 Tears in the jungle – Stage 2 sustainability conceptual unit

Focusing on the macro concept of sustainability, this integrated unit of work provides teaching and learning sequences for Stage 2 English, geography, visual arts and science and technology as well as the cross-curriculum priorities of sustainability and Asia and Australia’s engagement with Asia.

The unit of work is based around the picture books Tears in the jungle: A children’s adventure to save the orangutan and Tears in the jungle: Fight for survival, both by Daniel Clarke and William Clarke. The English textual concepts of point of view and authority will be explored through these texts.



Tears in the jungle: A children’s adventure to save the orang-utan by Daniel Clarke and William Clarke, published by CTQ Management Consulting, Terry Hills, 2011

Students will undertake a geographical investigation into the significance of the Borneo jungle for people, animals and the environment, and ways in which it is perceived and protected. Their scientific investigations into classification of living things and the functioning of local environments will deepen students’ understandings of the interconnections and interdependencies in natural environments. In addition to composing a variety of texts, visual arts will enable students to explore their personal perceptions of orangutans and the Borneo jungle and provide creative opportunities for personal responses.

As part of their investigations, students are encouraged to respond by taking action as global citizens to contribute to the protection of orangutans, local endangered species or local habitats.

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Content overview

This overview identifies the content focus areas, modules and learning focus of each subject area.

Geography

The Earth’s environment

* How can the Borneo jungle environment support the lives of people and other living things into the future?
	+ How do people’s views about the environment influence their actions?
	+ How can people use places and environments more sustainably?

Case study of the significance of the Borneo jungle to animals, people and the environment, peoples’ views and perception of the environment and measures that can be undertaken to protect it.

Science and technology

Living world

* How can we group living things?
* How are environments and living things interdependent?

Scientific investigation of local biodiversity, habitats and interdependencies of living things, within the school grounds or local area.

English

Literature study of Tears in the jungle and Fight for survival

* Point of view
* Authority

Develop understanding of the English textual concept of point of view and authority. Experiment with use of voice, visual literacy and multimodal elements. Compose informative, persuasive and multimodal texts.

Visual arts

‘Treasured tropics’

* Artist case studies
* Art making

Focus on the subject matter of jungle vegetation and orangutans. Create jungle paintings with reference to Henri Rousseau and Jennie Baker and sketches and paintings of orangutans with reference to Pamela Condor and Ernest Zacharevic.

Sustainability

Environmental sustainability is the big idea or overarching concept for this unit of work. Sustainability is both a geographical concept and a cross-curriculum priority and encompasses both an understanding of the concept of sustainability and actions that contribute to a sustainable future. In protecting environments, the interdependencies of environmental, social, cultural and economic systems need to be considered.

The subjects of geography and science and technology equip students with knowledge of sustainable practices, understandings of sustainability challenges and skills to take action for more sustainable ways of living. English provides students with skills to investigate sustainability issues and, together with visual arts, enables students to communicate and encourage others to take action for sustainable futures. The learning in each of these subject areas enables students to contribute to the world as active, responsible and informed global citizens.

Taking action

It is likely that students will be motivated to take individual and collective action to help protect orangutans in Indonesia. It is also important that students have the opportunity to undertake personal actions for a local sustainability or environmental challenge such as biodiversity enhancement or school waste management.

Use the [sustainability action process](https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/sustainability-action-process) as a scaffold for students’ sustainability action planning.

Programming

The unit is programmed across a term. If your school programs across a semester, it is suggested that this case study of the Borneo jungle be undertaken over 10 weeks and a case study of an Australian environment be undertaken in the other 10 weeks, incorporating fieldwork in the environment.

The learning sequence is guided by the progression through the core texts, Tears in the jungle: A children’s adventure to save the orangutan and Tears in the jungle: Fight for survival, both by Daniel and William Clarke. It is recommended that the school purchase a class set of the texts, especially the first book, Tears in the jungle: A children’s adventure to save the orang-utan. This enables students to closely examination of the elements of the text.

Duration

The unit is planned for 10 weeks.

English textual concepts

The following English textual concepts will be the focus of the literature study, with point of view being examined in both Tears of the jungle texts and authority in the second book, Fight for survival.

Point of view

Point of view in a text is the position from which the subject matter of a text is designed to be perceived.

Stage 2 students learn that point of view influences interpretation of texts. They understand that:

* point of view is about who sees, thinks and tells the story
* different points of view affect the way we understand a story
* different modes and media convey point of view in different ways.

Authority

Authority refers to the role of the composer and responder and the degree to which these are privileged in making meaning.

Students understand authority and authorship are different aspects of texts. They learn that:

* responses to and interpretations of a text may vary and may have more or less validity
* authors may shape interpretation of a text but may not be able to control it.

Quoted from English textual concepts and learning processes – Early Stage 1 to Stage 6, NSW Department of Education and English Teachers’ Association of NSW, 2017.

Project based learning

Project based learning provides authentic learning experiences for real world issues and develops in students the capacity to take action locally with global effects. With a focus on acting sustainably, the content is well suited to project based learning (PBL).

Refer to [Developing the project experience](https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-for-the-future/future-focused-learning-and-teaching/project-based-learning-resource-guide/developing-the-project-experience) by the NSW Department of Education in Future focused learning and teaching for guidance on planning project based learning.

Driving questions are open-ended and focus on solving a problem. For example:

* What can one person do?
* How can I make a difference?
* How can we contribute to protecting environments locally and globally?
* How can we encourage the school community to act more sustainably?

Learning outside

 ‘No one will protect what they don't care about, and no one will care about what they have never experienced.’ – Sir David Attenborough

Fieldwork is an essential component of geographical and scientific investigations. In addition to first hand data collection, it immerses students in nature and helps form their views and perceptions of natural environments and ecosystems.

The scientific investigation into local biodiversity focuses on recording observations and collecting data about local plants, animals and habitats in the school grounds or local area. The geographical investigation case studies an Asian environment, and so the photographs in the core and supporting texts provide virtual fieldwork experiences of the Borneo jungle. A visit to local rainforest or wet sclerophyll forest would greatly enhance students’ understandings and personal views of this ecosystem.

Contact your local [environmental or zoo education centre](https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/environmental-zoo-centres) for excursions to support your investigations. As authors and conservationists Daniel and William Clarke state in their first book, first hand experiences have an enormous impact.

‘We want to share our experiences we had with orangutans, with other children, to help them to understand the problems and dangers they are facing.’

– Daniel and William Clarke, p 3, Tears of the jungle: A Children’s adventure to save the orangutan.

Assessment

Assessment for, as and of learning can include:

* assessment for learning – anecdotal records, conversations, grades, feedback
* assessment as learning – self assessment and peer assessment based on set criteria, questioning, skills practice
* assessment of learning – graded writing and verbal tasks based on set criteria, tasks measuring student achievement against selected outcomes, evidence of student achievement based on personal learning goals

Acknowledgements

This teaching and learning sequence has been written by environmental education teachers and strongly draws on units of work and teaching and learning activities developed and taught by teachers from Maraylya Public School, Oxley Park Public School and Oakhill Drive Public School, supported by Penrith Lakes Environmental Education Centre. Some activities relating to the English textual concept of point of view have been adapted from the [English textual concepts – Stage 2 unit starter – Point of view](http://englishtextualconcepts.nsw.edu.au/sites/default/files/Stage%202%20-%20Point%20of%20view%20multi-text.pdf) by NSW Department of Education, 2016.

Teachers are invited to adapt the unit of work to meet their needs. Contact [Penrith Lakes Environmental Education Centre](http://www.penrithlakeseec.com) for access to resource support for the unit, including in-school presentations and incursions, or to share your students’ success stories inspired by the unit!

Syllabus outcomes

The unit addresses English, geography, science and technology and visual arts syllabus outcomes.

English

|  |  |
| --- | --- |
| Mode and identifier | Objective and outcome |
| Objective A | Communicates through speaking, listening, reading, writing, viewing and representing |
| Speaking and listening | EN2-1A communicates in a range of informal and formal contexts by adopting a range of roles in group, classroom, school and community contexts  |
| Writing and representing  | EN2-2A plans, composes and reviews a range of texts that are more demanding in terms of topic, audience and language  |
| Handwriting and using digital technologies | EN2-3A uses effective handwriting and publishes texts using digital technologies  |
| Reading and viewing | EN2-4A uses an increasing range of skills, strategies and knowledge to fluently read, view and comprehend a range of texts on increasingly challenging topics in different media and technologies |
| Spelling | EN2-5A uses a range of strategies, including knowledge of letter–sound correspondences and common letter patterns, to spell familiar and some unfamiliar words  |
| Objective B | Use language to shape and make meaning according to purpose, audience and context |
| Speaking and listening | EN2-6B identifies the effect of purpose and audience on spoken texts, distinguishes between different forms of English and identifies organisational patterns and features |
| Writing and representing | EN2-7B identifies and uses language forms and features in their own writing appropriate to a range of purposes, audiences and contexts |
| Reading and viewing | EN2-8B identifies and compares different kinds of texts when reading and viewing and shows an understanding of purpose, audience and subject matter  |
| Grammar, punctuation and vocabulary | EN2-9B uses effective and accurate sentence structure, grammatical features, punctuation conventions and vocabulary relevant to the type of text when responding to and composing texts  |
| Objective C | Think in ways that are imaginative, creative, interpretative and critical |
| Thinking imaginatively and creatively | EN2-10C thinks imaginatively, creatively and interpretively about information, ideas and texts when responding to and composing texts |
| Objective D | Express themselves and their relationships with others and their world |
| Expressing themselves | EN2-11D Responds to and composes a range of texts that express viewpoints of the world similar to and different to their own |
| Objective E | Learn and reflect on their learning through their study of English |
| Reflecting on learning | EN2-12E Recognises and uses a range of strategies to reflect on their own and others learning. |

Geography, science and technology, visual arts

| Geography | Science and technology | Visual arts |
| --- | --- | --- |
| GE2-1 examines features and characteristics of places and environments GE2-2 describes the ways people, places and environments interact GE2-3 examines differing perceptions about the management of places and environments GE2-4 acquires and communicates geographical information using geographical tools for inquiry  | ST2-1WS-S questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations ST2-2DP-T selects and uses materials, tools and equipment to develop solutions for a need or opportunity ST2-4LW-S compares features and characteristics of living and non-living things ST2-10ES-S investigates regular changes caused by interactions between the Earth and the Sun, and changes to the Earth’s surface | VAS2.1 represents the qualities of experiences and things that are interesting or beautiful by choosing among aspects of subject matter. VAS2.2 uses the forms to suggest the qualities of subject matterVAS2.3 acknowledges that artists make artworks for different reasons and that various interpretations are possible  |

[Creative Arts K-6 Syllabus](http://educationstandards.nsw.edu.au/wps/wcm/connect/c19a0ed2-4310-481d-ad6b-a6acadad42b3/k6_creative_arts_syl.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-c19a0ed2-4310-481d-ad6b-a6acadad42b3-lzilpJk) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2006

[English K-10 Syllabus](https://syllabus.nesa.nsw.edu.au/english/english-k10/) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2012

[Geography K-10 Syllabus](https://syllabus.nesa.nsw.edu.au/hsie/geography-k10/) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2015

[Science and Technology K-6 Syllabus](https://educationstandards.nsw.edu.au/wps/wcm/connect/5ab69646-f1d4-404b-9c16-b39dfb0986d3/science-and-technology-k-6-syllabus-2017.pdf?MOD=AJPERES&CVID=) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2017

Learning sequences per subject

| Geography | Science and technology | English | Visual arts |
| --- | --- | --- | --- |
| 3. Introducing the geographical inquiry | 7. Investigating relationships between living things | 1. Activating prior knowledge | 9. Jungle juxtapositions – art making |
| 5. Locating geographical characteristics | 13.Investigating interdependencies | 2. Introducing the text – Tears in the jungle | 15. Faces of the forest – art making |
| 6. Vocabulary and terminology | 16.Investigating habitats and threats | 4. Introducing the textual concept of point of view | 26. Barrowful of babies – art making |
| 7. Investigating relationships between living things | 20.Investigating roles of invertebrates | 6. Vocabulary and terminology |  |
| 8. Natural and human features of the jungle | 22.Protecting the Earth’s surface | 10. Point of view in poetry |  |
| 13. Investigating interdependencies | 28.Acting locally | 11. Experimenting with point of view |  |
| 16. Investigating habitats and threats | 31.Reflecting on learning | 12. Communicating through sign language |  |
| 18. Defining sustainability |  | 14. Exploring visual literacy and point of view |  |
| 21. People’s uses and views of environments |  | 17. Creating a personal response |  |
| 22. Protecting the Earth’s surface |  | 18. Defining sustainability |  |
| 23. People and palm oil |  | 19. Introducing the text – Fight for survival |  |
| 26. Environmental protectors |  | 21. People’s uses and views of environments |  |
| 27. How can we help? |  | 24. Introducing the textual concept of authority |  |
| 29. Persuasive text for sustainability |  | 26. Environmental protectors |  |
| 30. Calling for action – persuasive multimodal text |  | 28. Acting locally |  |
| 31. Reflecting on learning |  | 29. Persuasive text for sustainability |  |
|  |  | 30. Calling for action – persuasive multimodal text |  |
|  |  | 31. Reflecting on learning |  |

Overview of learning sequence

| Sequence | Syllabus content  | Teaching and learning activities | Registration |
| --- | --- | --- | --- |
| 1 | English | Activating prior knowledge |  |
| 2 | English | Introducing the text – Tears in the jungle |  |
| 3 | Geography | Introducing the geographical inquiry |  |
| 4 | English | Introducing the textual concept of point of view |  |
| 5 | Geography | Locating geographical characteristics |  |
| 6 | English, geography | Vocabulary and terminology |  |
| 7 | Science and technology, geography | Investigating relationships between living things |  |
| 8 | Geography | Natural and human features of the jungle |  |
| 9 | Visual arts | Jungle juxtapositions – art making |  |
| 10 |  English | Point of view in poetry |  |
| 11 | English | Experimenting with point of view |  |
| 12 | English | Communicating through sign language |  |
| 13 | Science and technology, geography | Investigating interdependencies  |  |
| 14 | English | Exploring visual literacy and point of view |  |
| 15 | Visual arts | Faces of the forest – art making |  |
| 16 | Science and technology, geography | Investigating habitats and threats |  |
| 17 | English | Creating a personal response |  |
| 18 | English, geography | Defining sustainability |  |
| 19 | English | Introducing the text – Fight for survival |  |
| 20 | Science and technology | Investigating roles of invertebrates |  |
| 21 | English, geography | People’s uses and views of environments |  |
| 22 | Science and technology, geography | Protecting the Earth’s surface |  |
| 23 | Geography | People and palm oil |  |
| 24 | English | Introducing the textual concept of authority |  |
| 25 | Geography, English | Environmental protectors |  |
| 26 | Visual arts | Barrowful of babies – art making |  |
| 27 | Geography | How can we help? |  |
| 28 | Science and technology, geography | Acting locally |  |
| 29 | English, geography | Persuasive text for sustainability |  |
| 30 | English, geography | Calling for action – persuasive multimodal text |  |
| 31 | English, geography, science and technology | Reflecting on learning |  |

Note: Learning sequences are not of equal length. In most instances the science and technology learning sequences comprise several investigations, including an investigation outside the classroom.

1. Activating prior knowledge

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishResponding and composing | What do we know about sustainability?Learning intention – activate our prior knowledge and complete pre-unit surveyStudents complete an online sustainability survey prior to commencing the unit. This process will be repeated at the end of the unit. Penrith Lakes Environmental Education Centre (EEC) is collecting data on the impact of the unit.  | Contact [Penrith Lakes Environmental Education Centre](http://www.penrithlakeseec.com) for survey link. |

2. Introducing the text – Tears in the jungle

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishSpeaking and listeningResponding and composingReading and viewing Visual literacyLearning process – engage personally | Tears in the jungle: A children’s adventure to save the orang-utanLearning intention – understand the context of the text and its purpose* View the cover illustration. Make predictions.
* Use visual literacy vocabulary – ‘demand’ being established by the orangutan’s eyes gazing directly at the viewer. Discuss the author’s purpose of the cover image.
* Collectively view the BTN video clip, Saving orangutans, which provides background information on the authors Daniel and William Clarke. Identify the third person voice of the narrator and use of first person voice by Daniel and William.
* Analyse the title of the book. Students discuss the double pronunciation and meaning of the word ‘tears’. ‘Tears’ is a homograph and was deliberately chosen for its duality in meaning. What is the context of the two meanings in the title? What meaning is communicated through the use of the single word?
* Tell the students that since the video the boys have written a second book, Tears in the jungle: Fight for survival, which is listed on the 2018 Children’s Book Council of Australia children's book of the year notables list.
* Make connections to the text – text to self, text to text, text to world.
* View additional background resources as a whole class or in literacy/reading groups, for example:
	+ Tears in the jungle website
	+ The book of Daniel – Australian story.
* Reflecting on the actions of the 10 and 12 year old boys, students write a paragraph in first person voice recounting how they have made a difference, for example, helping a person or animal, improving a place.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Cover of Tears in the jungle: A children’s adventure to save the orang-utan by Daniel Clarke and William Clarke, published by CTQ Management Consulting, Terry Hills, 2011[Saving orangutans](http://www.abc.net.au/btn/story/s3456851.htm), BTN, ABC, 20 March 2012 (03:58)[About the books](https://tearsinthejungle.com/the-book/), Tears in the jungle website [The book of Daniel](https://tearsinthejungle.com/about-us/our-australian-story/), Australian story, ABC, 2012 (28:21)[Tears in the jungle](https://tearsinthejungle.com) website |

3. Introducing the geographical inquiry

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Geography Skill – questioning | What do we want to know? What geographical inquiry questions will we ask?Learning intention – establish geographical inquiry questions and inquiry framework* Students brainstorm what they are curious about, what they wonder and would like to know.
* Introduce the geographical inquiry questions – How can the Borneo jungle environment support the lives of people and other living things into the future?
	+ Where is the Borneo jungle?
	+ What are its geographical characteristics?
	+ What animals and habitats are found in the jungle?
	+ What are the interrelationships in the jungle?
	+ Why is this environment significant?
	+ How is the jungle perceived by different people?
	+ How can jungle habitats, species and environments be protected?
* Display the questions for reference throughout the learning. The inquiry questions frame the geographical inquiry.
 |  |

4. Introducing the textual concept of point of view

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishSpeaking and listeningResponding and composingReading and viewing Visual literacyWriting and representingLearning process – understanding | What is the textual concept of point of view? How does camera shot type establish point of view?Learning intention – develop our understanding of the English textual concept of point of view * Read pages 2-3. Identify the authors’ statement of intent. What attitudes to orangutans are the readers invited to adopt?
* Introduce the English textual concept of point of view: point of view constructs a particular attitude towards the subject matter that the reader is invited to adopt.
* Browse through the book, viewing the photographs, focusing on the use of layout and framing, for example, sequences, full-page photographs and extreme close-ups.
* Explore the variety of camera shot types used in filmmaking. Discuss how using different layouts and camera shots helps to shape meaning and establish different points of view.
* Identify the camera shot types in the photographs in the book. For one example of each shot type, students state how the shot positions the reader and establishes point of view.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 2-3 of Tears in the jungle [Filmmaking 101: Camera shot types](https://www.bhphotovideo.com/explora/video/tips-and-solutions/filmmaking-101-camera-shot-types), Explora[Point of view](http://englishtextualconcepts.nsw.edu.au/content/point-view), English textual concepts, NSW Department of Education and ETA. (for teacher use) |

5. Locating geographical characteristics

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Geography Australia’s neighboursDifferent environmentsSkill – using maps**English**Reading and viewing | What are the geographical characteristics of Indonesia and Australia?Learning intention – develop our geographical knowledge and mapping skills* View page 3 ­– the map of Australia and Indonesia, then:
	+ state the location of Indonesia in relation to Australia
	+ identify the location of Indonesia in relation to the Equator, discuss the impact on climate and vegetation
	+ discuss the comparative land sizes and of Indonesia and Australia
	+ find the population of Indonesia (268 million) and Australia (25 million). Compare and make correlations to land mass.
* Read pages 4-8. On page 7 ask the students to identify the natural vegetation along the Sekonyer River. On page 8, discuss the fun fact – Why do you think orangutans build a nest in a different tree every night?
* Read pages 9-12. On page 11 ask the students:
	+ What is an eco-lodge and why have it?
	+ What native animals live in the jungle around the lodge?

How can we use Google MyMaps to represent information?* Read page 4. In Google MyMaps, students plot the journey taken by Daniel and William Clarke from Sydney to Tanjung Puting National Park in Borneo.
* On the location pin, add key climate data for Sydney and Borneo.
* Change the base map view to the satellite image. Zoom out to view and compare the vegetation cover of Indonesia and Australia.
* With reference to vegetation or land cover maps in an atlas, students use colour coded drop pins and a legend to identify the main vegetation types in Australia and in Indonesia.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 3-12 of Tears in the jungle [Google MyMaps](https://www.google.com.au/mymaps) (access via Department of Education portal) |

6. Vocabulary and terminology

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishVocabularyScience and technologyLiving worldGeographyThe Earth’s environment  | What is our new vocabulary?Learning intention – develop an understanding of unfamiliar and specialist vocabulary* Re-read pages 2-12 in the book and record specialist vocabulary as a word wall in the classroom for reference. Display images to support the vocabulary.
* Develop a glossary of technical terms.
* Use vocabulary as spelling words.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric. Pages 2-12 of Tears in the jungle Word wall |

7. Investigating relationships between living things

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Science and technology Living world Classification of living things Survival of living thingsSkills – making predictions, collecting data, describing relationships, presenting findingsGeographySignificance of environmentsSkills – collecting data, representing information Tools – visual representations – spider map graphic organiser | How do orangutans use trees and other plants? Learning intention – investigate how orangutans depend on trees and plants* Re-read pages 8-12. Read page 13.
* Identify ways in which orangutans use and interact with the jungle, for example, they use trees to support nests, branches to construct nests, large leaves for rain protection, fruit for food, and branches and vines to travel through the forest.
* Students create a spider map with an orangutan in the centre and uses of the jungle on the ‘spokes’. How are orangutans dependent on trees and jungle plants?

How do birds use the environment and other living things in our school grounds?Learning intention – investigate how local birds depend on other living things* Go outside on a bird walk to undertake an investigation into how birds use other living things in the school grounds.
* Using a bird identification chart as a guide, students predict the birds they will see and predict what each species will be doing. They create a table to record tally marks for each bird sighted and notes on their observed behaviours.
* Students write a statement comparing their predictions with their findings. They create a spider map for one or more of the observed birds showing how it is dependent on the environment and other living things.

How are some animals and plants interdependent?Learning intention – understand how some animals disperse plant seeds * Read pages 14-15. Identify the diet of orangutans as frugivorous –eating only fruit. Brainstorm how eating jungle fruits might help the jungle – orangutans are the ‘gardeners’ of the forest, playing an important role in seed dispersal.
* Define the term ‘interdependence’ as a mutually beneficial relationship, using the orangutans’ role in the jungle as an example
* Students research three to five examples of seed dispersal by animals in the jungle or local environment. They:
	+ name the animal and its habitat
	+ identify its role in the ecosystem as a seed disperser
	+ name examples of plants for which it dispersers seeds
	+ outlines features of the seeds that enable dispersal, for example, in sweet fleshy fruit, sticky or barbs for sticking to fur
	+ outlines how the animal dispersers seeds.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric. Pages 8-15 of Tears in the jungle [Birds in backyards identification charts](http://www.birdsinbackyards.net/resources/A4-Posters), Birds in BackyardsSupporting texts –A walk in the bush by Gwyn Perkins The hunt by Narelle Oliver |

8. Natural and human features of the jungle

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Geography Australia’s neighboursDifferent environmentsSkills – collecting information, representing dataTools – visual representations – annotated photo collages | What are the natural and human features of the Borneo jungle?Learning intention – acquire geographical information from photographs and identify natural and human features* Read pages 16-17. Using a T-chart, students:
	+ list the natural features of Borneo shown and described in the book. Add to this as more is revealed throughout the book.
	+ list the human features of Borneo shown and described such as Rimba Lodge, fire towers, orangutan feeding platforms, Camp Leakey
* Recall and discuss personal experiences of tannin stained waters, for example, coastal swamp forests along the NSW east coast
* Discuss the potential impacts of the pollution from gold mining
* Recall how Camp Leakey helps orangutans.
* Read pages 18-19. Discuss the fun fact on page 19 about orangutan DNA.
* Students research additional key plants, animals and habitats of Borneo jungles, sourcing photographs of the species. They use a photo collage app to group, organise and label the photographs.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 16-19 of Tears in the jungle [Borneo wildlife](http://wwf.panda.org/knowledge_hub/where_we_work/borneo_forests/about_borneo_forests/borneo_animals/), WWF[Borneo plants](http://wwf.panda.org/knowledge_hub/where_we_work/borneo_forests/about_borneo_forests/borneo_animals/borneo_plants/), WWF |

9. Jungle juxtapositions – art making

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Visual artsMaking Appreciating | How can we portray the vegetation layers in the Borneo jungle? Learning intention – create an artwork depicting plant diversity of the jungle * Recall the natural features of the jungle.
* View page 7 – the photograph of the river and jungle. Identify the vegetation layers of the jungle, its denseness and the varying colours, patterns and textures in the plants.
* Artist case study – view and discuss Henry Rousseau’s paintings and posters of the jungle, in particular his representation of plants and vegetation layers. (Interestingly, Rousseau didn’t ever visit a jungle.)
* Artist case study – view Jeannie Baker’s collages of tropical rainforest in her book, Where the forest meets the sea, and her depictions of plants, textures and vegetation layers.
* Art making – students use a variety of media to individually sketch several Borneo jungle plants previously collated in their photo collage. They use a copier or technology to generate multiple copies. They cut out and layer their images to create a dense jungle scene. They may also choose to add textured collage and natural materials.
 | Painting of a jungle with two monkeys. The jungle plants fill most of the page. The base of the painting has tall grass stalks, the midground has palm fronds in the foreground and vertical stalks of plants in the background, a palm tree with fronds that sit like an umbrella is on the left of the painting and plants with large leaves are on the right. There are oval fruits on the trees. There is one monkey sitting in the centre of the foreground behind the grass and a monkey in a tree in the centre of the background. Both monkeys are holding fruit.[Two monkeys in the jungle](https://commons.wikimedia.org/wiki/File%3AHenri_Rousseau_-_Two_Monkeys_in_the_Jungle.jpg) by Henry Rousseau, 1909. [Public domain.](https://creativecommons.org/publicdomain/zero/1.0/)[Where the forest meets the sea](https://twoinatepee.com/2017/05/02/exploring-the-power-of-picture-books-with-marc-martin/#jp-carousel-3797) by Jeannie Baker, 1987 |

10. Point of view in poetry

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishSpeaking and listeningReading and viewing Responding and composingVisual literacyWriting and representingLearning process – connecting | How is point of view depicted in images and poetry?Learning intention – connect understanding of point of view to other texts * Read pages 20-21. Identify the two camera shot types and layout used for the same scene. Discuss the differences in how the viewer is positioned in each photograph and the effect on point of view (as an outside observer on page 20 and within the photograph with the same viewpoint as Daniel on page 21).
* Discus the notion of ‘us’ and ‘them’.
* Read aloud the poem The orangutan’s plight by 10 year old Valentino Rodrigues, without images. Provide time for the students to read and reflect on the words.
* As a class discuss first responses. Explain the term ‘anthropomorphise’ as giving human feelings and behaviours to something (humanising) and relate it to the poem.
* In literature circles, students discuss and annotate a copy of the poem. They:
	+ identify the language used to position the reader, for example, ‘I’, ‘we’, ‘my’ and ‘them’, ‘they’, ‘your’. Is the reader part of the ‘us’ or the ‘them’?
	+ brainstorm how first person voice of the orangutan communicates meaning. What does it invite the reader to feel?
	+ identify the words and terms that humanise (anthropomorphise) the orangutan, evoke human emotions and engage empathy
	+ discuss why it is sometimes valuable to tell a story from a particular point of view
	+ tell the poem with expression and record the telling.
* Using a jigsaw strategy, students each rewrite one stanza of the poem, using third person voice and without humanising the orangutan. They read aloud their rewritten versions to their group. How does it change the story?
* View the poem on the Orangutan Foundation website. Discuss the effect of the photograph of the orang-utan. How does it work with the words in inviting the reader to adopt a particular position or attitude?
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 20-21 of Tears in the jungle [The orangutan’s plight – a poem](http://www.orangutan.org.uk/blog/2017/08/24/the-orangutans-plight-a-poem/), by Valentino Rodriques, Orangutan Foundation, 2017 |

11. Experimenting with point of view

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishVocabulary, grammar and punctuationWriting and representingResponding and composingLearning processes – engaging critically, experimenting | How can we experiment with point of view in a descriptive text?Learning intention – write a descriptive comparison between an orangutan’s hand and a human hand from two points of view* Read pages 22-27. Examine the photograph on page 25. Note the demand of William’s gaze. Ask students how it makes them feel. Does it have the effect of positioning the viewer with William?
* Examine the photograph on page 27. Ask students how it makes them feel. Does it have the effect of positioning the viewer to see the orangutan Siswi as William sees her?
* Read pages 28-33. View the photograph on page 29. Discuss the symbolism of William and Siswi holding hands.
* Students source and view images of orangutan’s hands. They compare them to their own hands and identify the similarities and differences.
* Inspired by the image on page 29, students write or tell a descriptive comparison in first person comparing an orangutan’s hand with a human hand. Students:
	+ write or verbally describe the differences from the point of view of themself as William
	+ rewrite or retell their description from the point of view of Siswi the orangutan.
* Students share their work with their peers who engage critically with each other’s texts.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 22-33 of Tears in the jungle The right hand of an orangutan is holding a vertical log. The four fingers are long and slender and bare of fur. The thumb is tucked under the fingers. The fingernails are short and similar to human's nails. The hand is very similar to a human hand, but with longer fingers.Orangutan’s hand. [Pixabay](https://pixabay.com/en/orangutan-hand-brush-animal-zoo-2155661/). [Public domain.](https://creativecommons.org/publicdomain/zero/1.0/) |

12. Communicating through sign language

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishResponding and composingReading and viewing | How can we communicate using sign language? Learning intention – understand elements of sign language * Re-read pages 32-33. Read the fun fact and discuss the potential impacts of the low birth rate of orangutans, as opposed to animals that have multiple births, for example, cats and dogs.
* On page 33, note that Princess had learnt sign language from her carer. As a class, discuss sign language as a form of communication.
* Explore the Auslan sign bank dictionary as a class or in pairs.
* Students sign a word or short phrase to describe their feelings towards orangutans.
 | [Auslan signbank dictionary](http://www.auslan.org.au/about/dictionary/) |

13. Investigating interdependencies

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Science and technology Living world – Survival of living thingsSkills – predicting, collecting data, representing data, systems thinkingGeography Significance of environmentsSkills – acquiring information, representing dataTools – visual representations – concept map, graphic organisers, photographs | What are some interdependencies among living things and the environment in the Borneo jungle?Learning intention – identify examples of species relationships and interdependencies between pitcher plants and animals* Read pages 34-35. Record the animals and plants listed. Add them to the lists of natural features of Borneo.
* Note the carnivorous pitcher plant on page 35. Students read the National Geographic article and write dot points outlining the relationships between pitcher plants and animals.
* Students identify the relationships that are mutually beneficial, for example, the carpenter ant and fanged pitcher plant, the tree shrew and the Nepenthes rajah pitcher plant (scientific name).
* Based on the information they have acquired so far through the text and research, in groups, students use systems thinking to create a concept map to represent the species relationships in the jungle. They start with a sketch jungle plants in the centre of a large whiteboard surface. They add images of jungle animals and draw lines to show their connections to the plants, each other and natural environment. For example, proboscis monkeys use trees for sitting and watching, eat leaves, seeds and fruit and the river to travel from one place to another.

What are some interdependencies among living things and the environment in our school or local area?Learning intention – investigate examples of species relationships and interdependencies in the school grounds or local area* Go outside and undertake an investigation to record examples of relationships between species.
* Students predict examples of relationships they will see, for example spiders’ webs on trees, caterpillars feeding on leaves, bees feeding from and pollinating flowers,
* Students photograph sightings or evidence of species relationships. They organise and label them using a photo collage app, identifying mutually beneficial relationships (interdependencies).
* Students write a statement comparing their predictions with their findings. They create a concept map to represent the observed species relationships.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 34-35 of Tears in the jungle [The living, breathing world of Borneo’s carnivorous pitcher plants](https://www.nationalgeographic.com/photography/proof/2015/01/28/the-living-breathing-world-of-borneos-carnivorous-pitcher-plants/), Christian Ziegler, National Geographic, 2015 |

14. Exploring visual literacy and point of view

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishResponding and composingReading and viewing Visual literacyLearning processes – connecting, engaging critically, experimenting | How can images convey point of view and engage the viewer’s emotions?Learning intention – understand how images can convey point of view and engage emotions* Read pages 36-39. Talk about the care centre and what it does for the orangutans. Explain that the jungle is being cut down (logged) to make way for palm plantations to create palm oil, a cheap vegetable oil used in food products such as chips and biscuits and non-food products such as soap and cosmetics. Care centres encourage the owners of pet baby orangutans to give them to the care centres to be fed and raised properly.
* View the image on page 36. Notice the placement of the image on the page, the framing of the image and the salient features. In pairs, students explore and discuss:
	+ How are the visual elements of gaze, demand, framing, placement, layout and salience used in this image?
	+ What effect do they create?
	+ How does the image make you feel?
	+ What is the intent the image?
	+ What attitude or point of view does it encourage you to take?
* Students compare the large image of the baby orangutan on page 39 with the cropped version on the front cover of the book. Using pair and share, they discuss the differences and effects created by the different framing, composition and layout of each image.
* Students download or copy a photograph of an orangutan, or other primate from the Borneo jungle, which includes a clear face of the animal. They create two versions of the photograph, experimenting with cropping and layout in one version to create an extreme close-up intended to engage empathy in the viewer and move them to care about the animal’s plight.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 36-39 of Tears in the jungle Online images of orangutans or other primates or monkeys from the Borneo jungle |

15. Faces of the forest – art making

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Visual artsMaking Appreciating  | How can we portray jungle animals’ facial features? Learning intention – create an artwork depicting a jungle primate’s facial features * Artist case study – scroll through the blog, Pamela Condor – Art with orang-utans, to view her extensive artworks of orangutans. Discuss composition, media and techniques Pamela Condor uses and the effects they create. Note that the backgrounds of her drawings are art made by orangutans in Melbourne Zoo.
* Art making – students:
	+ source and print as A4 an appealing photograph of a primate that lives in the Indonesian jungle
	+ move a cardboard frame over the photograph to observe details and explore the effects of framing in changing the shot type, for example close-up to extreme close-up.
	+ use charcoal or graphite sticks to draw a series of framed details of their primate’s face, including an extreme close-up gazing at the viewer. The extreme close-up will be enlarged into a painting.
	+ enlarge their extreme close-up onto a large art board using media such as acrylics applied with strips of cardboard, spatulas or large brushes.
 | Artwork of an extreme close-up of a young orangutan's face. The eyes are gazing forwards and are placed one third of teh way down the page. The nose is just below centre and the orangutan's mouth fills the bottom third of the page. Long brush strokes, or drawing strokes radiat from the orangutan's eyes, giving the impression of fur.Orangutan artwork by a teacher at Oakhill Drive PS, 2018[Pamela Condor – Art with orangutans](http://pamelaconder.com.au/index.php/pamela-conder-art-with-orangutans-blog/)Large art boards |

16. Investigating habitats and threats

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Science and technology Living world – Survival of living thingsSkills – collecting data, representing dataGeography Significance of environmentsSkill – representing informationTools – visual representation – cause and effect flowchart, spatial technologies | What are the habitat requirements of orangutans?Learning intention – understand key aspects of orangutan habitats and survival skills, understand the word ‘deforestation’* Read pages 40-45. Ask the students:
	+ What is jungle school?
	+ Why do young orangutans need jungle school?
	+ What skills do orangutans need for survival?
	+ What natural resources do orangutans need for survival?
* Read pages 46-48. Define ‘deforestation’.
	+ its impact on orangutans and other jungle animals
	+ its impact on the ecosystems of the jungle
	+ initial responses on how to stop deforestation in Borneo.
* Explore the spatial technology, Eyes on the forest to view the spatial distribution of deforestation in Borneo over time.
* Students read the section on deforestation in the WWF article on Threats to Borneo forests. They create a cause and effect flowchart to represent the effects of deforestation in Borneo. Note: Palm plantations and palm oil uses will be investigated in the second Tears in the jungle book.
* Discuss Daniel’s question on page 46: ‘Where are the orangutans going to live if we keep destroying their habitat?’

How healthy are the habitats in our school grounds or local area?Learning intention – investigate and assess the health of habitats in the school grounds or local area * Go outside and undertake a habitat assessment following the procedure in the department’s Habitat assessment of school grounds.
* Students compose a ‘report card’ on the health of the habitats investigated.
* Plot the habitats on a site map of the school, adding photographs and a ‘grading’.

What are the habitat requirements of our local animals?Learning intention – understand habitat requirements of local animals * Read page 48. Re-state the habitat requirements of orangutans.
* For an animal observed in the grounds, students:
	+ research the habitat requirements of the animal
	+ organise the information into the headings on page 48
	+ present it as a fact sheet, in a similar format to page 48.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 40-48 of Tears in the jungle [Threats to Borneo forests](http://wwf.panda.org/knowledge_hub/where_we_work/borneo_forests/borneo_deforestation/), WWF Global[Eyes on the forest](http://maps.eyesontheforest.or.id) – spatial technology[Habitat assessment of school grounds](https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/teaching-and-learning/biodiversity/habitat-assessment-of-school-grounds), NSW Department of EducationSupporting text – [Habitat](https://itunes.apple.com/au/book/habitat/id982864283?mt=13), Field of Mars EEC |

17. Creating a personal response

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishVocabulary, grammar and punctuationWriting and representingResponding and composingLearning process – reflecting | Personal response Learning intention –create a personal response to Tears in the jungle* Read pages 48-49. Students type their favourite fact about orangutans into Mentimetre or a class word cloud to represent the favourite facts of the class.
* Students reflect on the text Tears in the jungle. Specifically, they reflect on their:
	+ knowledge of orangutans and the Borneo jungle
	+ understanding of the significance of natural environments to animals and
	+ understanding of the textual concept of point of view.
* Students construct a personal response to the text Tears in the jungle that communicates their point of view.
 | Cover of the book stating the title as Tears in the jungle: A children's adventure to save the orangutan by Daniel Clarke and William Clarke. A baby orangutan's face gazes out. It has oval shaped eyes, the forehead and cheeks are lightly covered in fur and it is bare skin around its mouth and nose. The orangutan's head is leaning against a floral piece of fabric.Pages 48-49 of Tears in the jungle[Mentimetre](https://www.mentimeter.com) |

18. Defining sustainability

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishVocabularySpeaking and listeningReading and viewing Writing and representingResponding and composingGeographyPerception of environmentsTools – visual representations – videos, picture books, word cloud app | Sustainability definedLearning intention – develop understanding of the term sustainability * View the YouTube video, Daniel and William’s quest to save the orang-utans 2018 update. Discuss how the elements of the video – music, images, words and layout – used in the construction of point of view.
* Discuss why and how Daniel and William make a difference to the world by contributing to a sustainable future.
* Find the dictionary meaning for the words ‘sustainable’ and ‘sustainability’. Students use the words in sentences.
* Identify examples of sustainable actions and systems at school such as re-using paper, recycling, composting, vegetable patch, reminders to switch of lights and save electricity.
* Recall the message of Daniel and William Clarke on page 3 of the first book: ‘We believe we can all work together to save the orangutans and their habitat in Borneo and Sumatra’. ‘Work together’ and ‘save’ are words associated with sustainability.
* Students brainstorm words associated with sustainability and create word clouds of them.
 | [Daniel and William’s quest to save the orangutan – 2018 update](https://youtu.be/uFrkpi7FjuA), Tears in the jungle – Fight for survival, 2018 (06:16)Word clouds appsSupporting texts – The mbobo tree by Glenda Millard and Annie White Last tree in the city by Peter Canavas |

19. Introducing the text – Fight for survival

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishSpeaking and listeningReading and viewing Responding and composingProcess – engage personally | Tears in the jungle: A fight for survivalLearning intention – recognise change in the subject matter and text structure* View the cover illustration. Make predictions.
* Note the vector created by the direction of the young orangutan’s gaze. Discuss the symbolism of the orangutan’s hands. Discuss the intent of the cover image.
* Make connections to the text – text to self, text to text, text to world.
* Note that the first book was published in 2011 when the boys were 10 and 12 years old. The second book was published in 2017, six years later, with the boys as teenagers. In groups, students briefly share how their lives and their world has changed over the past six years.
* Read pages 5-19. Scan the QR codes to provide a multimodal textual experience. Identify changes to the people, places and animals from the first book. Discuss differences in the text itself, for example language and layout.
* In groups, using a ‘graffiti board’ strategy, students note the changes they noticed in the second book from the first book, both in subject matter and the text. They share their jottings with the group, justifying their responses.
 | Cover of book with title Tears of the jungle: Fight for survival by Danielle Clarke and William Clarke. A young orangutan is holding onto a thick vertical vine with its two hands. Its fingers are long and bare. The orangutan is looking upwards. The orangutan is covered in fur. On its face, its forehead, eyes, mouth and cheeks are bare of fur. In the background are leaves and a tree trunk. Pages 5-19 of Tears in the jungle: Fight for survival by Daniel Clarke and William Clarke, published by CTQ Management Consulting, Terry Hills, 2017 |

20. Investigating roles of invertebrates

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Science and technology Living world – Classification of living things Survival of living thingsSkills – questioning and predicting, collecting and recording and representing data | How does the recycling role of jungle invertebrates benefit the jungle and the invertebrates themselves?Learning intention – identify examples of interdependencies between animals and the environment, further develop understandings of interdependencies* Read page 20. Define ‘humidity’. Locate Borneo on a world globe and the equator. (0º latitude, Sydney is 33º south of the equator). Correlate latitude with climate and vegetation.
* Scan the QR code on page 20 and watch and listen to the video of the sounds of the Borneo jungle in the early morning.
* Read pages 21-25. Scan the QR codes on pages 24 and 25 to watch videos of dung beetles and ants at work on the forest floor.
* Students read the WWF article on Borneo invertebrates.
* Using information on pages 24 and 25 of Fight for survival, the accompanying videos and the WWF article, students create a summary table of the recycling role of dung beetles, ants, termites and millipedes in the Borneo jungle.

What invertebrates live in our school grounds or local area? What is their role?Learning intention – investigate and classify invertebrates living in the school grounds, connect understandings of interdependencies* Go outside and undertake an investigation into invertebrates in the school grounds.
* With reference to prior investigations and the dichotomous key in the Field of Mars EEC multi-touch book, Invertebrate explorer or Australian Museum’s Quick invertebrate guide, students predict where they will find invertebrates and what types of invertebrates they will observe.
* Using the methods outlined in the Australian Museum BugWise – Do it yourself field studies guides, students observe and record invertebrates in the school grounds, noting the location, date and time of day of the study areas. They use the dichotomous key or identification guide to group the invertebrates, based on their external features.
* Collate the results to form a class data set and identify trends. Which group of invertebrates is most abundant? Do the results show a diversity of invertebrates?
* Students compare their predictions with their findings.
* To understand the role of invertebrates in the grounds, in jigsaw groupings, students use the multi-touch book, Invertebrate explorer, or other sources, to research and share the role of one of the observed invertebrates.
 | Cover of book with title Tears of the jungle: Fight for survival by Danielle Clarke and William Clarke. A young orangutan is holding onto a thick vertical vine with its two hands. Its fingers are long and bare. The orangutan is looking upwards. The orangutan is covered in fur. On its face, its forehead, eyes, mouth and cheeks are bare of fur. In the background are leaves and a tree trunk. Pages 20-25 of Fight for survival [Borneo invertebrates](http://wwf.panda.org/knowledge_hub/where_we_work/borneo_forests/about_borneo_forests/borneo_animals/borneo_insects_bugs/), WWF[Invertebrate explorer](https://itunes.apple.com/au/book/invertebrate-explorer/id980936683?mt=13), Field of Mars EEC[BugWise – Do it yourself field studies](https://australianmuseum.net.au/bugwise), Australian Museum[Quick invertebrate guide](https://australianmuseum.net.au/uploads/documents/9379/quick%20invertebrate%20guide.pdf), Australian Museum |

21. People’s uses and views of environments

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishReading and viewing Speaking and listeningResponding and composingGeography Perception of environments Skills – recording, representing and communicating informationTools – visual representations – photographs, heart maps, role play, graphic organisers, picture books | What are Daniel’s and William’s feelings towards revisiting the orangutans?Learning intention – understand the reasons for and the effects of palm plantations* Read pages 26-27. View the photographs of The Little Sekonyer River, noting the milky brown contamination from gold mining. What evidence does this provide of the views of gold mining operators?
* Read pages 28-32. Discuss the two orangutans already known from the first book, Siswi and Princess, asking question such as:
	+ How have they changed?
	+ What is the significance of Princess’s new baby?
* Analyse the written text and identify words and phrases that communicate Daniel’s and William’s feelings towards the place and orangutans. Students make an evidence-based statement of Daniel’s and William’s feelings towards revisiting the orangutans.

What are different people’s views of the Borneo jungle environment?Learning intention – understand that different people value environments in different ways* Read pages 33-37. Scan the QR code on page 34 and watch the video of the results of jungle clearing for palm plantations.
* Provide time for the students to reflect on the images and words on pages 33-37. Students create personal ‘heart maps’ expressing their feelings about the information presented on the pages.
* Generate a list of the people with connections to the Borneo jungle environment, for example, villagers, palm plantation farmers, gold miners, tour operators, tourists, national park rangers, wildlife carers, William and Daniel.
* Use role play to explore and identify the varying people’s perceptions of the jungle. Students create heart maps or another visual representation of the views of the various stakeholders of the jungle.
 | Cover of book with title Tears of the jungle: Fight for survival by Danielle Clarke and William Clarke. A young orangutan is holding onto a thick vertical vine with its two hands. Its fingers are long and bare. The orangutan is looking upwards. The orangutan is covered in fur. On its face, its forehead, eyes, mouth and cheeks are bare of fur. In the background are leaves and a tree trunk. Pages 28-37 of Fight for survival Supporting text – The mbobo tree by Glenda Millard and Annie White  |

22. Protecting the Earth’s surface

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Science and technologyEarth and spaceSkills – represent and communicate observations and ideasGeography Protection of environmentsSkills – acquiring and communicating informationTools – visual representations – photographs, videos, logo  | How have human actions changed the Earth’s surface in Borneo?Learning intention – understand the causes and effects of deforestation on the Earth’s surface* Re-read pages 34-37. Students create a dot point list or sketches of the immediate and flow-on effects of palm plantations. They cut up their dot points and arrange them into a flow chart to represent the stages in palm oil farming and the impacts on the land. For example, clear jungle – plant palms – palms produce – decreased production – palms burnt – water table subsides – peat moss dries – few nutrients in soil – land barren.

How can scientific knowledge be used to help implement sustainable palm oil farming practices?Learning intention – investigate sustainable palm oil farming practices* Re-read page 37. Clarify what impacts sustainable farming practices could prevent.
* Students make inferences about sustainable farming practices. They summarise the suggestions by the Forum for Sustainable Palm Oil (FONAP) in the section – How can oil palm cultivation be made more sustainable?
* View the WWF video on the Roundtable on Sustainable Palm Oil (RSPO) page. What is the RSPO? Discuss how scientific knowledge being used to help implement sustainable palm oil farming practices that protect biodiversity and the Earth’s surface.
* With reference to the FONAP logo, students create a logo for the Roundtable on Sustainable Palm Oil (RSPO) that represents their role and vision.
 | Cover of book with title Tears of the jungle: Fight for survival by Danielle Clarke and William Clarke. A young orangutan is holding onto a thick vertical vine with its two hands. Its fingers are long and bare. The orangutan is looking upwards. The orangutan is covered in fur. On its face, its forehead, eyes, mouth and cheeks are bare of fur. In the background are leaves and a tree trunk. Pages 34-37 of Fight for survival [Options and solutions – How can palm oil be made more sustainable?,](https://www.forumpalmoel.org/what-is-palm-oil/solutions-options) Forum for Sustainable Palm Oil (FONAP)[Sustainable palm oil](https://rspo.org/about/sustainable-palm-oil), RSPO[How can palm oil be more sustainable? The Roundtable on Sustainable Palm Oil and WWF's role in it](https://rspo.org/about/sustainable-palm-oil), WWF International, 2015 (06:30) |

23. People and palm oil

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Geography Significance of environmentsPerception of environmentsSkills – recording, representing and communicating informationTools – visual representations – videos, multimedia | Why does the world want palm oil? How is it used?Learning intention – develop understanding of the properties of palm oil and its uses as an ingredient in food and non-food products* View the BTN video, Palm oil problem. Identify new information provided by the video.
* Students explore the WWF interactive webpage, Which everyday products contain palm oil? To develop understandings of how palm oil is used in everyday products.
* Guided by the WWF interactive page, students find food and non-food products at home. They either photograph them or bring them to school to create a display of products containing palm oil.
* In action project groups, students begin to formulate ideas for addressing issues relating to the use of palm oil.
 | [Palm oil problem,](http://www.abc.net.au/btn/story/s4625137.htm) BTN, 28 February 2017 (04:03)[Which everyday products contain palm oil?,](https://www.worldwildlife.org/pages/which-everyday-products-contain-palm-oil) WWF |

24. Introducing the textual concept of authority

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishSpeaking and listeningReading and viewing Responding and composingVisual literacyWriting and representingLearning processes – understanding, connecting, experimenting | What is the textual concept of authority? Learning intention – develop understanding of the English textual concept of authority* Define the word ‘authority’. State that authority and authorship are different aspects of a text. Explain that people respond to and interpret texts in different ways, for example, an author may work to be seen as the authority but the text may not be interpreted that way. Authors cannot control people’s interpretations.
* Re-read pages 33-37 and the video accessed via the QR code on page 34. Discuss how trustworthy the text appears to be. Discuss:
	+ Can the text be taken as an authority on the subject of palm oil farming and production?
	+ How does the style and modalities of the text determine its authority? (For example, photographs, first-hand experiences, expert presenter from the Orangutan Project.)
	+ What is the intent of the text? Does this influence its authority?
	+ How was authority determined in the BTN video, Palm oil problem, and WWF page on palm oil products?
	+ Did the other sources confer or contradict the information in Fight for survival? How does this influence authority of the text?
* Read pages 38-39. Identify the regional impacts of Indonesia’s deforestation practices. Discuss how the integration of news headlines influences the authority of the text.
* In the genre of an informative text, demonstrating the concept of authority, students script, storyboard and produce a 1 minute video about deforestation in Borneo. Students peer review the videos, commenting on ways in which authority was determined.
 | Cover of book with title Tears of the jungle: Fight for survival by Danielle Clarke and William Clarke. A young orangutan is holding onto a thick vertical vine with its two hands. Its fingers are long and bare. The orangutan is looking upwards. The orangutan is covered in fur. On its face, its forehead, eyes, mouth and cheeks are bare of fur. In the background are leaves and a tree trunk. Pages 33-39 of Fight for survival |

25. Environmental protectors

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Geography Protection of environmentsSkills – organise and communicate information Tools – visual representationsEnglishVocabulary, grammar and punctuationWriting and representingResponding and composing | **What organisations work to protect orangutan habitat?**Learning intention – identify strategies of organisations that protect orangutan habitat or provide care for orangutans* Read pages 40-54. Discuss how educating local villagers can protect orangutans.
* Under a main heading ‘International animal rescue care centre’, record dot points under the sub-headings: role, services and facilities, strategies to protect orang-utans, future directions from information in pages 40-53.
* Students list any questions about the care centre raised by the text. They research answers using the International Animal Rescue (IAR) Borneo orangutan rescue page and other sources.
* Students research an organisation that works to protect orangutan habitat or provide care for orangutans. They list the sustainable practices of the organisation in protecting orangutans and habitats.
* Students compose a fact sheet or visual representation to communicate the role and practices of the organisation.
 | Cover of book with title Tears of the jungle: Fight for survival by Danielle Clarke and William Clarke. A young orangutan is holding onto a thick vertical vine with its two hands. Its fingers are long and bare. The orangutan is looking upwards. The orangutan is covered in fur. On its face, its forehead, eyes, mouth and cheeks are bare of fur. In the background are leaves and a tree trunk. Pages 40-54 of Fight for survival [Borneo orang-utan rescue](https://www.internationalanimalrescue.org/orangutan-sanctuary), IAR |

26. Barrowful of babies – art making

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Visual artsMakingAppreciating  | How can we depict a group of baby orangutans?Learning intention – create collaborative artworks depicting young orangutans* Re-visit pages 47-51. View the photographs of baby orangutans. Scan the QR code on page 52 to watch the video of baby orangutans being wheeled in a wheelbarrow to their night enclosures.
* Artist case study – examine the series of images of the outdoor street art titled Barrel of monkeys by Ernest Zacharevic, located in Kutching, Borneo. Students note how the different views of the artwork make them feel, that is, the distance shots and close-ups of the art.
* Art making – students:
	+ form collaborative groups
	+ each select one photograph of a baby orang-utan to draw, from pages 47-51
	+ plan the composition and media for a large composite artwork of the group of their baby orangutans and agree on the ‘container’ for their group of babies, for example, a wheelbarrow
	+ draw their chosen baby orang-utan and cuts it out
	+ assemble the individual drawings into a group of orangutans.
 | Cover of book with title Tears of the jungle: Fight for survival by Danielle Clarke and William Clarke. A young orangutan is holding onto a thick vertical vine with its two hands. Its fingers are long and bare. The orangutan is looking upwards. The orangutan is covered in fur. On its face, its forehead, eyes, mouth and cheeks are bare of fur. In the background are leaves and a tree trunk. Pages 47-52 of Fight for survival [Barrel of monkeys by Ernest Zacherevic](http://www.ernestzacharevic.com/outdoor/#/kuching-2014/), Kutching, Borneo, 2014 |

27. How can we help?

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Geography Protection of environmentsSkills – communicate information, propose personal action and predict the effects  | What can we do for orangutans?Learning intention – plan and propose actions to help protect orangutan habitat* Read page 55. As a class, discuss ideas for actions to help orangutans. View actions of other schools as promoted on the Tears in the jungle website.
* Ideas and suggestions:
	+ ‘Colour me orange day’ to raise money across our school
	+ ‘Orangutan Race’ around the oval, sponsored on per lap basis
	+ Teach others about palm oil in our foods
	+ Persuade the canteen to use palm oil free popcorn and food
	+ Present PowerPoints or iMovie trailers at assembly
	+ Write letters to your Member of Parliament about palm oil labeling
	+ Raise funds for equipment for International Animal Rescue care centres
	+ Raise funds to adopt an orangutan in The Orangutan Project
	+ Raise funds for an organization such as The Orangutan Project, International Animal Rescue Centre, Orangutan Foundation International or Borneo Orangutan Survival Foundation.
 | Cover of book with title Tears of the jungle: Fight for survival by Danielle Clarke and William Clarke. A young orangutan is holding onto a thick vertical vine with its two hands. Its fingers are long and bare. The orangutan is looking upwards. The orangutan is covered in fur. On its face, its forehead, eyes, mouth and cheeks are bare of fur. In the background are leaves and a tree trunk. Page 55 of Fight for survival [Tears in the jungle](https://tearsinthejungle.com) website |

28. Acting locally

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| Science and technologySurvival of living thingsSkills – design and productionGeography Protection of environmentsSkills – propose personal action and predict the effects  | How can we protect or improve local biodiversity? What local sustainability actions can we undertake? Learning intention – plan and propose sustainability actions to help protect local environments* As a class, informed by the findings of the habitat assessments and biodiversity investigations, students identify issues and define issues.
* Students discuss ideas for protecting or improving local biodiversity and other local sustainability actions.
* Ideas and suggestions:
	+ Restore or improve natural areas in the school to enhance biodiversity
	+ Plant habitat gardens, such as flowering shrubs for small bird habitat
	+ Install nest boxes for native species such as possums, gliders and parrots
	+ Reduce litter in the school playground, thereby reducing litter that is washed into drains, waterways and the oceans
	+ Establish worm farming or composting systems for fruit and vegetable scraps
	+ Plant vegetable gardens and reduce food miles by using produce in the school canteen.
	+ Reduce single use plastics and plastic in landfill through ‘nude food’ lunches
	+ Collect containers for ‘return and earn’ recycling
	+ Improve classroom and school-wide paper re-use and recycling.
 | [Biodiversity teaching and learning](https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/teaching-and-learning/biodiversity), NSW Department of Education (teacher use)[Sustainability action process](https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/sustainability-action-process), NSW Department of Education (teacher use)Supporting texts – Belonging by Jeannie BakerThe tomorrow book by Jackie FrenchLiving world –  |

29. Persuasive text for sustainability

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishSpeaking and listeningReading and viewing Responding and composingVisual literacyWriting and representing**Geography**Protection of environmentsSkill – communicating**Science and technology** Skill – communicating | How can we persuade people to act sustainably locally? How can we persuade people to contribute to sustainability globally? Learning intention – compose persuasive texts* Once sustainable actions for orangutans and local environments are planned, students use an app such as Typorama to create persuasive posters for display around the school.
* Students compose persuasive texts to engender support for local action. For instance:
	+ asking the canteen to replace products which use unsustainable palm oil
	+ encouraging the community to purchase products that use sustainable palm oil
	+ supporting palm oil labelling
	+ encouraging support for local biodiversity protection or improvement projects
	+ gaining support for school sustainability initiatives and practices.
 | [Why palm oil should be labelled](https://www.choice.com.au/food-and-drink/nutrition/food-labelling/articles/palm-oil-labelling), Choice, 2015[Understanding how to read between the lines](https://www.palmoilinvestigations.org/brand-palm-oil-statements.html), Palm Oil Investigations[Palm oil](http://www.foodstandards.gov.au/consumer/generalissues/palmoil/Pages/default.aspx), Food Standards Australia New Zealand, 2017 [Don’t palm us off](https://www.zoo.org.au/get-involved/act-for-wildlife/dont-palm-us-off), Zoos Victoria |

30. Calling for action – persuasive multimodal text

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishSpeaking and listeningReading and viewing Responding and composingVisual literacyWriting and representing | How can we compose a multimodal persuasive text? Learning intention – persuade our audience, demonstrate our learning* Re-view the YouTube video, Daniel and William’s quest to save the orang-utans 2018 update. Discuss how the elements of the video work together to communicate meaning and position the viewer.
* Students view multimodal wildlife conservation web pages that promote a ‘call to action’ such as Species – Protecting wildlife – World Wildlife Fund, orangutan species page by WWF, Taronga Conservation Society and The Orangutan Project.
* Identify and discuss the elements of effective persuasive multimodal texts.
* Discuss and develop with students the success criteria for a persuasive multimodal text.
* Students create an iMovie movie or trailer to persuade an audience to contribute towards protecting orangutans or local species and habitats.
* Students evaluate the movie according to the success criteria previously established.
 | [Daniel and William’s quest to save the orangutan – 2018 update](https://youtu.be/uFrkpi7FjuA), Tears in the jungle – Fight for survival, 2018 (06:16)[Protecting wildlife for a healthy planet](https://www.worldwildlife.org/species), WWF[Act for the wild](https://taronga.org.au/conservation-and-science/act-for-the-wild), Taronga Conservation Society[The orang-utan project home page](https://www.orangutan.org.au), The Orangutan Project[Orangutan species page](https://www.worldwildlife.org/species/orangutan), WWF |

31. Reflecting on learning

| Syllabus content  | Teaching and learning activities | Resources  |
| --- | --- | --- |
| EnglishResponding and composing | Undertake sustainability surveyLearning intention – reflect on learning and complete post-unit survey* Students complete an online sustainability survey that they completed at the start of the unit. Penrith Lakes Environmental Education Centre (EEC) is collecting data on the impact of the unit.
 | Contact [Penrith Lakes Environmental Education Centre](http://www.penrithlakeseec.com) for survey link. |

References and resources

[Biodiversity teaching and learning](https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/teaching-and-learning/biodiversity), NSW Department of Education

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[English textual concepts – Stage 2 unit starter – Point of view](http://englishtextualconcepts.nsw.edu.au/sites/default/files/Stage%202%20-%20Point%20of%20view%20multi-text.pdf), NSW Department of Education, 2016

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[Penrith Lakes Environmental Education Centre](http://www.penrithlakeseec.com), NSW Department of Education

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