defining - identify and describe needs or opportunities for designing - identify the technologies needed to achieve designed solutions (ACTDEP005) Content Characteristics and basic needs of living things Inquiry question: What do we notice about living things? Students: - recognise that living things have basic needs including air, food and water (ACSSU002) - compare the basic needs of some plants and animals - participate in guided investigations to identify living things and the external features of plants and animals in the local environment - communicate findings of observations of living things in their environment
Stage 1	Geography A student: GE1-2 identifies ways in which people interact with and care for places GE1-3 communicates geographical information and uses geographical tools for inquiry	Key inquiry questions - What are the feature of, and activities in, places? - How can we care for places? - How can spaces within a place be used for different purposes? Content Features of places Students: - Investigate features of places and how they can be cared for How places are organised Students: - Investigate activities that occur within places

Outcomes and content

Stage	Outcomes	Content
Stage 1	Science and Technology Skills A student: ST1-1WS-S observes, questions and collects data to communicate and compare ideas ST1-2DP-T uses materials, tools and equipment to develop solutions for a need or opportunity ST1-4LW-S describes observable features of living things and their environments	Skills Focus Working Scientifically Planning and conducting investigations • explore and answer questions through participation in guided scientific investigations (AC SIS025, AC SIS038) • collect data from observations • compare observations with those of others (AC SIS041, AC SIS213) • make safe choices when using materials and equipment Processing and analysing data • use a range of methods to sort and collate information • represent information using drawings and simple tables, including digital representation methods (AC SIS027, AC SIS040) Design and Production Researching and planning • generate ideas for design solutions for a defined purpose • consider sustainable use of resources in planning design solutions • develop design ideas in response to defined brief Producing and implementing • effectively manage a variety of tools • manipulate a range of materials for a purpose • consider safety, sustainability and time constraints when producing solutions (ACTDEP007) • segment and sequence steps for making designed solutions • collaborate to develop designed solutions • perform strategic roles within a group to solve a problem (ACTDEP009) Content External features of living things Inquiry question: What are the external features of living things? Students: • describe the external features of a variety of living things (ACSSU017) • identify and group plants and animals using their external features, for example: – native and introduced plants and animals – worms, insects, fish, reptiles, birds and mammals Living things live in different places Inquiry question: How can we improve a local environment to encourage living things to thrive? Students: • identify that living things live in different places that suit their needs (ACSSU211) • design and produce an environment to cater for the needs of a living thing, for example: –encourage the growth of a plant, eg greenhouses, hydroponics –encourage the return of a living thing to a local habitat • recognise that people use science and technology in their daily lives, including when caring for their environment and living things (ACSHE022, ACSHE035)

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 'visiting Sydney Zoo' lesson outline

Location & Duration	Outcomes & 8Ways	Learning Activity	Resources
Classroom 30 minutes		8Ways context for this lesson – students will be explicitly thinking about what they will be doing and learning at during this program and while at an excursion to Sydney Zoo. They can create a learning map to help to see a goal for their learning and the learning journey. Activity 1: Explain that the class will be going on an excursion to Sydney Zoo to investigate living things. Look up the Sydney Zoo map and see what animals are at Sydney Zoo Brainstorm the things students will be learning at Sydney Zoo. Create a learning map as a class of all the things students could learn throughout their time at Sydney Zoo. These learning maps can help students to create goals in their learning.	Map Zoo Map
	8Ways Learning maps	Activity 2: Students use Activity sheet 'Learning Map' Students cut images out and stick them onto the learning map activity sheet arranged in a map and add words or sentences about what they will be learning, the map should have a start and a finish. This can be done as a class or individually/small groups. Examples include: • Animal facts • Habitat facts • Threats • Conservation	Activity sheets 'Images' 'Learning Map'

Images

Cut out the images below and use them to brainstorm and create a map of what you think you will learn at Sydney Zoo, you can add describing words or sentences.



Learning map

Create a **map** of all the things you will be **learning**. The **start** is what you know now, the **end** is what you will know when you finish.

Fill in the map with what your class is planning to learn about.

Recommended pre-visit 'maps' lesson outline

Location & Duration	Outcomes & 8Ways	Learning Activity	Resources
Classroom	GEe1-1 GEe1-2 GE1-2 GE1-3 STe-3LW-ST ST1-4LW-S	8Ways context for this lesson – students will be able to connect with Country through the story of Mugadung the Blue Tongue Lizard and how she uses the land, and where she could live on the map. Students will compare what human and natural made features look like.	
	8Ways Land Links	Activity 2: Story about Mugadung the Blue Tongue who lives at Sydney Zoo – activity sheet 'Where in the world is Sydney Zoo?'. - Students to find the location of the Zoo and circle it on the map. - Students to find location of the school or nearby suburb and circle it on the map. - Students to trace roads that connect to one another to drive from one to the other. - If your school or suburb is not listed on the map, use another landmark or suburb. Discuss what natural made and human made features on the map are. E.g., green parklands, trees and bushland vs. houses, shopping centres and schools. Mugadung relies on her habitat to survive. What does Mugadung need from her habitat? Food, water, shelter = natural healthy areas. Are there any areas on your map that would make good Mugadung habitat? (natural features e.g. parks) Extend on the learning – use Google Earth as a class to zoom into the Western Sydney area and investigate the natural and human made areas near your school.	Activity sheet 'Where in the World is Sydney Zoo?' Link https://www.google.com/earth/

Where in the world is Sydney Zoo?



Mugadung the Blue Tongue Lizard lives at Sydney Zoo.

She spends her days wandering through the bush looking for tasty food and hiding from other animals.

What does Mugadung need to survive?

_____od

_____at _____

She_____

Are there many places on the map for her and her friends to live?



- 1. Can you find where Sydney Zoo is on the map?** Circle it on the map.
- 2. Can you see your school?** Circle it on the map.
- 3. Draw a way to get from your school or another landmark e.g. Blacktown to Sydney Zoo using the roads.**

Optional pre-visit 'habitats' lesson outline

Location & Duration	Outcomes & 8Ways	Learning Activity	Resources
Out in school grounds 45 minutes	STe-1WS-S STe-3LW-ST ST1-1WS-S ST1-4LW-S	8Ways context for this lesson – students will be learning outside and connecting with nature and the land. Students will be learning by doing, watching and drawing which are non-verbal traits.	
	8Ways Land Links	Activity: Choose one area of the school grounds that is a good habitat zone for animals, for example, it has lots of trees and bushes. If your school does not have this zone, you could seek permission to go to a local park or students can search for images. Find a place where students can sit with their worksheets on a book or clipboard ready to draw. Remind students that the quieter they are the more likely they will see animals. 1. Students draw the area of habitat. 2. Choose one animal that students have seen in the grounds e.g. lorikeets, snails, ants, lizards. 3. Students draw chosen animal in the habitat. 4. Discuss how this habitat provides food, water, shelter for different living things. 5. Do Mugadung, the Blue Tongue Lizard's friends, ever make an appearance? Is there a Blue Tongue Lizard living at school?	Activity Sheet 'Habitats at School' Clipboards/book to lean on and pencils
	8Ways Non verbal		

Habitats at School

In your school grounds, choose an area of habitat as a class. Draw this habitat below.

Is there one animal you can see there? Draw this animal in its habitat.



Optional pre-visit

‘Features’ lesson outline

Location & Duration	Outcomes & 8Ways	Learning Activity	Resources
Classroom 10 mins + Outside 30-40 mins	STe-1WS-S STe-3LW-ST ST1-1WS-S ST1-4LW-S	External Features of Living Things The 8Ways context in this lesson involves using images for students to engage with the learning. They will see the example images of features and find these in nature. Teachers will deconstruct the learning by modelling the activity before students commence the activity.	
	8Ways Symbols	Activity: 1. Discuss what external features are. E.g. Legs, Fur, Scales, Ears, Eyes 2. Hand out the activity sheet ‘External Features of Living Things’	Activity sheet ‘External Features of Living Things’
	8Ways Deconstruct/Reconstruct	3. Take students outside into the playground to a safe area that has some habitat. This can be the same or different place to the Habitats at School activity. Sit them down to watch for animals in the area. The quieter they are, the more they are likely to see animals. 4. Model the action for the students when in the playground. • Show them the sheet • Find an animal • Look at the features on the sheet and see where the animal’s features match up and write the animal down Students can work individually or in small groups to look for animals that have the features shown on the sheet.	Clipboards/book to lean on and pencils
Extension Activity: Back in the classroom, collate some data from the students. Opportunity to create a class graph showing how many of each type of feature students found and how many animals they saw onsite.			

External Features of Living Things

Every plant and animal has external features that make them different from one another. Investigate living things in your playground. Can you find any animals with the features below? What animals did you see?

What animal can you see with these features?



- Wings
 - Beak
 - Feathers
-



- Antenna
 - Many legs
 - 3 body segments
-



- 4 legs
 - Claws
 - Scales
-



- Ears
 - Tail
 - Whiskers
 - Fur
-



- Slimy
 - Shell
 - No legs
-

Visiting Sydney Zoo

Take your students on a self-guided adventure or book a workshop at Sydney Zoo! Download and print the Stage 1 Activity Booklet 'The Living World at Sydney Zoo' and the 'Teacher Quizbook' to support student learning during your visit.

Pre-visit checklist:

- ✔ Pre-visit activities
- ✔ Behaviour expectations of students while visiting Sydney Zoo
 - Students must always be accompanied by a teacher
 - 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)

Upon arrival

- ✔ Send one staff member to check-in at Group Bookings desk - assemble classes with other staff members.
- ✔ Our Sydney Zoo education staff will brief students about being Safe, Slow and Quiet before entry.
- ✔ 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
This project may extend over several lesson, days, or weeks depending on how it is set up.	STe-1WS-S STe-2DP-T STe-3LW-ST ST1-1WS-S ST1-2DP-T ST1-4LW-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 them outside and working on Country; sharing what they are doing with the wider community of school and hopefully Sydney Zoo.	Activity sheet 'Project Planning Scaffold'
	8Ways Learning maps	Premise: How do we keep our planet healthy and safe for ourselves and wildlife? There are many ways we can improve the environment around, safely use and care for spaces. At Sydney Zoo we use the Choose, Change, Contribute framework.	Sydney Zoo CHANGE their energy story
	8Ways Deconstruct/Reconstruct	Activity 1: Read the attached story – Sydney Zoo CHANGE their energy	Butchers paper or white board
	8Ways Symbols Actions	Set up a brainstorming session for students. Either on some butchers paper or on the board as a class. Question students: is there anything in the school that we could improve for the environment or wildlife? Can we Choose something new?	
	8Ways Land links	Can we Change something to improve the place? Can we Contribute something to a charity or the community?	
	8Ways Non-linear	Read Sydney Zoo Change their energy story.	
	8Ways Community links	Activity 2 Once a few ideas have been written down, ask students to pick one as a class. Discuss how each option would benefit animals in the local habitat: • Pick up rubbish –plastic doesn't go into environment • Plant some trees –creates habitat, food and shelter for wildlife • Put up some signs around habitat that students could make to help protect species that live there • Put together or buy some possum boxes or other shelters that can go in the trees etc. • Create a frog pond somewhere at school • Apply for solar panel funding on rooves	

Optional post visit project lesson outline (continued)

	Learning Activity	Resources
	Activity 3: This activity can be short or extended for more depth. Students can research the area they wish to change/protect • observe who uses the space human and animal • find out what plants already exist • map the area for use • write a plan for what needs to happen, equipment needed, people needed • can use the project planning scaffold to start planning processes. • contact Sydney Zoo education if you need more ideas. Activity 4 Assign roles for the project • 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. Important note: Remember to take photos and videos throughout to show the hard work everybody has put in. If you would like to share your project with the wider community, Sydney Zoo would LOVE to hear from you education@sydneyzoo.com	

Sydney Zoo CHANGE their energy

EnergyAustralia sponsored
Sydney Zoo to install 602
solar panels



Sydney Zoo was started from scratch.

It changed from a field of grass with 2
trees...

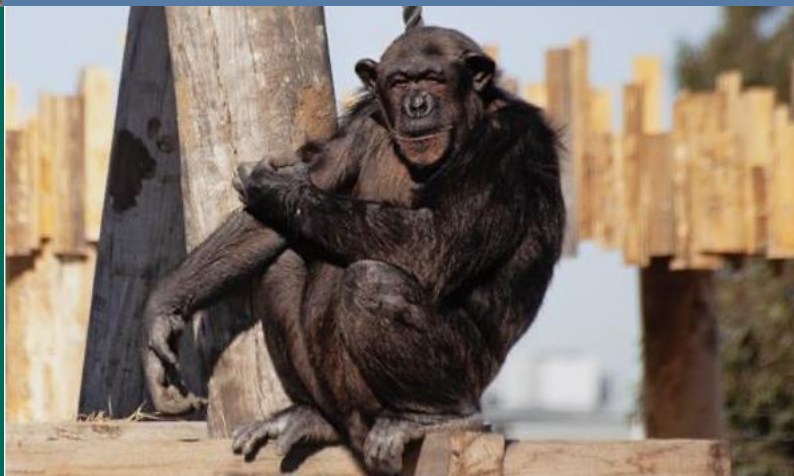
To a big wide cleared patch.



So many trucks, diggers and cranes
helped to build this.

Do you think you can guess whose
house this now is?

The Chimpanzees are the ones
who call it home.



Sydney Zoo CHANGE their energy



But there was still more work to do
and we couldn't do it alone.

The zoo started to look much more
put together.

But some things were still missing to
make it much better.



We wanted to share with the world and
do what we know.

Improving this place, our planet,
our home.



Sydney Zoo CHANGE their energy



Habitats for birds, bats, bees and frogs.
So many trees, hives, ponds and logs!



What could you do in your school or place?

Change the way plants and animals use the space?

After many improvements, we want to do more.

What else could we change at our core?



Sydney Zoo CHANGE their energy



Then a light bulb went off – we knew just what to do.

We can use energy from the sun to power us too.

EnergyAustralia came to help with our change.

They installed solar panels on the roofs of the buildings in range.



We're so thankful now the sun helps power the zoo.
There are so many ways you can improve your place too.

Project planning scaffold



**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?**

Word bank

Word	Definition
Aboriginal and/or Torres Strait Islander Peoples	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. An Aboriginal and/or Torres Strait Islander person is someone who: • is of Aboriginal and/or Torres Strait Islander descent • identifies as an Aboriginal person and/or Torres Strait Islander person, and • is accepted as such by the Aboriginal and/or Torres Strait Islander community(ies) in which they live.
adaptation	The process of change by which a species becomes better suited to its environment.
built environment	The manufactured artefacts and surroundings that provide the setting for human activity.
characteristics	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. 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.
classification	A category into which something is organised.
climate change	A long-term change in regional or global climate patterns eg annual precipitation, frequency of weather events.
climate graph	A graph showing average monthly temperature (by a line) and precipitation (by columns) for a location.
climatic zones	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.
conclusions	An opinion or judgement based on evidence.
Country/Place	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. 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.
cultural groups	People belonging to or identifying with a nationality, ethnic group, religion or social group with a distinct culture.
culture	The customs, habits, beliefs, social organisation and ways of life that characterise different groups and communities.
designed solution	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.
diversity	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
environment	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.
features	The tangible elements of a place or environment.
field sketches	Annotated line drawings created to record features of an environment during fieldwork activities.
investigate	Carry out a systematic or formal inquiry to discover and examine information.
investigation	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.
landscape	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.
natural environment	An environment in which humans do not make significant interventions, for example ocean environments or national parks.
natural resources	Resources provided by nature. Resources can be classified as renewable, non-renewable and continuous. Also known as environmental resources.
natural vegetation	The vegetation that has evolved in an area over time.
perception	People's assessment of places and environments.
seasonal calendar	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.
sketch map	A labelled drawing outlining the main geographical features of a place.
small-scale map	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.
sustainable	Supporting the needs of the present without compromising the ability of future generations to support their needs.
weather	The condition of the atmosphere at a point in time eg temperature, humidity.



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